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UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

(Mark One)

☒ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the Fiscal Year Ended December 31, 2014

or

o **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**

For the transition period from to .

Commission File Number: 0-20859

GERON CORPORATION
(Exact name of registrant as specified in its charter)

Delaware	**75-2287752**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
149 Commonwealth Drive, Suite 2070, Menlo Park, CA	**94025**
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: **(650) 473-7700**

Securities registered pursuant to Section 12(b) of the Act:

Title of each class	**Name of each exchange on which registered**
Common Stock, $0.001 par value	The Nasdaq Stock Market LLC

Securities registered pursuant to Section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes o No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes o No ☒

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes ☒ No o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes ☒ No o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any

amendment to this Form 10-K. ☒

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company. See the definitions of "large accelerated filer", "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer o	Accelerated filer ☒	Non-accelerated filer o (Do not check if a smaller reporting company)	Smaller reporting company o

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act). Yes o No ☒

The aggregate market value of voting and non-voting common equity held by non-affiliates of the registrant was approximately $501,005,000 based upon the closing price of the registrant's common stock on June 30, 2014 on the Nasdaq Global Select Market. The calculation of the aggregate market value of voting and non-voting common equity held by non-affiliates of the registrant excludes shares of common stock held by each officer, director and stockholder that the registrant concluded were affiliates on that date. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of March 6, 2015, there were 157,700,375 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE:

Document	Form 10-K Parts
Portions of the Registrant's definitive proxy statement for the 2015 annual meeting of stockholders to be filed pursuant to Regulation 14A within 120 days of the Registrant's fiscal year ended December 31, 2014	III

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In this report, unless otherwise indicated or the context otherwise requires, "Geron," "the registrant," "we," "us," and "our" refer to Geron Corporation, a Delaware corporation.

Forward-Looking Statements

This annual report on Form 10-K, including "Business" in Part I, Item 1 and "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Part II, Item 7, contains forward-looking statements that involve risks and uncertainties, as well as assumptions that, if they never materialize or prove incorrect, could cause the results of Geron Corporation, or Geron or the Company, to differ materially from those expressed or implied by such forward-looking statements. All statements other than statements of historical fact are statements that could be deemed forward-looking statements. In some cases, forward-looking statements can be identified by the use of terminology such as "may," "expects," "plans," "intends," "will," "should," "projects," "believes," "predicts," "anticipates," "estimates," "potential," or "continue" or the negative thereof or other comparable terminology. The risks and uncertainties referred to above include, without limitation, risks related to our research and development efforts, our dependence on Janssen Biotech, Inc. for the development, regulatory approval, manufacture and commercialization of our sole product candidate, imetelstat, need for future capital, uncertainty of clinical trial results or regulatory approvals or clearances, the future development of imetelstat, including any future efficacy or safety results that cause the benefit-risk profile of imetelstat to become unacceptable, enforcement of our patent and proprietary rights, reliance upon investigators, potential competition and other risks that are described herein and that are otherwise described from time to time in our Securities and Exchange Commission reports including, but not limited to, the factors described in Part I, Item 1A, "Risk Factors," of this annual report on Form 10-K. Geron assumes no obligation for and except as required by law, disclaims any obligation to update these forward-looking statements to reflect future information, events or circumstances.

Calculation of Aggregate Market Value of Non-Affiliate Shares

For purposes of calculating the aggregate market value of shares of our common stock held by non-affiliates as set forth on the cover page of this annual report on Form 10-K, we have assumed that all outstanding shares are held by non-affiliates, except for shares held by each of our executive officers, directors and 5% or greater stockholders. In the case of 5% or greater stockholders, we have not deemed such stockholders to be affiliates unless there are facts and circumstances which would indicate that such stockholders exercise any control over our company. These assumptions should not be deemed to constitute an admission that all executive officers, directors and 5% or greater stockholders are, in fact, affiliates of our company, or that there are no other persons who may be deemed to be affiliates of our company. Further information concerning shareholdings of our executive officers, directors and principal stockholders is incorporated by reference in Part III, Item 12 of this annual report on Form 10-K.

PART I

ITEM 1. BUSINESS

Company Overview

We are a clinical stage biopharmaceutical company focused on the development of a telomerase inhibitor, imetelstat, in hematologic myeloid malignancies. The discovery and early development of imetelstat, our sole product candidate, was based on our core expertise in telomerase and telomere biology. Telomerase is an enzyme that enables cancer cells, including malignant progenitor cells, to maintain telomere length, which provides them with the capacity for limitless, uncontrolled proliferation. Using our proprietary nucleic acid chemistry, we designed imetelstat to be an oligonucleotide that targets and binds with high affinity to the active site of telomerase, thereby directly inhibiting telomerase activity and impeding malignant cell proliferation. Molecular responses in essential thrombocythemia, or ET, and remission responses, including reversal of bone marrow fibrosis,

in myelofibrosis, or MF, suggest imetelstat has disease-modifying activity by inhibiting the progenitor cells of the malignant clone for the underlying disease in a relatively selective manner.

On November 13, 2014, we entered into an exclusive collaboration and license agreement, or the Collaboration Agreement, with Janssen Biotech, Inc., or Janssen, to develop and commercialize imetelstat worldwide for all indications in oncology, including hematologic myeloid malignancies, and all other human therapeutic uses. The Collaboration Agreement became effective on December 15, 2014 and we received $35 million from Janssen as an upfront payment. Additional consideration under the Collaboration Agreement includes payments up to a potential total of $900 million for the achievement of development, regulatory and commercial milestones, as well as royalties on worldwide net sales.

Under the Collaboration Agreement, Janssen is responsible for the development, manufacturing and commercialization of, and seeking regulatory approval for imetelstat worldwide. Development of imetelstat will proceed under a mutually agreed clinical development plan, which includes two Phase 2 studies to be pursued initially, one in myelofibrosis, referred to as the Initial Phase 2 MF Study, and one in myelodysplastic syndrome, referred to as the Initial Phase 2 MDS Study. We expect Janssen to initiate the Initial Phase 2 MF Study in mid-2015, followed by the Initial Phase 2 MDS Study to be initiated at the end of 2015. In addition, the clinical development plan may also include additional, possible registration studies in MF and myelodysplastic syndrome, or MDS, and possible exploratory Phase 2 and potential follow-on Phase 3 studies in acute myelogenous leukemia, or AML.

We believe our current operational and financial resources, including the upfront payment received from Janssen under the Collaboration Agreement, may enable us to acquire one or more oncology products, programs or companies to diversify our business.

Telomeres and Telomerase in Normal Development

In the human body, normal growth and maintenance of tissues occurs by cell division. However, most cells are only able to divide a limited number of times, and this number of divisions is regulated by telomere length. Telomeres are repetitions of a deoxyribonucleic acid, or DNA, sequence located at the ends of chromosomes. They act as protective caps to maintain stability and integrity of the chromosomes, which contain the cell's genetic material. Normally, every time a cell divides, the telomeres shorten. Eventually, they shrink to a critically short length, and as a result, the cell either dies by apoptosis or stops dividing and senesces.

Telomerase is a naturally occurring enzyme that maintains telomeres and prevents them from shortening during cell division in cells, such as stem cells, that must remain immortalized to support normal health. Telomerase consists of at least two essential components: a ribonucleic acid, or RNA, template (hTR), which binds to the telomere, and a catalytic subunit (hTERT) with reverse transcriptase activity, which adds a specific DNA sequence to the chromosome ends. The 2009 Nobel Prize for Physiology and Medicine was awarded to Drs. Elizabeth H. Blackburn and Carol W. Greider, together with Dr. Jack Szostak, who were former Geron collaborators, for the discovery of how chromosomes are protected by telomeres and the enzyme telomerase.

Telomerase is active during embryonic development, enabling the rapid cell division that supports normal growth. During the latter stages of human fetal development and in adulthood, telomerase is repressed in most cells, and telomere length gradually decreases during a lifetime. In tissues that have a high turnover throughout life, such as blood and gut, telomerase can be transiently upregulated in progenitor cells to enable controlled, self-limited proliferation to replace cells lost through natural cell aging processes. In proliferating progenitor cells, relatively long telomeres are maintained by upregulated telomerase. As the progeny of progenitor cells mature, telomerase is downregulated and telomeres shorten with cell division, preventing uncontrolled proliferation.

Telomeres and Telomerase in Cancer

Telomerase is upregulated in many tumor progenitor cells, which enables the continued and uncontrolled proliferation of the malignant cells that drive tumor growth and progression. Telomerase expression has been found to be present in approximately 90% of biopsies taken from a broad range of human cancers. Our nonclinical studies, in which the telomerase gene was artificially introduced and expressed in normal cells grown in culture, have suggested that telomerase does not itself cause a normal cell to become malignant. However, the sustained upregulation of telomerase enables tumor cells to maintain telomere length, providing them with the capacity for limitless proliferation. We believe that the sustained upregulation of telomerase is critical for tumor progression as it enables malignant progenitor cells to acquire cellular immortality and avoid apoptosis, or cell death.

Telomerase Inhibition: Inducing Cancer Cell Death

We believe that inhibiting telomerase may be an attractive approach to treating cancer because it may limit the proliferative capacity of malignant cells. We and others have observed in various in vitro and rodent tumor models that inhibiting telomerase results in telomere shortening and arrests uncontrolled malignant cell proliferation and tumor growth. In vitro studies have suggested that tumor cells with short telomeres may be especially sensitive to the anti-proliferative effects of inhibiting telomerase. Our nonclinical data also suggest that inhibiting telomerase is particularly effective at limiting the proliferation of malignant progenitor cells, which have high levels of telomerase and are believed to be important drivers of tumor growth and progression.

Many hematologic malignancies, such as ET, MF, and polycythemia vera, or PV, are known to arise from malignant progenitor cells in the bone marrow that express higher telomerase activity and have shorter telomeres when compared to normal healthy cells. Recent nonclinical data reported in the journal *Cell Stem Cell* in December 2014 by Steven Lane, M.D., Ph.D., Queensland Institute of Medical Research, one of our nonclinical collaborators, provided proof-of-concept of the role of telomerase in disease initiation and progression in AML. Leukemic stem cells, or LSCs, are functionally described as cells within AML that are capable of initiating and maintaining the disease. Through their high expression of telomerase, LSCs are believed to be responsible for chemotherapy resistance and relapse in AML which make them an important therapeutic target as a durable treatment for AML. Data from the nonclinical study conducted by Dr. Lane suggest that imetelstat has the potential for disease-modifying activity in AML by targeting LSCs.

Imetelstat: The First Telomerase Inhibitor to Advance to Clinical Development

Imetelstat is a lipid conjugated 13-mer oligonucleotide that is designed to be complementary to and bind with high affinity to the RNA template of telomerase, thereby directly inhibiting telomerase activity. The compound has a proprietary thio-phosphoramidate backbone, which is designed to provide resistance to the effect of cellular nucleases, thus conferring improved stability in plasma and tissues, as well as improved binding affinity to its target. To improve the ability of imetelstat to permeate through cellular membranes, we conjugated the oligonucleotide to a lipid group. Imetelstat's IC50, or half maximal inhibitory concentration, is 0.5-10 nM in cell free assays. The tissue half-life of imetelstat, or the time it takes for the concentration or amount of imetelstat to be reduced by half, in bone marrow, spleen, liver and tumor has been estimated to be 41 hours in humans, based on data from animal studies and clinical trial data. The tissue half-life indicates how long a drug will remain present in the tissues, and a longer tissue half-life may enable a drug to remain at effective doses for a longer period of time.

Imetelstat has been shown in nonclinical studies to exhibit relatively preferential inhibition of the clonal proliferation of malignant progenitor cells compared to normal progenitors. For this reason, imetelstat has been studied as a treatment for malignant diseases.

Imetelstat is the first telomerase inhibitor to advance to clinical development. The Phase 1 trials that we completed evaluated the safety, tolerability, pharmacokinetics and pharmacodynamic effects of imetelstat. Doses and dosing schedules were established that were tolerable and achieved target exposures in patients that were consistent with those required for efficacy in animal models. We believe adverse events were generally manageable and reversible. The dose-limiting toxicities were thrombocytopenia, or reduced platelet count, and neutropenia, or reduced neutrophil count. Following intravenous administration of imetelstat using tolerable dosing regimens, clinically relevant and significant inhibition of telomerase activity was observed in various types of tissue in which telomerase activity is measurable, including normal bone marrow hematopoietic cells, malignant plasma cells, hair follicle cells, and peripheral blood mononuclear cells.

Developing Imetelstat to Treat Hematologic Myeloid Malignancies

Proof-of-Concept in Essential Thrombocythemia

Myeloproliferative neoplasms, or MPNs, are hematologic myeloid malignancies that arise from malignant hematopoietic myeloid progenitor cells in the bone marrow, such as the precursor cells of red blood cells, platelets and granulocytes. Proliferation of malignant progenitor cells leads to an overproduction of any combination of myeloid white cells, red blood cells and/or platelets, depending on the disease. These overproduced cells may also be abnormal, leading to additional clinical complications. MPN diseases include PV, ET and MF. ET is an MPN characterized by a high platelet count, often accompanied by a high white cell count, and an increased risk of thrombosis, or bleeding, in higher risk patients.

In January 2011, we initiated a Phase 2 clinical trial of imetelstat in patients with ET. The Phase 2 ET trial was a multi-center, single arm, and open label trial that we designed to provide proof-of-concept for the potential use of imetelstat as a treatment for hematologic myeloid malignancies, such as MF, MDS or AML. The trial leveraged clinical observations from Phase 1 trials suggesting that imetelstat reduces platelet counts, as well as nonclinical observations that imetelstat distributes well to bone marrow in rodent models and selectively inhibits the proliferation of malignant progenitors ex vivo from patients with ET. Hematologic responses were measured by reductions in platelet counts, and molecular responses were measured by reductions in the JAK2 V617F mutant allele burden in circulating granulocytes as assessed by a reduction in the proportion of the abnormal Janus kinase 2, or JAK2, gene compared to the normal, or wild type JAK2 gene. We believe a decrease in the proportion of the JAK2 V617F mutant relative to the wild type JAK2 is consistent with selective inhibition of the malignant progenitor cells responsible for the disease.

Data from the primary efficacy analysis of the Phase 2 ET trial in October 2013 showed that imetelstat induced platelet count reductions in all 18 patients in the trial (a 100% hematologic response rate) and normalizations in 16 out of 18 patients (an 89% complete response rate). The median time on therapy was 17.1 months (range 6.9 months to 2.7 years). The JAK2 V617F gene mutation was detected in eight patients at baseline. Seven out of the eight (88%) patients achieved 72% to 96% reductions in JAK2 V617F allele burden that qualified as partial molecular responses with a median duration of 15.5 months. These data suggest that imetelstat inhibits the progenitor cells of the malignant clone believed to be responsible for the underlying disease in a relatively selective manner.

Adverse events reported in the Phase 2 ET trial have been similar to the adverse events reported in other imetelstat clinical trials, with fatigue, gastrointestinal symptoms (specifically nausea, diarrhea, constipation, and vomiting) and cytopenias being the most frequently observed adverse events. One patient experienced Grade 3 hepatic cirrhosis and encephalopathy which was assessed by the investigator to be possibly attributable to imetelstat, and later died of bleeding esophageal varices. Two patients experienced reversible Grade 3 alanine transaminase, which was assessed by the investigator to be possibly attributable to imetelstat. At least one abnormal liver function test, or LFT, was observed in

laboratory findings in all patients in the trial, with some patients experiencing persistent low-grade LFT abnormalities with longer dosing. With longer dosing, Grade 1 increases in alkaline phosphatase were observed, associated with mostly Grade 1 to some Grade 2 unconjugated hyperbilirubinemia. The clinical significance and long-term consequences of such persistent low-grade LFT abnormalities is currently undetermined.

In March 2014, we received written notice from the United States Food and Drug Administration, or FDA, that our Investigational New Drug application, or IND, for imetelstat had been placed on full clinical hold following the FDA's review of safety data in our then ongoing clinical studies. A full clinical hold is an order that the FDA issues to a trial sponsor to suspend all ongoing clinical trials and delay all proposed trials under a given IND. With this clinical hold, any patients in an ongoing Geron-sponsored clinical trial could not receive any further treatment with imetelstat. Therefore, we stopped imetelstat treatment in our Phase 2 Geron-sponsored clinical trials in ET and multiple myeloma, or MM. In our Phase 2 ET trial, imetelstat treatment was stopped in eight patients and in our Phase 2 MM trial, imetelstat treatment was stopped in two patients. See below for discussion of removal of the full clinical hold.

In their notice to us, the FDA cited the following safety issues as the basis for the clinical hold: lack of evidence of reversibility of hepatotoxicity, risk for chronic liver injury and lack of adequate follow-up in patients who experienced hepatotoxicity. To address the clinical hold, we were required to provide clinical follow-up information on patients who experienced LFT abnormalities until LFT abnormalities resolved to normal or baseline and to provide information regarding the reversibility of the liver toxicity after chronic imetelstat administration in animals.

We submitted a complete response to the FDA to seek release of the full clinical hold. In the complete response, we provided clinical follow-up information from patients in the previously ongoing Geron-sponsored Phase 2 trials in ET and MM. Our analysis of these data concluded that in the Phase 2 ET trial, LFT abnormalities resolved to normal or baseline in 14 of 18 follow-up patients. For the remaining four ET patients, at the time of the data cut-off, three showed improvement in LFT abnormalities and one had unresolved LFT abnormalities. In the Phase 2 MM trial, LFT abnormalities resolved to normal or baseline in all nine follow-up patients. In addition, no emergent hepatic adverse events were reported during follow-up for either study. In the complete response, we also provided data from our previously conducted nonclinical toxicology studies, which included a six-month study in mice and a nine-month study in cynomolgus monkeys. In those studies, no clinical pathology changes indicative of hepatocellular injury were observed, and no clear signal of LFT abnormalities were identified.

On October 31, 2014, the FDA removed the full clinical hold on our IND for imetelstat. In addition, the FDA stated that our proposed clinical development plan for imetelstat that is focused on high-risk myeloid malignancies, such as MF, is acceptable. The FDA acknowledged that we do not intend to conduct further studies in, or develop imetelstat for, the treatment of ET or PV, which is consistent with our plans as originally disclosed in April 2013.

Prior to initiation of the Initial Phase 2 MF Study, we plan to transfer our IND for imetelstat to Janssen as required by our Collaboration Agreement with them. For further discussion of the collaboration with Janssen, see the sub-section entitled, "Future Development of Imetelstat in Collaboration with Janssen".

Clinical Development in Myelofibrosis

MF is a myeloproliferative neoplasm among related diseases, such as ET, and is characterized by clonal proliferation of malignant hematopoietic progenitor cells in the bone marrow that causes bone marrow fibrosis, elevation in bone density, known as osteosclerosis, and abnormal rapid proliferation of blood vessels, known as pathological angiogenesis. MF patients may exhibit abnormally low red blood

cells/hemoglobin, known as progressive anemia, abnormally low white blood cells, known as leukopenia, abnormally high white blood cells, known as leukocytosis, abnormally low platelets, known as thrombocytopenia, abnormally high platelets, known as thrombocytosis, immature blood cells, known as peripheral blood leukoerythroblastosis, and abnormally high precursor cells in the blood, known as excess circulating blasts. In addition, impaired blood production from the bone marrow causes blood production to shift to other organs such as the spleen and liver, known as extramedullary hematopoiesis, which leads to an enlarged spleen, known as splenomegaly, or an enlarged liver, known as hepatomegaly. MF patients can also suffer from debilitating constitutional symptoms, such as drenching night sweats, fatigue, severe itching, known as pruritus, fever and bone pain. The estimated prevalence of MF in the United States is approximately 13,000 patients, with an annual incidence of approximately 3,000 patients. Approximately 70% of MF patients have two to three risk factors (intermediate-2) or four or more risk factors (high risk), as defined by the Dynamic International Prognostic Scoring System Plus, or DIPSS Plus, described in a 2011 *Journal of Clinical Oncology* article. These patients have a median survival of approximately one to three years, representing a significant unmet medical need.

Allogeneic hematopoietic cell transplantation, or allo-HCT, is the only current treatment approach for MF that can lead to complete remission of the disease with normalization of peripheral blood counts, regression of bone marrow fibrosis, disappearance of cytogenetic abnormalities, normalization of spleen size and resolution of constitutional symptoms. However, use of allo-HCT is limited to a very small number of eligible patients due to the lack of suitable donors, older age and/or comorbid conditions. In addition, graft vs. host disease and life-threatening infections are other limitations of allo-HCT treatment.

Recent data presented in December 2014 at the American Society of Hematology, or ASH, Annual Meeting by Dr. Ron Hoffman of the Mount Sinai School of Medicine from in vitro translational studies have demonstrated that imetelstat inhibits malignant hematopoiesis and malignant megakaryopoiesis. In one study, hematopoietic stem cells were obtained from spleens of MF patients and normal cord blood. Imetelstat treatment on both in vitro cultures of stem cells showed selective inhibition of the proliferation of hematopoietic stem cells and myeloid progenitor cells and preferential depletion of malignant hematopoietic progenitor cells. In another study, peripheral blood mononuclear cells, or PBMCs, were taken from MF patients and normal patients. Imetelstat treatment on both in vitro cultures of cells showed selective inhibition of the proliferation of malignant megakaryocytic progenitor cells from myelofibrosis PBMCs; a reduction in the number of malignant megakaryocytes from myelofibrosis PBMCs; and inhibition of late-stage megakaryocytic maturation derived from both myelofibrosis and normal PBMCs. These in vitro data support the clinical remission responses observed to date in the investigator-initiated clinical trial of myelofibrosis being conducted at Mayo Clinic, or the MF Pilot Study, and the disease-modifying activity suggested by the MF Pilot Study results.

Pilot Study in Myelofibrosis (MF Pilot Study)

Based on the data from the Phase 2 ET trial, in November 2012, Dr. Ayalew Tefferi, or the investigator, initiated the MF Pilot Study to assess the effect of imetelstat in patients with MF. The MF Pilot Study is an open label trial in patients with primary MF, post-ET MF, or post-PV MF who have two to three risk factors (intermediate-2) or four or more risk factors (high risk) as defined by DIPSS Plus. In the MF Pilot Study, imetelstat is administered as a single agent over a two hour intravenous infusion to patients in multiple patient cohorts. In the first cohort, Cohort A, imetelstat is given once every three weeks. In the second cohort, Cohort B, imetelstat is given weekly for four weeks, followed by one dose every three weeks. Under the protocol, patients in Cohorts A and B may receive an intensified dosing regimen, up to once per week, after the initial six cycles of treatment. The starting dose of imetelstat in Cohorts A and B is 9.4 mg/kg, with dose reductions and dose holds allowed for toxicity. The primary endpoint in the MF Pilot Study is overall response rate, which is defined by the

proportion of patients who are classified as responders, which means that they have achieved either a clinical improvement, or CI, partial remission, or PR, or complete remission, or CR, consistent with the criteria of the 2013 International Working Group for Myeloproliferative Neoplasms Research and Treatment, or IWG-MRT criteria, described in a 2013 *Blood* article. Secondary endpoints include reduction of spleen size by palpation, improvement in anemia or inducement of red blood cell transfusion independence, safety and tolerability.

In January 2014, Mayo Clinic closed the MF Pilot Study to new patient enrollment. Mayo Clinic's notification informing us of its decision to cease new patient enrollment did not indicate any concerns regarding efficacy or safety. In March 2014, we were informed by Mayo Clinic that the investigator's IND for the MF Pilot Study was placed on partial clinical hold by the FDA due to a safety signal of hepatotoxicity that was identified in Geron's Phase 2 clinical trials of imetelstat and that it was unknown if this hepatotoxicity was reversible. In order to resolve the partial clinical hold, the investigator was required to provide follow-up information regarding reversibility of hepatotoxicity for all patients who received imetelstat in the MF Pilot Study. The investigator submitted a complete response to the FDA to seek release of the partial clinical hold, and the partial hold was removed by the FDA in June 2014.

On July 31, 2014, we entered into an agreement with Mayo Clinic under which Mayo Clinic and the investigator agreed to transfer to us certain data and information from the MF Pilot Study, and agreed that we would assume full responsibility for the investigator's IND, as well as responsibility for the conduct of the MF Pilot Study as the trial sponsor. In September 2014, the investigator's IND, under which the MF Pilot Study has been conducted, was transferred to us and we assumed responsibility for the MF Pilot Study as the trial sponsor. Dr. Tefferi continues as the principal investigator for the trial. As of December 5, 2014, 23 patients out of the 80 patients enrolled in the MF Pilot Study continue to receive imetelstat treatment, which includes 17 out of 62 patients with MF, five out of nine patients with refractory anemia with ringed sideroblasts, or RARS, a subpopulation of MDS, and one out of nine patients with blast-phase MF.

Prior to initiation of the Initial Phase 2 MF Study, we plan to transfer the IND for the MF Pilot Study, as well as responsibility for the conduct of the MF Pilot Study as the trial sponsor, to Janssen, and they do not intend to enroll additional patients in the MF Pilot Study. The remaining patients in the MF Pilot Study will continue to receive imetelstat treatment and Janssen will continue to collect data and information from the MF Pilot Study. For further discussion of the collaboration with Janssen under the Collaboration Agreement, see the sub-section entitled, "Future Development of Imetelstat in Collaboration with Janssen".

Updated Preliminary Data from MF Pilot Study

In December 2014, the investigator presented updated preliminary efficacy and safety data (as of September 10, 2014) from Cohorts A and B of the MF Pilot Study (n=33) at the 2014 ASH Annual Meeting. The data presented in December 2014 updated the investigator's previous analysis from the preliminary data he had presented at ASH in December 2013. We believe that the updated preliminary data from the MF Pilot Study continue to suggest that imetelstat has disease-modifying activity in MF, with remissions that have been durable (median 11.1 months; range 6.9 months - 16.2 months as of September 10, 2014). The investigator reported that no new safety signals had been observed and myelosuppression continued to be the principal dose-limiting toxicity.

Patient Demographics and Status

Below is a table setting forth the demographics of the first 33 patients enrolled in the MF Pilot Study, including certain disease characteristics and exposure to any prior treatments:

	Total (n=33)
Median Age (range; years)	67.0 (53.0 - 79.0)
Male	22 (66.7%)
Myelofibrosis Subtype	
Primary	18 (54.5%)
Post-ET	5 (15.2%)
Post-PV	10 (30.3%)
DIPSS-plus Risk Status	
Intermediate-2 Risk	16 (48.5%)
High Risk	17 (51.5%)
Previously Treated	26 (78.8%)
Median # of Prior Treatments (range)	2 (1 - 6)
Prior JAK inhibitors	19 (57.6%)
Abnormal Karyotype	16 (48.5%)
Unfavorable Karyotype per DIPSS-plus	6 (18.2%)
Transfusion Dependent	13 (39.4%)
Constitutional Symptoms±	21 (63.6%)
Palpable Splenomegaly	23 (69.7%)
Median (range; cm)	15.0 (5.0 - 33.0)

± DIPSS+ assessment of symptoms at baseline: Includes unexplained persistent fever greater than 38.3°C (or greater than 101°F) during the past six months, unexplained non-menopausal night sweats during past six months, unexplained weight loss greater than 10% body weight in the previous six months and unexplained, non-articular bone pain during past six months.

As of September 10, 2014, the median duration of treatment was 11 cycles (range two cycles - 21 cycles). Median time on treatment was 14.3 months (range 6.5 months - 18.9 months) for patients with a CR, PR or CI response. All other patients had a median time on treatment of 6.9 months (range 1.4 months - 16.4 months).

Of these 33 patients, a total of nine patients remained on imetelstat treatment as of September 10, 2014. The following table describes patient status and reason for treatment discontinuation for each of the 33 patients, as reported by the investigator.

Patient Status and Reason for Treatment Discontinuation	Total (n=33)
On Treatment	9 (27.3%)
Discontinued Treatment:	24 (72.7%)
Stable Disease but Insufficient Response	15 (45.5%)
Disease Progression/Relapse	4 (12.1%)
Death[1]	2 (6.1%)
Adverse Event/Side Effects/Complications[2]	2 (6.1%)
Other Complicating Disease[3]	1 (3.0%)

(1) One death due to upper gastrointestinal hemorrhage (deemed unrelated to imetelstat per investigator assessment), the other due to intracranial hemorrhage with febrile neutropenia after prolonged myelosuppression (deemed possibly related to imetelstat per investigator assessment).

(2) One case of thrombocytopenia and the other persistent thrombocytopenia.

(3) Pre-existing problems with atrial fibrillation.

Updated Efficacy Data

The following table presents Geron's analysis of updated efficacy data as of September 10, 2014 for the first 33 eligible patients enrolled in the MF Pilot Study, using the IWG-MRT criteria:

Best Response by IWG-MRT	Total (n=33)
Overall Response (CR+PR+CI)	12 (36.4%)
Complete Remission (CR)	4 (12.1%)
Partial Remission (PR)	3 (9.1%)
Clinical Improvement (CI) by Anemia	1 (3.0%)
Clinical Improvement (CI) by Spleen	4 (12.1%)
Stable Disease (SD)	21 (63.6%)

Median onset of remission occurred at five cycles (range one cycle - nine cycles). As of September 10, 2014, six of seven CR/PR patients remained in remission with median duration of 11.1 months (range 6.9 months - 16.2 months). All four CR patients achieved reversal of bone marrow fibrosis including three with complete molecular response. Three CR/PR patients who were transfusion dependent at baseline became transfusion independent. Three CR/PR patients with splenomegaly at baseline achieved splenic response.

Additional efficacy results reported by the investigator included spleen response, transfusion independence and resolution of circulating blasts, leukoerythroblastosis, marked leukocytosis and thrombocytosis:

- Eight of 23 (34.8%) patients with splenomegaly achieved spleen responses by palpation, which is defined as either greater than or equal to 50% decrease if the baseline is greater than or equal to 10 centimeters or becoming non palpable if baseline is five to less than 10 centimeters. The median spleen size at baseline was 15 centimeters below the left costal margin (range five centimeters - 33 centimeters).

- Four of 13 patients (30.8%) who were transfusion dependent at baseline became transfusion independent which is defined as absence of any packed red blood cells transfusions during any consecutive 12-week interval with a hemoglobin level of ³8.5 grams per deciliter.

- 17 of 21 (81.0%) patients with circulating blasts, or immature cells, at baseline achieved complete (n=14, 66.7%) or partial (n=3, 14.3%) resolution.

- 22 of 27 (81.5%) patients with leukoerythroblastosis, a condition characterized by circulating immature granulocytes and nucleated red blood cells, achieved complete (n=13, 48.1%) or partial (n=9, 33.3%) resolution.

- Eight of 10 (80.0%) patients with marked leukocytosis, a condition characterized by very elevated white blood cell counts, achieved complete (n=3, 30.0%) or partial (n=5, 50.0%) resolution.

- 11 of 11 (100.0%) patients with thrombocytosis, a condition characterized by high platelet counts in blood, achieved complete (n=10, 90.9%) or partial (n=1, 9.1%) resolution.

Updated Safety Data

The following table sets forth the non-hematologic adverse events as of September 10, 2014, which were generally mild to moderate and not dose-limiting, for the first 33 eligible patients enrolled in the MF Pilot Study:

	All (n=33)	Related[(1)] (n=33)
Fatigue	3 (9.1%)	—
APTT	2 (6.1%)	—
Atrial Fibrillation	2 (6.1%)	—
Heart Failure	2 (6.1%)	—
Hyperkalemia	2 (6.1%)	—
Ejection Fraction Decreased	1 (3.0%)	—
Intracranial Hemorrhage[(2)]	1 (3.0%)[(3)]	1 (3.0%)[(3)]
Febrile Neutropenia	1 (3.0%)[(3)]	1 (3.0%)[(3)]
Upper GI Hemorrhage[(2)]	1 (3.0%)	—
Hyponatremia	1 (3.0%)	—
Lipase Increased	1 (3.0%)	—
Lung Infection	1 (3.0%)	—
Pain	1 (3.0%)	—
Pyoderma Gangrenosum[(4)]	1 (3.0%)	—
Small Intestinal Obstruction	1 (3.0%)	—

(1) Deemed possibly related to imetelstat per investigator assessment.

(2) Grade 5 event.

(3) Same patient.

(4) The pyoderma gangrenosum is associated with a post-operative complication of a splenectomy, or spleen removal.

The following table sets forth all hematologic adverse events greater than or equal to Grade 3 as of September 10, 2014 for the first 33 patients enrolled in the MF Pilot Study.

	Worst Grade*	Cohort A (n=19)	Cohort B (n=14)	Total (n=33)
Thrombocytopenia	3	8 (42.1%)	1 (7.1%)	9 (27.3%)
	4	2 (10.5%)	5 (35.7%)	7 (21.2%)
Neutropenia	3	4 (21.1%)	2 (14.3%)	6 (18.2%)
	4	2 (10.5%)	4 (28.6%)	6 (18.2%)
Anemia	3	7 (36.8%)	9 (64.3%)	16 (48.5%)
	4	—	—	—
Leukopenia	3	3 (15.8%)	6 (42.9%)	9 (27.3%)
	4	2 (10.5%)	1 (7.1%)	3 (9.1%)

* Hematologic toxicity is defined as worsening in grade after baseline.

The following table sets forth hematologic adverse events related to imetelstat as reported by the investigator lasting greater than or equal to four weeks as of September 10, 2014. These events mainly were observed in a small number of patients who received weekly dosing initially.

		Cohort A (n=19)	Cohort B (n=14)	Total (n=33)
Grade 3/4 Laboratory Finding Lasted ³ 4 Weeks	Thrombocytopenia	5 (26.3%)	3 (21.4%)	8 (24.2%)
	Neutropenia	1 (5.3%)	2 (14.3%)	3 (9.1%)
	Either	5 (26.3%)	5 (35.7%)	10 (30.3%)
Grade 4 Laboratory Finding Lasted ³ 4 Weeks	Thrombocytopenia	0	1 (7.1%)	1 (3.0%)
	Neutropenia	1 (5.3%)	1 (7.1%)	2 (6.1%)
	Either	1 (5.3%)	2 (14.3%)	3 (9.1%)

To mitigate the risk of severe, persistent cytopenias, the protocol for the MF Pilot Study was amended to raise the hematologic threshold for retreatment and include more stringent monitoring and dose adjustment criteria. Since then, no further episodes of significant bleeding events associated with thrombocytopenia, or infections associated with neutropenia, or additional episodes of febrile neutropenia have been reported to us by the investigator. As a result, we believe that the myelosuppressive effect of the drug may be manageable through dose hold rules and dose modifications.

Since the MF Pilot Study is ongoing, additional data from the remaining patients enrolled in the MF Pilot Study continues to be generated and is not reflected in the data discussed above. In this regard, additional and updated safety and efficacy data generated from the MF Pilot Study may be materially different from the data discussed above. Additional or updated data from the MF Pilot Study are also subject to any review or verification procedures that Janssen may conduct as the trial sponsor for the MF Pilot Study after it assumes responsibility for the conduct of the MF Pilot Study, and since this could result in material differences from the data reported by the investigator or us, additional or updated data that may be reported from the MF Pilot Study should be considered carefully and with caution. Analyses performed by Janssen after it becomes the sponsor of the MF Pilot Study may result in conclusions that are materially different from the investigator's analyses or ours, and therefore preliminary data should be considered carefully and with caution. As such, final data from the MF Pilot Study may be materially different from the data discussed above. Accordingly, the data discussed above should be considered carefully and with caution. Please refer to the risk factor

entitled "Risks Related to Clinical and Commercialization Activities—Success in early clinical trials may not be indicative of results in subsequent clinical trials. Likewise, preliminary data reported by investigators from time-to-time are subject to review and verification procedures that could result in material differences to final data and may change as more patient data become available" under Part I, Item 1A, "Risk Factors," of this annual report on Form 10-K.

Future Development of Imetelstat in Collaboration with Janssen

On November 13, 2014, we entered into the Collaboration Agreement with Janssen to develop and commercialize imetelstat worldwide for all indications in oncology, including hematologic myeloid malignancies, and all other human therapeutic uses. The Collaboration Agreement became effective on December 15, 2014, and we received $35 million from Janssen as an upfront payment.

Under the Collaboration Agreement, we granted to Janssen exclusive worldwide rights to develop and commercialize imetelstat for all indications, and Janssen is responsible for the development, manufacturing and commercialization of, and seeking regulatory approval for, imetelstat worldwide. Development of imetelstat will proceed under a mutually agreed clinical development plan, which includes the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study. We expect Janssen to initiate the Initial Phase 2 MF Study in mid-2015, followed later by the Initial Phase 2 MDS Study to be initiated at the end of 2015. In addition, the clinical development plan may also include possible registration studies in MF and MDS, and possible exploratory Phase 2 and potential follow-on Phase 3 studies in AML. Development costs for the planned Initial Phase 2 MF Study and the planned Initial Phase 2 MDS Study will be shared between the parties on a 50/50 basis.

Following the protocol-specified primary analysis of the Initial Phase 2 MF Study, which results are referred to in this annual report on Form 10-K as the Initial Phase 2 MF Results, or a certain time period after the initiation of the first Phase 3 MF study, Janssen must notify us of their decision, or a Continuation Decision, as to whether they elect to maintain the license rights granted to them under the Collaboration Agreement and continue to advance the development of imetelstat in any indication. In the event that the Initial Phase 2 MF Study has been terminated early or suspended, Janssen must instead notify us of their Continuation Decision by the date that is the later of 24 months after the initiation of the planned Initial Phase 2 MDS Study or 24 months after the termination of the Initial Phase 2 MF Study or commencement of the suspension period, as applicable.

In the event that Janssen notifies us of an affirmative Continuation Decision, we will then have an option to share further U.S. development and promotion costs, or the U.S. Opt-In Rights, in exchange for higher tiered royalty rates and higher future potential milestone payments if imetelstat is successfully developed and approved. If we exercise the U.S. Opt-In Rights, then we and Janssen will share U.S. development and promotion costs on a 20/80 basis (Geron 20%, Janssen 80%), we will receive a $65 million milestone payment at the time of the Continuation Decision, and will be eligible to receive additional potential payments of up to $470 million in development and regulatory milestones, up to $350 million in sales milestones, and tiered royalties ranging from a mid-teens up to a low twenties percentage rate on worldwide net sales of imetelstat in any countries where regulatory exclusivity exists or there are valid claims under the patent rights exclusively licensed to Janssen. In addition, if we exercise the U.S. Opt-In Rights, we will also have a separate co-promotion option, or the U.S. Co-Promotion Option, to provide 20% of the U.S. selling effort with sales force personnel, in lieu of funding 20% of U.S. promotion costs, upon regulatory approval and commercial launch of imetelstat in the United States. Such co-promotion would be conducted under a Janssen prepared promotion plan, and in accordance with a co-promotion agreement to be agreed by us and Janssen at the time of our exercise of the U.S. Co-Promotion Option. We would be responsible for all costs associated with establishing and maintaining our sales force in any conduct of such co-promotion. All product sales would be booked by Janssen. If we do not exercise the U.S. Opt-In Rights upon an affirmative Continuation Decision by Janssen, then all further development and promotion costs

beyond the Initial Phase 2 MF Study or Initial Phase 2 MDS Study will be borne by Janssen, we will receive a $65 million milestone payment at the time of the Continuation Decision plus a $70 million payment for Janssen's retention of full U.S. rights, and will be eligible to receive additional potential payments of up to $415 million in development and regulatory milestones, up to $350 million in sales milestones, and tiered royalties ranging from a double-digit up to a mid-teens percentage rate on worldwide net sales in any countries where regulatory exclusivity exists or there are valid claims under the patent rights exclusively licensed to Janssen.

Under the terms of the Collaboration Agreement, we and Janssen have created a joint governance structure, including joint development and steering committees and working groups, to oversee and manage worldwide regulatory, development and manufacturing work under the joint clinical development plan and promotional activities (assuming we exercise the U.S. Opt-In Rights) for imetelstat, with Janssen responsible for the operational implementation of those activities. In addition, both we and Janssen may propose to the joint development committee imetelstat development for any new indications not then provided for in the joint clinical development plan and if we and Janssen agree such development should be conducted outside of the joint clinical development plan, both we and Janssen would be entitled to independently undertake such development at the developing party's own cost, subject to the other party's obligation to provide reimbursement for its specified portion of the development costs plus a premium following marketing approval of imetelstat in such newly proposed indication as a result of such independent development. In the event that we do not exercise the U.S. Opt-In Rights following Janssen's Continuation Decision, the joint governance structure under the Collaboration Agreement would be dissolved, a joint oversight committee would monitor the progress of the collaboration, and we would have no further rights to conduct any independent imetelstat development.

Research and Development

Since our inception, we have devoted a significant amount of resources to develop our current and former product candidates. For information regarding research and development expenses incurred during 2014, 2013 and 2012, see Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations—Research and Development Expenses".

In light of projected reduced operational demands as a result of the Collaboration Agreement with Janssen, on March 3, 2015, we announced an organizational resizing to reduce our workforce from 39 to 21 positions, representing a reduction of approximately 46% of our workforce. As a result of this action, we expect personnel related research and development expenses to decrease in the future. For a further discussion, see Note 15 on Subsequent Event in Notes to Consolidated Financial Statements of this annual report on Form 10-K.

Intellectual Property

Intellectual property, including patent protection, is very important to our business. We file patent applications in the United States and other jurisdictions, and we also rely on trade secret protection and contractual arrangements to protect aspects of our business. An enforceable patent with appropriate claim coverage can provide an advantage over competitors who may seek to employ similar approaches to develop therapeutics, and so our future commercial success will be in part dependent on our intellectual property strategy. The information provided in this section should be reviewed in the context of the section entitled "Risks Related to Protecting Our Intellectual Property" under Item 1A, "Risk Factors".

The development of biotechnology products, including ours, typically includes the early development of a technology, followed by rounds of increasingly focused innovation around a product opportunity, including identification and definition of a specific product candidate and uses thereof,

manufacturing processes, product formulation and administration methods. The result of this process is that biotechnology products are often protected by several families of patent filings that are filed at different times during product development and cover different aspects of the product. Consequently, earlier filed, broad technology patents will usually expire ahead of patents covering later developments such as product formulations, so that patent expirations on a product may span several years. Patent coverage may also vary from country to country based on the scope of available patent protection. There are also opportunities to obtain extension of patent coverage for a product in certain countries, which add further complexity to the determination of patent life.

We endeavor to monitor worldwide patent filings by third parties that are relevant to our business. Based on this monitoring, we may determine that an action is appropriate to protect our business interests. Such actions may include negotiating patent licenses where appropriate, filing oppositions or reexaminations against a patent, or filing a request for the declaration of an interference with a United States patent application or issued patent.

Imetelstat

The following table shows the estimated latest expiration dates for the composition of matter patents for our sole product candidate, imetelstat. Composition of matter patents generally provide the most material coverage, and therefore may convey competitive advantages. Because imetelstat is still under development, subsequent innovation and associated patent filings may provide additional patent coverage with later expiration dates. Examination of overseas patent applications typically lags behind U.S. examination particularly where cases are filed first in the United States. The stated U.S. expiration date includes a patent term adjustment for delays in prosecution by the U.S. Patent and Trademark Office, but does not account for a potential patent term extension that may be available to compensate us for delays in FDA regulatory review of a new drug application.

Product Candidate	U.S. Patent Status / Expiration Date	Europe Patent Status / Expiration Date	Japan Patent Status / Expiration Date
Imetelstat	Issued / 2025	Issued / 2020*	Issued / 2024

* An additional composition of matter patent application for imetelstat has been filed that, if issued, would provide European patent protection until 2024.

Our patent rights relating to imetelstat which have been exclusively licensed to Janssen for all disorders or medical conditions include those covering the nucleic acid sequence of hTR, the RNA component of telomerase, against which the oligonucleotide component of imetelstat is targeted; composition claims to the drug molecule and related telomerase inhibiting molecules; the amidate nucleic acid chemistry used in the oligonucleotide; as well as manufacturing processes for the drug, and method of treatment and kit claims, certain of which are co-owned by us. Our proprietary nucleic acid chemistry is covered by patent families that we acquired in 2002 from Lynx Therapeutics, Inc., as well as in patents that we filed for further developments of this chemistry. Certain of our patent rights for measuring the expression of telomerase activity or the length of telomeres in cells have been non-exclusively licensed to Janssen.

As noted previously, we granted to Janssen exclusive worldwide rights to develop and commercialize imetelstat for all disorders or disease conditions. Under the terms of the Collaboration Agreement with Janssen, we remain responsible for prosecuting, at Janssen's direction, the patents exclusively licensed to Janssen, with costs shared between us and Janssen on a 50/50 basis. For intellectual property developed under the Collaboration Agreement, the party having sole ownership interest in such intellectual property will be responsible for prosecuting any such patents, with Janssen bearing all of the patent costs for such intellectual property solely owned by Janssen and with patent costs for such intellectual property either jointly owned or solely owned by us shared between the parties on a 50/50 basis.

Telomerase

Our patent rights relating to telomerase that cover the cloned genes that encode the catalytic protein component (hTERT) of human telomerase and cells that are immortalized by expression of recombinant hTERT are co-owned with and in-licensed exclusively from the University of Colorado. Certain patents for identifying telomerase modulators or diagnosing cancer by measuring the expression of telomerase activity are co-owned and in-licensed from the University of Texas Southwestern Medical Center and the University of California.

Licensing

In addition to the Collaboration Agreement with Janssen (see the section entitled "Future Development of Imetelstat in Collaboration with Janssen" above for further discussion of the Collaboration Agreement with Janssen), we have also granted licenses to a number of other organizations in the ordinary course of our business to utilize aspects of our technologies to develop and commercialize products outside of our imetelstat program. These include:

- licenses to several biotechnology and pharmaceutical companies to use telomerase immortalized cells in drug discovery research;
- licenses to several companies to commercialize telomerase immortalized cells for drug discovery applications;
- licenses to several companies to sell antibodies specific to telomerase for research purposes;
- licenses to several companies to develop and commercialize reagent kits, or to provide services, for the measurement of telomere length or telomerase activity for research purposes;
- a license to a company to develop and commercialize a particular telomerase based technology for cancer detection; and
- a license to a company for the development of cancer immunotherapies for veterinary applications.

Competition

The pharmaceutical and biotechnology industries are intensely competitive. Other pharmaceutical and biotechnology companies and research organizations currently engage in or have in the past engaged in efforts related to the biological mechanisms related to imetelstat, including the study of telomeres, telomerase and our proprietary oligonucleotide chemistry, and the research and development of therapies for the treatment of hematologic myeloid malignancies. In addition, other products and therapies that could compete directly with imetelstat currently exist or are being developed by pharmaceutical and biopharmaceutical companies and by academic institutions, government agencies and other public and private research organizations.

Our sole product candidate, imetelstat, if approved for marketing, will face significant competition from approved drugs, drugs currently under development and any other drugs that may be subsequently approved. Imetelstat would have to compete successfully based on efficacy, safety, convenience, price, cost-effectiveness and other relevant factors. In addition, imetelstat would have to compete against other drugs with a variety of decision makers, including physicians, patients, government and private third-party payors, technology assessment groups and patient advocacy organizations. We cannot guarantee that we, in collaboration with Janssen, will be able to compete successfully on any of these factors. If we or Janssen cannot compete successfully on any of the factors described previously, Janssen may terminate the Collaboration Agreement and our business may fail.

Imetelstat is likely to be in highly competitive markets. We are aware of products in research or development by our competitors that address the diseases we are targeting, and any of these products may compete with imetelstat. Our competitors may succeed in developing their products before we do, obtaining approvals from the FDA or other regulatory agencies for their products more rapidly than we do, or developing products that are more effective than imetelstat. These products or technologies might render our technology obsolete or noncompetitive. There may also be product candidates of which we are not aware at an earlier stage of development that may compete with imetelstat. In addition, imetelstat may need to compete or combine with existing therapies, many with long histories of use.

Many companies are developing alternative therapies to treat hematologic myeloid malignancies and, in this regard, are competitors of ours and Janssen. For example, if approved for commercial sale for the treatment of MF, imetelstat would compete against Incyte Corporation's ruxolitinib, or Jakafi®, which is orally administered. In clinical trials, Jakafi® reduced spleen size, abdominal discomfort, early satiety, bone pain, night sweats and itching in MF patients. Recently, there have also been reports of overall survival benefit as well as improvement in bone marrow fibrosis from Jakafi® treatment. Other treatment modalities for MF include:

- hydroxyurea for the management of splenomegaly, leukocytosis, thrombocytosis and constitutional symptoms;
- splenectomy and splenic irradiation for the management of splenomegaly and co-existing cytopenias, or low blood cell counts; and
- chemotherapy and pegylated interferon.

Drugs for the treatment of MF-associated anemia include erythropoiesis-stimulating agents, androgens, danazol, corticosteroids, thalidomide and lenalidomide. There are other investigational treatments further advanced in development than imetelstat, such as momelotinib by Gilead Sciences, Inc. and pacritinib by Cell Therapeutics, Inc., which are currently in Phase 3 clinical trials, and other inhibitors of the JAK-STAT pathway, as well as several investigational treatments in early phase testing such as histone deacetylase inhibitors, inhibitors of heat shock protein 90, hypomethylating agents, PI3 Kinase and mTOR inhibitors, hedgehog inhibitors, anti-LOX2 inhibitors, recombinant pentraxin 2 protein, KIP-1 activators, TGF-beta inhibitors, FLT inhibitors, and other tyrosine kinase inhibitors.

Independently, Janssen is developing therapies for hematologic malignancies, including AML, MDS, MM and ABC-subtype diffuse large B-cell lymphoma. Molecular and cellular pathways of interest include:

- cell surface targets for immune-directed therapy;
- immune checkpoint inhibition;
- leukemia stem cells;
- pathway addiction (genetic alterations, cell-type specific pathways);
- conditional sensitivity (stress, protein-producing tumors);
- targeting of T-cells and natural killer "NK" cells to tumors;
- identification of novel tumor-specific antigens; and
- progression from early MDS to AML and cancer interception.

Success by Janssen in any of these approaches may compete with imetelstat or render imetelstat obsolete or noncompetitive. A decision by Janssen to discontinue the imetelstat program and terminate the Collaboration Agreement would materially and adversely affect our business and business prospects.

Smaller companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. We anticipate increased competition in the future as new companies explore treatments for hematologic myeloid malignancies, which may significantly impact the commercial viability of imetelstat. Academic institutions, government agencies and other public and private research organizations may also conduct research, seek patent protection and establish collaborative arrangements for research, clinical development and marketing of products similar to ours. These companies and institutions compete with us in recruiting and retaining qualified scientific and management personnel as well as in acquiring technologies complementary to our imetelstat program.

In addition to the above factors, we and Janssen expect to face competition in the following areas:

- product efficacy and safety;
- convenience of product administration;
- cost of manufacturing;
- the timing and scope of regulatory consents;
- status of reimbursement coverage;
- price; and
- patent position, including potentially dominant patent positions of others.

As a result of the foregoing, competitors may develop more commercially desirable or affordable products, or achieve earlier patent protection or product commercialization than us or Janssen. Competitors have developed, or are in the process of developing, technologies that are, or in the future may be, competitive to imetelstat. Some of these products may have an entirely different approach or means of accomplishing therapeutic effects similar to those that may be demonstrated by imetelstat. Competitors may develop products that are safer, more effective or less costly than imetelstat, or more convenient to administer to patients and, therefore, present a serious competitive threat to imetelstat. In addition, competitors may price their products below what Janssen may determine to be an acceptable price for imetelstat, may receive better third-party payor coverage and/or reimbursement, or may be more cost effective than imetelstat. Such competitive products or activities by competitors may render imetelstat obsolete, which may cause Janssen to terminate the Collaboration Agreement and which would severely and adversely affect our business prospects.

Government Regulation

Regulation by governmental authorities in the United States and other countries is a significant factor in the development, manufacture and marketing of our sole product candidate, imetelstat, in collaboration with Janssen. We anticipate that imetelstat will require regulatory approval by governmental agencies prior to commercialization. In particular, potential human therapeutic products, such as imetelstat, are subject to rigorous preclinical and clinical testing and other approval procedures of the FDA and similar regulatory authorities in European and other countries. Various governmental statutes and regulations also govern or influence testing, manufacturing, safety, labeling, storage and recordkeeping related to such products and their marketing. In collaboration with Janssen, the process of obtaining these approvals and the subsequent compliance with appropriate statutes and regulations require the expenditure of substantial time and money, and there can be no guarantee that approvals will be granted.

United States Food and Drug Administration Regulatory Approval Process

Prior to commencement of clinical trials involving humans, preclinical testing of new pharmaceutical products is generally conducted on animals in the laboratory to evaluate the potential efficacy and safety of a product candidate. The results of these trials are submitted to the FDA as part of an IND application, which must be cleared by the FDA before clinical testing in humans can begin. Typically, clinical evaluation involves a time consuming and costly three phase trial process. In Phase 1, clinical trials are conducted with a small number of healthy volunteers or patients afflicted with a specific disease to assess safety and to evaluate the pattern of drug distribution and metabolism within the body. In Phase 2, clinical trials are conducted with groups of patients afflicted with a specific disease in order to determine preliminary efficacy, optimal dosages and expanded evidence of safety. The Phase 2 trials can be conducted comparing the investigational treatment to a comparator arm, or not. If used, a comparator usually includes standard of care therapy. Safety and efficacy data from Phase 2 clinical trials, even if favorable, may not provide sufficient rationale for proceeding to a Phase 3 clinical trial. In Phase 3, large scale, multi center, comparative trials are conducted with patients afflicted with a target disease to provide sufficient data to demonstrate the efficacy and safety required by the FDA. The FDA closely monitors the progress of each of the three phases of clinical testing and may, at its discretion, re-evaluate, alter, suspend, or terminate the trials.

The results of the preclinical and clinical testing of small molecules and many biologic drugs are submitted to the FDA in the form of a New Drug Application, or NDA, for review and for approval prior to commencement of commercial sales. In the case of blood products, vaccines, or gene and cell therapies, the results of clinical trials are submitted to the FDA as a Biologics License Application, or BLA. In responding to an NDA/BLA submission, the FDA may grant a marketing authorization, impose limitations on a marketing authorization, request additional information, deny the application if it determines that the application does not provide an adequate basis for approval, or refuse to review an application that has been submitted if it determines that the application does not provide an adequate basis for filing and review.

European and Other Regulatory Approval Process

Prior to initiating clinical trials in a region outside of the United States, a clinical trial application must be submitted and reviewed by the appropriate regulatory authority regulating the country in which the trial will be conducted. Whether or not FDA clearance or approval has been obtained, approval of a product by comparable regulatory authorities in Europe and other countries is necessary prior to commencement of marketing the product in such countries. The regulatory authorities in each country may impose their own requirements and may refuse to grant an approval, or may require additional data before granting it, even though the relevant product has been cleared or approved by the FDA or another authority. As with the FDA, the regulatory authorities in the European Union, or EU, and other developed countries have lengthy approval processes for pharmaceutical products. The process for gaining approval in particular countries varies, but generally follows a similar sequence to that described for FDA approval. In Europe, the European Medicine Agency, or EMA, and the European Committee for Proprietary Medicinal Products, or CPMP, provide a mechanism for EU member states to exchange information on all aspects of product licensing. The EU has established the EMA for the evaluation of medical products, with both a centralized procedure with which the marketing authorization is recognized in all EU member states and a decentralized procedure, the latter being based on the principle of licensing within one member country followed by mutual recognition by the other member countries.

Other Regulations

We are also subject to various and often changing federal, state, local and international laws, rules, regulations, guidelines and recommendations relating to safe working conditions and manufacturing practices.

Manufacturing

A typical sequence of steps in the manufacture of imetelstat drug product includes the following key components:

- starting materials, which are well-defined raw materials that are used to make bulk drug substance;
- bulk drug substance, which is the active pharmaceutical ingredient in a drug product that provides pharmacological activity or other direct effect in the treatment of disease; and
- final drug product, which is the finished dosage form that contains the drug substance that is shipped to the clinic for patient treatment.

Under the Collaboration Agreement, after a transition period, Janssen will be responsible for the manufacture and/or supply of imetelstat on a global basis for clinical trials and, after any regulatory approval, all commercial activities. Consequently, we will be, and expect to remain, dependent on Janssen to appropriately supply imetelstat. Currently, third-party contractors perform certain process development and other technical and scientific work with respect to imetelstat, in addition to supplying starting materials and manufacturing drug substance and drug product. We or Janssen do not have direct control over their personnel or operations. These third-party contractors, and/or any other contractors that Janssen may rely upon for the manufacture and/or supply of imetelstat, typically complete their services on a proposal by proposal basis under master supply agreements and may need to make substantial investments to enable sufficient capacity increases and cost reductions, and to implement those regulatory and compliance standards necessary for successful Phase 3 clinical trials and commercial production. These third-party contractors, and/or any other contractors that Janssen may rely upon for the manufacture and/or supply of imetelstat, may not be able to achieve such capacity increases, cost reductions, or regulatory and compliance standards, and even if they do, such achievements may not be at a commercially reasonable cost. Neither we nor Janssen have any long-term commitments or commercial supply agreements with any of the third-party contractors for imetelstat.

We currently have a master service agreement with two third-party contractors for labeling and packaging of imetelstat final drug product and for distribution of imetelstat to clinical sites in North America. In addition, we have agreements with two third-party contractors for release and distribution of imetelstat drug product to clinical sites in Europe. These third-party contractors provide services on a proposal by proposal basis. If requested by Janssen, we may transfer or assign these agreements to Janssen to the extent permissible by the terms of the agreements or agreed with such third-party contractors.

We have also entered into quality agreements with our imetelstat bulk drug substance and final drug product manufacturers, and our labeling, packaging and distribution service providers. The master and quality agreements are designed to ensure product quality, compliance with current Good Manufacturing Practices, or cGMP, and oversight of third parties for all critical aspects of imetelstat production, testing, release, labeling and packaging, storage and distribution. If requested by Janssen, we may transfer or assign these agreements to Janssen to the extent permissible by the terms of the agreements or agreed with such third-party contractors.

Concentration of Revenues

In 2014 and 2013, the majority of our revenues were from license fees and royalties under licenses granted to several biotechnology and pharmaceutical companies to use telomerase immortalized cells in drug discovery research and for drug discovery applications. Two customers accounted for approximately 31%, 42% and 59% of our 2014, 2013 and 2012 revenues, respectively. In 2012, the majority of our revenues were from license fees and royalties related to our license and collaboration agreement with GE Healthcare UK, Limited, or GE Healthcare, for the development and commercialization of cellular assay products and our license agreement with Asia Biotech Corporation related to our telomerase activation technology. Upon the closing of the stem cell divestiture under the Contribution Agreement on October 1, 2013, the license agreement with GE Healthcare, including any future revenue payments thereunder, was transferred to Asterias Biotherapeutics, Inc. In December 2012, we assigned our telomerase activation technology to Telomerase Activation Sciences, Inc. and terminated our license agreement with Asia Biotech Corporation. Future royalty obligations by Asia Biotech Corporation under the license agreement have been terminated. We operate in one operating segment and have operations solely in the United States. All of our long-lived assets are maintained in the United States. Information regarding total revenues, net loss and total assets is set forth in our financial statements included in Item 8 of this annual report on Form 10-K.

Stem Cell Divestiture; Asterias Series A Distribution

Background

On October 1, 2013, we closed the transaction to divest our human embryonic stem cell assets and our autologous cellular immunotherapy program pursuant to the terms of the previously disclosed asset contribution agreement, or the Contribution Agreement, that we entered into in January 2013 with BioTime, Inc., or BioTime, and BioTime's wholly owned subsidiary, Asterias Biotherapeutics, Inc., or Asterias (formerly known as BioTime Acquisition Corporation) and received 6,537,779 shares of Asterias Series A common stock. In accordance with our contractual obligations under the Contribution Agreement, we distributed all of the shares of Asterias Series A common stock to our stockholders on a pro rata basis, or distributed cash in lieu thereof, which we refer to as the Series A Distribution. We completed the Series A Distribution to eligible stockholders on August 15, 2014 and have no remaining obligations for the Series A Distribution. See further discussion in Note 7 on Divestiture of Stem Cell Assets in Notes to Consolidated Financial Statements of this annual report on Form 10-K.

In connection with the Contribution Agreement, BioTime made certain contributions to Asterias, including five-year warrants to purchase 8,000,000 shares of BioTime common stock at an exercise price of $5.00 per share, or the BioTime Warrants. Upon the completion of the Series A Distribution, Asterias distributed the BioTime Warrants on a pro rata basis to the holders of Asterias Series A common stock. The BioTime Warrant distribution was completed on October 1, 2014.

Consultants

We have consulting agreements with a number of leading academic scientists, clinicians and regulatory experts. These individuals serve as key consultants, expert witnesses, or as members of clinical advisory panels with respect to our imetelstat program or in legal proceedings. They also serve as important contacts for us throughout the broader scientific and clinical communities. They are distinguished individuals with expertise in numerous fields, including telomere and telomerase biology, cellular biology, molecular biology, oncology and drug regulations.

We retain each consultant according to the terms of a consulting agreement. Under such agreements, we pay them a consulting fee and reimburse them for out-of-pocket expenses incurred in performing their services for us. In addition, some consultants hold options to purchase our common stock and restricted stock awards, subject to the vesting requirements contained in the consulting

agreements. Our consultants may be employed by other entities and therefore may have commitments to their employer, or may have other consulting or advisory agreements that may limit their availability to us.

Executive Officers of the Company

The following table sets forth certain information with respect to our executive officers as of January 31, 2015:

Name	Age	Position
John A. Scarlett, M.D.	63	President and Chief Executive Officer
Olivia K. Bloom	46	Executive Vice President, Finance, Chief Financial Officer and Treasurer
Melissa A. Kelly Behrs	51	Executive Vice President, Business Development and Portfolio and Alliance Management
Andrew J. Grethlein, Ph.D.	50	Executive Vice President, Development and Technical Operations
Stephen N. Rosenfield, J.D.	65	Executive Vice President, General Counsel and Corporate Secretary

John A. Scarlett, M.D., has served as our Chief Executive Officer and a director since September 2011 and President since January 2012. Prior to joining Geron, Dr. Scarlett served as President, Chief Executive Officer and a member of the board of directors of Proteolix, Inc., a privately held, oncology-oriented biopharmaceutical company, from February 2009 until its acquisition by Onyx Pharmaceuticals, Inc., an oncology-oriented biopharmaceutical company, in November 2009. From February 2002 until its acquisition by Ipsen, S.A. in October 2008, Dr. Scarlett served as the Chief Executive Officer and a member of the board of directors of Tercica, Inc., an endocrinology-oriented biopharmaceutical company, and also as its President from February 2002 through February 2007. From March 1993 to May 2001, Dr. Scarlett served as President and Chief Executive Officer of Sensus Drug Development Corporation. In 1995, he co-founded Covance Biotechnology Services, Inc., a contract biopharmaceutical manufacturing operation, and served as a member of its board of directors from inception to 2000. From 1991 to 1993, Dr. Scarlett headed the North American Clinical Development Center and served as Senior Vice President of Medical and Scientific Affairs at Novo Nordisk Pharmaceuticals, Inc., a wholly owned subsidiary of Novo Nordisk A/S. Dr. Scarlett received his B.A. degree in chemistry from Earlham College and his M.D. from the University of Chicago, Pritzker School of Medicine.

Olivia K. Bloom has served as our Executive Vice President, Finance since February 2014, Chief Financial Officer since December 2012 and Treasurer since February 2011. Ms. Bloom previously served as our Senior Vice President, Finance from December 2012 to February 2014, Chief Accounting Officer from September 2010 to December 2012 and Vice President, Finance from January 2007 to December 2012. Ms. Bloom joined the Company in 1994 as a Senior Financial Analyst and from 1996 to 2011 served as our Controller. Prior to Geron, Ms. Bloom started her career in public accounting at KPMG Peat Marwick and became a Certified Public Accountant in 1994. Ms. Bloom graduated Phi Beta Kappa with a B.S. in Business Administration from the University of California at Berkeley.

Melissa A. Kelly Behrs has served as our Executive Vice President, Business Development and Portfolio & Alliance Management, since July 2014. Prior to that she was our Executive Vice President, Portfolio and Alliance Management, since February 2014 and she was our Senior Vice President, Portfolio and Alliance Management, from September 2012 to February 2014. Ms. Behrs joined Geron in November 1998 as Director of Corporate Development. Since then, she has served in various managerial positions, including General Manager, R&D Technologies; Vice President, Corporate

Development; Senior Vice President, Therapeutic Development, Oncology; and Senior Vice President, Strategic Portfolio Management. From 1990 to 1998, Ms. Behrs worked at Genetics Institute, Inc., a biotechnology research and development company, serving initially as Assistant Treasurer and then as Associate Director of Preclinical Operations where she was responsible for all business development, regulatory, and project management activities for the Preclinical Development function. Ms. Behrs received a B.S. from Boston College and an M.B.A. from Babson College.

Andrew J. Grethlein, Ph.D., has served as our Executive Vice President, Development and Technical Operations, since July 2014. Prior to that he served as our Executive Vice President, Technical Operations, since September 2012. Prior to joining Geron, Dr. Grethlein was Executive Vice President and Chief Operating Officer for Inspiration Biopharmaceuticals, a biopharmaceutical company, from January 2010 to September 2012. From October 2008 until January 2010, Dr. Grethlein was Senior Vice President of Biotechnology and Portfolio Management Team Leader for Hematology at Ipsen S.A., a global specialty pharmaceutical company. His responsibilities at Ipsen included planning and execution of worldwide strategy for product and portfolio development in the hematologic therapeutic area. From 2003 to 2008, Dr. Grethlein served as Senior Vice President of Pharmaceutical Operations at Tercica, Inc., an endocrinology-oriented biopharmaceutical company. In this role, he was a member of the senior executive team that governed corporate strategy, business planning and company operations, and had responsibility for all manufacturing and quality functions. Before joining Tercica, Dr. Grethlein served in various positions at Elan Corporation, a biotechnology company, from 1997 to 2003, including as Senior Director, South San Francisco Pharmaceutical Operations, where he had responsibility as site head for commercial manufacturing operations. From 1995 to 1997, Dr. Grethlein served as Manager, Biologics Development and Manufacturing, for Athena Neurosciences, Inc., a pharmaceutical company. Prior to this, he served in various engineering positions for the Michigan Biotechnology Institute, a nonprofit technology research and business development corporation. Dr. Grethlein received his A.A. degree in liberal arts from Simon's Rock Early College, his B.S. in biology from Bates College, and his M.S. and Ph.D. in chemical engineering from Michigan State University.

Stephen N. Rosenfield, J.D., has served as our Executive Vice President, General Counsel and Corporate Secretary since February 2012, General Counsel and Secretary since January 2012 and Secretary since October 2011. From July 2009 to February 2012, Mr. Rosenfield has been a consultant to private companies. From October 2008 until June 2009, Mr. Rosenfield was the General Counsel and Secretary of Tercica, Inc., a U.S. subsidiary of Ipsen, S.A., a global specialty pharmaceutical company. From June 2004 until October 2008, Mr. Rosenfield was the General Counsel and Secretary of Tercica, Inc., an endocrinology-oriented biopharmaceutical company, from January 2006 until October 2008, he was also the Executive Vice President of Legal Affairs, and from June 2004 until January 2006, Mr. Rosenfield was the Senior Vice President of Legal Affairs. Prior to joining Tercica, Mr. Rosenfield served as the Executive Vice President of Legal Affairs, General Counsel and Secretary of InterMune, Inc., a biotechnology company focused in pulmonology and fibrotic diseases. Prior to joining InterMune, Mr. Rosenfield was an attorney at Cooley LLP, an international law firm, where he served as outside counsel for biotechnology and technology clients. Mr. Rosenfield received a B.S. from Hofstra University and a J.D. from Northeastern University School of Law.

Employees

As of December 31, 2014, we had 42 employees, of whom 7 hold Ph.D. degrees and 13 hold other advanced degrees. Of this current total workforce, 22 employees were engaged in, or directly supported, our research and development activities, and 20 employees were engaged in business development, legal, finance and administration. None of our employees are covered by a collective bargaining agreement; nor have we experienced work stoppages. We consider relations with our employees to be good.

On March 3, 2015, we announced an organizational resizing to reduce our workforce from 39 to 21 positions, representing a reduction of approximately 46% of our workforce. For a further discussion, see Note 15 on Subsequent Event in Notes to Consolidated Financial Statements of this annual report on Form 10-K.

Corporate Information

Geron Corporation was incorporated in the State of Delaware on November 28, 1990.

Available Information

Our internet address is www.geron.com. Information included on our website is not part of this annual report on Form 10-K. We make available free of charge on our website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports as soon as reasonably practicable after such material is electronically filed with or furnished to the SEC. In addition, copies of our annual reports are available free of charge upon written request. The SEC also maintains an Internet site that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The address of that site is www.sec.gov.

ITEM 1A. RISK FACTORS

Our business is subject to various risks and uncertainties that may have a material adverse effect on our business, financial condition or results of operations. You should carefully consider the risks and uncertainties described below, together with all of the other information included in this annual report on Form 10-K. Our business faces significant risks and uncertainties, and those described below may not be the only risks and uncertainties we face. Additional risks and uncertainties not presently known to us or that we currently believe are immaterial may also significantly impair our business, financial condition or results of operations. If any of these risks or uncertainties occur, our business, results of operations or financial condition could suffer, the market price of our common stock could decline and you could lose all or part of your investment in our common stock.

RISKS RELATED TO OUR BUSINESS

We are dependent upon our collaborative relationship with Janssen to further develop, manufacture and commercialize imetelstat, our sole product candidate. If Janssen fails to perform as expected, the potential for us to generate future revenues from milestone payments and royalties from imetelstat would be significantly reduced, the development and/or commercialization of imetelstat may be terminated or substantially delayed, and our business would be severely harmed.

Under the terms of the Collaboration Agreement, we and Janssen have created a joint governance structure, including joint development and steering committees and working groups, to oversee and manage worldwide regulatory, development, manufacturing and commercialization activities for imetelstat; however, Janssen is solely responsible for the operational implementation of those activities. Accordingly, the timely and successful completion by Janssen of those activities will significantly affect the timing and amount of any revenues from milestone payments and royalties we may receive under the Collaboration Agreement, and these activities will be influenced by, among other things, the efforts and allocation of resources by Janssen, none of which we control. If Janssen does not perform in the manner we expect or fulfill its responsibilities in a timely manner, or at all, the clinical development, manufacturing, regulatory approval and/or commercialization efforts related to imetelstat could be delayed or terminated, and it could become necessary for us to assume the responsibilities for the clinical development, manufacturing, regulatory approval and/or commercialization of imetelstat at our own expense. Accordingly, there can be no assurance that any of the development, regulatory or sales milestones will be achieved or that we will receive any future milestone or royalty payments under the Collaboration Agreement.

In addition, because Janssen is solely responsible for the operational implementation of worldwide regulatory, development, manufacturing and commercialization activities related to imetelstat, we are solely dependent on Janssen to provide us with timely and accurate information concerning these

activities. If we do not receive accurate information from Janssen in a timely manner, or at all, regarding these activities, including, for example, plans for, and enrollment, efficacy and safety results from, clinical trials, then the timeliness and accuracy of our public disclosures, as well as our governance-related decision-making regarding these activities, may be adversely affected.

Our collaboration with Janssen may be unsuccessful due to other factors, including the following:

- Janssen may choose to terminate the Collaboration Agreement for convenience;
- Janssen may provide a negative Continuation Decision and halt its development of imetelstat;
- the results of the Initial Phase 2 MF Study and/or the Initial Phase 2 MDS Study may be negative or inconclusive, or Janssen may observe safety issues in either of these studies, which may result in a negative Continuation Decision by Janssen, in which case we would receive no further payments from Janssen under the Collaboration Agreement;
- Janssen may choose not to develop and commercialize imetelstat in certain markets or for one or more indications, if at all;
- Janssen may take considerably more time advancing imetelstat through the clinical and regulatory process than we currently anticipate, which could materially delay the achievement of milestones and, consequently the receipt of milestone payments from Janssen, and ultimately, any royalties on worldwide net sales;
- in the event of a dispute between us and Janssen regarding Janssen's performance under the Collaboration Agreement, it may be difficult for us to prove that Janssen breached its obligation to use "commercially reasonable efforts" with regard to the development, regulatory approval, manufacture and commercialization of imetelstat under the Collaboration Agreement;
- Janssen may not dedicate the resources necessary to carry imetelstat through clinical development or may not obtain the necessary regulatory approvals, and this would delay the achievement of development, regulatory or sales milestones;
- Janssen's ability to achieve development and manufacturing objectives or milestones may be delayed or substantially impacted if we fail to transfer technology and information related to imetelstat to Janssen in a timely manner or at all;
- subject to our election of the U.S. Co-Promotion Option, Janssen will be responsible for all aspects of the commercialization of imetelstat worldwide, including pricing decisions which would affect the royalties on worldwide net sales we could receive;
- Janssen may change the focus of its commercialization efforts or prioritize other programs more highly and, accordingly, reduce the efforts and resources allocated to imetelstat, which would have the direct effect of reducing our royalties or share of potential co-promotion activities since the extent of our U.S. Co-Promotion Option is limited to a percentage of overall promotion activities under the Collaboration Agreement;
- after assuming manufacturing responsibilities for imetelstat, Janssen may fail to manufacture or supply sufficient quantities of imetelstat for use in planned clinical trials, which could delay, suspend or stop any imetelstat clinical activities;
- Janssen may fail to develop a commercially viable formulation or manufacturing process for imetelstat, and may fail to manufacture or supply sufficient quantities of imetelstat for commercial use, if approved, which would result in lost sales revenue and reduced royalties for us;

- Janssen may not comply with all applicable regulatory requirements or may fail to report safety data in accordance with all applicable regulatory requirements, which could delay, suspend or stop clinical activities being performed by Janssen or by us; and

- if Janssen is acquired during the term of our collaboration, the acquirer may have different strategic priorities that could cause it to terminate the Collaboration Agreement or reduce its commitment to our collaboration.

If our collaboration with Janssen is unsuccessful as a result of any of the above factors, or any other factor, then Janssen may terminate the Collaboration Agreement, and we would not be eligible for any further payments from Janssen under the Collaboration Agreement, which would severely and adversely affect our business and business prospects.

Delays in the initiation of, or the inability to initiate, subsequent clinical trials of imetelstat, such as the Initial Phase 2 MF Study or the Initial Phase 2 MDS Study planned to be conducted under the Collaboration Agreement, could result in increased development costs and would delay our ability to earn revenues from milestone payments or royalties from the Collaboration Agreement with Janssen.

To date, we have not initiated any clinical trials evaluating imetelstat in any hematologic myeloid malignancies (other than essential thrombocythemia), including myelofibrosis, or MF. Advancing clinical development of imetelstat will be influenced by results from existing clinical trials, such as the MF Pilot Study, and potential future clinical trials of imetelstat in hematologic myeloid malignancies, such as the Initial Phase 2 MF Study or the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement. The commencement of potential future clinical trials of imetelstat could be delayed or abandoned for a variety of reasons, including as a result of failures or delays by Janssen in:

- obtaining regulatory clearance to commence subsequent clinical trials of imetelstat in a timely manner, or at all, in the United States or other countries;

- properly designing, commencing, enrolling, conducting or completing potential future clinical trials, including the Initial Phase 2 MF Study or the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, and promptly or adequately reporting data from such trials;

- demonstrating sufficient safety and efficacy in future Phase 2 clinical trials, including the Initial Phase 2 MF Study or the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, to obtain regulatory clearance to commence subsequent clinical trials in a timely manner, or at all, in the United States or other countries;

- properly conducting and/or completing the MF Pilot Study;

- manufacturing sufficient quantities of imetelstat and in a manner that meets the quality standards of the FDA and other regulatory agencies;

- ensuring the ability to manufacture imetelstat at acceptable costs for Phase 3 clinical trials and commercialization;

- obtaining clearance or approval of proposed trial designs or manufacturing specifications from the FDA and other regulatory authorities;

- reaching agreement on acceptable terms and on a timely basis, if at all, with collaborators and vendors located in the United States or foreign jurisdictions, including contract research organizations, laboratory service providers and trial sites, on all aspects of clinical trials;

- obtaining institutional review board or ethics committee approval to conduct clinical trials at prospective clinical trial sites; and

- identifying and successfully screening and enrolling appropriate subjects for participation in clinical trials and retaining those subjects in the clinical trials.

Failures or delays with respect to any of these events could adversely affect the ability to initiate, maintain or successfully complete any future clinical trials of imetelstat, which could increase development costs, impair our ability to earn revenues from milestone payments or royalties from the Collaboration Agreement with Janssen or cause Janssen to terminate the Collaboration Agreement, any of which could adversely impact our financial results and would have severe adverse effects on our business and business prospects.

If there are any safety or efficacy results that cause the benefit-risk profile of imetelstat to become unacceptable, the clinical development of imetelstat would be delayed or halted, and Janssen may terminate the Collaboration Agreement, which would severely and adversely affect our business prospects, and may cause us to cease operations.

Imetelstat may prove to have undesirable or unintended side effects or other characteristics adversely affecting its safety, efficacy, cost-effectiveness or marketability that could prevent or limit its approval for marketing and successful commercial use, or that could delay or prevent the commencement and/or completion of clinical trials for imetelstat. For example, although the FDA removed the full clinical hold on our IND for imetelstat, if patients in current or future clinical trials experience similar or more severe hepatotoxicity, including elevated LFTs or severe hepatic adverse events, such IND for imetelstat may again be placed on clinical hold, and we, in collaboration with Janssen, may be precluded from further developing imetelstat. In addition, if regulatory submissions requesting approval to market imetelstat are submitted, after reviewing the data in such submissions, the FDA and regulatory agencies in other countries may conclude that the overall benefit-risk profile of imetelstat treatment, including hepatotoxicity or severe hepatic adverse events, may preclude approval of imetelstat for marketing or further development for any indications, including hematologic malignancies. Any of these events would severely harm our business and prospects, and would likely cause us to cease operations.

Further, in our Phase 1 clinical trials of imetelstat, we observed dose-limiting toxicities, including thrombocytopenia when the drug was used as a single agent, and neutropenia when the drug was used in combination with paclitaxel, as well as a low incidence of severe infusion reactions. In our Phase 2 clinical trials of imetelstat in ET, MM, and solid tumors, we have observed hematologic toxicities as well as gastrointestinal events, infections, muscular and joint pain, fatigue and infusion reactions. In addition, in our Phase 2 clinical trials of imetelstat, we have observed LFT abnormalities, the clinical significance and long-term consequences of which are currently undetermined. In our Phase 2 trial in ET, one patient died of bleeding esophageal varices, a complication of chronic liver disease, for which imetelstat could not be excluded as a causative agent. In the MF Pilot Study, myelosuppression has been the primary dose-limiting toxicity reported to date, consistent with our observations in previous Geron-sponsored imetelstat studies. However, during the MF Pilot Study, more persistent and profound myelosuppression, particularly thrombocytopenia, was observed with imetelstat administered on a weekly basis. This included one case of febrile neutropenia after prolonged myelosuppression with intracranial hemorrhage resulting in patient death, which was assessed as possibly related to imetelstat by the investigator. Since the MF Pilot Study is an ongoing study with additional data being generated, the benefit-risk profile of imetelstat in MF will continue to be assessed, including the risk of hepatotoxicity and severe cytopenias that may be associated with life-threatening clinical outcomes.

Clinical trials by their nature examine the effect of a potential therapy in a sample of the potential future patient population. As such, clinical trials conducted with imetelstat, to date and in the future, may not uncover all possible adverse events that patients treated with imetelstat may experience. In collaboration with Janssen, we may observe or report dose-limiting toxicities or other safety issues in potential future clinical trials of imetelstat, including the Initial Phase 2 MF Study and the Initial

Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement. Likewise, because previously enrolled patients continue to receive imetelstat in the MF Pilot Study, additional or more severe toxicities or safety issues in the MF Pilot Study, including additional serious adverse events and clinically significant LFT abnormalities, may be observed or reported as patient treatment continues and more data become available. If such toxicities or other safety issues in any clinical trial of imetelstat result in an unacceptable benefit-risk profile, then:

- the commencement and/or completion of any current or future clinical trials, including the MF Pilot Study and the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, would likely be delayed or prevented;
- the MF Pilot Study or any potential future clinical trials, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, may be placed on clinical hold or halted by regulatory authorities, such as the previous clinical holds placed by the FDA on our IND for imetelstat and the IND for the MF Pilot Study; or
- additional, unforeseen trials or preclinical studies may be required to be conducted.

The occurrence of any of these events would likely cause Janssen to abandon their development of imetelstat entirely and terminate the Collaboration Agreement. Any termination of the Collaboration Agreement by Janssen would have a material adverse effect on our results of operations, financial condition, business prospects and the future of imetelstat, any of which may cause us to cease operations.

If Janssen does not elect to continue the development of imetelstat in a timely manner, or at all, our business and business prospects would be severely harmed.

Under the terms of the Collaboration Agreement, Janssen is not obligated to make any additional payments to us until it makes an affirmative Continuation Decision following the results of the Initial Phase 2 MF Study, or, if the Initial Phase 2 MF Study is terminated early or suspended for an extended period of time, within a certain time period thereafter as set forth in the Collaboration Agreement. The timing of Janssen's Continuation Decision also affects the timing and availability of our decision regarding U.S. Opt-In Rights, as well as our election of the U.S. Co-Promotion Option. If the Initial Phase 2 MF Study is terminated early, suspended for an extended period of time, or is otherwise unsuccessful, Janssen may provide a negative Continuation Decision, in which case, the Collaboration Agreement would terminate, we would not be eligible for any further payments from Janssen under that agreement and our business and business prospects would be severely and adversely affected.

In addition, Janssen may terminate the Collaboration Agreement at any time for convenience. If Janssen terminates the Collaboration Agreement, then, depending on the timing of such event:

- we would no longer have the right to receive any milestone payments or royalties under the Collaboration Agreement;
- the development of imetelstat would likely be terminated or significantly delayed;
- we would bear all of the risks and costs related to the further clinical development, manufacturing, regulatory approval and commercialization of imetelstat;
- we would need to raise additional capital if we were to choose to pursue imetelstat development on our own, or we would need to establish alternative collaborations with third-party collaboration partners, which may not be possible in a timely manner or at all, or may not be possible on terms acceptable to us, in which case it would likely be necessary for us to limit the

size or scope of the imetelstat development program or seek additional funding by other means to accommodate the increased expenditures; and

- we would need to hire additional employees to support the development and commercialization of imetelstat, which would increase our need for additional funding.

Any termination of the Collaboration Agreement by Janssen at any time would have a material adverse effect on our results of operations, financial condition, business prospects and the future of imetelstat, any of which would have severe adverse effects on our business and business prospects, and may cause us to cease operations.

Our decision to exercise our U.S. Opt-In Rights under the Collaboration Agreement with Janssen for imetelstat must be made within a limited time after Janssen makes an affirmative Continuation Decision and, as a result, we may be required to make a substantial capital investment based on limited clinical data.

We must elect to exercise our U.S. Opt-In Rights within a short timeframe following Janssen's Continuation Decision. Although we expect to receive information from Janssen regarding data from the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study, proposed future clinical development plans and costs, estimates in timing for commercializing imetelstat and related promotional activities, and calculation of our share of development costs incurred to date by Janssen that we will be required to reimburse if we exercise our U.S. Opt-In Rights, we will be required to rapidly decide whether to make a substantial capital investment in imetelstat prior to the conclusion of any Phase 3 registration-enabling clinical trial. Accordingly, if imetelstat were to become unsuccessful in any Phase 3 registration-enabling clinical trial or fails to receive regulatory approval, we would not receive any financial return on this substantial capital investment. Such an occurrence would negatively impact our financial condition and results of operations.

Our Collaboration Agreement with Janssen prohibits us from developing or commercializing any product that operates through the same mechanism of action as imetelstat, and our U.S. co-promotion rights may be terminated if we market or promote any such products for any oncology indication. As a result of this, or for any other reason, we may not be able to successfully acquire or in-license promising product opportunities for development, which would limit our growth and revenue potential.

We plan to seek to diversify our sole product candidate development risk by identifying promising product opportunities for development, which we may seek to acquire or in-license. However, the Collaboration Agreement with Janssen prohibits us from commercializing, under the intellectual property we have licensed exclusively to Janssen, any substance whose identified or known mechanism of action is telomerase inhibition. Further, if we exercise our U.S. Co-Promotion Option under the Collaboration Agreement, we will be required to certify at the time of exercising our U.S. Co-Promotion Option that we are not marketing or promoting, and have no right to market or promote, any such products for any oncology indication. Our right to co-promote in the U.S. may be terminated by Janssen if we develop or commercialize a product for treating an oncology indication that acts through the same mechanism of action as imetelstat or that is substitutable for imetelstat. Accordingly, our Collaboration Agreement with Janssen could adversely affect our ability to acquire or in-license, or to research, develop or market, promising product candidates.

In addition, we may not be able to identify promising product candidates. The competition to acquire or in-license rights to promising product candidates is fierce, and many of our competitors are large, multinational pharmaceutical and biotechnology companies with considerably more financial, development and commercialization resources and experience than we have. Thus, even if we succeed in identifying promising product candidates, we may not be able to acquire rights to them on acceptable terms, or at all. In any event, any growth through acquisition or in-licensing will depend upon our identifying and obtaining promising product candidates, our ability to develop those product

candidates and the availability of funding to complete the development of, obtain regulatory approval for and commercialize these product candidates. If we are unable to identify and acquire promising product candidates, we will be unable to diversify our sole product candidate development risk, and our growth and revenue potential could be limited.

We may not be able to successfully retain key personnel to support our collaboration with Janssen or to manage any future growth.

Under the terms of the Collaboration Agreement, we and Janssen have created a joint governance structure, including committees and working groups, to manage worldwide regulatory, development, manufacturing and commercialization activities for imetelstat, and we will have ongoing responsibilities to oversee and participate in the collaboration with Janssen. In addition, we will remain responsible for prosecuting, at Janssen's direction, the patents we licensed to Janssen, and have sole responsibility for those patents that were not licensed to Janssen. If we are unable to successfully retain, motivate and incentivize our personnel, our ability to support the Collaboration Agreement with Janssen could be impaired, and our business and the price of our common stock would be adversely impacted.

In addition, our future growth and success depend to a significant extent on the skills, experience and efforts of our executive officers and key members of our clinical and scientific staff. We face intense competition for qualified individuals from numerous pharmaceutical, biopharmaceutical and biotechnology companies, as well as academic and other research institutions. The previous restructurings we implemented and the recently announced organizational resizing, as well as our collaboration with Janssen and uncertainties regarding our ability to diversify our sole product candidate development risk, could have an adverse impact on our ability to retain and recruit qualified personnel or we may incur unanticipated inefficiencies caused by our reduced personnel resources. We may be unable to retain our current personnel or attract or assimilate other highly qualified management and development personnel in the future on acceptable terms. The loss of any or all of these individuals could harm our business and could impair our ability to support our collaboration with Janssen or to support future growth.

We and certain of our officers have been named as defendants in three purported securities lawsuits, two of which are securities class action lawsuits, and certain of our officers and directors have been named as defendants in a derivative lawsuit. These, and potential similar or related lawsuits, could result in substantial damages, divert management's time and attention from our business, and have a material adverse effect on our results of operations. These lawsuits and any other lawsuits will be costly to defend or pursue and are uncertain in their outcome.

Securities-related class action lawsuits and derivative litigation has often been brought against companies, including many biotechnology companies, which experience volatility in the market price of their securities. This risk is especially relevant for us because biotechnology and biopharmaceutical companies often experience significant stock price volatility in connection with their product development programs.

On March 14, 2014, a purported securities class action lawsuit was commenced in the United States District Court for the Northern District of California, or the California District Court, naming as defendants us and certain of our officers. The lawsuit alleges violations of the Securities Exchange Act of 1934 in connection with allegedly false and misleading statements made by us related to our Phase 2 trial of imetelstat in patients with ET or PV. The plaintiff alleges, among other things, that we failed to disclose facts related to the occurrence of persistent low-grade LFT abnormalities observed in our Phase 2 trial of imetelstat in ET or PV patients and the potential risk of chronic liver injury following long-term exposure to imetelstat. The plaintiff seeks damages and an award of reasonable costs and expenses, including attorneys' fees.

On March 28, 2014, a second purported securities class action lawsuit was commenced in the California District Court, naming as defendants us and certain of our officers. This lawsuit, which is based on the same factual background as the purported securities class action lawsuit that commenced on March 14, 2014, also alleges violations of the Securities Exchange Act of 1934 and seeks damages and an award of reasonable costs and expenses, including attorneys' fees.

On June 30, 2014, both of the foregoing lawsuits, or the Class Action Lawsuits, were consolidated for all purposes, and a lead plaintiff and lead counsel were appointed by the California District Court. On July 21, 2014, the California District Court ordered the lead plaintiff to file its consolidated amended complaint in the Class Action Lawsuits, which was filed on September 19, 2014. We filed our motion to dismiss the consolidated amended complaint on November 18, 2014. The plaintiff's opposition to our motion to dismiss was filed on January 20, 2015, and we filed our reply on February 25, 2015. The court hearing for the motion to dismiss has been scheduled for April 10, 2015.

On June 6, 2014, a purported securities lawsuit, not styled as a class action, was commenced in the United States District Court for the Southern District of Mississippi, or the Mississippi District Court, naming as defendants us and certain of our officers. This lawsuit, which is based on the same factual background as the Class Action Lawsuits, also alleges violations of the Securities Exchange Act of 1934 and seeks damages and an award of reasonable costs and expenses, including attorneys' fees. On August 11, 2014, we filed a motion to transfer the purported securities lawsuit filed in the Mississippi District Court to the California District Court so it could be consolidated with the purported Class Action Lawsuits. On November 4, 2014, the Mississippi District Court granted our motion and transferred the case to the California District Court, and the transferred case has been consolidated by the California District Court with the purported Class Action Lawsuits filed in the California District Court.

On April 21, 2014, a stockholder purporting to act on our behalf filed a derivative lawsuit in the Superior Court of California for the County of San Mateo against certain of our officers and directors. The lawsuit alleges breaches of fiduciary duties by the defendants and other violations of law. In general, the lawsuit alleges that the defendants caused or allowed the dissemination of allegedly false and misleading statements related to our Phase 2 trial of imetelstat in patients with ET or PV. The plaintiff is seeking unspecified monetary damages and other relief, including reforms and improvements to our corporate governance and internal procedures.

It is possible that additional suits will be filed, or allegations received from stockholders, with respect to these same or other matters and also naming us and/or our officers and directors as defendants. These lawsuits and any other related lawsuits are subject to inherent uncertainties, and the actual defense and disposition costs will depend upon many unknown factors. The outcome of these lawsuits is necessarily uncertain. We could be forced to expend significant resources in the defense against these lawsuits and we may not prevail. In addition, we may incur substantial legal fees and costs in connection with these lawsuits. We currently are not able to estimate the possible cost to us from these matters, as these lawsuits are currently at an early stage, and we cannot be certain how long it may take to resolve these matters or the possible amount of any damages that we may be required to pay. We have not established any reserve for any potential liability relating to these lawsuits. It is possible that we could, in the future, incur judgments or enter into settlements of claims for monetary damages. A decision adverse to our interests on these actions could result in the payment of substantial damages, or possibly fines, and could have a material adverse effect on our cash flow, results of operations and financial position.

We may also be subject to litigation arising from our proposed or completed strategic transactions or if the results of our business and collaboration activities are not successful.

On October 1, 2013, we closed the transaction to divest our human embryonic stem cell assets and our autologous cellular immunotherapy program pursuant to the terms of the Contribution Agreement that we entered into in January 2013 with BioTime and Asterias. On November 13, 2014, we announced that we had entered into the Collaboration Agreement with Janssen to develop and commercialize imetelstat worldwide. We may face litigation arising from or related to the value received by our stockholders, if any, from our distribution of the Asterias Series A common stock and/or the BioTime Warrants distributed by Asterias under the Contribution Agreement, or our role as a named underwriter with respect to our distribution of the Asterias Series A common stock, including the delays we experienced with respect to completing our distribution of the Asterias Series A common stock, or we may face litigation based on other matters related to the Contribution Agreement and the Collaboration Agreement or the transactions contemplated thereby, including if we are unable to generate substantial value under the Collaboration Agreement with Janssen or such collaboration is not otherwise successful.

As a result of these and other factors, we may be exposed to a number of litigation risks related to the transactions contemplated by the Contribution Agreement and the Collaboration Agreement, including declines or fluctuations in our stock price, additional advisor and legal fees, distractions to our management caused by activities undertaken in connection with resolving any disputes related to the transactions, or the loss of important contractual rights. As another example, some of our investors purchased shares of our common stock because they were interested in the opportunities presented by our human embryonic stem cell programs. Thus, certain stockholders may have attributed substantial financial value to our stem cell assets and may believe that the Asterias Series A common stock, BioTime Warrants and/or cash received in the distributions pursuant to the Contribution Agreement were inadequate consideration for such assets.

Similarly, the announcement and/or completion of these strategic transactions could result in litigation arising out of any claims that our stockholders suffered financial losses due to the transactions, the approval of our stockholders was required under applicable law or otherwise should have been obtained prior to the completion of either or both of these transactions, or that our officers and directors breached their fiduciary duties in connection with the approval and completion of these transactions. Although we believe that stockholder approval was not required under applicable law in order to complete either or both of these transactions and therefore we neither sought nor intend to seek such stockholder approval, it is possible that persons who were stockholders at the time of the applicable transaction may claim that their approval was required, in which case litigation could follow, which could result in substantial damages to us and/or could negatively affect our rights and obligations under either of these agreements or, in the case of the Collaboration Agreement, could result in the termination of that agreement.

Likewise, our stockholders may believe that the financial and other terms of the Collaboration Agreement are not favorable to either us or our stockholders, including any belief that the potential payments we may receive under the Collaboration Agreement are inadequate. Litigation brought by our stockholders challenging the validity of, or financial losses resulting from, these transactions could also result in claims against us by Asterias and/or Janssen, and each of the Contribution Agreement and the Collaboration Agreement provide for indemnification by us of BioTime and Janssen, respectively, against all losses and expenses relating to breaches of our representations, warranties and covenants in the applicable agreement, which could expose us to further financial obligations and damages. The occurrence of any one or more of the above could have a significant adverse impact on our business and financial condition.

In addition, if the results of our business and collaboration activities are not successful, including without limitation, if:

- we or Janssen are otherwise unable to continue development of imetelstat due to actions by regulatory authorities, such as the previous full clinical hold that was placed by the FDA on our IND for imetelstat in March 2014;
- we, Janssen or any investigators ascertain that the use of imetelstat results in significant systemic or organ toxicities, including hepatotoxicity, or other safety issues resulting in an unacceptable benefit-risk profile;
- the conduct of previous clinical trials, such as the MF Pilot Study, and future clinical trials, such as the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, results in patient injury or death, or any failure to meet regulatory and compliance requirements;
- the final or any preliminary results from the MF Pilot Study, or any subsequent clinical trial of imetelstat, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, are not deemed to be successful;
- Janssen discontinues the further development of imetelstat and terminates the Collaboration Agreement; or
- Asterias is unable to develop our stem cell assets, and we are not able to receive any royalties from the sale of any potential stem cell products by Asterias,

our stock price would likely decline, and future litigation may result. A decision adverse to our interests in any such lawsuits could result in the payment of substantial damages by us, and could have a material adverse effect on our cash flow, results of operations and financial position or could otherwise severely harm our business.

Our business may also bring us into conflict with our licensees, licensors, or others with whom we have contractual or other business relationships, or with our competitors or others whose interests differ from ours. If we are unable to resolve those conflicts on terms that are satisfactory to all parties, we may become involved in litigation brought by or against us. For example, we are subject to the risk of possible disagreements with Janssen, including those regarding the development and/or commercialization of imetelstat, interpretation of the Collaboration Agreement and ownership of proprietary rights. In addition, in certain circumstances we may believe that we have achieved a particular milestone and Janssen may disagree with our belief. In that case, receipt of that milestone payment may be delayed or may never be received, which would adversely affect our financial condition and may require us to adjust our operating plans. While the Collaboration Agreement provides for a joint governance structure to oversee and manage worldwide regulatory, development, manufacturing and commercialization activities for imetelstat, Janssen generally will, subject to limited exceptions, have the deciding vote in the event of any disagreement. In any event, the joint governance structure contemplated by the Collaboration Agreement will be dissolved in the event that we do not exercise our U.S. Opt-In Rights, which would preclude our ability to participate in any further decision-making for imetelstat. Reliance on a joint governance structure also subjects us to the risk that changes in key management personnel that are members of the various joint committees may materially and adversely affect the functioning of these committees, which could significantly delay or preclude imetelstat development and/or commercialization. As a result of possible disagreements with Janssen, we also may become involved in litigation or arbitration, which would be time-consuming and expensive.

Monitoring, initiating and defending against legal actions, including our currently-pending securities-related lawsuits and derivative litigation, are time-consuming for our management, likely to be expensive and may detract from our ability to fully focus our internal resources on our business

activities. The outcome of litigation is always uncertain, and in some cases could include judgments against us that require us to pay damages, enjoin us from certain activities, or otherwise negatively affect our legal or contractual rights, which could have a significant adverse effect on our business. In addition, the inherent uncertainty of such litigation, including our currently-pending securities-related lawsuits and derivative litigation, could lead to increased volatility in our stock price and a decrease in the value of our stockholders' investment in our common stock.

RISKS RELATED TO CLINICAL AND COMMERCIALIZATION ACTIVITIES

The research and development of imetelstat is subject to numerous risks and uncertainties.

The science and technology of telomere biology, telomerase and our proprietary oligonucleotide chemistry are relatively new. There is no precedent for the successful commercialization of a therapeutic product candidate based on these technologies. In collaboration with Janssen, we must undertake significant research and development activities to develop imetelstat, our sole product candidate, based on these technologies, which may take years to accomplish, if at all.

Because of the significant scientific, regulatory and commercial challenges that must be overcome for the research, development and commercialization of imetelstat to be successful, the development of imetelstat in hematologic myeloid malignancies, including MF and MDS, or any other indications, may be delayed or abandoned, even after significant resources have been expended on it. Our decisions to discontinue our Phase 2 clinical trial of imetelstat in metastatic breast cancer in September 2012, and to discontinue our development of imetelstat in solid tumors with short telomeres in April 2013, are examples of this. Any further delay or abandonment of the development of imetelstat in hematologic myeloid malignancies would have a material adverse effect on our collaboration with Janssen which could result in the termination of the Collaboration Agreement. Any of these events would have severe adverse effects on our business and business prospects and likely result in the failure of our business.

Success in early clinical trials may not be indicative of results in subsequent clinical trials. Likewise, preliminary data reported by investigators from time-to-time are subject to review or verification procedures that could result in material differences to final data and may change as more patient data become available.

A number of new drugs and biologics have shown promising results in initial clinical trials, but subsequently failed to establish sufficient safety and efficacy data to obtain necessary regulatory approvals. Data obtained from preclinical and clinical activities are subject to varying interpretations, which may delay, limit or prevent regulatory approval.

Data from our preclinical studies and Phase 1 and Phase 2 clinical trials of imetelstat, as well as preliminary, additional or updated data from the MF Pilot Study, should not be relied upon as evidence that subsequent or larger-scale clinical trials of imetelstat will succeed. The positive efficacy results we have obtained from the Phase 2 clinical trial of imetelstat in ET may not predict the future therapeutic benefit of imetelstat, if any, in other hematologic myeloid malignancies, including MF. For example, the known LFT abnormalities and dose-limiting toxicities associated with imetelstat, such as profound thrombocytopenia and neutropenia and other safety issues, including death, that have been observed in both Geron-sponsored and investigator-sponsored trials, including the MF Pilot Study, could cause complexities in treating patients with MF and could result in the discontinuation of the MF Pilot Study and any future clinical trials of imetelstat, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement. Also, the criteria used to assess efficacy in the MF Pilot Study have not been validated for clinical use and may not be considered by the FDA or other regulatory agencies to be accurate predictors of efficacy for different endpoints that may be required by the FDA or other regulatory agencies for Phase 3 clinical trials.

The preliminary results of the MF Pilot Study presented by the investigator at the ASH annual meeting in December 2013 and the updated preliminary results presented at ASH in December 2014 will need to be confirmed in one or more larger Phase 2 and Phase 3 trials in MF at multiple treating centers. The results reported by us, Janssen or by the investigator in the MF Pilot Study may not be reproduced in any subsequent imetelstat trials conducted in the future, including the Initial Phase 2 MF Study or the Initial Phase 2 MDS Study planned to be conducted under the Collaboration Agreement, or by any other investigator or group of investigators, or in any trial enrolling a larger number of patients or conducted at multiple treating centers, and thus should not be relied upon as indicative of future clinical results of imetelstat in MF or any other hematologic myeloid malignancy.

In addition, from time-to-time, we or Janssen may report or announce preliminary data from current or potential future clinical trials, such as the Initial Phase 2 MF Study and Initial Phase 2 MDS Study planned to be conducted under the Collaboration Agreement. For example, the investigator for the MF Pilot Study reported preliminary data from the trial in December 2013 and updated preliminary data in December 2014. Since those data were preliminary, the final data from the MF Pilot Study may be materially different than the data reported in December 2013 or December 2014. Since patients previously enrolled in the MF Pilot Study continue to receive imetelstat, safety and efficacy data continue to be generated, and such additional and updated data may materially change the overall conclusions from the preliminary data reported in December 2013 or December 2014. Therefore, such preliminary data should be considered carefully and with caution. Additional and updated data from the MF Pilot Study are also subject to any review or verification procedures that Janssen may conduct as the trial sponsor for the MF Pilot Study after it assumes responsibility for the conduct of the MF Pilot Study, and since this could result in material differences from the data reported by the investigator or us, additional or updated data that may be reported from the MF Pilot Study should be considered carefully and with caution. Analyses performed by Janssen may result in conclusions that are materially different from the investigator's analyses or ours, and therefore such preliminary data should be considered carefully and with caution.

Material adverse changes in final data from the MF Pilot Study could jeopardize our Collaboration Agreement with Janssen and if Janssen were to terminate the Collaboration Agreement, our business prospects would be severely and adversely affected. Even if final safety and efficacy data from the MF Pilot Study are positive, significant additional clinical testing will be necessary for the future development of imetelstat in MF. Any such final safety and efficacy data from the MF Pilot Study may not be reproducible in future clinical trials, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement.

Before Janssen can seek to obtain regulatory approval for the commercial sale of imetelstat, multiple clinical trials, including larger-scale Phase 3 clinical trials, will need to be conducted to demonstrate that imetelstat is safe and effective for use in a diverse population. There is typically an extremely high rate of attrition from the failure of drug candidates proceeding through clinical trials. If imetelstat cannot be developed in future clinical trials, including Phase 3 clinical trials, our Collaboration Agreement with Janssen will be negatively impacted and could be terminated altogether, which would have severe adverse effects on our business and business prospects, and likely result in the failure of our business.

Conducting and completing potential future clinical trials of imetelstat, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, on a timely basis is subject to risks and uncertainties.

Delays or terminations of potential future clinical trials, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, could be caused by matters such as:

- not receiving timely regulatory clearances or approvals in any jurisdiction, whether within or outside of the United States, including, if we, Janssen or future investigators do not obtain and maintain regulatory clearance to commence studies of imetelstat in MF, MDS or any additional hematologic myeloid malignancies in a timely manner or at all, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement;
- the inability by Janssen to maintain the INDs for imetelstat that we expect to transfer to Janssen, including the IND for the MF Pilot Study, without such INDs being placed on full or partial clinical hold by the FDA;
- the inability to properly design, conduct and/or complete current and potential future clinical trials of imetelstat including the MF Pilot Study and the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study;
- data showing lack of effectiveness of imetelstat during clinical trials, or results that do not demonstrate statistically significant efficacy;
- safety issues, side effects or dose-limiting toxicities, including any additional or more severe safety issues related to imetelstat in addition to those which have been observed to date in Geron-sponsored or investigator-sponsored trials, whether or not in the same indications or therapeutic areas;
- disruptions due to drug supply or quality issues;
- not receiving acceptance of new manufacturing specifications or procedures or clinical trial protocol amendments by regulatory authorities;
- failure by investigators conducting future clinical trials of imetelstat, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, to timely commence, enroll, complete or report data from such clinical trials;
- not receiving timely institutional review board or ethics committee approval of clinical trial protocols or protocol amendments;
- delays in patient enrollment due to size or nature of patient population, nature of protocols, proximity of patients to clinical sites, availability of effective treatments for the relevant disease and eligibility criteria for the trial;
- inability to retain patients to complete clinical trials or to return for post-treatment follow-up;
- difficulty in obtaining or accessing necessary clinical data, including additional and future data from the MF Pilot Study, which may result in incomplete data sets;
- unavailability of any study-related treatment (including comparator therapy);
- issues or disputes with key vendors of clinical services, such as contract research organizations, clinical trial sites and laboratory service providers; or

- governmental or regulatory delays in any jurisdiction, whether within or outside of the United States, information requests, clinical holds, such as the previous clinical holds placed by the FDA on our IND for imetelstat and the IND for the MF Pilot Study, and changes in regulatory requirements, policies and guidelines.

Advancing clinical development of imetelstat in the United States is dependent on obtaining positive results from existing and potential future clinical trials of imetelstat in hematologic myeloid malignancies, including the MF Pilot Study and the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement. Obtaining additional and future data from the MF Pilot Study may provide additional insights into the further development of imetelstat for MF, MDS or AML, including with respect to Janssen's ability to initiate the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement. Accordingly, a delay in the timely completion of the MF Pilot Study, including any delay caused by any future clinical hold placed by the FDA on the INDs for imetelstat, including the IND for the MF Pilot Study, that we plan to transfer to Janssen prior to initiation of the Initial Phase 2 MF Study, could have a material adverse effect on advancing the development of imetelstat to subsequent clinical trials, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement. Also, adverse safety results from clinical trials of imetelstat, including those results that have been reported and those that may in the future be reported from the MF Pilot Study or the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, could delay or prevent the initiation or continuation of further clinical development of imetelstat, whether under the Collaboration Agreement or otherwise. Occurrence of any of these events would delay the timing of any Continuation Decision Janssen could provide to us or could cause Janssen to terminate the Collaboration Agreement which would severely and adversely affect the future of imetelstat and our business prospects.

In addition, enrollment goals for potential future clinical trials of imetelstat, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, may not be met. The inability to retain or treat patients who have enrolled in a clinical trial but may be prone to withdraw due to side effects from imetelstat, lack of efficacy or personal issues, or who are lost to further follow-up, could result in clinical trial delays, the inability to complete clinical trials, or incomplete data sets. Further, any future clinical trials may be overseen by a safety monitoring committee, which may determine to significantly modify, delay or suspend one or more of these trials due to safety or futility findings based on emerging data occurring during a clinical trial. Data that we have received or that we or Janssen may in the future receive from investigators may be flawed or incomplete if the investigators fail to follow appropriate clinical or quality practices. Delays in timely initiation or completion of clinical testing of imetelstat could increase research and development costs and could prevent or would delay obtaining regulatory approval for imetelstat, either of which would delay the timing of any Continuation Decision Janssen could provide to us or could cause Janssen to terminate the Collaboration Agreement which would severely and adversely affect the future of imetelstat and our business prospects.

Obtaining regulatory clearances and approvals to develop and market imetelstat in the United States and other countries is a costly and lengthy process, and we cannot predict whether or when regulatory authorities will permit additional imetelstat development or approve imetelstat for commercial sale.

Federal, state and local governments in the United States and governments in other countries have significant regulations in place that govern drug research and development and may prevent us, in collaboration with Janssen, from successfully conducting development efforts or from commercializing imetelstat. Imetelstat must receive all relevant regulatory approvals before it may be marketed in the United States or other countries. Obtaining regulatory approval is a lengthy, expensive and uncertain

process. Because imetelstat involves the application of new technologies and a new therapeutic approach, it may be subject to substantial additional review by various government regulatory authorities, and, as a result, the process of obtaining regulatory approvals for imetelstat may proceed more slowly than for product candidates based upon more conventional technologies, and any approval that may be received could limit the use of imetelstat.

Prior to initiating future clinical trials of imetelstat, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, the clinical trial protocols must be submitted to the FDA or regulatory authorities in other countries. Questions or comments from these agencies that must be addressed would likely delay further clinical development of imetelstat and the timing of any Continuation Decision by Janssen or could cause Janssen to terminate the Collaboration Agreement, which would severely and adversely affect the future of imetelstat and our business prospects.

Prior to submission of any regulatory application seeking approval to commence commercial sales of imetelstat, extensive preclinical and clinical testing will be required to be conducted. If the interpretation of safety and efficacy data obtained from these preclinical and clinical studies varies from interpretations by the FDA or regulatory authorities in other countries, this would likely delay, limit or prevent further development and approval of imetelstat which may cause Janssen to terminate the Collaboration Agreement. For example, the FDA and regulatory authorities in other countries may require more or different data than what has been generated from our preclinical studies and our prior Geron-sponsored Phase 2 clinical trials or the MF Pilot Study or that may be generated by potential future clinical trials, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement. In addition, delays or rejections of regulatory approvals, or limitations in marketing authorizations, may be encountered as a result of changes in regulatory environment or regulatory agency policy during the period of product development and/or the period of review of any application for regulatory agency approval for imetelstat. We do not expect imetelstat to be approved for commercial sale for many years, if at all.

Delays in obtaining regulatory agency clearances and approvals or limitations in the scope of such clearances or approvals could:

- significantly harm the commercial potential of imetelstat;
- impose costly procedures upon future development activities;
- diminish any competitive advantages that may have been available; or
- adversely limit the amount of, or affect our ability to receive, any milestone payments or royalties under the Collaboration Agreement with Janssen.

Even if the necessary time and resources are committed by us and Janssen, the required regulatory agency clearances and approvals may not be obtained for imetelstat. Even if regulatory agency clearances and approvals are obtained to commence commercial sales of imetelstat, they may entail limitations on the indicated uses or other aspects of the product label for which imetelstat can be marketed, which could limit the potential commercial use of imetelstat, or an approval might be contingent on the performance of costly additional clinical trials that would be required after approval. The occurrence of any of these events could delay any applications for regulatory approval and therefore delay the payment of potential milestone payments to us, or, if approved for commercial sale, could reduce the market demand for imetelstat and therefore result in decreased sales and reduced royalties for us under the Collaboration Agreement. Occurrence of any of these events could negatively impact our collaboration with Janssen or cause Janssen to terminate the Collaboration Agreement, which would severely and adversely affect our business and business prospects.

Failure to achieve continued compliance with government regulation could delay or halt commercialization of imetelstat, our sole product candidate.

Approved products and their manufacturers are subject to continual review, and discovery of previously unknown problems with a product or its manufacturer may result in restrictions on the product or manufacturer, including import restrictions, seizure and withdrawal of the product from the market. If approved for commercial sale, future sales of imetelstat will be subject to government regulation related to numerous matters, including the processes of:

- manufacturing;
- advertising and promoting;
- selling and marketing;
- labeling; and
- distribution.

If, and to the extent that, we are or Janssen is unable to comply with these regulations, our ability to earn potential milestone payments and royalties from worldwide net sales of imetelstat would be materially and adversely impacted.

Failure to comply with regulatory requirements can result in severe civil and criminal penalties, including but not limited to:

- recall or seizure of products;
- injunctions against the import, manufacture, distribution, sales and/or marketing of products; and
- criminal prosecution.

The imposition of any of these penalties or other commercial limitations could negatively impact our collaboration with Janssen or cause Janssen to terminate the Collaboration Agreement, either of which would severely and adversely affect our business and business prospects.

Janssen's development activities conducted under a Janssen Independent Development Plan, or IDP, may create significant reimbursement obligations for us, which could result in reduced cash inflow from future milestone payments and royalties until we have fully paid our obligations.

Under the Collaboration Agreement, Janssen may conduct certain development activities for imetelstat under a Janssen IDP if we and Janssen agree that such activities should be performed outside of the mutually agreed global clinical development plan. Although Janssen would bear all of the costs for such Janssen IDP, if we exercised our U.S. Opt-In Rights and if any data from a Janssen IDP supports approval by a regulatory agency in the United States or other countries, then we would be required to reimburse Janssen for our share of the costs of that Janssen IDP plus a premium pursuant to the terms of the Collaboration Agreement. This cost reimbursement is payable as a lump sum up to a certain threshold upon receipt of regulatory approval for the Janssen IDP. Any remaining amounts in excess of the threshold are payable in installments by offsetting milestone payments or royalties received by us over a certain period of time, at which time any remaining reimbursement amount would be payable in a lump sum. This payment mechanism could result in reduced cash inflow from future milestone payments and royalties, which would adversely affect our results of operations and financial condition.

Under the Collaboration Agreement with Janssen, if we develop imetelstat independently under our own IDP, the success of that IDP may depend on providing adequate financial and technical resources. Failure to successfully conduct or fund our own IDP activities may adversely affect our business.

Under the Collaboration Agreement with Janssen, we may conduct certain development activities for imetelstat under a Geron IDP if we and Janssen agree that such activities should be performed outside of the mutually agreed global clinical development plan. In the event we conduct any clinical activities under a Geron IDP, we will be responsible for paying all of the development costs for the Geron IDP. Because the outcome of any clinical activities and/or regulatory approval process is highly uncertain, we cannot reasonably estimate whether any Geron IDP activities we may undertake will succeed. Since we are only eligible for reimbursement from Janssen for their share of the Geron IDP costs plus a premium if any data from a Geron IDP supports approval by a regulatory agency in the United States or other countries, we may not recoup our investment in any Geron IDP, which could adversely affect our financial condition. In addition, we may need additional capital to support any Geron IDP activities and we cannot assure you that our existing capital resources, future interest income, potential milestone payments and royalties under the Collaboration Agreement and potential future sales of our common stock will be sufficient to fund these future activities. If sufficient capital is not available, we may be unable to pursue activities under a Geron IDP, which could adversely affect our business.

To execute activities under a Geron IDP, we likely would be required to collaborate with contract research organizations, investigators, academic institutions, vendors, clinical trial sites, scientific consultants and others. We would be dependent upon the ability of these parties to perform their responsibilities reliably. In addition, we would have limited control over the activities of these organizations, investigators, scientific consultants and vendors. Except as otherwise required by our agreements with them, we could expect only limited amounts of their time to be dedicated to our activities. If any of these third parties were unable or refuse to contribute to projects on which we needed their help, our ability to conduct activities under a Geron IDP could be significantly harmed. Also, if the performance of these services is not of the highest quality, does not achieve necessary regulatory compliance standards, or if such organization or vendor stops or delays its performance for any reason, it would impair and delay our ability to report data from clinical activities under a Geron IDP which would, in turn, hinder our ability to make the necessary representations or provide the necessary information to regulatory authorities, if at all. As a result, we may not obtain regulatory approval and receive any reimbursement from Janssen for their share of the costs for the Geron IDP, which could adversely affect our business and financial condition.

We will be dependent on Janssen and third parties to manufacture clinical and commercial quantities of imetelstat, which could result in a delay of clinical trials or regulatory approval or lost sales.

Under the Collaboration Agreement, after a transition period, Janssen will be responsible for the manufacture and/or manage the supply of imetelstat on a global basis for clinical trials and all commercial activities. Consequently, we will be, and expect to remain, dependent on Janssen to appropriately supply imetelstat. Janssen may encounter difficulties in production scale-up, including problems involving production yields, quality control and quality assurance, and shortage of qualified personnel. Janssen may not perform as agreed or may default in its obligations to supply imetelstat for clinical trials and/or commercial activities. Janssen also may fail to deliver the required quantities of imetelstat on a timely basis. Any such failure by Janssen could delay future clinical trials and any applications for regulatory approval and therefore delay the payment of potential milestone payments to us, or, if approved for commercial sale, could impair Janssen's ability to meet the market demand for imetelstat and therefore result in decreased sales and reduced royalties for us.

Currently, third-party contractors perform certain process development or other technical and scientific work with respect to imetelstat, as well as supply starting materials and manufacture drug

substance and drug product. We do not have direct control over their personnel or operations. We rely on these third-party contractors to produce and deliver sufficient quantities of imetelstat to support clinical trials on a timely basis and to comply with applicable regulatory requirements. If requested by Janssen, we may transfer certain of the agreements with these third parties to Janssen, if permitted by the terms and conditions of the respective agreements or otherwise allowed by the third parties. If these companies do not perform the work which they are contracted to perform, fail to comply with applicable cGMP regulations, do not complete the work within the expected timelines, fail to produce materials which are suitable for use in clinical trials or choose to exit the business, the ability to develop or manufacture imetelstat could be significantly harmed. For example, changes to one or more suppliers due to these or other reasons could lead to delays in drug supply. Manufacturing delays could adversely impact the initiation or completion of future clinical trials, such as the Initial Phase 2 MF Study or the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement, which may cause Janssen to terminate the Collaboration Agreement or delay the timing of any Continuation Decision that Janssen could provide to us, either of which would severely and adversely affect our business prospects.

In addition, current third-party contractors and/or any other contractors utilized by Janssen may need to make substantial investments to enable sufficient capacity increases and cost reductions, and to implement those regulatory and compliance standards necessary for successful Phase 3 clinical trials and commercial production. These third-party contractors may not be able to achieve such capacity increases, cost reductions, or regulatory and compliance standards, and even if they do, such achievements may not be at commercially reasonable costs. Neither we nor Janssen have any long-term commitments or commercial supply agreements with any of the third-party contractors for imetelstat, and changing manufacturers may be prolonged and difficult due to inherent technical complexities and because the number of potential manufacturers is limited. It may be difficult or impossible for Janssen to find a replacement manufacturer on acceptable terms, or at all.

There are other risks and uncertainties with respect to manufacturing that could adversely impact the initiation or completion of future clinical trials. For example, certain commonly used reagents and solvents may experience market shortages and, if these shortages occur, such shortages may adversely impact the ability to manufacture imetelstat. If a significant issue arises regarding manufacturing, this may cause Janssen to terminate the Collaboration Agreement or delay the timing of any Continuation Decision that Janssen could provide to us, either of which would severely and adversely affect our business prospects.

Imetelstat may not be able to be manufactured at costs or scales necessary to conduct clinical trials or potential future commercialization activities.

Oligonucleotides are relatively large molecules produced using complex chemistry, and the cost of manufacturing an oligonucleotide like imetelstat is greater than the cost of making typical small-molecule drugs. Therefore, imetelstat for clinical use is more expensive to manufacture than most other treatments currently available today or that may be available in the future. Similarly, the cost of manufacturing imetelstat for commercial use will need to be significantly lower than our current costs in order for imetelstat to become a commercially successful product. However, Janssen may not be able to achieve sufficient scale increases or cost reductions necessary for successful commercial production of imetelstat, which could result in decreased sales and reduced royalties for us.

Manufacturing imetelstat is subject to process and technical challenges and regulatory risks.

We have faced and Janssen will continue to face numerous risks and uncertainties with regard to manufacturing imetelstat. Regulatory requirements for oligonucleotide products are less well-defined than for small-molecule drugs, and there is no guarantee that Janssen will achieve sufficient product quality standards required for Phase 3 clinical trials or for commercial approval and manufacturing of

imetelstat. Changes in the manufacturing processes or formulations for imetelstat that may be made during later stages of clinical development, including during Phase 3 clinical trials, may result in regulatory delays, the need for further clinical trials, rejection of a marketing application, or limitation on marketing authorization by regulatory authorities, and therefore delay the payment of potential milestone payments to us, or, if approved for commercial sale, could impair Janssen's ability to meet the market demand for imetelstat and therefore result in decreased sales and reduced royalties for us.

We have not yet negotiated our agreement with Janssen specifying all of the terms for our co-promotion of imetelstat should we exercise our U.S. Co-Promotion Option. In addition, we do not have a sales force and may not develop one.

Pursuant to the Collaboration Agreement with Janssen, we have a U.S. Co-Promotion Option if we exercise our U.S. Opt-In Rights. Assuming we exercise the U.S. Co-Promotion Option, we can elect to provide 20% of the U.S. imetelstat selling effort with sales force personnel, in lieu of funding 20% of U.S. promotion costs upon regulatory approval and commercial launch of imetelstat in the United States. While the Collaboration Agreement includes the material terms of our U.S. Co-Promotion Option, we and Janssen mutually agreed to negotiate a separate agreement specifying the detailed activities and responsibilities with respect to the marketing and co-promotion of imetelstat following our election to exercise our U.S. Co-Promotion Option. We will need to negotiate this separate agreement with Janssen and, as a result, Janssen may place restrictions or additional obligations on us, including financial obligations. Any restrictions or additional obligations may restrict our co-promotion activities or involve more significant financial or other obligations than we currently anticipate. In addition, we have no sales experience as a company, and there are risks involved with establishing our own sales force capabilities. Developing an internal sales force and function will require substantial expenditures and will be time-consuming, may expose us to unforeseen costs and expenses, and we may not be able to effectively recruit, train or retain sales personnel. Accordingly, we may be unable to establish our own sales force which could effectively preclude us from participating in co-promoting imetelstat in the United States. In addition, any sales force we establish may not be effective, or may be less effective than any sales force that Janssen utilizes to promote imetelstat. In such event, the commercialization of imetelstat may be adversely affected, which could materially and adversely affect any sales milestone or royalties we may receive under the Collaboration Agreement.

The Collaboration Agreement limits our ability to transfer our U.S. Co-Promotion Option to a potential acquirer.

Although the Collaboration Agreement permits us to be acquired by any company, our right to transfer our U.S. Co-Promotion Option to a potential acquirer is limited, and subject to Janssen's sole discretion under certain circumstances. If we are acquired under such limited circumstances, then we may not be able to transfer the U.S. Co-Promotion Option to such acquirer as part of the acquisition. This limiting provision may discourage potential acquisition bids for us or lower our value thus preventing holders of our common stock from benefiting from what they may believe are the positive aspects of an acquisition, including the potential realization of a higher rate of return on their investment from this type of transaction.

RISKS RELATED TO PROTECTING OUR INTELLECTUAL PROPERTY

We remain responsible for prosecuting, at Janssen's direction, the patents we have exclusively licensed to Janssen. The success of our collaboration with Janssen will depend on our ability to protect our technologies and imetelstat, through patents and other intellectual property rights.

Protection of our proprietary technology is critically important to our business, especially with respect to our collaboration with Janssen. Our success will depend in part on our ability to obtain, enforce and extend our patents and maintain trade secrets, both in the United States and in other

countries. If we are unsuccessful in any of these regards, the value of our technologies and imetelstat will be adversely affected, and we and/or Janssen may be unable to continue development of imetelstat. By way of example, we do not yet have issued compound patent coverage for imetelstat in Europe after 2020. Further, our patents may be challenged, invalidated or circumvented, and our patent rights may not provide proprietary protection or competitive advantages to us or Janssen. In the event that we or our licensors are unsuccessful in obtaining and enforcing patents, we or Janssen may not be able to further develop or commercialize imetelstat, any of which could delay future clinical trials and any applications for regulatory approval and therefore delay the payment of potential milestone payments to us, or, if imetelstat is approved for commercial sale, could impair Janssen's ability to sell imetelstat and therefore result in decreased sales and reduced royalties for us. Occurrence of any of these events could negatively impact our collaboration with Janssen or cause Janssen to terminate the Collaboration Agreement, which would materially and adversely affect our business, and we may be unable to continue our operations.

The patent positions of pharmaceutical and biopharmaceutical companies, including ours, are highly uncertain and involve complex legal and technical questions. In particular, legal principles for biotechnology and pharmaceutical patents in the United States and in other countries are evolving, and the extent to which we will be able to obtain patent coverage to protect our technologies and imetelstat, or enforce issued patents, is uncertain. If we or Janssen infringe the patents of others, we or Janssen may be blocked from continuing development work or be required to obtain licenses on terms that may impact the value of imetelstat or cause it to be commercially impracticable.

A number of significant changes to U.S. patent law occurred when the Leahy-Smith America Invents Act, or the AIA, was signed into law on September 16, 2011. These include provisions that affect the way patent applications will be prosecuted and may affect patent litigation. The United States Patent and Trademark Office, or the Patent Office, has developed new and untested regulations and procedures to govern the full implementation of the AIA. Many of the substantive changes to patent law associated with the AIA, and in particular, the first to file provisions, became effective on March 16, 2013. For example, under the AIA, patent rights are awarded to the first inventor to file a patent application with respect to a particular invention. Since the publication of discoveries in scientific or patent literature tends to lag behind actual discoveries by at least several months and sometimes several years, the persons or entities that we or our licensors name as inventors in our patents and patent applications may not have been the first to invent the inventions disclosed in the patent applications or patents, or the first to file patent applications for these inventions. As a result, we may not be able to obtain patents for discoveries that we otherwise would consider patentable and that we consider to be extremely significant to the future success of imetelstat. Thus, our ability to protect our patentable intellectual property depends, in part, on our ability to be the first to file patent applications with respect to our inventions or joint inventions with Janssen. Delay in the filing of a patent application for any purpose, including further development or refinement of an invention, may result in the risk of loss of patent rights. The AIA and its implementation could increase the uncertainties and costs surrounding the prosecution of our patent applications and the enforcement or defense of our issued patents. Significant impairment of our imetelstat patent rights would have a material adverse effect on our business and could cause Janssen to terminate the Collaboration Agreement which would severely and adversely affect our business prospects.

The U.S. Supreme Court, or the Court, has also issued decisions affecting patents. On June 13, 2013, in *Association for Molecular Pathology v. Myriad Genetics, Inc.* the Court held that claims to isolated genomic DNA were not patentable subject matter, but claims to complementary DNA, or cDNA, molecules were patentable subject matter. The effect of the decision on patents for other isolated natural products is uncertain. On March 20, 2012, in *Mayo Collaborative Services, DBA Mayo Medical Laboratories, et al. v. Prometheus Laboratories, Inc.*, the Court held that several claims drawn to measuring drug metabolite levels from patient samples and correlating them to drug doses were not

patentable subject matter. The decision has created uncertainty around the ability to patent certain biomarker-related method patents. These decisions have increased the uncertainty with regard to our ability to obtain patents in the future as well as the value of current and future patents, once obtained. Depending on decisions by the U.S. federal courts and the Patent Office, the interpretation of laws and regulations governing patents could change in unpredictable ways that would weaken our ability to obtain new patents or to enforce our existing patents. Occurrence of these events could significantly impair our imetelstat patent rights which would have a material adverse effect on our business and could cause Janssen to terminate the Collaboration Agreement.

Challenges to our patent rights can result in costly and time-consuming legal proceedings that may prevent or limit development of imetelstat.

Our patents may be challenged through administrative or judicial proceedings. Such proceedings are typically lengthy and complex, and an adverse decision can result in the loss of important patent rights. For example, where more than one party seeks U.S. patent protection for the same technology, the Patent Office may declare an interference proceeding in order to ascertain the party to which the patent should be issued. Patent interferences are typically complex, highly contested legal proceedings, subject to appeal. They are usually expensive and prolonged, and can cause significant delay in the issuance of patents. Our pending patent applications, or our issued patents, may be drawn into interference proceedings or be challenged through post-grant review procedures, which may delay or prevent the issuance of patents, or result in the loss of issued patent rights.

Under the AIA, interference proceedings have been eliminated for patent applications filed on or after March 16, 2013, and have been replaced with other types of proceedings, including derivation proceedings. The AIA also includes post-grant review procedures subjecting U.S. patents to post-grant review procedures similar to European oppositions. U.S. patents owned or licensed by us may therefore be subject to post-grant review procedures, as well as other forms of review and re-examination. A decision in such proceedings adverse to our interests could result in the loss of valuable patent rights which would have a material adverse effect on our business and could cause Janssen to terminate the Collaboration Agreement which would severely and adversely affect our business prospects.

Certain jurisdictions, such as Europe, New Zealand and Australia, permit oppositions to be filed against granted patents or patents proposed to be granted. Under the Collaboration Agreement, Janssen could commercialize imetelstat internationally if approved by regulatory authorities for commercial sale. Therefore, securing both proprietary protection and freedom to operate outside of the United States is important to the Collaboration Agreement with Janssen and our business.

We have been involved in both opposing the grant of patents to others through such opposition proceedings and in defending our patent applications against oppositions filed by others. These opposition proceedings required significant time and costs to protect our intellectual property rights. If we are unable to commit these types of resources for our imetelstat patent rights, we and/or Janssen could be prevented or limited in the development and commercialization of imetelstat. Occurrence of any of these events could negatively impact our collaboration with Janssen or cause Janssen to terminate the Collaboration Agreement which would severely and adversely affect our business prospects.

As more groups become engaged in scientific research and product development in the areas of telomerase biology, the risk of our patents, or patents that we have in-licensed, being challenged through patent interferences, derivation proceedings, oppositions, re-examinations, litigation or other means will likely increase. Challenges to our patents through these procedures can be extremely expensive and time-consuming, even if the outcome is favorable to us. An adverse outcome in a patent dispute could severely harm our collaboration with Janssen or cause Janssen to terminate the Collaboration Agreement, or could otherwise have a material adverse effect on our business by:

- causing us to lose patent rights in the relevant jurisdiction(s);
- subjecting us to litigation, or otherwise preventing Janssen or us from commercializing imetelstat in the relevant jurisdiction(s);
- requiring Janssen or us to obtain licenses to the disputed patents;
- forcing Janssen or us to cease using the disputed technology; or
- requiring Janssen or us to develop or obtain alternative technologies.

We or Janssen may be subject to infringement claims that are costly to defend, and as to which we may be obligated to indemnify or obtain unblocking licenses, and such claims may limit our or Janssen's ability to use disputed technologies and prevent us or Janssen from pursuing research and development or commercialization of imetelstat.

The commercial success of imetelstat will depend upon our and Janssen's ability to develop, manufacture, market and sell imetelstat without infringing or otherwise violating the intellectual property and other proprietary rights of third parties. There is considerable intellectual property litigation in the biotechnology and pharmaceutical industries, and many pharmaceutical companies, including potential competitors, have substantial patent portfolios. In the event our technologies infringe the rights of others or require the use of discoveries and technologies controlled by third parties, we or Janssen may be prevented from pursuing research, development, manufacturing or commercialization of imetelstat, or may be required to obtain licenses to those patents or other proprietary rights or develop or obtain alternative technologies. For example, we are aware that certain third parties have or may be prosecuting patents and patent estates that may relate to imetelstat, and while we believe these patents will expire before imetelstat is commercialized and/or that these patents are invalid and/or would not be infringed by the manufacture, use or sale of imetelstat, it is possible that the owner(s) of these patents will assert claims against us and/or Janssen in the future. Under the Collaboration Agreement, we are obligated under certain circumstances to indemnify Janssen from any claim of infringement of the patent rights of third parties in Janssen's development, manufacture or commercialization of imetelstat, or to obtain unblocking licenses from such third parties, at our cost.

Since we cannot be aware of all intellectual property rights potentially relating to imetelstat and its uses, we do not know with certainty that imetelstat, or the intended commercialization thereof, does not and will not infringe or otherwise violate any third party's intellectual property. Any infringement claims against us or Janssen would likely be expensive to resolve, and the cost of any indemnification of Janssen or unblocking license that we could be required to obtain under the Collaboration Agreement is unpredictable and could be significant. If we or Janssen are unable to resolve an infringement claim successfully, we or Janssen could be subject to an injunction which would prevent us or Janssen from commercializing imetelstat, and could also require us or Janssen to pay substantial damages. In addition to infringement claims, in the future we or Janssen may also be subject to other claims relating to intellectual property, such as claims that we or Janssen have misappropriated the trade secrets of third parties. We expect that as imetelstat continues to progress in development, we will see more efforts by others to obtain patents that are positioned to cover imetelstat. Our success therefore

depends significantly on our and Janssen's ability to operate without infringing patents and the proprietary rights of others.

We or Janssen may become aware of discoveries and technologies controlled by third parties that are advantageous to developing or manufacturing imetelstat. Under such circumstances, we may initiate negotiations for licenses to other technologies as the need or opportunity arises. We, or Janssen, may not be able to obtain a license to a technology required for the research, development, manufacturing or commercialization of imetelstat on commercially favorable terms, or at all, or our licenses may be terminated on certain grounds, including as a result of our failure to comply with our obligations under such licenses. If we or Janssen do not obtain a necessary license or if such a license is terminated, we or Janssen may need to redesign our technologies or obtain rights to alternate technologies, which may not be possible, and even if possible, could cause delays in the development efforts for imetelstat. In cases where we or Janssen are unable to license necessary technologies, we and/or Janssen could be subject to litigation and prevented from developing imetelstat, and in certain circumstances we may be required to indemnify Janssen for infringement claims arising from Janssen's development, manufacture or commercialization of imetelstat, which could materially and adversely impact our business. Failure by us or Janssen to obtain alternative technologies or a license to any technology that may be required to research, develop, manufacture or commercialize imetelstat would delay future clinical trials and any applications for regulatory approval and therefore delay the payment of potential milestone payments to us, or, if imetelstat is approved for commercial sale, could impair Janssen's ability to sell imetelstat and therefore result in decreased sales and reduced royalties for us. Occurrence of any of these events could negatively impact our collaboration with Janssen or cause Janssen to terminate the Collaboration Agreement which would materially and adversely affect our business, and we may be unable to continue our operations.

We may become involved in disputes with Janssen or any past or future collaborator(s) over intellectual property inventorship or ownership, and publications by our investigators, scientific consultants and research collaborators could impair our ability to obtain patent protection or protect our proprietary information, which, in either case, could have a significant impact on our business.

Inventions discovered under research, material transfer or other such collaborative agreements, including our Collaboration Agreement with Janssen, may become jointly owned by us and the other party to such agreements in some cases and the exclusive property of either party in other cases. Under some circumstances, it may be difficult to determine who invents and owns a particular invention, or whether it is jointly owned, and disputes could arise regarding inventorship and ownership of those inventions. These disputes could be costly and time consuming and an unfavorable outcome could have a significant adverse effect on our business if we were not able to protect or license rights to these inventions. In addition, clinical trial investigators, scientific consultants and research collaborators generally have contractual rights to publish data and other proprietary information, subject to review by us and/or Janssen. Publications by investigators, scientific consultants and research collaborators containing such information, either with permission or in contravention of the terms of their agreements, may impair the ability to obtain patent protection or protect proprietary information which would have a material adverse effect on our business and could cause Janssen to terminate the Collaboration Agreement.

Much of the information and know-how that is critical to our business is not patentable, and we may not be able to prevent others from obtaining this information and establishing competitive enterprises.

We sometimes rely on trade secrets to protect our proprietary technology, especially in circumstances in which we believe patent protection is not appropriate or available. We attempt to protect our proprietary technology in part by confidentiality agreements with our employees, consultants, collaborators and contractors. We cannot provide assurance that these agreements will not

be breached, that we would have adequate remedies for any breach, or that our trade secrets will not otherwise become known or be independently discovered by competitors, any of which would harm our business significantly.

RISKS RELATED TO OUR FINANCIAL POSITION AND NEED FOR ADDITIONAL FINANCING

We have a history of losses and anticipate continued future losses, and our continued losses could impair our ability to sustain operations.

We have incurred operating losses every year since our operations began in 1990. As of December 31, 2014, our accumulated deficit was approximately $928.4 million. Losses have resulted principally from costs incurred in connection with our research and development activities and from general and administrative costs associated with our operations. We expect to incur additional operating losses and, as clinical development activities continue under our Collaboration Agreement with Janssen, our operating losses may increase in size.

Substantially all of our revenues to date have been research support payments under collaborative agreements and milestones, royalties and other revenues from our licensing arrangements. Any revenues generated from ongoing collaborative agreements and revenues from our licensing arrangements, including the Collaboration Agreement with Janssen, may not be sufficient alone to sustain our operations. In addition, there can be no assurance that we will receive any milestone payments or royalties from Janssen in the future. We may be unsuccessful in entering into any new corporate collaboration, partnership or license agreements that result in revenues, or existing collaborative agreements or license arrangements, such as the Collaboration Agreement with Janssen, may be terminated or expire.

We also expect to experience negative cash flow for the foreseeable future as we fund our operating losses and capital expenditures. This will result in decreases in our working capital, total assets and stockholders' equity, which may not be offset by milestone payments or royalties from Janssen or by future financings. We will need to generate significant revenues to achieve profitability. We may not be able to generate these revenues from the Collaboration Agreement with Janssen through milestone payments or royalties, and we may never achieve profitability. Our failure to achieve profitability could negatively impact the market price of our common stock and our ability to sustain operations. Even if we do become profitable, we may not be able to sustain or increase profitability on a quarterly or annual basis.

We may require additional capital to support development and commercialization of imetelstat in collaboration with Janssen and to otherwise grow our business, and our ability to obtain the necessary funding is uncertain.

We may need additional capital resources in order to support development and commercialization of imetelstat, especially if we elect to exercise our U.S. Opt-In Rights and U.S. Co-Promotion Option under the Collaboration Agreement and potentially independently pursue imetelstat development under our own IDP, and to otherwise support the future growth of our business through the acquisition of other oncology products, programs or companies. We cannot assure you that our existing capital resources, future interest income, potential milestone payments and royalties under the Collaboration Agreement with Janssen and potential future sales of our common stock, including pursuant to our At-The-Market Issuance Sales Agreement, or sales agreement, with MLV & Co. LLC, or MLV, will be sufficient to fund future planned activities. The timing and degree of any future capital requirements will depend on many factors, including:

- the accuracy of the assumptions underlying our estimates for our capital needs;
- whether we elect U.S. Opt-In Rights to share future U.S. development and promotion costs for imetelstat under the Collaboration Agreement with Janssen;

- to the extent permitted under the Collaboration Agreement, whether we independently pursue imetelstat development under our own IDP;
- our potential reimbursement obligations to Janssen if any data from a Janssen IDP support approval by a regulatory agency in the United States or other countries;
- the achievement of development, regulatory and commercial milestones resulting in the payment to us from Janssen under the Collaboration Agreement and the timing of receipt of such payments, if any;
- changes or delays in our and Janssen's development plans for imetelstat, including changes which may result from any future clinical holds on the INDs for imetelstat, including the IND for the MF Pilot Study, that we expect to transfer to Janssen;
- Janssen's ability to meaningfully reduce manufacturing costs of imetelstat;
- the progress, timing, magnitude, scope and costs of clinical development, manufacturing and commercialization for imetelstat, including the number of indications being pursued, subject to permission from the FDA;
- the time and costs involved in obtaining regulatory clearances and approvals in the United States and in other countries;
- Janssen's ability to successfully market and sell imetelstat, upon regulatory approval or clearance, in the United States and other countries;
- our decision to exercise our U.S. Co-Promotion Option, including the costs and timing of building a U.S. sales force;
- the timing, receipt and amount of royalties under the Collaboration Agreement on worldwide net sales of imetelstat, upon regulatory approval or clearance, if any;
- the timing, receipt and amount of royalties on sales of any stem cell products by Asterias, upon development, regulatory approval or clearance, if any;
- the sales price and availability of adequate third-party reimbursement for imetelstat;
- the cost of acquiring and/or licensing any new product candidates, if any;
- expenses associated with the pending and potential additional related purported securities lawsuits and derivative lawsuits, as well as any other litigation; and
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims.

In addition, changes in our business may occur that would consume available capital resources sooner than we expect. If our existing capital resources, future interest income, and potential milestone payments and royalties under the Collaboration Agreement with Janssen are insufficient to meet future capital requirements, we will need to raise additional capital to fund our operations. Further, if the Collaboration Agreement is terminated, including as a result of Janssen's failure to provide an affirmative Continuation Decision to us, we would not receive any milestone payments or royalties under the Collaboration Agreement, and we would be required to fund all clinical development, manufacturing and commercial activities for imetelstat ourselves, which would require us to raise additional capital or establish alternative collaborations with third-party collaboration partners, which may not be possible. Additional financing through public or private equity financings, including pursuant to our sales agreement with MLV prior to its expiration in October 2015, capital lease transactions or other financing sources may not be available on acceptable terms, or at all. We may raise equity capital at a stock price or on other terms that could result in substantial dilution of

ownership for our stockholders. The receptivity of the public and private equity markets to proposed financings is substantially affected by the general economic, market and political climate and by other factors which are unpredictable and over which we have no control.

Our ability to raise additional funds will be severely impaired in the event of:

- any future clinical holds on any IND for imetelstat;
- failure to show adequate safety or efficacy of imetelstat in existing or potential future clinical trials; or
- a termination of the Collaboration Agreement or our collaboration with Janssen is otherwise unsuccessful.

If sufficient capital is not available, we may be unable to fulfill our funding obligations under the Collaboration Agreement with Janssen resulting in our breach of the Collaboration Agreement which could lead to Janssen paying lower milestone payments and lower royalties to us under a reduced royalty tier which could have a material adverse effect on our results of operations and financial condition.

Moreover, we plan to diversify our sole product candidate development risk by identifying and seeking to acquire or in-license new product opportunities for development. Acquisition or in-licensing opportunities that we may pursue could materially affect our liquidity and capital resources and may require us to incur indebtedness, seek equity capital or both. In addition, there can be no assurance that sufficient additional capital would be available to us in order to pursue any of these opportunities.

Our ability to use our net operating loss carryforwards and certain other tax attributes may be limited.

Under Section 382 of the Internal Revenue Code of 1986, as amended, or the Code, if a corporation undergoes an "ownership change," generally defined as a greater than 50% change (by value) in its equity ownership over a three-year period, the corporation's ability to use its pre-change net operating loss carryforwards and other pre-change tax attributes (such as research tax credits) to offset its post-change taxable income or taxes may be limited. Changes in our stock ownership, some of which are outside of our control, may have resulted or could in the future result in an ownership change. If a limitation were to apply, utilization of a portion of our domestic net operating loss and tax credit carryforwards could be limited in future periods. In addition, a portion of the carryforwards may expire before being available to reduce future income tax liabilities.

RISKS RELATED TO OUR COMMON STOCK AND FINANCIAL REPORTING

Historically, our stock price has been extremely volatile.

Historically, our stock price has been extremely volatile. Between January 1, 2005 and December 31, 2014, our stock has traded as high as $12.18 per share and as low as $0.91 per share. Between January 1, 2012 and December 31, 2014, the price has ranged between a high of $7.79 per share and a low of $0.91 per share. The significant market price fluctuations of our common stock have been due to and may in the future be influenced by a variety of factors, including:

- not receiving timely regulatory clearances or approvals in any jurisdiction, whether within or outside of the United States, including, if we, Janssen or future investigators do not obtain regulatory clearance to commence studies of imetelstat in MF, MDS or any additional hematologic myeloid malignancies in a timely manner or at all, including the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study planned to be conducted by Janssen under the Collaboration Agreement;

- developments in our collaboration with Janssen, including the termination or modification of the Collaboration Agreement or disputes regarding the collaboration;
- announcements regarding the research and development of imetelstat, including results of or delays in any clinical trials of imetelstat, and investor perceptions thereof;
- announcements regarding the safety of imetelstat, including announcements similar to our March 2014 announcements that the FDA had placed a full clinical hold on our IND for imetelstat and a partial clinical hold on the investigator's IND for the MF Pilot Study due to safety concerns;
- announcements regarding our plans to discontinue certain programs or clinical trials, such as our prior announcements regarding the discontinuation of our stem cell programs and certain clinical trials;
- perception by our stockholders about the adequacy of the consideration received for the divestiture of our stem cell assets to Asterias or potential payments we may receive under the Collaboration Agreement;
- the demand in the market for our common stock;
- the experimental nature of imetelstat;
- fluctuations in our operating results;
- our declining cash balance as a result of operating losses;
- general market conditions or market conditions relating to the biopharmaceutical and pharmaceutical industries;
- announcements of technological innovations, new commercial products, or clinical progress or lack thereof by us, our collaborators, licensees, partners or our competitors;
- announcements concerning regulatory developments and proprietary rights;
- comments by securities analysts;
- large stockholders exiting their position in our common stock;
- announcements of or developments concerning pending and/or potential future litigation;
- the issuance of common stock to partners, vendors or investors to raise additional capital; and
- the occurrence of any other risks and uncertainties discussed under the heading "Risk Factors."

Stock prices and trading volumes for many biopharmaceutical companies fluctuate widely for a number of reasons, including factors which may be unrelated to their businesses or results of operations, such as media coverage, legislative and regulatory measures and the activities of various interest groups or organizations. In addition to other risk factors described in this section, overall market volatility, as well as general domestic or international economic, market and political conditions, could materially and adversely affect the market price of our common stock and the return on your investment.

If we fail to meet continued listing standards of NASDAQ, our common stock may be delisted, which could have a material adverse effect on the liquidity of our common stock.

Our common stock is currently traded on the Nasdaq Global Select Market. The NASDAQ Stock Market LLC has requirements that a company must meet in order to remain listed on NASDAQ. In particular, NASDAQ rules require us to maintain a minimum bid price of $1.00 per share of our common stock. If the closing bid price of our common stock were to fall below $1.00 per share for 30 consecutive trading days or we do not meet other listing requirements, we would fail to be in

compliance with NASDAQ's listing standards. There can be no assurance that we will continue to meet the minimum bid price requirement, or any other requirement in the future. If we fail to meet the minimum bid price requirement, The NASDAQ Stock Market LLC may initiate the delisting process with a notification letter. If we were to receive such a notification, we would be afforded a grace period of 180 calendar days to regain compliance with the minimum bid price requirement. In order to regain compliance, shares of our common stock would need to maintain a minimum closing bid price of at least $1.00 per share for a minimum of 10 consecutive trading days. In addition, we may be unable to meet other applicable NASDAQ listing requirements, including maintaining minimum levels of stockholders' equity or market values of our common stock in which case, our common stock could be delisted. If our common stock were to be delisted, the liquidity of our common stock would be adversely affected and the market price of our common stock could decrease.

The sale of a substantial number of shares may adversely affect the market price of our common stock.

The sale of a substantial number of shares of our common stock in the public market, or the perception that such sales could occur, could significantly and negatively affect the market price of our common stock. As of December 31, 2014, we had 300,000,000 shares of common stock authorized for issuance and 157,429,871 shares of common stock outstanding. In addition, we had reserved 32,327,345 shares of our common stock for future issuance pursuant to our option and equity incentive plans and outstanding warrants as of December 31, 2014. Issuing additional shares could negatively affect the market price of our common stock and the return on your investment.

Future sales of our common stock, including pursuant to our sales agreement with MLV prior to its expiration in October 2015, or the issuance of common stock to satisfy our current or future cash payment obligations or to acquire technology, property, or other businesses, could cause immediate dilution and adversely affect the market price of our common stock. In addition, under the universal shelf registration statement filed by us in July 2012 and declared effective by the SEC in October 2012, we may sell any combination of common stock, preferred stock, debt securities and warrants in one or more offerings, up to a cumulative value of $96.5 million. The sale or issuance of our securities, as well as the existence of outstanding options and shares of common stock reserved for issuance under our option and equity incentive plans and outstanding warrants also may adversely affect the terms upon which we are able to obtain additional capital through the sale of equity securities, which could negatively affect the market price of our common stock and the return on your investment.

Our undesignated preferred stock may inhibit potential acquisition bids; this may adversely affect the market price of our common stock and the voting rights of holders of our common stock.

Our certificate of incorporation provides our board of directors with the authority to issue up to 3,000,000 shares of undesignated preferred stock and to determine or alter the rights, preferences, privileges and restrictions granted to or imported upon these shares without further vote or action by our stockholders. The issuance of shares of preferred stock may delay or prevent a change in control transaction without further action by our stockholders. As a result, the market price of our common stock may be adversely affected.

In addition, if in the future, we issue preferred stock that has preference over our common stock with respect to the payment of dividends or upon our liquidation, dissolution or winding up, or if we issue preferred stock with voting rights that dilute the voting power of our common stock, the rights of holders of our common stock or the market price of our common stock could be adversely affected.

Provisions in our charter, bylaws and Delaware law may inhibit potential acquisition bids for us, which may prevent holders of our common stock from benefiting from what they believe may be the positive aspects of acquisitions and takeovers.

Provisions of our charter documents and bylaws may make it substantially more difficult for a third party to acquire control of us and may prevent changes in our management, including provisions that:

- prevent stockholders from taking actions by written consent;
- divide the board of directors into separate classes with terms of office that are structured to prevent all of the directors from being elected in any one year; and
- set forth procedures for nominating directors and submitting proposals for consideration at stockholders' meetings.

Provisions of Delaware law may also inhibit potential acquisition bids for us or prevent us from engaging in business combinations. In addition, we have severance agreements with several employees and a company-wide severance plan, either of which could require a potential acquirer to pay a higher price. Either collectively or individually, these provisions may prevent holders of our common stock from benefiting from what they may believe are the positive aspects of acquisitions and takeovers, including the potential realization of a higher rate of return on their investment from these types of transactions.

We do not intend to pay cash dividends on our common stock in the foreseeable future.

We do not anticipate paying cash dividends on our common stock in the foreseeable future. Any payment of cash dividends will depend upon our financial condition, results of operations, capital requirements and other factors and will be at the discretion of our board of directors.

Failure to achieve and maintain effective internal controls in accordance with Section 404 of the Sarbanes-Oxley Act of 2002 could have a material adverse effect on our business and stock price.

Section 404 of the Sarbanes-Oxley Act of 2002, or Section 404, requires that we establish and maintain an adequate internal control structure and procedures for financial reporting. Our annual reports on Form 10-K must contain an assessment by management of the effectiveness of our internal control over financial reporting and must include disclosure of any material weaknesses in internal control over financial reporting that we have identified. In addition, our independent registered public accounting firm must annually provide an opinion on the effectiveness of our internal control over financial reporting.

The requirements of Section 404 are ongoing and also apply to future years. We expect that our internal control over financial reporting will continue to evolve as our business develops. Although we are committed to continue to improve our internal control processes and we will continue to diligently and vigorously review our internal control over financial reporting in order to ensure compliance with Section 404 requirements, any control system, regardless of how well designed, operated and evaluated, can provide only reasonable, not absolute, assurance that its objectives will be met. Therefore, we cannot be certain that in the future material weaknesses or significant deficiencies will not exist or otherwise be discovered. If material weaknesses or other significant deficiencies occur, these weaknesses or deficiencies could result in misstatements of our results of operations, restatements of our financial statements, a decline in our stock price, or other material adverse effects on our business, reputation, results of operations, financial condition or liquidity.

RISKS RELATED TO COMPETITIVE FACTORS

Competitors may develop technologies that are superior to or more cost-effective than ours, which may significantly impact the commercial viability of imetelstat which could cause Janssen to terminate the Collaboration Agreement and damage our ability to sustain operations.

The pharmaceutical and biotechnology industries are intensely competitive. Other pharmaceutical and biotechnology companies and research organizations currently engage in or have in the past engaged in efforts related to the biological mechanisms related to imetelstat, including the study of telomeres, telomerase and our proprietary oligonucleotide chemistry, and the research and development of therapies for the treatment of hematologic myeloid malignancies. In addition, other products and therapies that could directly compete with imetelstat currently exist or are being developed by pharmaceutical and biopharmaceutical companies and by academic institutions, government agencies and other public and private research organizations.

Many companies are developing alternative therapies to treat hematologic myeloid malignancies and, in this regard, are competitors of ours and Janssen. For example, if approved for commercial sale for the treatment of MF, imetelstat would compete against Incyte Corporation's ruxolitinib, or Jakafi®, which is orally administered. In clinical trials, Jakafi® reduced spleen size, abdominal discomfort, early satiety, bone pain, night sweats and itching in MF patients. Recently, there have also been reports of overall survival benefit as well as improvement in bone marrow fibrosis from Jakafi® treatment. Other treatment modalities for MF include hydroxyurea for the management of splenomegaly, leukocytosis, thrombocytosis and constitutional symptoms; splenectomy and splenic irradiation for the management of splenomegaly and co-existing cytopenias, or low blood cell counts; chemotherapy and pegylated interferon. Drugs for the treatment of MF-associated anemia include erythropoiesis-stimulating agents, androgens, danazol, corticosteroids, thalidomide and lenalidomide. There are other investigational treatments further along in development than imetelstat, such as momelotinib by Gilead Sciences, Inc. and pacritinib by Cell Therapeutics, Inc., which are currently in Phase 3 clinical trials, and other inhibitors of the JAK-STAT pathway, as well as several investigational treatments in early phase testing such as histone deacetylase inhibitors, inhibitors of heat shock protein 90, hypomethylating agents, PI3 Kinase and mTOR inhibitors, hedgehog inhibitors, anti-LOX2 inhibitors, recombinant pentraxin 2 protein, KIP-1 activators, TGF-beta inhibitors, FLT inhibitors, and other tyrosine kinase inhibitors.

Independently, Janssen is developing therapies for hematologic malignancies, including AML, MDS, MM and ABC-subtype diffuse large B-cell lymphoma. Molecular and cellular pathways of interest include:

- cell surface targets for immune-directed therapy;
- immune checkpoint inhibition;
- leukemia stem cells;
- pathway addiction (genetic alterations, cell-type specific pathways);
- conditional sensitivity (stress, protein-producing tumors);
- targeting of T-cells and natural killer "NK" cells to tumors;
- identification of novel tumor-specific antigens; and
- progression from early MDS to AML and cancer interception.

Success by Janssen in any of these approaches may compete with imetelstat or render imetelstat obsolete or noncompetitive, which could lead to a decision by Janssen to discontinue the imetelstat program and terminate the Collaboration Agreement which would materially and adversely affect our business and business prospects.

Smaller companies may also prove to be significant competitors, particularly through collaborative arrangements with large and established companies. We anticipate increased competition in the future as new companies explore treatments for hematologic myeloid malignancies, which may significantly impact the commercial viability of imetelstat. Academic institutions, government agencies and other public and private research organizations may also conduct research, seek patent protection and establish collaborative arrangements for research, clinical development and marketing of products similar to ours. These companies and institutions compete with us in recruiting and retaining qualified scientific and management personnel as well as in acquiring technologies complementary to our imetelstat program.

In addition to the above factors, we and Janssen expect to face competition in the following areas:

- product efficacy and safety;
- convenience of product administration;
- cost of manufacturing;
- the timing and scope of regulatory consents;
- status of reimbursement coverage;
- price; and
- patent position, including potentially dominant patent positions of others.

As a result of the foregoing, competitors may develop more commercially desirable or affordable products, or achieve earlier patent protection or product commercialization than us or Janssen. Competitors have developed, or are in the process of developing, technologies that are, or in the future may be, competitive to imetelstat. Some of these products may have an entirely different approach or means of accomplishing therapeutic effects similar to those that may be demonstrated by imetelstat. Competitors may develop products that are safer, more effective or less costly than imetelstat, or more convenient to administer to patients and, therefore, present a serious competitive threat to imetelstat. In addition, competitors may price their products below what Janssen may determine to be an acceptable price for imetelstat, may receive better third-party payor coverage and/or reimbursement, or may be more cost effective than imetelstat. Such competitive products or activities by competitors may render imetelstat obsolete, which may cause Janssen to terminate the Collaboration Agreement which would severely and adversely affect our business prospects.

To be successful, imetelstat must be accepted by the health care community, which can be very slow to adopt or unreceptive to new technologies and products.

If approved for marketing, imetelstat may not achieve market acceptance since hospitals, physicians, patients or the medical community in general may decide not to accept and utilize imetelstat. If approved for commercial sale, imetelstat will compete with a number of conventional and widely accepted drugs and therapies manufactured and marketed by major pharmaceutical companies. The degree of market acceptance of imetelstat will depend on a number of factors, including:

- the establishment and demonstration to the medical community of the clinical efficacy and safety of imetelstat;
- the ability to demonstrate that imetelstat is superior to alternatives currently on the market;
- the ability to establish in the medical community the potential advantage of imetelstat over alternative treatment methods;
- the label and promotional claims allowed by the FDA or other regulatory agencies for imetelstat, if any;

- sales, marketing and distribution support for imetelstat; and
- reimbursement policies of government and third-party payors.

The established use of conventional products competitive with imetelstat may limit or preclude the potential for imetelstat to receive market acceptance upon any commercialization. We or Janssen may be unable to demonstrate any pharmacoeconomic advantage for imetelstat compared to established or standard-of-care therapies, or newly developed therapies, for hematologic myeloid malignancies. Third-party payors may decide that any potential improvement that imetelstat may provide to clinical outcomes in hematologic myeloid malignancies is not adequate to justify the costs of treatment with imetelstat. If third-party payors do not view imetelstat as offering a better balance between clinical benefit and treatment cost compared to standard-of-care therapies or other treatment modalities currently in development, imetelstat may not be commercially viable. If the health care community does not accept imetelstat for any of the foregoing reasons, or for any other reason, our ability to earn potential milestone payments and royalties under the Collaboration Agreement with Janssen would be negatively impacted and our business prospects would be severely and adversely affected.

If acceptable prices or adequate reimbursement for imetelstat is not obtained, the use of imetelstat could be severely limited.

The ability to successfully commercialize imetelstat will depend significantly on obtaining acceptable prices and the availability of reimbursement to the patient from third-party payors. In March 2010, the Patient Protection and Affordable Care Act, as amended by the Health Care and Education Reconciliation Act, collectively known as the Affordable Care Act, became law and substantially changed the way healthcare will be financed by both governmental and private insurers, and significantly impacted the pharmaceutical industry. The Affordable Care Act contains a number of provisions, including those governing enrollment in federal healthcare programs, reimbursement changes and fraud and abuse, which will impact existing government healthcare programs and will result in the development of new programs, including Medicare payment for performance initiatives and improvements to the physician quality reporting system and feedback program. Additionally, the Affordable Care Act:

- mandates a further shift in the burden of Medicaid payments to the states;
- increases the minimum level of Medicaid rebates payable by manufacturers of brand-name drugs from 15.1% to 23.1%;
- requires collection of rebates for drugs paid by Medicaid managed care organizations;
- requires manufacturers to participate in a coverage gap discount program, under which they must agree to offer 50% point-of-sale discounts off negotiated prices of applicable brand drugs to eligible beneficiaries during their coverage gap period, as a condition for the manufacturer's outpatient drugs to be covered under Medicare Part D, beginning January 2011; and
- imposes a non-deductible annual fee on pharmaceutical manufacturers or importers who sell "branded prescription drugs" to specified federal government programs.

While the U.S. Supreme Court upheld the constitutionality of most elements of the Affordable Care Act in June 2012, other legal challenges are still pending final adjudication in several jurisdictions. In addition, the United States Congress has also proposed a number of legislative initiatives, including possible repeal of the Affordable Care Act. At this time, it remains unclear whether there will be any changes made to the Affordable Care Act, whether to certain provisions or its entirety. We cannot assure that the Affordable Care Act, as currently enacted or as amended in the future, will not adversely affect our business and financial results and we cannot predict how future federal or state legislative or administrative changes relating to healthcare reform will affect our business.

In addition, other legislative changes have been proposed and adopted since the Affordable Care Act was enacted. The American Taxpayer Relief Act of 2012, signed into law in January 2013, among other things, also reduced Medicare payments to several providers, including hospitals, imaging centers and cancer treatment centers, and increased the statute of limitations period for the government to recover overpayments to providers from three to five years. On March 1, 2013, the President signed an executive order implementing sequestration, and on April 1, 2013, Medicare payment reductions of 2% went into effect and will remain in effect through 2024 unless additional Congressional action is taken.

While the Affordable Care Act has likely increased the number of patients who have insurance coverage for imetelstat, it is uncertain whether its cost containment measures will adversely affect reimbursement for imetelstat. Cost control initiatives could decrease the price that Janssen may receive for imetelstat in the future. If imetelstat is not considered cost-effective or adequate third-party reimbursement for the users of imetelstat cannot be obtained, then Janssen may be unable to maintain price levels sufficient to realize an appropriate return on the investment in imetelstat, which could impair our ability to earn potential milestone payments and royalties under the Collaboration Agreement with Janssen and our financial condition, operating results and business prospects would be severely and adversely affected.

RISKS RELATED TO ENVIRONMENTAL AND PRODUCT LIABILITY

Activities conducted by us or Janssen involve hazardous materials, and improper handling of these materials by employees, contractors, or agents could expose us or Janssen to significant legal and financial penalties.

We, Janssen, or contractors or agents may be required to incur significant costs to comply with current or future environmental laws and regulations and may be adversely affected by the cost of compliance with these laws and regulations. Additionally, an accident could damage the manufacturing facilities and operations of any third-party contracted by us or Janssen to perform services with respect to imetelstat. If we, Janssen or contractors or agents are unable to comply with federal, state and county environmental and safety laws and regulations, including those governing laboratory procedures, exposure to blood-borne pathogens and the handling of biohazardous materials, chemicals and various radioactive compounds, or an accident occurs, considerable additional costs, fines, penalties or liabilities could be assessed which could negatively impact our collaboration with Janssen or cause Janssen to terminate the Collaboration Agreement, either of which would severely and adversely affect our business prospects.

We may not be able to obtain or maintain sufficient insurance on commercially reasonable terms or with adequate coverage against potential liabilities in order to protect ourselves against product liability claims.

Our business exposes us to potential product liability risks that are inherent in the testing, manufacturing and marketing of human therapeutic and diagnostic products. We may become subject to product liability claims if the use of imetelstat is alleged to have injured patients, including any injuries alleged to arise from any hepatotoxicity from imetelstat. We currently have limited clinical trial liability insurance, and we may not be able to maintain this type of insurance for any of our clinical trials or clinical trials that we may conduct in collaboration with Janssen under the Collaboration Agreement. In addition, product liability insurance is becoming increasingly expensive. Being unable to obtain or maintain product liability insurance in the future on acceptable terms or with adequate coverage against potential liabilities could have a material adverse effect on our business.

Significant disruptions of information technology systems or breaches of data security could adversely affect our business.

Our business is increasingly dependent on critical, complex and interdependent information technology systems, including Internet-based systems, to support business processes as well as internal

and external communications. The size and complexity of our computer systems make them potentially vulnerable to breakdown, malicious intrusion and computer viruses that may result in the impairment of key business processes.

In addition, our systems are potentially vulnerable to data security breaches—whether by employees or others—that may expose sensitive data to unauthorized persons. Such data security breaches could lead to the loss of trade secrets or other intellectual property, or could lead to the public exposure of personal information (including sensitive personal information) of our employees, collaborators, clinical trial patients, customers and others.

Such disruptions and breaches of security could have a material adverse effect on our business, financial condition and results of operations.

Our headquarters are located near known earthquake fault zones, and the occurrence of an earthquake or other catastrophic disaster could cause damage to our offices and equipment, which could cause delays or even require us to cease or curtail operations.

Our headquarters are located in the San Francisco Bay Area near known earthquake fault zones and are vulnerable to significant damage from earthquakes. We do not carry earthquake insurance. We are also vulnerable to damage from other types of disasters, including fires, floods, power loss, communications failures, terrorism and similar events. If any disaster were to occur, our ability to operate our business at our offices would be seriously, or potentially completely, impaired. The insurance we maintain may not be adequate to cover our losses from such disasters or other business interruptions.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

In February 2014, we amended the lease agreement for our premises at 149 Commonwealth Drive, Menlo Park, California to extend the lease term through January 2016 and reduce the space leased by us to approximately 24,000 square feet of office space effective July 2014. Our amended lease at 149 Commonwealth Drive includes an option to extend the lease for one additional period of 18 months. We believe that our facilities are adequate to meet our requirements for the near term.

ITEM 3. LEGAL PROCEEDINGS

On March 14, 2014, a purported securities class action lawsuit was commenced in the United States District Court for the Northern District of California, or the California District Court, naming as defendants us and certain of our officers. The lawsuit alleges violations of the Securities Exchange Act of 1934 in connection with allegedly false and misleading statements made by us related to our Phase 2 trial of imetelstat in patients with ET or PV. The plaintiff alleges, among other things, that we failed to disclose facts related to the occurrence of persistent low-grade LFT abnormalities observed in our Phase 2 trial of imetelstat in ET or PV patients and the potential risk of chronic liver injury following long-term exposure to imetelstat. The plaintiff seeks damages and an award of reasonable costs and expenses, including attorneys' fees. On March 28, 2014, a second purported securities class action lawsuit was commenced in the California District Court, and on June 6, 2014, a third purported securities lawsuit, not styled as a class action, was commenced in the United States District Court for the Southern District of Mississippi, or the Mississippi District Court, naming as defendants us and certain of our officers. These lawsuits, which are based on the same factual background as the purported securities class action lawsuit that commenced on March 14, 2014, also allege violations of the Securities Exchange Act of 1934 and seek damages and an award of reasonable costs and expenses,

including attorneys' fees. On June 30, 2014, the California District Court consolidated both of the purported class actions filed in the California District Court and appointed a lead plaintiff and lead counsel to represent the purported class. On July 21, 2014, the California District Court ordered the lead plaintiff to file its consolidated amended complaint, which was filed on September 19, 2014. On August 11, 2014, we filed a motion to transfer the purported securities lawsuit filed in the Mississippi District Court to the California District Court. On November 4, 2014, the Mississippi District Court granted our motion and transferred the case to the California District Court, which was thereafter consolidated with the class actions. We filed our motion to dismiss the consolidated amended complaint on November 18, 2014. The plaintiff's opposition was filed on January 20, 2015, and we filed our reply on February 25, 2015. The court hearing for the motion to dismiss has been scheduled for April 10, 2015. It is possible that additional suits will be filed, or allegations made by stockholders, with respect to these same or other matters and also naming us and/or our officers and directors as defendants. We believe that we have meritorious defenses and intend to defend against these lawsuits vigorously.

On April 21, 2014, a stockholder purporting to act on our behalf filed a derivative lawsuit in the Superior Court of California for the County of San Mateo against certain of our officers and directors. The lawsuit alleges breaches of fiduciary duties by the defendants and other violations of law. In general, the lawsuit alleges that the defendants caused or allowed the dissemination of allegedly false and misleading statements related to our Phase 2 trial of imetelstat in patients with ET or PV. The plaintiff is seeking unspecified monetary damages and other relief, including reforms and improvements to our corporate governance and internal procedures. It is possible that additional derivative lawsuits will be filed with respect to these same or other matters and also naming our officers and directors as defendants. We have not yet responded to the derivative lawsuit, but intend to vigorously defend against the claims alleged and to seek dismissal of the lawsuit.

These lawsuits and any other related lawsuits are subject to inherent uncertainties, and the actual defense and disposition costs will depend upon many unknown factors. The outcome of these lawsuits is necessarily uncertain. We could be forced to expend significant resources in the defense against these and any other related lawsuits and we may not prevail. We currently are not able to estimate the possible cost to us from these lawsuits, as they are currently at an early stage, and such amounts could be material to our financial statements even if we prevail in the defense against these lawsuits. We cannot be certain how long it may take to resolve these lawsuits or the possible amount of any damages that we may be required to pay.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR THE REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Our common stock is quoted on the Nasdaq Global Select Market under the symbol GERN. The high and low intraday sales prices as reported by the Nasdaq Global Select Market of our common stock for each of the quarters in the years ended December 31, 2014 and 2013 were as follows:

	High	Low
Year ended December 31, 2014		
First quarter	$ 5.92	$ 1.39
Second quarter	$ 3.47	$ 1.69
Third quarter	$ 3.30	$ 1.98
Fourth quarter	$ 3.96	$ 1.76
Year ended December 31, 2013		
First quarter	$ 1.78	$ 1.05
Second quarter	$ 1.55	$ 0.98
Third quarter	$ 3.95	$ 1.27
Fourth quarter	$ 7.79	$ 2.65

As of March 6, 2015, there were approximately 654 stockholders of record of our common stock. This number does not include "street name" or beneficial holders, whose shares are held of record by banks, brokers and other financial institutions. We are engaged in a highly dynamic industry, which often results in significant volatility of our common stock price. On March 6, 2015, the closing sales price for our common stock was $3.50 per share.

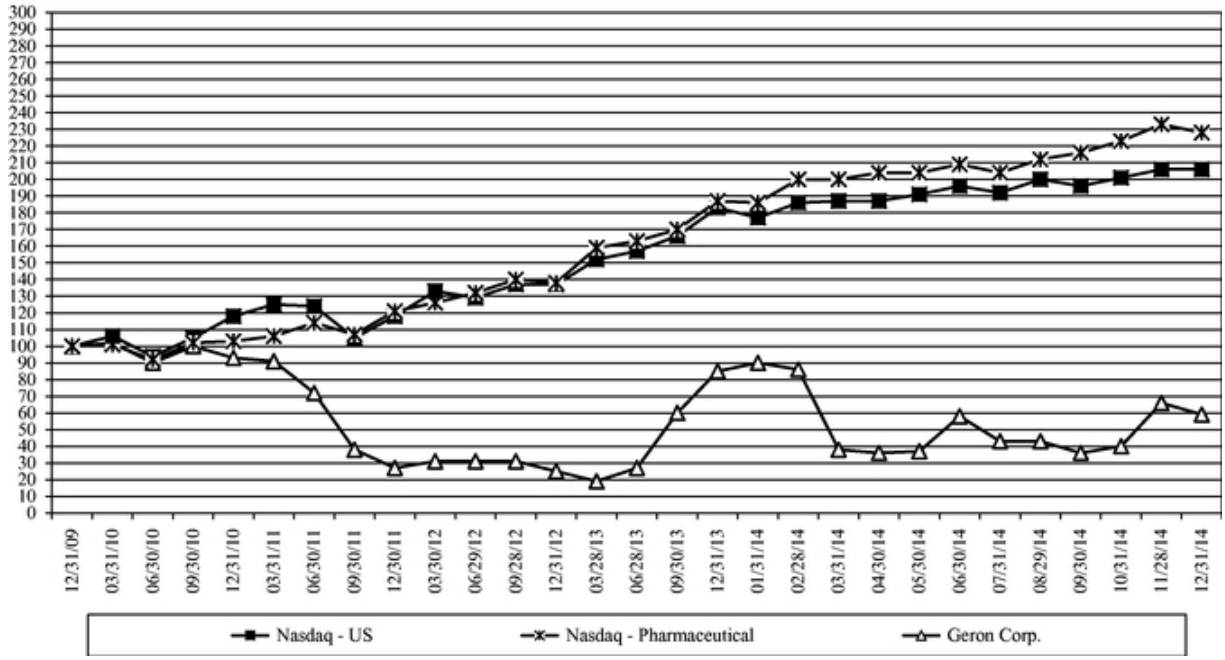
Dividend Policy

We have never paid cash dividends on our capital stock and do not anticipate paying cash dividends in the foreseeable future, but intend to retain our capital resources for reinvestment in our business. Any future determination to pay cash dividends will be at the discretion of the board of directors and will be dependent upon our financial condition, results of operations, capital requirements and other factors our board of directors deems relevant.

Performance Measurement Comparison[(1)]

The following graph compares total stockholder returns of Geron Corporation for the last five fiscal years beginning December 31, 2009 to two indices: the Nasdaq CRSP Total Return Index for the Nasdaq Stock Market-U.S. Companies, or the Nasdaq-US, and the Nasdaq Pharmaceutical Index, or the Nasdaq-Pharmaceutical. The total return for our stock and for each index assumes the reinvestment of dividends, although we have never declared cash dividends on Geron stock, and is based on the returns of the component companies weighted according to their capitalizations as of the end of each quarterly period. The Nasdaq-US tracks the aggregate price performance of equity securities of U.S. companies traded on the Nasdaq Global Select Market, or NGSM. The Nasdaq-Pharmaceutical, which is calculated and supplied by Nasdaq, represents pharmaceutical companies, including biotechnology companies, trading on Nasdaq under the Standard Industrial Classification (SIC) Code No. 283 Drugs main category (2833—Medicinals & Botanicals, 2834—Pharmaceutical Preparations, 2835—Diagnostic Substances, 2836—Biological Products). Geron common stock trades on the NGSM and is a component of both the Nasdaq-US and the Nasdaq-Pharmaceutical. The stockholder return shown in the graph below is not necessarily indicative of future performance, and we do not make or endorse any predictions as to future stockholder returns.

Comparison of Five Year Cumulative Total Return on Investment Among
Geron Corporation, the Nasdaq-US Index and the Nasdaq-Pharmaceutical Index(2)



(1) This Section is not "soliciting material," is not deemed "filed" with the SEC and is not to be incorporated by reference in any filing of Geron Corporation under the Securities Act, or the Exchange Act, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

(2) Shows the cumulative total return on investment assuming an investment of $100 in each of Geron, the Nasdaq-US and the Nasdaq-Pharmaceutical on December 31, 2009. The cumulative total return on Geron stock has been computed based on a price of $5.55 per share, the price at which Geron common stock closed on December 31, 2009.

Recent Sales of Unregistered Securities

In December 2014, we issued an aggregate of 168,039 shares of our common stock pursuant to the net, or cashless, exercise of warrants that were originally issued in connection with a loan agreement with the California Institute for Regenerative Medicine, or CIRM, in November 2011. These warrants were exercisable for an aggregate of 461,382 shares of our common stock and had an exercise price of $2.32 per share.

In issuing the above-mentioned shares, we relied on the exemptions provided by Section 3(a)(9) of the Securities Act of 1933, as amended.

ITEM 6. SELECTED FINANCIAL DATA

The following selected consolidated financial data should be read together with our consolidated financial statements and accompanying notes and "Management's Discussion and Analysis of Financial Condition and Results of Operations" appearing elsewhere in this annual report on Form 10-K. The selected consolidated financial data in this section is not intended to replace our consolidated financial statements and the accompanying notes. Our historical results are not necessarily indicative of our future results.

	Year Ended December 31,				
	2014	2013	2012	2011	2010
	(In thousands, except share and per share data)				
Consolidated Statements of Operations Data:					
Revenues from collaborative agreements	$ —	$ —	$ —	$ 300	$ 925
License fees and royalties	1,153	1,283	2,709	2,138	2,638
Total revenues	1,153	1,283	2,709	2,438	3,563
Operating expenses:					
Research and development	20,707	23,155	51,368	69,316	61,687
Acquired in-process research and development[1]	—	—	—	—	35,000
Restructuring charges[2]	—	1,462	2,702	5,449	—
General and administrative	16,758	15,624	20,397	23,789	18,043
Total operating expenses	37,465	40,241	74,467	98,554	114,730
Loss from operations	(36,312)	(38,958)	(71,758)	(96,116)	(111,167)
Unrealized gain (loss) on derivatives	351	(316)	13	643	190
Interest and other income	373	951	3,097	1,024	2,045
Losses recognized under equity method investment	—	—	—	(503)	(2,347)
Losses recognized from debt extinguishment[3]	—	—	—	(1,664)	—
Interest and other expense	(82)	(56)	(233)	(237)	(98)
Net loss	$ (35,670)	$ (38,379)	$ (68,881)	$ (96,853)	$ (111,377)
Basic and diluted net loss per share:					
Net loss per share	$ (0.23)	$ (0.30)	$ (0.54)	$ (0.78)	$ (1.14)
Shares used in computing net loss per share	153,540,341	128,380,800	126,941,024	124,506,763	97,601,520

(1) In December 2010, we and Angiochem, Inc., or Angiochem, entered into an exclusive license agreement that provided us with a worldwide exclusive license, with the right to grant sublicenses, to Angiochem's proprietary peptide technology that facilitates the transfer of anti-cancer compounds across the blood-brain barrier to be used with tubulin disassembly inhibitors to enable the treatment of primary brain cancers and cancers that have metastasized to the brain. As consideration for the license rights, we paid Angiochem an upfront payment of $7.5 million in cash and issued to Angiochem 5,261,144 shares of common stock on January 5, 2011 as payment of our obligation to issue $27.5 million in stock to Angiochem. Because further clinical and process development of GRN1005 was required before any viable commercial application could be identified or utilized, we concluded that the technology had no alternative future use, and

accordingly, expensed the total upfront payment of $35 million as acquired in-process research and development at the time of acquisition in 2010.

On December 3, 2012, we provided to Angiochem notice of termination of the exclusive license agreement. We returned the asset to Angiochem in May 2013 and the license agreement terminated effective June 1, 2013.

(2) In April 2013, we announced the decision to discontinue our discovery research programs and companion diagnostics program based on telomere length and close our research laboratory facility located at 200 Constitution Drive, Menlo Park, California. With this decision, a total of 20 positions were eliminated, representing approximately 31% of our workforce at that time. In connection with this restructuring, we incurred aggregate restructuring charges of approximately $1.4 million in 2013. All actions associated with this restructuring were completed in 2013, and we do not anticipate incurring any further charges in connection with this restructuring.

In December 2012, we announced the decision to discontinue development of GRN1005. With this decision, a total of 43 positions were eliminated, representing a reduction of approximately 40% of our workforce at that time. In connection with the restructuring, we incurred aggregate restructuring charges of approximately $2.8 million, of which $2.7 million was recorded in 2012 and $92,000 was recorded in 2013. All actions associated with this restructuring were completed in 2013, and we do not anticipate incurring any further charges in connection with this restructuring.

In November 2011, we discontinued further development of our stem cell programs. With this decision, a total of 66 positions were eliminated, representing a reduction of approximately 38% of our workforce at that time. In connection with the restructuring, we recorded aggregate restructuring charges of approximately $5.4 million in 2011. All actions associated with this restructuring were completed in 2012, and we do not anticipate incurring any further charges in connection with this restructuring. See Note 6 on Restructurings in Notes to Consolidated Financial Statements of this annual report on Form 10-K.

(3) In November 2011, we repaid the outstanding principal balance, including accrued interest, or Loan Balance, to CIRM representing our entire Loan Balance under our loan agreement with CIRM. In addition, we relinquished our right to future disbursements from CIRM under the loan agreement and gave notice of termination. With the repayment of the entire outstanding Loan Balance, we have no further amounts owed to CIRM. In connection with the early termination of the loan agreement with CIRM, we recognized a debt extinguishment charge of $1.7 million for the unamortized debt discount associated with the loan.

	December 31,				
(In thousands)	**2014**	**2013**	**2012**	**2011**	**2010**
Consolidated Balance Sheets Data:					
Cash, restricted cash, cash equivalents and marketable securities	$ 170,639	$ 66,019	$ 96,329	$ 154,239	$ 221,274
Working capital	111,607	59,470	84,269	112,181	154,168
Total assets	172,511	67,344	99,801	160,047	233,584
Accumulated deficit	(928,433)	(892,763)	(854,384)	(785,503)	(688,650)
Total stockholders' equity	130,712	59,757	85,653	146,603	192,735

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

The following discussion should be read in conjunction with the audited consolidated financial statements and notes thereto included in Part II, Item 8 of this annual report on Form 10-K.

We are a clinical stage biopharmaceutical company focused on the development of a telomerase inhibitor, imetelstat, in hematologic myeloid malignancies. The discovery and early development of imetelstat, our sole product candidate, was based on our core expertise in telomerase and telomere biology. Telomerase is an enzyme that enables cancer cells, including malignant progenitor cells, to maintain telomere length, which provides them with the capacity for limitless, uncontrolled proliferation. Using our proprietary nucleic acid chemistry, we designed imetelstat to be an oligonucleotide that targets and binds with high affinity to the active site of telomerase, thereby directly inhibiting telomerase activity and impeding malignant cell proliferation. Molecular responses in essential thrombocythemia, or ET, and remission responses, including reversal of bone marrow fibrosis, in myelofibrosis, or MF, suggest imetelstat has disease-modifying activity by inhibiting the progenitor cells of the malignant clone for the underlying disease in a relatively selective manner.

On November 13, 2014, we entered into an exclusive collaboration and license agreement, or the Collaboration Agreement, with Janssen Biotech, Inc., or Janssen, to develop and commercialize imetelstat worldwide for all indications in oncology, including hematologic myeloid malignancies, and all other human therapeutic uses. The Collaboration Agreement became effective on December 15, 2014 and we received $35 million from Janssen as an upfront payment, which has been recorded as deferred revenue on our consolidated balance sheet as of December 31, 2014. Additional consideration under the Collaboration Agreement includes payments up to a potential total of $900 million for the achievement of development, regulatory and commercial milestones, as well as royalties on worldwide net sales.

Under the Collaboration Agreement, Janssen is responsible for the development, manufacturing and commercialization of, and seeking regulatory approval for imetelstat worldwide. Development of imetelstat will proceed under a mutually agreed clinical development plan, which includes two Phase 2 studies to be pursued initially, one in myelofibrosis, referred to as the Initial Phase 2 MF Study, and one in myelodysplastic syndrome, referred to as the Initial Phase 2 MDS Study. We expect Janssen to initiate the Initial Phase 2 MF Study in mid-2015, followed by the Initial Phase 2 MDS Study to be initiated at the end of 2015. In addition, the clinical development plan may also include additional, possible registration studies in MF and myelodysplastic syndrome, or MDS, and possible exploratory Phase 2 and potential follow-on Phase 3 studies in acute myelogenous leukemia, or AML. For a further discussion regarding the Collaboration Agreement, see Note 10 on License Agreements in Notes to Consolidated Financial Statements of this annual report on Form 10-K.

We believe our current operational and financial resources, including the upfront payment received from Janssen under the Collaboration Agreement, may enable us to acquire other oncology products, programs or companies to diversify our business.

We have incurred operating losses every year since our operations began in 1990. Losses have resulted principally from costs incurred in connection with our research and development activities and from general and administrative costs associated with our operations. Substantially all of our revenues to date have been research support payments under collaborative agreements, and milestones, royalties and other revenues from our licensing arrangements. We currently have no source of product revenue. Our revenues for 2015 are expected to primarily consist of revenue from the upfront payment from Janssen upon the completion of technology transfer-related activities in 2015, and future revenues are substantially dependent on Janssen successfully developing and commercializing imetelstat in

accordance with the Collaboration Agreement. Since inception, we have primarily financed our operations through the sale of equity securities, interest income on our marketable securities and payments we received under our collaborative and licensing arrangements.

For the years ended December 31, 2014, 2013 and 2012, we incurred net losses of $35.7 million, or $0.23 per share, $38.4 million, or $0.30 per share, and $68.9 million, or $0.54 per share, respectively. As of December 31, 2014, we had an accumulated deficit of $928.4 million. The significance of future losses will depend on whether Janssen continues to develop and advance imetelstat and the clinical and commercial success of imetelstat, which would result in future revenues to us in the form of milestone payments and royalties under the Collaboration Agreement as described above, and whether we acquire other oncology products, programs or companies to diversify our business. There can be no assurance that we will receive any milestone payments or royalties from Janssen in the future, or at all. Imetelstat, which is our sole product candidate, will require significant additional clinical testing prior to possible regulatory approval in the United States and other countries, and we do not expect imetelstat to be commercially available for many years, if at all.

As of December 31, 2014, we had cash, restricted cash, cash equivalents and marketable securities of $170.6 million compared to $66.0 million at December 31, 2013 and $96.3 million at December 31, 2012. The increase in cash, restricted cash, cash equivalents and marketable securities in 2014 was primarily the result of the receipt of net cash proceeds of approximately $96.8 million, after deducting the underwriting discount and offering expenses payable by us, from an underwritten public offering of 25,875,000 shares of our common stock at a public offering price of $4.00 per share that we completed in February 2014 and the receipt of $35.0 million from Janssen as an upfront payment in December 2014 upon the effectiveness of the Collaboration Agreement. We estimate that our existing capital resources and future interest income will be sufficient to fund our current level of operations through at least the next 12 months. However, we may use our available capital resources sooner than we anticipate.

Critical Accounting Policies and Estimates

Our consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses. Note 1 of Notes to Consolidated Financial Statements describes the significant accounting policies used in the preparation of the consolidated financial statements. Certain of these significant accounting policies are considered to be critical accounting policies, as defined below.

A critical accounting policy is defined as one that is both material to the presentation of our consolidated financial statements and requires management to make difficult, subjective or complex judgments that could have a material effect on our financial condition and results of operations. Specifically, critical accounting estimates have the following attributes: (i) we are required to make assumptions about matters that are highly uncertain at the time of the estimate; and (ii) different estimates we could reasonably have used, or changes in the estimate that are reasonably likely to occur, would have a material effect on our financial condition or results of operations.

Estimates and assumptions about future events and their effects cannot be determined with certainty. We base our estimates on historical experience and on various other assumptions believed to be applicable and reasonable under the circumstances. These estimates may change as new events occur, as additional information is obtained and as our operating environment changes. These changes have historically been minor and have been included in the consolidated financial statements as soon as they became known. Based on a critical assessment of our accounting policies and the underlying judgments and uncertainties affecting the application of those policies, management believes that our

consolidated financial statements are fairly stated in accordance with accounting principles generally accepted in the United States, and meaningfully present our financial condition and results of operations.

We believe the following critical accounting policies reflect our more significant estimates and assumptions used in the preparation of our consolidated financial statements:

Fair Value of Financial Instruments

We categorize financial instruments recorded at fair value on our consolidated balance sheet based upon the level of judgment associated with inputs used to measure their fair value. The categories are as follows:

Level 1—Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date. An active market for the asset or liability is a market in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis.

Level 2—Inputs (other than quoted market prices included in Level 1) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.

Level 3—Inputs reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement. Following is a description of the valuation methodologies used for instruments measured at fair value on our consolidated balance sheet, including the category for such instruments.

Instruments classified as Level 1 include money market funds, representing 24% of our total financial instruments measured at fair value classified as assets as of December 31, 2014. Instruments classified as Level 2 include U.S. government-sponsored enterprise securities, commercial paper and corporate notes, representing 76% of our total financial instruments measured at fair value classified as assets as of December 31, 2014. The price for each security at the measurement date is derived from various sources. Periodically, we assess the reasonableness of these sourced prices by comparing them to the prices provided by our portfolio managers from broker quotes as well as reviewing the pricing methodologies used by our portfolio managers. Historically, we have not experienced significant deviation between the sourced prices and our portfolio manager's prices.

Warrants to purchase common stock and non-employee options are normally traded less actively, have trade activity that is one way, and/or are traded in less-developed markets and are therefore valued based upon models with significant unobservable market parameters, resulting in Level 3 categorization. Instruments classified as Level 3 include derivative liabilities from non-employee options, representing all of our financial instruments measured at fair value classified as liabilities as of December 31, 2014. The fair value for these instruments is calculated using the Black Scholes option-pricing model. The model's inputs reflect assumptions that market participants would use in pricing the instrument in a current period transaction. Use of this model requires us to make assumptions regarding stock volatility, dividend yields, expected term of the non-employee options and risk-free interest rates. Changes to the model's inputs are not changes to valuation methodologies, but instead reflect direct or indirect impacts from changes in market conditions. Accordingly, results from the valuation model in one period may not be indicative of future period measurements. Expected volatilities are based on historical volatilities of our stock. The expected term of non-employee options represents the remaining contractual term of the instruments. The risk-free interest rate is based on the

U.S. Zero Coupon Treasury Strip Yields for the remaining term of the instrument. If factors change and we employ different assumptions in future periods, the fair value of these non-employee options reflected as of each balance sheet date and the resulting change in fair value that we record may differ significantly from what we have recorded in previous periods. As of December 31, 2014, we have not revised the method in which we derive assumptions in order to estimate fair values of non-employee options classified as liabilities, and we do not expect revisions in the future.

For a further discussion regarding fair value measurements, see Note 2 on Fair Value Measurements in Notes to Consolidated Financial Statements of this annual report on Form 10-K.

Revenue Recognition

In general, we recognize revenue for each unit of accounting when all of the following criteria have been met: (a) persuasive evidence of an arrangement exists, (b) delivery has occurred or services have been rendered, (c) the seller's price to the buyer is fixed or determinable, and (d) collectability is reasonably assured. Amounts received prior to satisfying these revenue recognition criteria are recorded as deferred revenue. Amounts expected to be recognized as revenue within the 12 months following the balance sheet date are classified as current deferred revenue. Amounts not expected to be recognized as revenue within the 12 months following the balance sheet date are classified as noncurrent deferred revenue.

Since our inception, substantially all of our revenues have been generated from collaboration agreements and licensing arrangements. Economic terms in these agreements may include non-refundable license payments in cash or equity securities, option payments in cash or equity securities, cost reimbursements, cost-sharing arrangements, milestone payments, royalties on future sales of products, or any combination of these items. In applying the appropriate revenue recognition guidance related to these agreements, we first assess whether the arrangement contains multiple elements. In this evaluation, we consider: (1) the deliverables included in the arrangement and (2) whether the individual deliverables represent separate units of accounting or whether they must be accounted for as a combined unit of accounting. This evaluation involves subjective determinations and requires us to make judgments about the individual deliverables and whether such deliverables are separable from the other aspects of the contractual relationship. Deliverables are considered separate units of accounting provided that: (i) the delivered item(s) has value to the customer on a standalone basis, and if (ii) the arrangement includes a general right of return relative to the delivered item(s), delivery or performance of the undelivered item(s) is considered probable and substantially in our control. In assessing whether an item has standalone value, we consider factors such as the research, manufacturing and commercialization capabilities of the collaboration partner and the availability of the associated expertise in the general marketplace. In addition, we consider whether the collaboration partner can use the other deliverable(s) for their intended purpose without the receipt of the remaining element(s), whether the value of the deliverable is dependent on the undelivered item(s) and whether there are other vendors that can provide the undelivered element(s).

Arrangement consideration that is fixed or determinable is allocated among the separate units of accounting using the relative selling price method. We then apply the applicable revenue recognition criteria noted above to each of the separate units of accounting in determining the appropriate period and pattern of recognition. We determine how to allocate arrangement consideration to identified units of accounting based on the selling price hierarchy provided under relevant accounting guidance. The estimated fair value of deliverables under the arrangement may be derived using a best estimate of selling price if vendor-specific-objective evidence and third-party evidence are not available.

Upfront non-refundable signing, license or non-exclusive option fees are recognized as revenue: (i) when rights to use the intellectual property, related to a license that has standalone value from the other deliverables to be provided under the agreement, have been delivered or (ii) over the term of the agreement if we have continuing performance obligations as the arrangement would be accounted for as a single unit of accounting. When payments are received in equity securities, we do not recognize any revenue unless such securities are determined to be realizable in cash.

At the inception of an arrangement that includes milestone payments, we assess whether each milestone is substantive and at risk to both parties on the basis of the contingent nature of the milestone. This evaluation includes an assessment of whether: (i) the consideration is commensurate with either the performance to achieve the milestone or the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting from the performance to achieve the milestone, (ii) the consideration relates solely to past performance and (iii) the consideration is reasonable relative to all of the deliverables and payment terms within the arrangement. We consider various factors such as the scientific, clinical, regulatory, commercial and other risks that must be overcome to achieve the respective milestone and the level of effort and investment required to achieve the respective milestone in making this assessment. There is considerable judgment involved in determining whether a milestone satisfies all of the criteria required to conclude that a milestone is substantive. Milestone payments for milestones that are considered substantive would be recognized as revenue in their entirety upon successful accomplishment of the milestone, assuming all other revenue recognition criteria are met. Milestone payments for milestones that are not considered substantive would be recognized as revenue over the remaining period of performance, assuming all other revenue recognition criteria are met.

Royalties are recognized as earned in accordance with contract terms when royalties from licensees can be reasonably estimated and collectability is reasonably assured. If royalties cannot be reasonably estimated or collectability of a royalty amount is not reasonably assured, royalties are recognized as revenue when the cash is received. Revenue from commercial milestone payments will be accounted for as royalties and recorded as revenue upon achievement of the milestone, assuming all other revenue recognition criteria are met.

Cost-sharing expenses are recorded as earned or owed based on the performance requirements by both parties under the respective contracts. For arrangements in which we and our collaboration partner in the agreement are exposed to significant risks and rewards depending on the commercial success of the activity, we recognize payments between the parties on a net basis and record such amounts as a reduction or addition to research and development expense. For arrangements in which we have agreed to perform certain research and development services for our collaboration partner and are not exposed to significant risks and rewards depending on the commercial success of the activity, we recognize the respective cost reimbursements as revenue under the collaborative agreement as the related research and development services are rendered.

Revenue recognition for licenses and collaboration agreements requires significant judgment. We estimate the projected future term of license agreements over which we recognize revenue. We evaluate the deliverables under an arrangement and estimate the fair value of those deliverables. We also assess the substantive nature of milestones. Our assessments and estimates are based on contractual terms, historical experience and general industry practice. Revisions in these values or estimations have the effect of increasing or decreasing license fee revenue in the period of revision. As of December 31, 2014, we have not made any revisions to revenue recognition estimates and we do not expect revisions to currently active agreements in the future.

Clinical Trial Accruals

Substantial portions of our preclinical studies and all of our clinical trials have been performed by third-party contract research organizations, or CROs, and other vendors. We accrue expenses for

preclinical studies performed by our vendors based on certain estimates over the term of the service period and adjust our estimates as required. We accrue expenses for clinical trial activities performed by CROs based upon the estimated amount of work completed on each study. For clinical trial expenses, the significant factors used in estimating accruals include the number of patients enrolled, the number of active clinical sites, and the duration for which the patients will be enrolled in the study. Pass through costs from CROs include, but are not limited to, regulatory expenses, investigator fees, lab fees, travel costs and other miscellaneous costs, including shipping and printing fees. We accrue pass through costs based on estimates of the amount of work completed for the clinical trial. We monitor patient enrollment levels and related activities to the extent possible through internal reviews, review of contractual terms and correspondence with CROs. We base our estimates on the best information available at the time. However, additional information may become available to us which will allow us to make a more accurate estimate in future periods. In this event, we may be required to record adjustments to research and development expenses in future periods when the actual level of activity becomes more certain.

Valuation of Stock-Based Compensation

We measure and recognize compensation expense for all stock-based awards to our employees and directors, including stock options, restricted stock awards and employee stock purchases related to our Employee Stock Purchase Plan, or ESPP, based on estimated fair values. We use the Black Scholes option-pricing model to estimate the grant-date fair value of our stock options and employee stock purchases. Option-pricing valuation model assumptions such as expected volatility, risk-free interest rate and expected term impact the fair value estimate.

Further, the estimated forfeiture rate impacts the amount of aggregate stock-based compensation expense recognized during the period. The fair value of stock options and employee stock purchases is amortized over the vesting period of the awards using a straight-line method.

Expected volatilities are based on historical volatilities of our stock since traded options on Geron common stock do not correspond to option terms and trading volume of options is limited. The expected term of options represents the period of time that options granted are expected to be outstanding. In deriving this assumption, we reviewed actual historical exercise and cancellation data and the remaining outstanding options not yet exercised or cancelled. The expected term of employees' purchase rights under our ESPP is equal to the purchase period. The risk-free interest rate is based on the U.S. Zero Coupon Treasury Strip Yields for the expected term in effect on the date of grant. Forfeiture rates are estimated based on historical data and are adjusted, if necessary, over the requisite service period based on the extent to which actual forfeitures differ, or are expected to differ, from their estimate.

We have granted restricted stock awards to employees and directors with three types of vesting schedules: (i) service-based, (ii) performance-based or (iii) market-based. Service-based restricted stock awards generally vest annually over four years. Performance-based restricted stock awards vest upon achievement of discrete strategic corporate goals within a specified performance period, generally three years. Market-based restricted stock awards vest upon achievement of certain market price thresholds of our common stock within a specified performance period, generally three years.

The fair value for service-based restricted stock awards is determined using the fair value of our common stock on the date of grant. The fair value is amortized as stock-based compensation expense over the requisite service period of the award, which is generally the vesting period, on a straight-line basis and is reduced for estimated forfeitures, as applicable.

The fair value for performance-based restricted stock awards is determined using the fair value of our common stock on the date of grant. Stock-based compensation expense for awards with vesting based on performance conditions is recognized over the period from the date the performance

condition is determined to be probable of occurring through the date the applicable condition is expected to be met and is reduced for estimated forfeitures, as applicable. If the performance condition is not considered probable of being achieved, no stock-based compensation expense is recognized until such time as the performance condition is considered probable of being met, if at all. If that assessment of the probability of the performance condition being met changes, the impact of the change in estimate would be recognized in the period of the change. If the requisite service period has been met prior to the change in estimate, the effect of the change in estimate would be immediately recognized. We evaluate whether performance conditions are probable of occurring, as well as the expected performance period, on a quarterly basis.

The fair value for market-based restricted stock awards is determined using a lattice valuation model with a Monte Carlo simulation. The model takes into consideration the historical volatility of our stock and the risk-free interest rate at the date of grant. In addition, the model is used to estimate the derived service period for the awards. The derived service period is the estimated period of time that would be required to satisfy the market condition, assuming the market condition will be satisfied. Stock-based compensation expense is recognized over the derived service period for the awards using the straight-line method and is reduced for estimated forfeitures, as applicable, but is accelerated if the market condition is achieved earlier than estimated. If a market-based restricted stock award is forfeited or expires after completion of the derived service period, any previously recognized stock-based compensation expense is not reversed.

We evaluate the assumptions used in estimating fair values of our stock-based awards by reviewing current trends in comparison to historical data on an annual basis. We have not revised the methods by which we derive assumptions in order to estimate fair values of our stock-based awards. If factors change and we employ different assumptions in future periods, the stock-based compensation expense that we record for awards to employees and directors may differ significantly from what we have recorded in the current period.

Compensation expense recognized for stock-based awards to employees and directors was $7.7 million, $4.4 million and $5.3 million for the years ended December 31, 2014, 2013 and 2012, respectively. As of December 31, 2014, total compensation cost related to unvested stock-based awards not yet recognized, net of estimated forfeitures, was $15.0 million, which is expected to be recognized over the next 27 months on a weighted-average basis.

For our non-employee stock-based awards, the measurement date on which the fair value of the stock-based award is calculated is equal to the earlier of (i) the date at which a commitment for performance by the counterparty to earn the equity instrument is reached or (ii) the date at which the counterparty's performance is complete. We recognized stock-based compensation expense of $94,000, $92,000 and $135,000 for the fair value of the vested portion of non-employee options and restricted stock awards in our consolidated statements of operations for the years ended December 31, 2014, 2013 and 2012, respectively.

Results of Operations

Our results of operations have fluctuated from period to period and may continue to fluctuate in the future, based upon the progress of research and development efforts in collaboration with Janssen and whether we acquire other oncology products, programs or companies to diversify our business. Results of operations for any period may be unrelated to results of operations for any other period. In addition, historical results should not be viewed as indicative of future operating results. We are subject to risks common to companies in our industry and at our stage of development, including, but not limited to, risks inherent in research and development efforts, our dependence on Janssen for the development, regulatory approval, manufacture and commercialization of our sole product candidate, imetelstat, uncertainty of preclinical and clinical trial results or regulatory approvals or clearances, need

for future capital, enforcement of our patent and proprietary rights, reliance upon our collaborators, investigators and other third parties, and potential competition. In order for imetelstat to be commercialized based on our research, we and Janssen must conduct preclinical tests and clinical trials, demonstrate the safety and efficacy of imetelstat, obtain regulatory approvals or clearances and enter into manufacturing, distribution and marketing arrangements, as well as obtain market acceptance. We do not expect to receive royalties based on sales of imetelstat for many years, if at all.

Revenues

In addition to the Collaboration Agreement with Janssen, we have entered into several license or collaboration agreements with companies involved with oncology, diagnostics, research tools and biologics production. In each of these agreements, we have granted certain rights to our technologies. In connection with the agreements, we are eligible to receive license fees, option fees, milestone payments and royalties on future sales of products, or any combination thereof. We recognized license fee revenues of $738,000, $933,000 and $1.6 million in 2014, 2013 and 2012, respectively, related to our various agreements. We have not recognized any revenue related to the Collaboration Agreement in 2014 since we have determined that the sole non-contingent deliverable under the Collaboration Agreement is our delivery of the license rights to Janssen and our complete performance of the technology transfer-related activities. We currently expect completion of the technology transfer-related activities to occur by September 30, 2015, at which point we expect to fully recognize the $35.0 million upfront payment from Janssen as license fee revenue. The decrease in license fee revenues in 2014 compared to 2013 primarily reflects the full recognition of a non-refundable up-front license payment in 2013 for an exclusive commercial license using our telomerase promoter technology for oncology-related in vitro assays. The decrease in license fee revenues in 2013 compared to 2012 primarily reflects the full recognition of a license payment from GE Healthcare in 2012 upon the exercise of an option to expand the scope of their original license agreement with us to obtain exclusive global rights to intellectual property and know-how for the development and sale of cellular assays derived from induced pluripotent stem cells. In connection with the closing of the divestiture of our human embryonic stem cell assets in October 2013, our license agreement with GE Healthcare, including any future revenue payments thereunder, was transferred to Asterias.

We recognized royalty revenues of $415,000, $350,000 and $1.1 million in 2014, 2013 and 2012, respectively, on product sales of telomerase detection and telomere measurement kits to the research-use-only market, cell-based research products and nutritional products. The increase in royalty revenues in 2014 compared to 2013 primarily reflects the receipt of a milestone fee in 2014 in connection with the achievement of a net sales milestone by a licensee of our hTERT technology. The decrease in royalty revenues in 2013 compared to 2012 primarily reflects the assignment of our telomerase activation technology to Telomerase Activation Sciences, Inc., or TA Sciences, in December 2012 and termination of our license agreement with Asia Biotech Corporation. See further discussion of the agreement with TA Sciences under the sub-section entitled "Interest and Other Income".

We expect our revenues for 2015 to primarily consist of license fee revenue from the upfront payment from Janssen under the Collaboration Agreement upon our completion of the technology transfer-related activities in 2015, and future license fee and royalty revenues are substantially dependent on Janssen successfully developing and commercializing imetelstat in accordance with the Collaboration Agreement. See further discussion of revenue recognition for the Janssen collaboration in Note 10 on License Agreements in Notes to Consolidated Financial Statements of this annual report on Form 10-K. Future license fee and royalty revenues are also dependent on additional agreements being signed and current agreements being maintained. Current revenues may not be predictive of future revenues.

Research and Development Expenses

For each of our research and development programs, we incur direct external, personnel related and other research and development costs. Direct external expenses primarily consist of costs to outside parties to perform laboratory studies, develop manufacturing processes and manufacture raw materials and clinical trial drug materials, conduct and manage clinical trials, including investigator-sponsored clinical trials, and provide advice and consultation for scientific and clinical strategies. Personnel related expenses primarily consist of salaries and wages, stock-based compensation, payroll taxes and benefits for those individuals involved with ongoing research and development efforts. Other research and development expenses primarily consist of laboratory supplies, research-related overhead associated with leasing, operating and maintaining our facilities and equipment depreciation and maintenance. All of these costs apply to our current and historical clinical programs and our historical preclinical programs and discovery research efforts. A product candidate is designated a clinical candidate once an investigational new drug application has been filed with the FDA, or a similar filing with regulatory agencies outside the United States, for the purpose of commencing clinical trials in humans. Preclinical programs include product candidates undergoing toxicology, pharmacology, metabolism and efficacy studies and manufacturing process development required before testing in humans can commence.

Research and development expenses were $20.7 million, $23.2 million and $51.4 million for the years ended December 31, 2014, 2013 and 2012, respectively. As shown in the table below, the decrease in research and development expenses in 2014 compared to 2013 and 2013 compared to 2012 primarily reflects the net result of lower direct external costs due to the wind-down of our GRN1005 trials in patients with brain metastases and imetelstat trials in solid tumors, reduced personnel related costs resulting from previous restructurings and lower costs for scientific supplies and services and other research-related overhead costs due to the discontinuation of our discovery research programs in April 2013. The decrease in research and development expenses in 2014 compared to 2013 was partially offset by an increase in direct external costs for the manufacturing of imetelstat drug product. Overall, in 2015 we expect direct external research and development expenses to increase as we collaborate with Janssen on the development of imetelstat in hematologic myeloid malignancies and personnel related research and development expenses to decrease as a result of the recently announced organizational resizing.

Research and development expenses for the years ended December 31, 2014, 2013 and 2012 were as follows:

(In thousands)	Year Ended December 31, 2014	2013	2012
Direct external research and development expenses:			
Clinical program: Imetelstat	$ 8,901	$ 7,665	$ 12,907
Clinical program: GRN1005[(1)]	—	1,039	10,723
Clinical program: GRNOPC1[(2)]	—	202	393
Preclinical programs[(3)]	—	228	1,155
Personnel related expenses	9,674	10,753	19,008
All other research and development expenses	2,132	3,268	7,182
Total	$ 20,707	$ 23,155	$ 51,368

(1) In December 2012, we discontinued the GRN1005 program and returned the asset to Angiochem in May 2013.

(2) In October 2013, we closed the transaction to divest our human embryonic stem cell assets and our autologous cellular immunotherapy program to Asterias. Asterias assumed all post-closing liabilities with respect to all of the assets contributed by us, including any liabilities related to the

GRNOPC1 and autologous cellular immunotherapy clinical trials. See Note 7 on Divestiture of Stem Cell Assets in Notes to Consolidated Financial Statements of this annual report on Form 10-K for further discussion.

(3) In April 2013, we announced the decision to discontinue our discovery research programs and companion diagnostics program based on telomere length.

At this time, we cannot provide reliable estimates of how much time or investment will be necessary to commercialize imetelstat. For a more complete discussion of the risks and uncertainties associated with the development of imetelstat, see the sub-sections entitled "Risks Related to Our Business" and "Risks Related to Clinical and Commercialization Activities" in Part I, Item 1A entitled "Risk Factors" and elsewhere in this annual report on Form 10-K.

Restructuring Charges

In April 2013, we announced the decision to discontinue our discovery research programs and companion diagnostics program based on telomere length and close our research laboratory facility located at 200 Constitution Drive, Menlo Park, California. With this decision, a total of 20 positions were eliminated. In connection with this restructuring, we incurred aggregate restructuring charges of approximately $1.4 million in 2013, of which $624,000 related to one-time termination benefits, including $28,000 of non-cash stock-based compensation expense relating to the extension of the post-termination exercise period through the end of December 2013 for certain stock options previously granted to terminated employees, $200,000 related to non-cash charges for write-downs of excess equipment and leasehold improvements and $546,000 related to costs associated with the closure of our research laboratory facility. In connection with the decision to close our research laboratory facility, we entered into an amendment to the lease agreement for the 200 Constitution Drive facility under which the lease terminated effective December 31, 2013. As consideration for the early termination of the lease, we paid the landlord the remaining rents due under the original term of the lease as well as certain facility maintenance costs, all of which have been included in restructuring charges. In 2013, we received proceeds of approximately $1.1 million from the sale of excess laboratory equipment in connection with the closure of our research laboratory facility. All actions associated with this restructuring were completed in 2013, and we do not anticipate incurring any further charges in connection with this restructuring.

In December 2012, we announced the decision to discontinue development of GRN1005. With this decision, a total of 43 positions were eliminated. In connection with this restructuring, we incurred aggregate restructuring charges of approximately $2.8 million, of which $2.7 million was recorded in 2012 and $92,000 was recorded in 2013. The aggregate restructuring charges consisted of $2.5 million related to one-time termination benefits, including $107,000 of non-cash stock-based compensation expense relating to the extension of the post-termination exercise period through the end of December 2013 for certain stock options previously granted to terminated employees, and $271,000 related to write-downs of GRN1005 manufacturing equipment. All actions associated with this restructuring were completed in 2013, and we do not anticipate incurring any further charges in connection with this restructuring. See Note 6 on Restructurings in Notes to Consolidated Financial Statements of this annual report on Form 10-K for further discussion of the restructuring charges.

General and Administrative Expenses

General and administrative expenses were $16.8 million, $15.6 million and $20.4 million for the years ended December 31, 2014, 2013 and 2012, respectively. The increase in general and administrative expenses in 2014 compared to 2013 primarily reflects the net result of higher non-cash stock-based compensation expense, increased legal fees associated with the purported securities lawsuits and the derivative lawsuit filed against us and/or certain of our officers and directors and transaction

costs associated with the Collaboration Agreement we entered into with Janssen in November 2014, partially offset by reduced patent costs and transaction fees associated with the stem cell divestiture which closed in October 2013. The decrease in general and administrative expenses in 2013 compared to 2012 primarily reflects lower personnel related expenses, primarily resulting from previous restructurings, and reduced legal and consulting fees associated with our intellectual property portfolio and our stem cell divestiture efforts. We expect general and administrative expenses to increase in 2015 as a result of higher anticipated legal fees as we intend to vigorously defend against the lawsuits filed against us.

Unrealized Gain (Loss) on Derivatives

Unrealized gain (loss) on derivatives reflects a non-cash adjustment for changes in fair value of options held by non-employees that are classified as current liabilities. Derivatives classified as liabilities are marked to fair value at each financial reporting date with any resulting unrealized gain (loss) recorded in the consolidated statements of operations. The derivatives continue to be reported as a liability until such time as the instruments are exercised or expire or are otherwise modified to remove the provisions which require them to be recorded as liabilities, at which time these instruments are marked to fair value and reclassified from liabilities to stockholders' equity. We incurred unrealized gains on derivatives of $351,000 and $13,000 for the years ended December 31, 2014 and 2012, respectively, compared to unrealized losses on derivatives of $316,000 for the year ended December 31, 2013. The unrealized gains and losses on derivatives primarily reflect the change in fair values of derivative liabilities as a result of fluctuations in the market value of our stock and changes in other inputs factored into the estimate of their fair value such as the volatility of our stock. See Note 2 on Fair Value Measurements in Notes to Consolidated Financial Statements of this annual report on Form 10-K for further discussion of the fair value of derivatives.

Interest and Other Income

Interest income was $373,000, $219,000 and $597,000 for the years ended December 31, 2014, 2013 and 2012, respectively. The increase in interest income in 2014 compared to 2013 primarily reflects an increase in our cash and investment balances in connection with the receipt of the net cash proceeds from the underwritten public offering of shares of our common stock that we completed in February 2014. The decrease in interest income in 2013 compared to 2012 primarily reflects lower cash and investment balances resulting from the use of cash for operations. Interest earned in future periods will depend on the size of our securities portfolio and prevailing interest rates.

Other income was $732,000 and $2.5 million for the years ended December 31, 2013 and 2012, respectively. No other income was recognized for the year ended December 31, 2014. Other income recognized in 2013 reflects a net gain on the sale of excess laboratory equipment in connection with the closure of our research laboratory facility. Other income recognized in 2012 reflects the receipt a non-refundable upfront payment of $2.5 million for the assignment of our telomerase activation technology to TA Sciences, pursuant to the Termination and Assignment Agreement that we entered into with Asia Biotech Corporation, or Asia Biotech, and TA Sciences in December 2012. See Note 10 on License Agreements in Notes to Consolidated Financial Statements of this annual report on Form 10-K for further discussion of the Termination and Assignment Agreement with Asia Biotech and TA Sciences.

Interest and Other Expense

Interest and other expense was $82,000, $56,000 and $233,000 for the years ended December 31, 2014, 2013 and 2012, respectively. The increase in interest and other expense in 2014 compared to 2013 primarily reflects higher bank charges related to the increase in our cash and investment balances in connection with the receipt of the net cash proceeds from the underwritten public offering of shares of our common stock that we completed in February 2014. The decrease in interest and other expense in 2013 compared to 2012 primarily reflects the recognition of accumulated foreign currency translation adjustments in connection with the dissolution of Geron Bio-Med Ltd. in August 2012 and reduced bank charges as a result of lower cash and investment balances in 2013.

Net Loss

Net loss was $35.7 million, $38.4 million and $68.9 million for the years ended December 31, 2014, 2013 and 2012, respectively. The decrease in net loss in 2014 compared to 2013 and 2013 compared to 2012 primarily reflects lower clinical trial costs as a result of the wind-down of our GRN1005 trials in patients with brain metastases and imetelstat trials in solid tumors, decreased personnel related costs resulting from previous restructurings, reduced costs for scientific supplies and services and other research-related overhead costs with the discontinuation of our discovery research programs in April 2013 and lower patent costs and transaction fees associated with the stem cell divestiture which closed in October 2013. The decrease in net loss in 2014 compared to 2013 was partially offset by increased costs for the manufacturing of imetelstat drug product, higher non-cash stock-based compensation expense and increased legal fees associated with the purported securities lawsuits and transaction costs for the Collaboration Agreement we entered into with Janssen in November 2014.

Liquidity and Capital Resources

Cash, restricted cash, cash equivalents and marketable securities at December 31, 2014 were $170.6 million, compared to $66.0 million at December 31, 2013 and $96.3 million at December 31, 2012. We estimate that our existing capital resources and future interest income will be sufficient to fund our current level of operations through at least the next 12 months. We have an investment policy to invest these funds in liquid, investment grade securities, such as interest-bearing money market funds, certificates of deposit, municipal securities, U.S. government and agency securities, corporate notes and commercial paper. Our investment portfolio does not contain securities with exposure to sub-prime mortgages, collateralized debt obligations, asset-backed securities or auction rate securities and, to date, we have not recognized any other-than-temporary impairment on our marketable securities or any significant changes in aggregate fair value that would impact our cash resources or liquidity. To date, we have not experienced lack of access to our invested cash and cash equivalents; however, access to our invested cash and cash equivalents may be impacted by adverse conditions in the financial and credit markets. The increase in cash, restricted cash, cash equivalents and marketable securities in 2014 was primarily the result of the receipt of net cash proceeds of approximately $96.8 million, after deducting the underwriting discount and offering expenses payable by us, from an underwritten public offering of 25,875,000 shares of our common stock at a public offering price of $4.00 per share that we completed in February 2014 and the receipt of $35.0 million from Janssen as an upfront payment in December 2014 upon the effectiveness of the Collaboration Agreement.

In October 2012, we entered into an At-The-Market Issuance Sales Agreement, or sales agreement, with MLV & Co. LLC, or MLV, which provides that, upon the terms and subject to the conditions and limitations set forth in the sales agreement, we may elect to issue and sell shares of our common stock having an aggregate offering price of up to $50.0 million from time to time through MLV as our sales agent. We are not obligated to make any sales of common stock under the sales agreement. To date, we have not sold any common stock pursuant to the sales agreement. The sales agreement will expire in October 2015 unless extended by the parties.

We may need additional capital resources in order to support development and commercialization of imetelstat, especially if we elect to exercise our U.S. Opt-In Rights and U.S. Co-Promotion Option under the Collaboration Agreement and potentially independently pursue imetelstat development under our own IDP, and to otherwise support the future growth of our business through the acquisition of other oncology products, programs or companies. We cannot assure you that our existing capital resources, future interest income, potential milestone payments and royalties under the Collaboration Agreement with Janssen and potential future sales of our common stock, including pursuant to our

sales agreement with MLV, will be sufficient to fund future planned activities. The timing and degree of any future capital requirements will depend on many factors, including:

- the accuracy of the assumptions underlying our estimates for our capital needs;
- whether we elect U.S. Opt-In Rights to share future U.S. development and promotion costs for imetelstat under the Collaboration Agreement with Janssen;
- to the extent permitted under the Collaboration Agreement, whether we independently pursue imetelstat development under our own IDP;
- our potential reimbursement obligations to Janssen if any data from a Janssen IDP support approval by a regulatory agency in the United States or other countries;
- the achievement of development, regulatory and commercial milestones resulting in the payment to us from Janssen under the Collaboration Agreement and the timing of receipt of such payments, if any;
- changes or delays in our and Janssen's development plans for imetelstat, including changes which may result from any future clinical holds on the INDs for imetelstat, including the IND for the MF Pilot Study, that we expect to transfer to Janssen;
- Janssen's ability to meaningfully reduce manufacturing costs of imetelstat;
- the progress, timing, magnitude, scope and costs of clinical development, manufacturing and commercialization for imetelstat, including the number of indications being pursued, subject to permission from the FDA;
- the time and costs involved in obtaining regulatory clearances and approvals in the United States and in other countries;
- Janssen's ability to successfully market and sell imetelstat, upon regulatory approval or clearance, in the United States and other countries;
- our decision to exercise our U.S. Co-Promotion Option, including the costs and timing of building a U.S. sales force;
- the timing, receipt and amount of royalties under the Collaboration Agreement on worldwide net sales of imetelstat, upon regulatory approval or clearance, if any;
- the timing, receipt and amount of royalties on sales of any stem cell products by Asterias, upon development, regulatory approval or clearance, if any;
- the sales price and availability of adequate third-party reimbursement for imetelstat;
- the cost of acquiring and/or licensing any new product candidates, if any;
- expenses associated with the pending and potential additional related purported securities lawsuits and derivative lawsuits, as well as any other litigation; and
- the costs involved in preparing, filing, prosecuting, maintaining, defending and enforcing patent claims.

In addition, changes in our business may occur that would consume available capital resources sooner than we expect. If our existing capital resources, future interest income, and potential milestone payments and royalties under the Collaboration Agreement with Janssen are insufficient to meet future capital requirements, we will need to raise additional capital to fund our operations. Further, if the Collaboration Agreement is terminated, including as a result of Janssen's failure to provide an affirmative Continuation Decision to us, we would not receive any milestone payments or royalties under the Collaboration Agreement, and we would be required to fund all clinical development,

manufacturing and commercial activities for imetelstat ourselves, which would require us to raise additional capital or establish alternative collaborations with third-party collaboration partners, which may not be possible. Additional financing through public or private equity financings, including pursuant to our sales agreement with MLV, capital lease transactions or other financing sources may not be available on acceptable terms, or at all. We may raise equity capital at a stock price or on other terms that could result in substantial dilution of ownership for our stockholders. The receptivity of the public and private equity markets to proposed financings is substantially affected by the general economic, market and political climate and by other factors which are unpredictable and over which we have no control.

Our ability to raise additional funds will be severely impaired in the event of:

- any future clinical holds on any IND for imetelstat;
- failure to show adequate safety or efficacy of imetelstat in existing or potential future clinical trials; or
- a termination of the Collaboration Agreement or our collaboration with Janssen is otherwise unsuccessful.

If sufficient capital is not available, we may be unable to fulfill our funding obligations under the Collaboration Agreement with Janssen resulting in our breach of the Collaboration Agreement which could lead to Janssen paying lower milestone payments and lower royalties to us under a reduced royalty tier which could have a material adverse effect on our results of operations and financial condition.

Moreover, we plan to diversify our sole product candidate development risk by identifying and seeking to acquire or in-license new product opportunities for development. Acquisition or in-licensing opportunities that we may pursue could materially affect our liquidity and capital resources and may require us to incur indebtedness, seek equity capital or both. In addition, there can be no assurance that sufficient additional capital would be available to us in order to pursue any of these opportunities.

Cash Flows from Operating Activities

Net cash provided by operations was $9.4 million in 2014. Net cash used in operations was $36.7 million and $55.1 million in 2013 and 2012, respectively. The decrease in net cash used in operations in 2014 compared to 2013 primarily reflects the receipt of $35.0 million from Janssen as an upfront payment in December 2014 upon the effectiveness of the Collaboration Agreement. Additionally, the decrease in net cash used in operations in 2014 compared to 2013 and in 2013 compared to 2012 reflects reduced operating expenses due to previous restructurings and the wind-down of our GRN1005 trials in patients with brain metastases and imetelstat trials in solid tumors.

Cash Flows from Investing Activities

Net cash used in investing activities was $77.9 million in 2014. Net cash provided by investing activities was $21.1 million and $61.0 million in 2013 and 2012, respectively. The decrease in net cash provided by investing activities in 2014 compared to 2013 primarily reflects higher purchases of marketable securities with the net cash proceeds received from an underwritten public offering of shares of our common stock that we completed in February 2014. The decrease in net cash provided by investing activities in 2013 compared to 2012 was primarily the result of lower proceeds from maturities of marketable securities relative to purchases of marketable securities.

For the three years ended December 31, 2014, we have purchased approximately $1.0 million in property and equipment, none of which was financed through equipment financing arrangements. In

2014, we closed the certificate of deposit for our unused equipment line of credit upon maturity and transferred the cash proceeds to our cash operating accounts. This action also cancelled the availability of the equipment line of credit.

Cash Flows from Financing Activities

Net cash provided by financing activities in 2014, 2013 and 2012 was $98.4 million, $6.6 million and $150,000, respectively. Net cash provided by financing activities in 2014 primarily reflects the receipt of net cash proceeds of approximately $96.8 million, after deducting the underwriting discount and offering expenses payable by us, from the underwritten public offering of 25,875,000 shares of our common stock at a public offering price of $4.00 per share that we completed in February 2014. Net cash provided by financing activities in 2013 and 2012 reflects proceeds from the issuance of common stock under our employee equity plans.

Significant Cash and Contractual Obligations

As of December 31, 2014, our contractual obligations for the next five years and thereafter were as follows:

	Payments Due by Period				
Contractual Obligations[1]	Total	Less Than 1 Year	1 - 3 Years	4 - 5 Years	After 5 Years
			(In thousands)		
Equipment lease	$ 20	$ 10	$ 10	$ —	$ —
Operating leases[2]	959	885	74	—	—
Research funding and license fees[3]	313	88	90	90	45
Total contractual cash obligations	$ 1,292	$ 983	$ 174	$ 90	$ 45

(1) This table does not include payments under our severance plan if there were a change in control of Geron or severance payments to employees in the event of an involuntary termination. In addition, this table does not include any royalty obligations under our license agreements as the timing and likelihood of such payments are not known.

(2) In February 2014, we amended the lease agreement for our premises at 149 Commonwealth Drive to extend the lease term through January 2016. Our amended lease at 149 Commonwealth Drive includes an option to extend the lease for one additional period of 18 months. Operating lease obligations in the table above do not include payments due under the amended lease agreement for the extended lease term or assume the exercise by us of any right of termination.

(3) Research funding is comprised of sponsored research commitments at various laboratories around the world. License fees are comprised of minimum annual license payments under our existing license agreements with several universities and companies for the right to use intellectual property related to technologies that we have in-licensed.

Off-Balance Sheet Arrangements

We have not engaged in any off-balance sheet arrangements, including the use of structured finance, special purpose entities or variable interest entities.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

The following discussion about our market risk disclosures contains forward-looking statements. Actual results could differ materially from those projected in the forward-looking statements. We are exposed to credit risk and interest rate risk. We do not use derivative financial instruments for speculative or trading purposes.

Credit Risk. We currently place our cash, restricted cash, cash equivalents and marketable securities with four financial institutions in the United States. Deposits with banks may exceed the amount of insurance provided on such deposits. While we monitor the cash balances in our operating accounts and adjust the cash balances as appropriate, these cash balances could be impacted if the underlying financial institutions fail or could be subject to other adverse conditions in the financial markets. Financial instruments that potentially subject us to concentrations of credit risk consist primarily of cash equivalents and marketable securities. Cash equivalents and marketable securities currently consist of money market funds, U.S. government-sponsored enterprise securities, commercial paper and corporate notes. Our investment policy, approved by the audit committee of our board of directors, limits the amount we may invest in any one type of investment issuer, thereby reducing credit risk concentrations. We limit our credit and liquidity risks through our investment policy and through regular reviews of our portfolio against our policy. To date, we have not experienced any loss or lack of access to cash in our operating accounts or to our cash equivalents and marketable securities in our investment portfolio. The effect of a hypothetical decrease of 10% in the average yield earned on our cash equivalents and marketable securities would have resulted in an immaterial decrease in our interest income for the year ended December 31, 2014.

Interest Rate Risk. The primary objective of our investment activities is to manage our marketable securities portfolio to preserve principal and liquidity while maximizing the return on the investment portfolio through the full investment of available funds without significantly increasing risk. To achieve this objective, we primarily invest in widely diversified investments with fixed interest rates, which carry a degree of interest rate risk. Fixed rate securities may have their fair value adversely impacted due to a rise in interest rates. Due in part to these factors, our future interest income may fall short of expectations due to changes in market conditions and in interest rates or we may suffer losses in principal if forced to sell securities which may have declined in fair value due to changes in interest rates.

The fair value of our cash equivalents and marketable securities at December 31, 2014 was $167.9 million. These investments include $40.4 million of cash equivalents which are due in less than 90 days, $108.6 million of short-term investments which are due in less than one year and $18.9 million of long-term investments which are due in one to two years. We primarily invest our marketable securities portfolio in securities with at least an investment grade rating to minimize interest rate and credit risk as well as to provide for an immediate source of funds. Although changes in interest rates may affect the fair value of the marketable securities portfolio and cause unrealized gains or losses, such gains or losses would not be realized unless the investments are sold. Due to the nature of our investments, which are primarily money market funds, U.S. government-sponsored enterprise securities, commercial paper and corporate notes, we have concluded that there is no material interest rate risk exposure and a 1% movement in market interest rates would not have a significant impact on the total value of our portfolio.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The following consolidated financial statements and the related notes thereto, of Geron Corporation and the Report of Independent Registered Public Accounting Firm, Ernst & Young LLP, are filed as a part of this annual report on Form 10-K.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of Geron Corporation

We have audited the accompanying consolidated balance sheets of Geron Corporation as of December 31, 2014 and 2013, and the related consolidated statements of operations, comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2014. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Geron Corporation at December 31, 2014 and 2013, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2014, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Geron Corporation's internal control over financial reporting as of December 31, 2014, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated March 11, 2015 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP
Redwood City, California
March 11, 2015

GERON CORPORATION

CONSOLIDATED BALANCE SHEETS

	December 31,	
	2014	2013
	(In thousands, except share and per share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 42,796	$ 12,990
Restricted cash	266	795
Marketable securities	108,645	52,234
Interest and other receivables	963	564
Prepaid assets	736	474
Total current assets	153,406	67,057
Noncurrent marketable securities	18,932	—
Property and equipment, net	173	92
Deposits and other assets	—	195
	$ 172,511	$ 67,344
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 1,033	$ 1,397
Accrued compensation and benefits	4,213	3,946
Accrued restructuring charges	—	94
Accrued liabilities	1,537	1,783
Deferred revenue	35,000	—
Fair value of derivatives	16	367
Total current liabilities	41,799	7,587
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.001 par value; 3,000,000 shares authorized; no shares issued and outstanding at December 31, 2014 and 2013	—	—
Common stock, $0.001 par value; 300,000,000 shares authorized; 157,429,871 and 130,677,949 shares issued and outstanding at December 31, 2014 and 2013, respectively	157	131
Additional paid-in capital	1,059,072	952,403
Accumulated deficit	(928,433)	(892,763)
Accumulated other comprehensive loss	(84)	(14)
Total stockholders' equity	130,712	59,757
	$ 172,511	$ 67,344

See accompanying notes.

GERON CORPORATION

CONSOLIDATED STATEMENTS OF OPERATIONS

	Year Ended December 31,		
	2014	2013	2012
	(In thousands, except share and per share data)		
Revenues:			
License fees and royalties	$ 1,153	$ 1,283	$ 2,709
Operating expenses:			
Research and development	20,707	23,155	51,368
Restructuring charges	—	1,462	2,702
General and administrative	16,758	15,624	20,397
Total operating expenses	37,465	40,241	74,467
Loss from operations	(36,312)	(38,958)	(71,758)
Unrealized gain (loss) on derivatives	351	(316)	13
Interest and other income	373	951	3,097
Interest and other expense	(82)	(56)	(233)
Net loss	$ (35,670)	$ (38,379)	$ (68,881)
Basic and diluted net loss per share	$ (0.23)	$ (0.30)	$ (0.54)
Shares used in computing basic and diluted net loss per share	153,540,341	128,380,800	126,941,024

See accompanying notes.

GERON CORPORATION

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

	Year Ended December 31,		
	2014	2013	2012
		(In thousands)	
Net loss	$ (35,670)	$ (38,379)	$ (68,881)
Other comprehensive income (loss):			
Net unrealized loss on marketable securities	(70)	(54)	(38)
Foreign currency translation adjustments	—	—	16
Reclassification of accumulated foreign currency translation adjustments	—	—	153
Other comprehensive (loss) income	(70)	(54)	131
Comprehensive loss	$ (35,740)	$ (38,433)	$ (68,750)

See accompanying notes.

GERON CORPORATION

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Common Stock		Additional Paid-In Capital	Accumulated Deficit	Accumulated Other Comprehensive Income (Loss)	Total Stockholders' Equity
	Shares	Amount				
	(In thousands, except share data)					
Balances at December 31, 2011	131,443,148	$ 131	$ 932,066	$ (785,503)	$ (91)	$ 146,603
Net loss	—	—	—	(68,881)	—	(68,881)
Other comprehensive income	—	—	—	—	131	131
Stock-based compensation related to issuance of common stock and options in exchange for services	170,298	—	135	—	—	135
Cancellations of non-vested restricted stock under equity plans, net of issuances of common stock	(2,592,375)	(2)	269	—	—	267
Stock-based compensation for equity-based awards to employees and directors	—	—	5,311	—	—	5,311
401(k) contribution	1,221,624	1	2,086	—	—	2,087
Balances at December 31, 2012	130,242,695	130	939,867	(854,384)	40	85,653
Net loss	—	—	—	(38,379)	—	(38,379)
Other comprehensive loss	—	—	—	—	(54)	(54)
Stock-based compensation related to issuance of common stock and options in exchange for services	66,853	—	252	—	—	252
Cancellations of non-vested restricted stock under equity plans, net of issuances of common stock	(388,056)	—	6,553	—	—	6,553
Stock-based compensation for equity-based awards to employees and directors	—	—	4,435	—	—	4,435
401(k) contribution	756,457	1	1,296	—	—	1,297
Balances at December 31, 2013	130,677,949	131	952,403	(892,763)	(14)	59,757
Net loss	—	—	—	(35,670)	—	(35,670)
Other comprehensive loss	—	—	—	—	(70)	(70)
Issuance of common stock in connection with public offering, net of issuance costs of $6,695	25,875,000	26	96,779	—	—	96,805
Stock-based compensation related to issuance of common stock and options in exchange for services	71,239	—	253	—	—	253
Issuance of common stock upon net exercise of warrants	168,039	—	—	—	—	—
Issuances of common stock under equity plans, net of cancellations of non-vested restricted stock	564,950	—	1,555	—	—	1,555
Stock-based compensation for equity-based awards to employees and directors	—	—	7,658	—	—	7,658
401(k) contribution	72,694	—	424	—	—	424
Balances at December 31, 2014	157,429,871	$ 157	$1,059,072	$ (928,433)	$ (84)	$ 130,712

See accompanying notes.

GERON CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
	2014	2013	2012
		(In thousands)	
Cash flows from operating activities:			
Net loss	$ (35,670)	$ (38,379)	$ (68,881)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Depreciation and amortization	47	320	830
Accretion and amortization on investments, net	2,889	1,322	2,184
Loss (gain) on retirement/sales of property and equipment, net	3	(831)	(142)
Loss on write-downs of property and equipment	—	200	271
Stock-based compensation for services by non-employees	253	252	183
Stock-based compensation for employees and directors	7,658	4,435	5,311
Amortization related to 401(k) contributions	111	458	726
Unrealized (gain) loss on derivatives	(351)	316	(13)
Changes in assets and liabilities:			
Interest and other receivables	(399)	188	646
Prepaid assets	(72)	1,081	1,311
Deposits and other assets	5	(4)	112
Accounts payable	(364)	(2,032)	449
Accrued compensation and benefits	580	(431)	3,548
Accrued restructuring charges	(94)	(1,878)	(1,758)
Accrued liabilities	(246)	(1,697)	(92)
Deferred revenue	35,000	—	—
Translation adjustment	—	—	169
Net cash provided by (used in) operating activities	9,350	(36,680)	(55,146)
Cash flows from investing activities:			
Restricted cash transfer	529	(1)	(1)
Purchases of property and equipment	(131)	(3)	(862)
Proceeds from sales of property and equipment	—	1,196	170
Purchases of marketable securities	(190,263)	(88,977)	(79,369)
Proceeds from sales/calls of marketable securities	10,549	—	—
Proceeds from maturities of marketable securities	101,412	108,839	141,016
Net cash (used in) provided by investing activities	(77,904)	21,054	60,954
Cash flows from financing activities:			
Proceeds from issuance of common stock, net of issuance costs	98,360	6,553	150
Net cash provided by financing activities	98,360	6,553	150
Net increase (decrease) in cash and cash equivalents	29,806	(9,073)	5,958
Cash and cash equivalents, at beginning of year	12,990	22,063	16,105
Cash and cash equivalents, at end of year	$ 42,796	$ 12,990	$ 22,063

See accompanying notes.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Organization

Geron Corporation, or we or Geron, was incorporated in the State of Delaware on November 28, 1990. We are a clinical stage biopharmaceutical company focused on the development of a telomerase inhibitor, imetelstat, in hematologic myeloid malignancies. Principal activities to date have included obtaining financing, securing operating facilities and conducting research and development. In November 2014, we entered into an exclusive collaboration and license agreement, or the Collaboration Agreement, with Janssen Biotech, Inc., or Janssen, to develop and commercialize imetelstat worldwide for oncology, including hematologic myeloid malignancies, and all other human therapeutic uses. The significance of future losses will depend on whether Janssen continues to develop and advance imetelstat and the clinical and commercial success of imetelstat, which would result in future revenues to us in the form of milestone payments and royalties under the Collaboration Agreement, as described below, and whether we acquire other oncology products, programs or companies to diversify our business. There can be no assurance that we will receive any milestone payments or royalties from Janssen in the future. Imetelstat, which is our sole product candidate, will require significant additional clinical testing prior to possible regulatory approval in the United States and other countries, and we do not expect imetelstat to be commercially available for many years, if at all.

Principles of Consolidation

The consolidated financial statements include the accounts of Geron and our former wholly-owned subsidiary, Geron Bio-Med Ltd. (Geron Bio-Med), a United Kingdom company. In March 2012, the board of directors and shareholders of Geron Bio-Med approved actions to commence a voluntary winding up of the company. The full wind up of Geron Bio-Med was completed in August 2012. Prior to 2013, we eliminated intercompany accounts and transactions and prepared the financial statements of Geron Bio-Med using the local currency as the functional currency. We translated the assets and liabilities of Geron Bio-Med at rates of exchange at the balance sheet date and translated income and expense items at average monthly rates of exchange. The resultant translation adjustments were included in accumulated other comprehensive income (loss), a separate component of stockholders' equity.

Net Loss Per Share

Basic earnings (loss) per share is calculated based on the weighted average number of shares of common stock outstanding during the period. Diluted earnings (loss) per share is calculated based on the weighted average number of shares of common stock and potential dilutive securities outstanding during the period. Potential dilutive securities primarily consist of outstanding stock options, restricted stock awards and warrants to purchase common stock and are determined using the treasury stock method at an average market price during the period.

Because we are in a net loss position, diluted loss per share excludes the effects of potential dilutive securities. Had we been in a net income position, diluted earnings per share would have included the shares used in the computation of basic net loss per share as well as an additional 3,072,340, 532,120 and 11,497 shares for 2014, 2013 and 2012, respectively, related to outstanding stock options, restricted stock awards and warrants (as determined using the treasury stock method at the estimated average market value).

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires us to make estimates and assumptions that affect the amounts reported in the financial statements and accompanying notes. On a regular basis, management evaluates these estimates and assumptions. Actual results could differ from those estimates.

Fair Value of Financial Instruments

Cash Equivalents and Marketable Securities

We consider all highly liquid investments with an original maturity of three months or less to be cash equivalents. We are subject to credit risk related to our cash equivalents and marketable securities. We place our cash and cash equivalents in money market funds and cash operating accounts. Our marketable securities include U.S. government-sponsored enterprise securities, commercial paper and corporate notes with original maturities ranging from four to 19 months.

We classify our marketable securities as available-for-sale. We record available-for-sale securities at fair value with unrealized gains and losses reported in accumulated other comprehensive income (loss) in stockholders' equity. Realized gains and losses are included in interest and other income and are derived using the specific identification method for determining the cost of securities sold and have been insignificant to date. Dividend and interest income are recognized when earned and included in interest and other income in our consolidated statements of operations. We recognize a charge when the declines in the fair values below the amortized cost basis of our available-for-sale securities are judged to be other-than-temporary. We consider various factors in determining whether to recognize an other-than-temporary charge, including whether we intend to sell the security or whether it is more likely than not that we would be required to sell the security before recovery of the amortized cost basis. Declines in market value associated with credit losses judged as other-than-temporary result in a charge to interest and other income. Other-than-temporary charges not related to credit losses are included in accumulated other comprehensive income (loss) in stockholders' equity. We have not recorded any other-than-temporary impairment charges for our available-for-sale securities for the years ended December 31, 2014, 2013 and 2012. See Note 2 on Fair Value Measurements.

Non-Marketable Equity Investments

Non-marketable equity investments in companies in which we own less than 20% of the outstanding voting stock and do not otherwise have the ability to exert significant influence over the investees are carried at cost, as adjusted for other-than-temporary impairments. We apply the equity method of accounting for investments in non-marketable nonpublic companies in which we own more than 20% of the outstanding voting stock or otherwise have the ability to exert significant influence over the investees. Under this method, we increase (decrease) the carrying value of our investment by a proportionate share of the investee's earnings (losses). If losses exceed the carrying value of the investment, losses are then applied against any advances to the investee, including any commitment to provide financial support, until those amounts are reduced to zero. Commitments to provide financial support include formal guarantees, implicit arrangements, reputational expectations, intercompany relationships or a consistent past history of providing financial support. The equity method is then suspended until the investee has earnings. Any proportionate share of investee earnings is first applied to the share of accumulated losses not recognized during the period the equity method was suspended.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

We recognize previously suspended losses to the extent additional investment is determined to represent the funding of prior losses. See Note 7 on Divestiture of Stem Cell Assets.

Fair Value of Derivatives

For non-employee options classified as liabilities, the fair value of these instruments is recorded on the consolidated balance sheet at inception and adjusted to fair value at each financial reporting date. The change in fair value of the non-employee options is recorded in the consolidated statements of operations as unrealized gain (loss) on derivatives. Fair value of non-employee options is estimated using the Black Scholes option-pricing model. The non-employee options continue to be reported as a liability until such time as the instruments are exercised or expire or are otherwise modified to remove the provisions which require this treatment, at which time these instruments are marked to fair value and reclassified from liabilities to stockholders' equity. For non-employee options classified as permanent equity, the fair value of the non-employee options is recorded in stockholders' equity as of their respective vesting dates and no further adjustments are made. See Note 2 on Fair Value Measurements.

Nonmonetary Transactions

We account for nonmonetary transactions based on the fair values of the assets (or services) involved. The cost of a nonmonetary asset acquired in exchange for another nonmonetary asset is the fair value of the asset surrendered to obtain it with a gain or loss recognized on the exchange. We use the fair value of the asset received to measure the cost if it is more clearly evident than the fair value of the asset surrendered. If the fair value of neither the assets received nor the assets relinquished is determinable within reasonable limits, we use the recorded amount (or carrying value) of the nonmonetary assets relinquished to account for the exchange. Similarly, we use carrying value for an exchange of controlled assets that do not meet the definition of a business for a non-controlling non-marketable equity interest in a company with no gain or loss recognized on the exchange. See Note 7 on Divestiture of Stem Cell Assets.

Revenue Recognition

In general, we recognize revenue for each unit of accounting when all of the following criteria have been met: (a) persuasive evidence of an arrangement exists, (b) delivery has occurred or services have been rendered, (c) the seller's price to the buyer is fixed or determinable, and (d) collectability is reasonably assured. Amounts received prior to satisfying these revenue recognition criteria are recorded as deferred revenue. Amounts expected to be recognized as revenue within the 12 months following the balance sheet date are classified as current deferred revenue. Amounts not expected to be recognized as revenue within the 12 months following the balance sheet date are classified as noncurrent deferred revenue.

License and/or Collaboration Agreements

In addition to the Collaboration Agreement with Janssen, we have entered into several license or collaboration agreements with various oncology, diagnostics, research tools and biologics production companies. Economic terms in these agreements may include non-refundable license payments in cash or equity securities, option payments in cash or equity securities, cost reimbursements, cost-sharing

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

arrangements, milestone payments, royalties on future sales of products, or any combination of these items. In applying the appropriate revenue recognition guidance related to these agreements, we first assess whether the arrangement contains multiple elements. In this evaluation, we consider: (1) the deliverables included in the arrangement and (2) whether the individual deliverables represent separate units of accounting or whether they must be accounted for as a combined unit of accounting. This evaluation involves subjective determinations and requires us to make judgments about the individual deliverables and whether such deliverables are separable from the other aspects of the contractual relationship. Deliverables are considered separate units of accounting provided that: (i) the delivered item(s) has value to the customer on a standalone basis, and if (ii) the arrangement includes a general right of return relative to the delivered item(s), delivery or performance of the undelivered item(s) is considered probable and substantially in our control. In assessing whether an item has standalone value, we consider factors such as the research, manufacturing and commercialization capabilities of the collaboration partner and the availability of the associated expertise in the general marketplace. In addition, we consider whether the collaboration partner can use the other deliverable(s) for their intended purpose without the receipt of the remaining element(s), whether the value of the deliverable is dependent on the undelivered item(s) and whether there are other vendors that can provide the undelivered element(s).

Arrangement consideration that is fixed or determinable is allocated among the separate units of accounting using the relative selling price method. We then apply the applicable revenue recognition criteria noted above to each of the separate units of accounting in determining the appropriate period and pattern of recognition. We determine how to allocate arrangement consideration to identified units of accounting based on the selling price hierarchy provided under relevant accounting guidance. The estimated fair value of deliverables under the arrangement may be derived using a best estimate of selling price if vendor-specific-objective evidence and third-party evidence are not available.

Upfront non-refundable signing, license or non-exclusive option fees are recognized as revenue: (i) when rights to use the intellectual property, related to a license that has standalone value from the other deliverables to be provided under the agreement, have been delivered or (ii) over the term of the agreement if we have continuing performance obligations as the arrangement would be accounted for as a single unit of accounting. When payments are received in equity securities, we do not recognize any revenue unless such securities are determined to be realizable in cash.

At the inception of an arrangement that includes milestone payments, we assess whether each milestone is substantive and at risk to both parties on the basis of the contingent nature of the milestone. This evaluation includes an assessment of whether: (i) the consideration is commensurate with either the performance to achieve the milestone or the enhancement of the value of the delivered item(s) as a result of a specific outcome resulting from the performance to achieve the milestone, (ii) the consideration relates solely to past performance and (iii) the consideration is reasonable relative to all of the deliverables and payment terms within the arrangement. We consider various factors such as the scientific, clinical, regulatory, commercial and other risks that must be overcome to achieve the respective milestone and the level of effort and investment required to achieve the respective milestone in making this assessment. There is considerable judgment involved in determining whether a milestone satisfies all of the criteria required to conclude that a milestone is substantive. Milestone payments for milestones that are considered substantive would be recognized as revenue in their entirety upon successful accomplishment of the milestone, assuming all other revenue recognition criteria are met.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Milestone payments for milestones that are not considered substantive would be recognized as revenue over the remaining period of performance, assuming all other revenue recognition criteria are met.

Royalties are recognized as earned in accordance with contract terms when royalties from licensees can be reasonably estimated and collectability is reasonably assured. If royalties cannot be reasonably estimated or collectability of a royalty amount is not reasonably assured, royalties are recognized as revenue when the cash is received. Revenue from commercial milestone payments will be accounted for as royalties and recorded as revenue upon achievement of the milestone, assuming all other revenue recognition criteria are met.

Cost-sharing expenses are recorded as earned or owed based on the performance requirements by both parties under the respective contracts. For arrangements in which we and our collaboration partner in the agreement are exposed to significant risks and rewards depending on the commercial success of the activity, we recognize payments between the parties on a net basis and record such amounts as a reduction or addition to research and development expense. For arrangements in which we have agreed to perform certain research and development services for our collaboration partner and are not exposed to significant risks and rewards depending on the commercial success of the activity, we recognize the respective cost reimbursements as revenue under the collaborative agreement as the related research and development services are rendered.

Restricted Cash

Restricted cash consists of funds maintained in separate certificate of deposit accounts for specified purposes. The components of restricted cash were as follows:

	December 31,	
(In thousands)	**2014**	**2013**
Certificate of deposit for unused equipment line of credit	$ —	$ 530
Certificate of deposit for credit card purchases	266	265
	$ 266	$ 795

In 2014, we closed the certificate of deposit for our unused equipment line of credit upon maturity and transferred the cash proceeds to our cash operating accounts. This action also cancelled the availability of the equipment line of credit.

Research and Development Expenses

Research and development expenses consist of expenses incurred in identifying, developing and testing product candidates resulting from our independent efforts as well as efforts associated with collaborations. These expenses include, but are not limited to, in-process research and development acquired in an asset acquisition and deemed to have no alternative future use, payroll and personnel expense, lab supplies, preclinical studies, clinical trials, including support for investigator-sponsored clinical trials, raw materials to manufacture clinical trial drugs, manufacturing costs for research and clinical trial materials, sponsored research at other labs, consulting, costs to maintain technology licenses and research-related overhead. Research and development costs are expensed as incurred, including payments made under our license agreements.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Clinical Trial Costs

A significant component of our research and development expenses has historically been clinical trial costs. Substantial portions of our preclinical studies and all of our clinical trials have been performed by third-party contract research organizations, or CROs, and other vendors. We accrue expenses for preclinical studies performed by our vendors based on certain estimates over the term of the service period and adjust our estimates as required. We accrue expenses for clinical trial activities performed by CROs based upon the estimated amount of work completed on each study. For clinical trial expenses, the significant factors used in estimating accruals include the number of patients enrolled, the number of active clinical sites and the duration for which the patients will be enrolled in the study. Pass through costs from CROs include, but are not limited to, regulatory expenses, investigator fees, lab fees, travel costs and other miscellaneous costs, including shipping and printing fees. We accrue pass through costs based on estimates of the amount of work completed for the clinical trial. We monitor patient enrollment levels and related activities to the extent possible through internal reviews, review of contractual terms and correspondence with CROs. We base our estimates on the best information available at the time. However, additional information may become available to us which would allow us to make a more accurate estimate in future periods. In this event, we may be required to record adjustments to research and development expenses in future periods when the actual level of activity becomes more certain.

Depreciation and Amortization

We record property and equipment at cost and calculate depreciation using the straight-line method over the estimated useful lives of the assets, generally four years. Leasehold improvements are amortized over the shorter of the estimated useful life or remaining term of the lease.

Stock-Based Compensation

We maintain various stock incentive plans under which stock options and restricted stock awards are granted to employees, directors and consultants. We also have an employee stock purchase plan for all eligible employees. We recognize stock-based compensation expense on a straight-line basis over the requisite service period, which is generally the vesting period. For additional information, see Note 9 on Stockholders' Equity.

Stock Options and Employee Stock Purchase Plan

We grant service-based stock options under our equity plans to employees, directors and consultants. The vesting period for employee options is generally four years. We use the Black Scholes option-pricing model to estimate the grant-date fair value of our stock options and employee stock plan purchases. The determination of fair value for these stock-based awards on the date of grant using the Black Scholes option-pricing model is affected by our stock price as well as assumptions regarding a number of complex and subjective variables. For additional information, see Note 9 on Stockholders' Equity.

Restricted Stock Awards

We have granted restricted stock awards to employees and directors with three types of vesting schedules: (i) service-based, (ii) performance-based or (iii) market-based. Service-based restricted stock

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

awards generally vest annually over four years. Performance-based restricted stock awards vest upon achievement of discrete strategic corporate goals within a specified performance period, generally three years. Market-based restricted stock awards vest only upon achievement of certain market price thresholds of our common stock within a specified performance period, generally three years.

The fair value for service-based restricted stock awards is determined using the fair value of our common stock on the date of grant. The fair value is amortized as stock-based compensation expense over the requisite service period of the award, which is generally the vesting period, on a straight-line basis and is reduced for estimated forfeitures, as applicable.

The fair value for performance-based restricted stock awards is determined using the fair value of our common stock on the date of grant. Stock-based compensation expense for awards with vesting based on performance conditions is recognized over the period from the date the performance condition is determined to be probable of occurring through the date the applicable condition is expected to be met and is reduced for estimated forfeitures, as applicable. If the performance condition is not considered probable of being achieved, no stock-based compensation expense is recognized until such time as the performance condition is considered probable of being met, if at all. If that assessment of the probability of the performance condition being met changes, the impact of the change in estimate would be recognized in the period of the change. If the requisite service period has been met prior to the change in estimate, the effect of the change in estimate would be recognized immediately. All previously granted performance-based restricted stock awards have been cancelled unvested as the performance conditions were not achieved within the respective performance periods.

The fair value for market-based restricted stock awards is determined using a lattice valuation model with a Monte Carlo simulation. The model takes into consideration the historical volatility of our stock and the risk-free interest rate at the date of grant. In addition, the model is used to estimate the derived service period for the awards. The derived service period is the estimated period of time that would be required to satisfy the market condition, assuming the market condition will be satisfied. Stock-based compensation expense is recognized over the derived service period for the awards using the straight-line method and is reduced for estimated forfeitures, as applicable, but is accelerated if the market condition is achieved earlier than estimated. If a market-based restricted stock award is forfeited or expires after completion of the derived service period, any previously recognized stock-based compensation expense is not reversed. All previously granted market-based restricted stock awards have been cancelled unvested as the market conditions were not achieved within the specified performance period.

Non-Employee Stock-Based Awards

For our non-employee stock-based awards, the measurement date on which the fair value of the stock-based award is calculated is equal to the earlier of: (i) the date at which a commitment for performance by the counterparty to earn the equity instrument is reached or (ii) the date at which the counterparty's performance is complete. We recognize stock-based compensation expense for the fair value of the vested portion of non-employee awards in our consolidated statements of operations.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

Accumulated Other Comprehensive Loss

Accumulated other comprehensive loss includes certain changes in stockholders' equity which are excluded from net loss. The components of accumulated other comprehensive loss were as follows:

(In thousands)	December 31, 2014	December 31, 2013
Unrealized loss on marketable securities	$ (84)	$ (14)

Income Taxes

We maintain deferred tax assets and liabilities that reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes and are subject to tests of recoverability. Our deferred tax assets include net operating loss carryforwards, research credits and capitalized research and development. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. Our net deferred tax asset has been fully offset by a valuation allowance because of our history of losses. Any potential accrued interest and penalties related to unrecognized tax benefits within operations would be recorded as income tax expense.

Concentrations of Customers and Suppliers

The majority of our revenues was earned in the United States. Two customers accounted for approximately 31%, 42% and 59% of our 2014, 2013 and 2012 revenues, respectively.

We contract third-party manufacturers to produce GMP-grade drugs for preclinical and clinical studies. We also contract for starting materials to supply those manufacturers and us. Certain development and clinical activities may be delayed if we or Janssen are unable to obtain sufficient quantities of starting materials or GMP-grade drugs from current third-party suppliers or other third-party sources.

Recent Accounting Pronouncements

In April 2014, the Financial Accounting Standards Board, or FASB, issued Accounting Standard Update No. 2014-08, Presentation of Financial Statements and Property, Plant, and Equipment: Reporting Discontinued Operations and Disclosures of Disposals of Components of an Entity, or ASU 2014-08. ASU 2014-08 raised the threshold for a disposal of assets to qualify as a discontinued operation and requires new disclosures for both discontinued operations and disposals of individually significant components of a business that do not qualify as discontinued operations. Under the new guidance, only disposals of assets representing a strategic shift in operations that has a major effect on the entity's operations and financial results should be presented as discontinued operations. If the disposal does qualify as a discontinued operation, the entity will be required to provide expanded disclosures, as well as disclosure of the pretax income attributable to the disposal of a significant part of an entity that does not qualify as a discontinued operation. ASU 2014-08 is effective for us beginning January 1, 2015 and subsequent interim periods. We do not expect the adoption of ASU 2014-08 to have a material effect on our consolidated financial statements.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

1. ORGANIZATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES (Continued)

In May 2014, the FASB issued Accounting Standard Update No. 2014-09, Revenue from Contracts with Customers, or ASU 2014-09. ASU 2014-09 provides a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance, including industry-specific guidance. ASU 2014-09 will require an entity to recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. This update creates a five-step model that requires entities to exercise judgment when considering the terms of the contract(s). The five-step model includes: (i) identifying the contract(s) with the customer, (ii) identifying the separate performance obligations in the contract, (iii) determining the transaction price, (iv) allocating the transaction price to the separate performance obligations, and (v) recognizing revenue when each performance obligation is satisfied. ASU 2014-09 also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. ASU 2014-09 will be effective for us beginning January 1, 2017 and subsequent interim periods. We have the option to apply the provisions of ASU 2014-09 either retrospectively to each prior reporting period presented or retrospectively with the cumulative effect of applying this accounting standard recognized at the date of initial application. Early adoption is not permitted. We are currently evaluating the transition method and the impact that the adoption of ASU 2014-09 will have on our consolidated financial statements and related disclosures.

In August 2014, the FASB issued Accounting Standard Update No. 2014-15, Presentation of Financial Statements—Going Concern (Subtopic 205-40): Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern, or ASU 2014-15. ASU 2014-15 is intended to define management's responsibility to evaluate whether there is substantial doubt about an organization's ability to continue as a going concern and to provide related footnote disclosures. Substantial doubt about an entity's ability to continue as a going concern exists when relevant conditions and events, considered in the aggregate, indicate that it is probable that the entity will be unable to meet its obligations as they become due within one year after the date that the financial statements are issued (or available to be issued). ASU 2014-15 provides guidance to an organization's management, with principles and definitions that are intended to reduce diversity in the timing and content of disclosures that are commonly provided by organizations in financial statement footnotes. ASU 2014-15 will be effective for us beginning December 31, 2016 and subsequent interim periods. Early adoption is permitted. We are currently in the process of evaluating the impact of adoption of ASU 2014-15 on our consolidated financial statements and related disclosures.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. FAIR VALUE MEASUREMENTS

We categorize financial instruments recorded at fair value on our consolidated balance sheets based upon the level of judgment associated with inputs used to measure their fair value. The categories are as follows:

Level 1— Inputs are unadjusted, quoted prices in active markets for identical assets or liabilities at the measurement date. An active market for the asset or liability is a market in which transactions for the asset or liability occur with sufficient frequency and volume to provide pricing information on an ongoing basis.

Level 2— Inputs (other than quoted market prices included in Level 1) are either directly or indirectly observable for the asset or liability through correlation with market data at the measurement date and for the duration of the instrument's anticipated life.

Level 3— Inputs reflect management's best estimate of what market participants would use in pricing the asset or liability at the measurement date. Consideration is given to the risk inherent in the valuation technique and the risk inherent in the inputs to the model.

A financial instrument's categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement. Below is a description of the valuation methodologies used for financial instruments measured at fair value on our consolidated balance sheets, including the category for such financial instruments.

Cash Equivalents and Marketable Securities Available-for-Sale

Certificates of deposit and money market funds are categorized as Level 1 within the fair value hierarchy as their fair values are based on quoted prices available in active markets. U.S. government-sponsored enterprise securities, commercial paper and corporate notes are categorized as Level 2 within the fair value hierarchy as their fair values are estimated by using pricing models, quoted prices of securities with similar characteristics or discounted cash flows.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. FAIR VALUE MEASUREMENTS (Continued)

Cash equivalents, restricted cash and marketable securities by security type at December 31, 2014 were as follows:

(In thousands)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Included in cash and cash equivalents:				
Money market funds	$ 40,342	$ —	$ —	$ 40,342
Restricted cash:				
Certificate of deposit	$ 266	$ —	$ —	$ 266
Marketable securities:				
Government-sponsored enterprise securities (due in less than 1 year)	$ 401	$ —	$ (1)	$ 400
Government-sponsored enterprise securities (due in 1 to 2 years)	6,556	—	(7)	6,549
Commercial paper (due in less than 1 year)	10,985	14	—	10,999
Corporate notes (due in less than 1 year)	97,307	2	(63)	97,246
Corporate notes (due in 1 to 2 years)	12,412	—	(29)	12,383
	$ 127,661	$ 16	$ (100)	$ 127,577

Cash equivalents, restricted cash and marketable securities by security type at December 31, 2013 were as follows:

(In thousands)	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Estimated Fair Value
Included in cash and cash equivalents:				
Money market funds	$ 8,079	$ —	$ —	$ 8,079
Corporate notes	2,206	—	—	2,206
	$ 10,285	$ —	$ —	$ 10,285
Restricted cash:				
Certificates of deposit	$ 795	$ —	$ —	$ 795
Marketable securities:				
Government-sponsored enterprise securities (due in less than 1 year)	$ 7,369	$ 1	$ (1)	$ 7,369
Commercial paper (due in less than 1 year)	5,496	3	—	5,499
Corporate notes (due in less than 1 year)	39,383	1	(18)	39,366
	$ 52,248	$ 5	$ (19)	$ 52,234

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. FAIR VALUE MEASUREMENTS (Continued)

Marketable securities with unrealized losses at December 31, 2014 and 2013 were as follows:

	Less Than 12 Months		12 Months or Greater		Total	
(In thousands)	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses	Estimated Fair Value	Gross Unrealized Losses
As of December 31, 2014:						
Government-sponsored enterprise securities (due in less than 1 year)	$ 400	$ (1)	$ —	$ —	$ 400	$ (1)
Government-sponsored enterprise securities (due in 1 to 2 years)	5,549	(7)	—	—	5,549	(7)
Corporate notes (due in less than 1 year)	92,989	(63)	—	—	92,989	(63)
Corporate notes (due in 1 to 2 years)	12,383	(29)	—	—	12,383	(29)
	$ 111,321	$ (100)	$ —	$ —	$ 111,321	$ (100)
As of December 31, 2013:						
Government-sponsored enterprise securities (due in less than 1 year)	$ 3,947	$ (1)	$ —	$ —	$ 3,947	$ (1)
Corporate notes (due in less than 1 year)	37,060	(18)	—	—	37,060	(18)
	$ 41,007	$ (19)	$ —	$ —	$ 41,007	$ (19)

The gross unrealized losses related to government-sponsored enterprise securities and corporate notes as of December 31, 2014 and 2013 were due to changes in interest rates. We determined that the gross unrealized losses on our marketable securities as of December 31, 2014 and 2013 were temporary in nature. We review our investments quarterly to identify and evaluate whether any investments have indications of possible impairment. Factors considered in determining whether a loss is temporary include the length of time and extent to which the fair value has been less than the cost basis and whether we intend to sell the security or whether it is more likely than not that we would be required to sell the security before recovery of the amortized cost basis. We currently do not intend to sell these securities before recovery of their amortized cost basis.

Derivatives

Non-employee options are normally traded less actively, have trade activity that is one way, and/or are traded in less-developed markets and are therefore valued based upon models with significant unobservable market parameters, resulting in Level 3 categorization.

Options held by non-employees whose performance obligations are complete are classified as derivative liabilities on our consolidated balance sheets. These options are marked to fair value at each reporting period, and upon the exercise of these options, the instruments are marked to fair value and reclassified from derivative liabilities to stockholders' equity. We have not recorded any reclassifications from current liabilities to stockholders' equity for non-employee option exercises in 2014 and 2013.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. FAIR VALUE MEASUREMENTS (Continued)

As of December 31, 2014 and 2013, the following non-employee options to purchase common stock were considered derivatives and classified as current liabilities:

Issuance Date	Exercise Price	Number of Shares at December 31, 2014	Number of Shares at December 31, 2013	Exercisable Date	Expiration Date	Fair Value at December 31, 2014	Fair Value at December 31, 2013
						(In thousands)	
March 2005	$ 6.39	284,600	284,600	January 2007	March 2015	$ 16	$ 367

The fair value of derivatives has been calculated at each reporting date using the Black Scholes option-pricing model with the following assumptions:

	December 31, 2014	December 31, 2013
Dividend yield	0%	0%
Expected volatility	0.895	0.844
Risk-free interest rate	0.04%	0.13%
Expected term	0.25 yr	1 yr

Dividend yield is based on historical cash dividend payments. The expected volatility is based on historical volatilities of our stock since traded options on Geron common stock do not correspond to derivatives' terms and trading volume of Geron options is limited. The risk-free interest rate is based on the U.S. Zero Coupon Treasury Strip Yields for the expected term in effect on the reporting date. The expected term of derivatives is equal to the remaining contractual term of the instruments.

Fair Value on a Recurring Basis

The following table presents information about our financial instruments that are measured at fair value on a recurring basis as of December 31, 2014 and indicates the fair value category assigned.

	Fair Value Measurements at Reporting Date Using			
(In thousands)	Quoted Prices in Active Markets for Identical Assets / Liabilities Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3	Total
Assets				
Money market funds[1]	$ 40,342	$ —	$ —	$ 40,342
Government-sponsored enterprise securities[2][3]	—	6,949	—	6,949
Commercial paper[2]	—	10,999	—	10,999
Corporate notes[2][3]	—	109,629	—	109,629
Total	$ 40,342	$ 127,577	$ —	$ 167,919
Liabilities				
Derivatives[4]	$ —	$ —	$ 16	$ 16

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. FAIR VALUE MEASUREMENTS (Continued)

The following table presents information about our financial instruments that are measured at fair value on a recurring basis as of December 31, 2013 and indicates the fair value category assigned.

	Fair Value Measurements at Reporting Date Using			
(In thousands)	Quoted Prices in Active Markets for Identical Assets / Liabilities Level 1	Significant Other Observable Inputs Level 2	Significant Unobservable Inputs Level 3	Total
Assets				
Money market funds[1]	$ 8,079	$ —	$ —	$ 8,079
Government-sponsored enterprise securities[2]	—	7,369	—	7,369
Commercial paper[2]	—	5,499	—	5,499
Corporate notes[1][2]	—	41,572	—	41,572
Total	$ 8,079	$ 54,440	$ —	$ 62,519
Liabilities				
Derivatives[4]	$ —	$ —	$ 367	$ 367

(1) Included in cash and cash equivalents on our consolidated balance sheets.

(2) Included in current portion of marketable securities on our consolidated balance sheets.

(3) Included in noncurrent portion of marketable securities on our consolidated balance sheets.

(4) Included in fair value of derivatives on our consolidated balance sheets.

Changes in Level 3 Recurring Fair Value Measurements

The table below includes a rollforward of the balance sheet amounts for the year ended December 31, 2014, including the change in fair value, for financial instruments in the Level 3 category. When a determination is made to classify a financial instrument within Level 3, the determination is based upon the significance of the unobservable parameters to the overall fair value measurement. However, Level 3 financial instruments typically include, in addition to the unobservable components, observable components (that is, components that are actively quoted and can be validated to external

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

2. FAIR VALUE MEASUREMENTS (Continued)

sources). Accordingly, the gain in the table below includes changes in fair value due in part to observable factors that are part of the methodology.

	Fair Value Measurements Using Significant Unobservable Inputs (Level 3) Year Ended December 31, 2014					
(In thousands)	Fair Value at December 31, 2013	Total Unrealized Gain Included in Earnings[1]	Purchases, Sales, Issuances, Settlements	Transfers In and/or Out of Level 3	Fair Value at December 31, 2014	Change in Unrealized Gain Related to Financial Instruments Held at December 31, 2014[1]
Derivative liabilities	$ 367	$ (351)	$ —	$ —	$ 16	$ (351)

(1) Reported as unrealized gain on derivatives in our consolidated statements of operations.

Credit Risk

We currently place our cash, restricted cash, cash equivalents and marketable securities with four financial institutions in the United States. Generally, these deposits may be redeemed upon demand and therefore, bear minimal risk. Deposits with banks may exceed the amount of insurance provided on such deposits. Financial instruments that potentially subject us to concentrations of credit risk consist primarily of cash equivalents and marketable securities. Cash equivalents and marketable securities currently consist of money market funds, U.S. government-sponsored enterprise securities, commercial paper and corporate notes. Our investment policy, approved by the audit committee of our board of directors, limits the amount we may invest in any one type of investment issuer, thereby reducing credit risk concentrations.

3. PROPERTY AND EQUIPMENT

Property and equipment, stated at cost, is comprised of the following:

	December 31,	
(In thousands)	2014	2013
Furniture and computer equipment	$ 1,158	$ 1,092
Lab equipment	130	118
Leasehold improvements	74	74
	1,362	1,284
Less accumulated depreciation and amortization	(1,189)	(1,192)
	$ 173	$ 92

4. EQUIPMENT LINE

In 2009, we renewed our equipment financing facility and had approximately $500,000 available for borrowing. This facility was secured by a certificate of deposit. In 2014, we closed the certificate of deposit for our unused equipment line of credit upon maturity and transferred the cash proceeds to our cash operating accounts. This action also cancelled the availability of the equipment line of credit. We had no amounts due under this facility as of December 31, 2013.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

5. ACCRUED LIABILITIES

Accrued liabilities consisted of the following:

(In thousands)	December 31, 2014	December 31, 2013
Service provider obligations	$ 408	$ 840
Clinical trial costs	513	326
Other	616	617
	$ 1,537	$ 1,783

6. RESTRUCTURINGS

April 2013 Restructuring

On April 25, 2013, we announced the decision to discontinue our discovery research programs and companion diagnostics program based on telomere length and close our research laboratory facility located at 200 Constitution Drive, Menlo Park, California. With this decision, a total of 20 positions were eliminated. In connection with this restructuring, we incurred aggregate restructuring charges of $1,370,000 for the year ended December 31, 2013, of which $624,000 related to one-time termination benefits, including $28,000 of non-cash stock-based compensation expense relating to the extension of the post-termination exercise period through the end of December 2013 for certain stock options previously granted to terminated employees, $200,000 related to non-cash charges for write-downs of excess equipment and leasehold improvements and $546,000 related to costs associated with the closure of our research laboratory facility. In connection with the decision to close our research laboratory facility, we entered into an amendment to the lease agreement for the 200 Constitution Drive facility under which the lease terminated effective December 31, 2013. As consideration for the early termination of the lease, we paid the landlord the remaining rents due under the original term of the lease as well as certain facility maintenance costs, all of which have been included in restructuring charges. The restructuring resulted in aggregate cash expenditures of $1,085,000 after adjustments and non-cash credits. In 2013, we received proceeds of $1,080,000 from the sale of excess laboratory equipment in connection with the closure of our research laboratory facility. All actions associated with this restructuring were completed in 2013, and we do not anticipate incurring any further charges in connection with this restructuring.

The components of the accrued restructuring charges included on our consolidated balance sheet relating to the April 2013 restructuring are summarized in the following table. As of December 31, 2014, we had no remaining obligations related to the April 2013 restructuring:

(In thousands)	Employee Severance and Other Benefits	Facility Related Charges	Total
Beginning accrual balance as of December 31, 2013	$ 21	$ 73	$ 94
Cash payments	(19)	(73)	(92)
Adjustments or non-cash credits	(2)	—	(2)
Ending accrual balance as of December 31, 2014	$ —	$ —	$ —

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

6. RESTRUCTURINGS (Continued)

December 2012 Restructuring

On December 3, 2012, we announced the decision to discontinue development of GRN1005. With this decision, a total of 43 positions were eliminated. In connection with this restructuring, we incurred aggregate restructuring charges of $2,794,000, of which $2,702,000 was recognized for the year ended December 31, 2012 and $92,000 was recognized for the year ended December 31, 2013. The aggregate restructuring charges consisted of $2,523,000 related to one-time termination benefits, including $107,000 of non-cash stock-based compensation expense relating to the extension of the post-termination exercise period through the end of December 2013 for certain stock options previously granted to terminated employees, and $271,000 related to non-cash charges for write-downs of GRN1005 manufacturing equipment. The restructuring resulted in aggregate cash expenditures of $2,271,000 after adjustments and non-cash credits. All actions associated with this restructuring were completed in 2013, and we do not anticipate incurring any further charges in connection with this restructuring.

See Note 15 on Subsequent Event for discussion of an organizational resizing announced in March 2015.

7. DIVESTITURE OF STEM CELL ASSETS

On October 1, 2013, we closed the transaction to divest our human embryonic stem cell assets and our autologous cellular immunotherapy program pursuant to the terms of the previously disclosed asset contribution agreement, or the Contribution Agreement, that we entered into in January 2013 with BioTime, Inc., or BioTime, and BioTime's subsidiary, Asterias Biotherapeutics, Inc., or Asterias (formerly known as BioTime Acquisition Corporation).

In accordance with the terms of the Contribution Agreement, on October 1, 2013 we received 6,537,779 shares of Asterias Series A common stock representing 21.4% of Asterias' outstanding common stock as a class as of that date. We are also entitled to receive royalties from Asterias on the sale of products that are commercialized, if any, in reliance upon the patents we contributed to Asterias. In accordance with our contractual obligations under the Contribution Agreement, we distributed all of the shares of Asterias Series A common stock we received from Asterias to our stockholders on a pro rata basis, other than with respect to fractional shares and shares that would otherwise have been distributed to Geron stockholders residing in certain excluded jurisdictions, which shares, as required by the Contribution Agreement, were sold with the net cash proceeds therefrom distributed ratably to the stockholders who would otherwise have been entitled to receive such shares. We refer to the distribution by us of the Asterias Series A common stock, or cash in lieu thereof, as the Series A Distribution. We completed the Series A Distribution to eligible stockholders on August 15, 2014. As of December 31, 2014, we had no remaining obligations with respect to the Series A Distribution.

We accounted for the divestiture of the stem cell assets as a nonmonetary transaction since we transferred intangible assets in exchange for a non-controlling interest in Asterias. The stem cell assets we contributed consisted primarily of intellectual property and know-how and did not meet the definition of a business for accounting purposes. A business consists of three elements: (i) inputs, (ii) processes and (iii) outputs. To be considered a business, only inputs and processes are required, which together form an integrated set of activities used to create outputs. Since we did not contribute any processes, such as operational processes or an organized workforce with the skills and experience

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

7. DIVESTITURE OF STEM CELL ASSETS (Continued)

to provide the necessary processes capable of being applied to inputs to create outputs, we determined the stem cell assets only represented inputs and therefore were not considered an integrated set of activities. Due to the significant research and development necessary to realize the commercial potential of the stem cell assets, we expensed all research and development costs associated with the stem cell assets as incurred and therefore, there was no recorded amount, or carrying value, for the stem cell assets on our consolidated balance sheets. Since the divestiture of the stem cell assets represented the transfer of nonfinancial assets that do not meet the definition of a business in exchange for a non-controlling equity interest in Asterias, we accounted for the transaction using the carrying amount, or book value, of the assets surrendered with no gain or loss recognized on the exchange, consistent with our accounting policy for such transactions. Because the stem cell assets had a carrying amount of zero, we applied a carrying amount of zero to the Asterias Series A common stock received in the divestiture.

We applied the equity method of accounting to our investment in Asterias Series A common stock during the period of ownership from October 1, 2013 through August 15, 2014. Since our investment in Asterias had an initial carrying amount of zero upon the closing of the transactions contemplated by the Contribution Agreement on October 1, 2013 and we had no commitments to provide financial support or obligations to perform services or other activities for Asterias, we suspended the equity method of accounting on October 1, 2013. In addition, since Asterias incurred net losses during our period of ownership, no additional value has been recognized for Asterias Series A common stock. Accordingly, the completion of the Series A Distribution had no impact on our consolidated financial statements.

8. COMMITMENTS AND CONTINGENCIES

Purported Securities and Derivative Lawsuits

On March 14, 2014, a purported securities class action lawsuit was commenced in the United States District Court for the Northern District of California, or the California District Court, naming as defendants us and certain of our officers. The lawsuit alleges violations of the Securities Exchange Act of 1934 in connection with allegedly false and misleading statements made by us related to our Phase 2 trial of imetelstat in patients with ET or PV. The plaintiff alleges, among other things, that we failed to disclose facts related to the occurrence of persistent low-grade LFT abnormalities observed in our Phase 2 trial of imetelstat in ET or PV patients and the potential risk of chronic liver injury following long-term exposure to imetelstat. The plaintiff seeks damages and an award of reasonable costs and expenses, including attorneys' fees. On March 28, 2014, a second purported securities class action lawsuit was commenced in the California District Court, and on June 6, 2014, a third purported securities lawsuit, not styled as a class action, was commenced in the United States District Court for the Southern District of Mississippi, or the Mississippi District Court, naming as defendants us and certain of our officers. These lawsuits, which are based on the same factual background as the purported securities class action lawsuit that commenced on March 14, 2014, also allege violations of the Securities Exchange Act of 1934 and seek damages and an award of reasonable costs and expenses, including attorneys' fees. On June 30, 2014, the California District Court consolidated both of the purported class actions filed in the California District Court and appointed a lead plaintiff and lead counsel to represent the purported class. On July 21, 2014, the California District Court ordered the lead plaintiff to file its consolidated amended complaint, which was filed on September 19, 2014. On August 11, 2014, we filed a motion to transfer the purported securities lawsuit filed in the Mississippi

8. COMMITMENTS AND CONTINGENCIES (Continued)

District Court to the California District Court. On November 4, 2014, the Mississippi District Court granted our motion and transferred the case to the California District Court, which was thereafter consolidated with the class actions. On November 18, 2014, we filed a motion with the California District Court to dismiss the consolidated amended complaint. The plaintiff's opposition to our motion to dismiss was filed on January 20, 2015, and we filed our reply on February 25, 2015. The court hearing for the motion to dismiss has been scheduled for April 10, 2015. We believe that we have meritorious defenses and intend to defend against these lawsuits vigorously.

On April 21, 2014, a stockholder purporting to act on our behalf filed a derivative lawsuit in the Superior Court of California for the County of San Mateo against certain of our officers and directors. The lawsuit alleges breaches of fiduciary duties by the defendants and other violations of law. In general, the lawsuit alleges that the defendants caused or allowed the dissemination of allegedly false and misleading statements related to our Phase 2 trial of imetelstat in patients with ET or PV. The plaintiff is seeking unspecified monetary damages and other relief, including reforms and improvements to our corporate governance and internal procedures. It is possible that additional derivative lawsuits will be filed with respect to these same or other matters and also naming our officers and directors as defendants. We have not yet responded to the derivative lawsuit, but intend to vigorously defend against the claims alleged and to seek dismissal of the lawsuit.

For a further discussion of these ongoing lawsuits, refer to the section entitled "Legal Proceedings" in Part I, Item 3 of this annual report Form 10-K. These lawsuits and any other related lawsuits are subject to inherent uncertainties, and the actual defense and disposition costs will depend upon many unknown factors. The outcome of these lawsuits is necessarily uncertain. We could be forced to expend significant resources in the defense against these and any other related lawsuits and we may not prevail. We currently are not able to estimate the possible cost to us from these lawsuits, as they are currently at an early stage, and we cannot be certain how long it may take to resolve these lawsuits or the possible amount of any damages that we may be required to pay. Such amounts could be material to our consolidated financial statements even if we prevail in the defense against these lawsuits. We have not established any reserves for any potential liability relating to these lawsuits. It is possible that we could, in the future, incur judgments or enter into settlements of claims for monetary damages.

Indemnifications to Officers and Directors

Our corporate bylaws require that we indemnify our officers and directors, as well as those who act as directors and officers of other entities at our request, against expenses, judgments, fines, settlements and other amounts actually and reasonably incurred in connection with any proceedings arising out of their services to Geron. In addition, we have entered into separate indemnification agreements with each of our directors and officers which provide for indemnification of these directors and officers under similar circumstances and under additional circumstances. The indemnification obligations are more fully described in our bylaws and the indemnification agreements. We purchase standard insurance to cover claims or a portion of the claims made against our directors and officers. Since a maximum obligation is not explicitly stated in our bylaws or in our indemnification agreements and will depend on the facts and circumstances that arise out of any future claims, the overall maximum amount of the obligations cannot be reasonably estimated. We have no such obligations on our consolidated balance sheets as of December 31, 2014 and 2013.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

8. COMMITMENTS AND CONTINGENCIES (Continued)

Operating Lease Commitment

In February 2014, we amended the lease agreement for our premises at 149 Commonwealth Drive to extend the lease term through January 2016. As of December 31, 2014, future minimum payments under our operating lease for our premises at 149 Commonwealth Drive were approximately $959,000. Rent expense under our operating leases was approximately $936,000, $1,422,000 and $1,474,000 for the years ended December 31, 2014, 2013 and 2012, respectively.

Severance Plan

We have an Amended and Restated Severance Plan, or Severance Plan, that applies to all employees that are not subject to performance improvement plans, and most significantly provides for, among other benefits: (i) a severance payment upon a Change of Control Triggering Event and Separation from Service (as defined in the Severance Plan) and (ii) a severance payment for each non-executive employee upon a Non-Change of Control Triggering Event and Separation from Service (as defined in the Severance Plan). A Change of Control Triggering Event is defined as an event where: (i) an employee is terminated by us without cause in connection with a change of control or within 12 months following a change of control provided, however, that if an employee is terminated by us in connection with a change of control but immediately accepts employment with our successor or acquirer, the employee will not be eligible for the benefits outlined in the Severance Plan, (ii) an employee resigns because in connection with a change of control, the offered terms of employment (new or continuing) by us or our successor or acquirer within 30 days after the change of control results in a material change in the terms of employment, or (iii) after accepting (or continuing) employment with us after a change of control, an employee resigns within 12 months following a change of control due to a material change in the terms of employment. A Non-Change of Control Triggering Event is defined as an event where a non-executive employee is terminated by us without cause. Severance payments range from two to 18 months of base salary, depending on the employee's position with us, payable in a lump sum payment. The Severance Plan also provides that the provisions of employment agreements entered into between us and executive or non-executive employees supersede the provisions of the Severance Plan. As of December 31, 2014, all our executive officers have employment agreements with provisions that may provide greater severance benefits than those in the Severance Plan.

9. STOCKHOLDERS' EQUITY

Public Offering

On February 4, 2014, we completed an underwritten public offering of 25,875,000 shares of our common stock at a public offering price of $4.00 per share, resulting in net cash proceeds of approximately $96,805,000 after deducting the underwriting discount and offering expenses payable by us.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

9. STOCKHOLDERS' EQUITY (Continued)

Warrants

As of December 31, 2014, the following warrants to purchase our common stock were outstanding and classified as equity:

Issuance Date	Exercise Price	Number of Shares	Exercisable Date	Expiration Date
August 2011[1]	$ 3.98	537,893	August 2011	August 2021
April 2005	$ 3.75	470,000	April 2005	April 2015
		1,007,893		

(1) In connection with each disbursement under the loan agreement with CIRM, we were obligated to issue to CIRM a warrant to purchase Geron common stock. Such warrants and the underlying common stock were unregistered. We have no further obligations to issue any additional warrants to CIRM. In December 2014, CIRM exercised a warrant to purchase 461,382 shares of our common stock utilizing the net exercise provision in the warrant resulting in the issuance of 168,039 shares of our common stock.

Equity Plans

2002 Equity Incentive Plan

The 2002 Equity Incentive Plan, or 2002 Plan, expired in May 2012. Upon the adoption of the 2011 Incentive Award Plan in May 2011 (see below), no further grants of options or stock purchase rights were made from the 2002 Plan. Options granted under the 2002 Plan expire no later than ten years from the date of grant. Option exercise prices were equal to 100% of the fair market value of the underlying common stock on the date of grant. Service-based stock options under the 2002 Plan generally vested over a period of four years from the date of the option grant. Other stock awards (restricted stock awards and restricted stock units) had variable vesting schedules which were determined by our board of directors on the date of grant.

2011 Incentive Award Plan

In May 2011, our stockholders approved the adoption of the 2011 Incentive Award Plan, or 2011 Plan. Our board of directors administers the 2011 Plan. The 2011 Plan provides for grants to employees (including officers and employee directors) of either incentive stock or nonstatutory stock options and stock purchase rights to employees (including officers and employee directors) and consultants (including non-employee directors). As of December 31, 2014, an aggregate of 13,384,883 shares of our common stock were available for future grants of equity awards under the 2011 Plan. Pursuant to the terms of the 2011 Plan, any shares subject to outstanding stock options originally granted under the 2002 Plan or 1996 Directors' Stock Option Plan, or outstanding unvested restricted stock awards originally granted under the 2002 Plan, that expire or terminate for any reason prior to exercise or settlement or are forfeited because of the failure to meet a contingency or condition required to vest such shares shall become available for issuance under the 2011 Plan. Options granted under the 2011 Plan expire no later than ten years from the date of grant. Option exercise prices shall be equal to 100% of the fair market value of the underlying common stock on the date of grant. If, at the time we

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

9. STOCKHOLDERS' EQUITY (Continued)

grant an option, the optionee directly or by attribution owns stock possessing more than 10% of the total combined voting power of all classes of our stock, the option price shall be at least 110% of the fair market value of the underlying common stock and shall not be exercisable more than five years after the date of grant.

We grant service-based stock options to employees under our 2011 Plan that generally vest over a period of four years from the date of the option grant. Other stock awards (restricted stock awards and restricted stock units) have variable vesting schedules as determined by our board of directors on the date of grant.

Under certain circumstances, options may be exercised prior to vesting, subject to our right to repurchase shares subject to such option at the exercise price paid per share. Our repurchase rights would generally terminate on a vesting schedule identical to the vesting schedule of the exercised option. During 2014, we have not repurchased any shares under the 2011 Plan. As of December 31, 2014, we have no shares outstanding subject to repurchase.

Our Non-Employee Director Compensation Policy adopted by our board of directors in March 2014 provides for the automatic grant of the following types of equity awards under the 2011 Plan:

First Director Option. Each person who becomes a non-employee director, whether by election by our stockholders or by appointment by our board of directors to fill a vacancy, will automatically be granted an option to purchase 70,000 shares of common stock on the date such person first becomes a non-employee director, or First Director Option. The First Director Option shall vest annually over three years upon each anniversary date of appointment to our board of directors.

Subsequent Director Option. Each non-employee director (other than any director receiving a First Director Option on the date of the annual meeting) will automatically be granted a subsequent option to purchase 35,000 shares of common stock, a Subsequent Director Option, on the date of the annual meeting of stockholders in each year during such director's service on our board of directors. The Subsequent Director Option vests one year from the date of grant.

1996 Directors' Stock Option Plan

The 1996 Directors' Stock Option Plan, or 1996 Directors Plan, expired in July 2006 upon which no further option grants were made from the 1996 Directors Plan. The options granted under the 1996 Directors Plan were nonstatutory stock options and expire no later than ten years from the date of grant. The option exercise price was equal to the fair market value of the underlying common stock on the date of grant. Options to purchase shares of common stock generally were 100% vested upon grant, except for options granted upon first appointment to the board of directors. These initial options vested annually over three years upon each anniversary date of appointment to the board of directors.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

9. STOCKHOLDERS' EQUITY (Continued)

2006 Directors' Stock Option Plan

The 2006 Directors' Stock Option Plan, or 2006 Directors Plan, was terminated by our board of directors and replaced by the 2011 Plan in March 2014. No further grants of options were made from the 2006 Directors Plan upon the 2006 Directors Plan's termination. All outstanding awards granted under the 2006 Directors Plan remain subject to the terms of the 2006 Directors Plan and the individual grants made thereunder.

The options granted under the 2006 Directors Plan were nonstatutory stock options, and they expire no later than ten years from the date of grant. The option exercise price was equal to the fair market value of the underlying common stock on the date of grant. The First Director Option granted to non-employee members of the board of directors under the 2006 Directors Plan vested annually over three years upon each anniversary date of appointment to the board of directors. The Subsequent Director Option granted to non-employee members of the board of directors on the date of the annual meeting of stockholders in each year during such director's service on our board of directors under the 2006 Directors Plan vested one year from the date of grant.

Aggregate option and award activity for the 2002 Plan, 2011 Plan, 1996 Directors Plan and 2006 Directors Plan is as follows:

		Outstanding Options			
	Shares Available For Grant	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Life (In years)	Aggregate Intrinsic Value (In thousands)
Balance at December 31, 2013	16,207,250	15,576,216	$ 3.04		$ 33,798
Options granted	(5,658,931)	5,658,931	$ 4.85		
Awards granted	(59,330)	—	$ —		
Options exercised	—	(662,626)	$ 1.94		
Options cancelled/forfeited	3,613,577	(3,613,577)	$ 5.48		
Awards cancelled/forfeited	142,375	—	$ —		
2006 Directors Plan termination	(860,058)	—	$ —		
Balance at December 31, 2014	13,384,883	16,958,944	$ 3.16	7.38	$ 16,038
Options exercisable at December 31, 2014		9,129,576	$ 3.12	6.47	$ 9,231
Options fully vested and expected to vest at December 31, 2014		16,225,022	$ 3.14	7.32	$ 15,546

The aggregate intrinsic value in the preceding table represents the total intrinsic value, based on Geron's closing stock price of $3.25 per share as of December 31, 2014, which would have been received by the option holders had all the option holders exercised their options as of that date.

There were no options granted with an exercise price below or greater than fair market value of our common stock on the date of grant in 2014, 2013 or 2012. As of December 31, 2014, 2013 and 2012, there were 9,129,576, 8,144,040 and 10,410,194 exercisable options outstanding at weighted average exercise prices per share of $3.12, $4.26 and $5.49, respectively.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

9. STOCKHOLDERS' EQUITY (Continued)

The total pretax intrinsic value of stock options exercised during 2014, 2013 and 2012 was $989,000, $2,787,000 and $100, respectively. Cash received from the exercise of options in 2014, 2013 and 2012 totaled approximately $1,286,000, $6,567,000 and $1,000, respectively. No income tax benefit was realized from stock options exercised in 2014 since we reported an operating loss.

Information about stock options outstanding as of December 31, 2014 is as follows:

	Options Outstanding		
Exercise Price Range	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Life (In years)
$1.10 - $1.50	4,284,937	$ 1.42	7.41
$1.51 - $2.14	4,278,382	$ 1.64	7.84
$2.16 - $5.01	5,376,639	$ 4.29	7.91
$5.05 - $9.32	3,018,986	$ 5.80	5.72
$1.10 - $9.32	16,958,944	$ 3.16	7.38

Aggregate restricted stock activity for the 2002 Plan, 2011 Plan and 2006 Directors Plan is as follows:

	Number of Shares	Weighted Average Grant Date Fair Value Per Share	Weighted Average Remaining Contractual Term (In years)
Non-vested restricted stock at December 31, 2013	409,437	$ 4.84	0.82
Granted	59,330	$ 2.67	
Vested	(265,422)	$ 4.47	
Cancelled/forfeited	(142,375)	$ 4.66	
Non-vested restricted stock at December 31, 2014	60,970	$ 4.73	0.37

The total fair value of restricted stock that vested during 2014, 2013 and 2012 was $782,000, $252,000 and $936,000, respectively.

Employee Stock Purchase Plan

In March 2014, our board of directors adopted the 2014 Employee Stock Purchase Plan, or 2014 Purchase Plan. The 2014 Purchase Plan was approved by our stockholders in May 2014. The 2014 Purchase Plan replaced the 1996 Employee Stock Purchase Plan, or 1996 Purchase Plan, which was terminated effective as of the date the 2014 Purchase Plan was approved by our stockholders. However, outstanding purchase rights granted under the 1996 Purchase Plan prior to its termination remained subject to the terms of the 1996 Purchase Plan. A total of 968,829 shares of our common stock were issued under the 1996 Purchase Plan since its adoption in July 1996 and reserves of 231,171 shares of our common stock for future issuance under the 1996 Purchase Plan were cancelled as of the date of termination and became available for future issuance for other corporate purposes. Under the 2014 Purchase Plan, we are authorized to sell to eligible employees up to an aggregate of 1,000,000 shares of

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

9. STOCKHOLDERS' EQUITY (Continued)

Geron common stock. As of December 31, 2014, 24,375 shares of our common stock have been issued under the 2014 Purchase Plan since its adoption.

Under the terms of the 2014 Purchase Plan, employees can choose to have up to 10% of their annual salary withheld to purchase our common stock. An employee may not make additional payments into such account or increase the withholding percentage during the offering period.

The 2014 Purchase Plan is comprised of a series of offering periods, each with a maximum duration (not to exceed 12 months) with new offering periods commencing on January 1st and July 1st of each year. The date an employee enters the offering period will be designated as the entry date for purposes of that offering period. An employee may only participate in one offering period at a time. Each offering period consists of two consecutive purchase periods of six months' duration, with the last day of such period designated a purchase date.

The purchase price per share at which common stock is purchased by the employee on each purchase date within the offering period is equal to 85% of the lower of (i) the fair market value per share of Geron's common stock on the employee's entry date into that offering period or (ii) the fair market value per share of Geron's common stock on the purchase date. If the fair market value of Geron's common stock on the purchase date is less than the fair market value at the beginning of the offering period, a new 12 month offering period will automatically begin on the first business day following the purchase date with a new fair market value.

Stock-Based Compensation for Employees and Directors

We measure and recognize compensation expense for all share-based payment awards made to employees and directors, including employee stock options, restricted stock awards and employee stock purchases, based on grant-date fair values for these instruments. We grant service-based stock options and restricted stock awards under our equity plans to employees, directors and consultants. The vesting period for employee options is generally four years. We use the Black Scholes option-pricing model to estimate the grant-date fair value of our stock options and employee stock purchases. The fair value for service-based restricted stock awards is determined using the fair value of our common stock on the date of grant.

In the past, our board of directors has awarded to our employees and directors performance-based restricted stock awards and market-based restricted stock awards. We have not recognized any stock-based compensation expense for performance-based restricted stock awards in our consolidated statements of operations for the years ended December 31, 2014, 2013 and 2012 as the achievement of the specified performance criteria was not considered probable during that time. All of these awards have been cancelled unvested as the performance conditions were not achieved within the respective performance periods. The fair value for market-based restricted stock awards was determined using a lattice valuation model with a Monte Carlo simulation. All previously granted market-based restricted stock awards have been cancelled unvested as the market conditions were not achieved within the specified performance period.

As stock-based compensation expense recognized in the consolidated statements of operations for the years ended December 31, 2014, 2013 and 2012 is based on awards ultimately expected to vest, it has been reduced for estimated forfeitures but at a minimum, reflects the grant-date fair value of those awards that actually vested in the period. Forfeitures have been estimated at the time of grant based on

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

9. STOCKHOLDERS' EQUITY (Continued)

historical data and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

We recognize stock-based compensation expense on a straight-line basis over the requisite service period, which is generally the vesting period. The following table summarizes the stock-based compensation expense related to stock options, restricted stock awards and employee stock purchases for the years ended December 31, 2014, 2013 and 2012 which was allocated as follows:

	Year Ended December 31,		
(In thousands)	2014	2013	2012
Research and development	$ 2,545	$ 1,741	$ 2,336
Restructuring charges	—	28	107
General and administrative	5,113	2,666	2,868
Stock-based compensation expense included in operating expenses	$ 7,658	$ 4,435	$ 5,311

Modifications to the post-termination exercise period of outstanding options held by certain members of our executive management team resulted in additional stock-based compensation expense of $205,000 for the year ended December 31, 2013 and have been reflected in the above table. In addition, stock-based compensation expense has been recognized for the modification of the post-termination exercise period for certain stock options previously granted to employees affected by the April 2013 and December 2012 restructurings, which has been included in restructuring charges in our consolidated statements of operations. See Note 6 on Restructurings for further discussion of the restructurings.

The fair value of stock options granted in 2014, 2013 and 2012 has been estimated at the date of grant using the Black Scholes option-pricing model with the following assumptions:

	2014	2013	2012
Dividend yield	0%	0%	0%
Expected volatility range	0.898 to 0.922	0.742 to 0.792	0.631 to 0.740
Risk-free interest rate range	1.64% to 1.92%	0.80% to 1.97%	0.81% to 1.25%
Expected term	5.5 yrs	6 yrs	6 yrs

The fair value of employee stock purchases in 2014, 2013 and 2012 under the 2014 Purchase Plan and 1996 Purchase Plan has been estimated using the Black Scholes option-pricing model with the following assumptions:

	2014	2013	2012
Dividend yield	0%	0%	0%
Expected volatility range	0.835 to 1.666	0.506 to 1.391	0.458 to 0.774
Risk-free interest rate range	0.06% to 0.15%	0.09% to 0.21%	0.06% to 0.21%
Expected term range	6 mos to 12 mos	6 mos to 12 mos	6 mos to 12 mos

Dividend yield is based on historical cash dividend payments and Geron has paid no dividends to date. The expected volatility range is based on historical volatilities of our stock since traded options on

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

9. STOCKHOLDERS' EQUITY (Continued)

Geron stock do not correspond to option terms and the trading volume of options is limited. The risk-free interest rate range is based on the U.S. Zero Coupon Treasury Strip Yields for the expected term in effect on the date of grant for an award. The expected term of options is derived from actual historical exercise and post-vesting cancellation data and represents the period of time that options granted are expected to be outstanding. The expected term of employees' purchase rights is equal to the purchase period.

Based on the Black Scholes option-pricing model, the weighted average estimated fair value of employee stock options granted during the years ended December 31, 2014, 2013 and 2012 was $3.57, $1.03 and $0.89 per share, respectively. The weighted average estimated fair value of employees' purchase rights for the years ended December 31, 2014, 2013 and 2012 was $2.10, $0.75 and $0.59 per share, respectively. As of December 31, 2014, total compensation cost related to unvested share-based payment awards not yet recognized, net of estimated forfeitures, was $15,032,000, which is expected to be recognized over the next 27 months on a weighted-average basis.

Stock-Based Compensation to Service Providers

We grant stock options and restricted stock awards to consultants from time to time in exchange for services performed for us. In general, the stock options and restricted stock awards vest over the contractual period of the consulting arrangement. We granted stock options to purchase 75,000, 80,000 and 50,000 shares of our common stock to consultants in 2014, 2013 and 2012, respectively. The fair value of stock options and restricted stock awards held by consultants is recorded as operating expenses over the vesting term of the respective equity awards. In addition, we will record any increase in the fair value of the stock options and restricted stock awards as the respective equity award vests. We recorded stock-based compensation expense of $94,000, $92,000 and $135,000 for the vested portion of the fair value of stock options and restricted stock awards held by consultants in 2014, 2013 and 2012, respectively.

We have also issued common stock to consultants and vendors in exchange for services either performed or to be performed for us. For these stock issuances, we record a prepaid asset equal to the fair market value of the shares on the date of issuance and amortize the fair value of the shares to our operating expenses on a pro-rata basis as services are performed or goods are received. In 2014, 2013 and 2012, we issued 71,239, 66,853 and 170,298 shares of common stock, respectively, in exchange for goods or services. In 2014, 2013 and 2012, we recognized approximately $158,000, $202,000 and $1,010,000, respectively, of expense in connection with stock grants to consultants and vendors. As of December 31, 2014, $7,000 related to consultant and vendor stock issuances remained as a prepaid asset which is being amortized to our operating expenses on a pro-rata basis as services are incurred or goods are received.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

9. STOCKHOLDERS' EQUITY (Continued)

Common Stock Reserved for Future Issuance

Common stock reserved for future issuance as of December 31, 2014 is as follows:

Outstanding stock options	16,958,944
Options and awards available for grant	13,384,883
Employee stock purchase plan	975,625
Warrants outstanding	1,007,893
Total	32,327,345

401(k) Plan

We sponsor a defined-contribution savings plan under Section 401(k) of the Internal Revenue Code covering all full-time U.S. employees, or the Geron 401K Plan. Participating employees may contribute up to the annual Internal Revenue Service contribution limit. The Geron 401K Plan also permits us to provide discretionary matching and profit sharing contributions. The Geron 401K Plan is intended to qualify under Section 401 of the Internal Revenue Code so that contributions by employees or by us, and income earned on the contributions, are not taxable to employees until withdrawn from the Geron 401K Plan. Our contributions, if any, will be deductible by us when made.

In 2014, our board of directors approved a cash matching contribution equal to 50% of each employee's contributions, which was fully vested when paid. We provided the 2014 matching contribution in February 2015. In 2013 and 2012, our board of directors approved a matching contribution equal to 75% and 100% of each employee's contributions, respectively. Those matching contributions were made in our common stock and vest ratably over four years for each year of service completed by the employee, commencing from the date of hire, until they are fully vested when the employee has completed four years of service.

For the vested portion of the 2014 match, we recorded $175,000 as research and development expense and $143,000 as general and administrative expense. For the vested portion of the 2013 match, we recorded $156,000 as research and development expense and $157,000 as general and administrative expense. For the vested portion of the 2012 match, we recorded $616,000 as research and development expense and $259,000 as general and administrative expense. Due to the number of positions eliminated in the previous restructurings, a partial plan termination was triggered in both 2013 and 2012. We accelerated the vesting of unvested prior employer matches for employees affected by the respective restructurings, which resulted in $266,000 and $370,000 of operating expenses in 2013 and 2012, respectively. As of December 31, 2014, approximately $273,000 remained unvested for the 2013, 2012 and 2011 matches which will be amortized to operating expenses as the corresponding years of service are completed by the employees.

Sales Agreement

On October 8, 2012, we entered into an At-the-Market Issuance Sales Agreement, or sales agreement, with MLV & Co. LLC, or MLV, pursuant to which we may elect to issue and sell shares of our common stock having an aggregate offering price of up to $50,000,000 from time to time into the open market at prevailing prices through MLV as our sales agent. We will pay MLV an aggregate commission rate equal to up to 3.0% of the gross proceeds of the sales price per share for common

9. STOCKHOLDERS' EQUITY (Continued)

stock sold through MLV under the sales agreement. Pursuant to the sales agreement, sales of common stock will be made in such quantities and on such minimum price terms as we may set from time to time. We are not obligated to make any sales of common stock under the sales agreement. As of December 31, 2014, we had not sold any common stock pursuant to the sales agreement. The sales agreement will expire in October 2015 unless extended by the parties.

10. LICENSE AGREEMENTS

Janssen Biotech, Inc.

In November 2014, we and Janssen Biotech, Inc., or Janssen, entered into an exclusive collaboration and license agreement, or Collaboration Agreement, to develop and commercialize imetelstat worldwide for oncology, including hematologic myeloid malignancies, and all other human therapeutic uses. Upon the early termination of the waiting periods under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, the Collaboration Agreement became effective on December 15, 2014. Upon the effectiveness of the Collaboration Agreement, we received $35,000,000 from Janssen as an upfront payment.

Under the Collaboration Agreement, we granted to Janssen exclusive worldwide rights to develop and commercialize imetelstat for all indications, and Janssen is responsible for the development, manufacturing and commercialization of, and seeking regulatory approval for, imetelstat worldwide. Under the Collaboration Agreement, development of imetelstat will initially proceed under a mutually agreed joint clinical development plan, or CDP, which includes two agreed upon Phase 2 studies to be pursued initially, one in myelofibrosis, or the Initial Phase 2 MF Study, and one in myelodysplastic syndrome, or the Initial Phase 2 MDS Study, as well as additional, possible registration studies in myelofibrosis, or MF, and myelodysplastic syndrome, or MDS, and possible exploratory Phase 2 and potential follow-on Phase 3 studies in acute myelogenous leukemia, or AML. Development costs for the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study will be shared between the parties on a 50/50 basis. We expect Janssen to initiate the Initial Phase 2 MF Study in mid-2015, followed later by the Initial Phase 2 MDS Study to be initiated at the end of 2015.

Following the protocol-specified primary analysis of the Initial Phase 2 MF Study or after a certain time period after the initiation of the first Phase 3 MF study, Janssen must notify us whether it elects to maintain its license rights and continue to advance the development of imetelstat in any indication. In the event that the Initial Phase 2 MF Study has been terminated early or suspended, Janssen must instead notify us of its election by the date that is the later of 24 months from the initiation of the planned Initial Phase 2 MDS Study or 24 months from the termination of the planned Initial Phase 2 MF Study or commencement of the suspension period, as applicable.

In the event that Janssen elects to continue to maintain its license rights and advance the development of imetelstat in any indication within the applicable timeframe set forth in the Collaboration Agreement (such election, the Continuation Election), we then would have an option, or the U.S. Opt-In Rights, to share further U.S. development and promotion costs in exchange for higher tiered royalty rates and higher future milestone payments if imetelstat is successfully developed and approved. If we exercise our U.S. Opt-In Rights, then the parties would share U.S. development and promotion costs on a 20/80 basis (Geron 20%, Janssen 80%), we would receive a $65,000,000 milestone payment, or Continuation Fee, at the time of the Continuation Election, and would be eligible to receive additional potential payments of up to $470,000,000 in development and regulatory milestones,

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

10. LICENSE AGREEMENTS (Continued)

up to $350,000,000 in sales milestones, and tiered royalties ranging from a mid-teens up to low twenties percentage rate on worldwide net sales of imetelstat in any countries where regulatory exclusivity exists or there are valid claims under the patent rights exclusively licensed to Janssen. In addition, if we exercise our U.S. Opt-In Rights, we then would also have a separate option, or the Co-Promotion Option, to provide 20% of the U.S. selling effort with sales force personnel, in lieu of funding 20% of U.S. promotion costs, upon regulatory approval and commercial launch of imetelstat in the United States. Such co-promotion would be conducted under a Janssen prepared promotion plan, and in accordance with a co-promotion agreement to be agreed by the parties at the time of our exercise of our Co-Promotion Option. We would be responsible for all costs associated with establishing and maintaining a sales force in any conduct of such co-promotion. All product sales would be booked by Janssen. If we do not exercise our U.S. Opt-In Rights, then all further development and promotion costs beyond the Initial Phase 2 MF Study or Initial Phase 2 MDS Study would be borne by Janssen, we would receive the $65,000,000 Continuation Fee at the time of the Continuation Election plus a $70,000,000 payment, or Full U.S. Rights Fee, for Janssen's retention of full U.S. rights to imetelstat, and would be eligible to receive additional potential payments of up to $415,000,000 in development and regulatory milestones, up to $350,000,000 in sales milestones, and tiered royalties ranging from a double-digit up to mid-teens percentage rate on worldwide net sales of imetelstat in any countries where regulatory exclusivity exists or there are valid claims under the patent rights exclusively licensed to Janssen.

Under the terms of the Collaboration Agreement, we remain responsible for prosecuting, at Janssen's direction, the patents licensed to Janssen at the time we entered into the Collaboration Agreement, with costs shared between us and Janssen on a 50/50 basis. For intellectual property developed under the Collaboration Agreement, or Development IP, the party having sole ownership interest in such Development IP would be responsible for prosecuting the patents, with Janssen bearing all of the costs for Development IP solely owned by Janssen and costs shared between the parties on a 50/50 basis for Development IP either jointly owned or solely owned by us.

Under the terms of the Collaboration Agreement, we and Janssen created a joint governance structure, including joint development and steering committees and working groups, to oversee and manage worldwide regulatory, development and manufacturing work under the joint CDP and promotional activities (assuming we exercises our U.S. Opt-In Rights) for imetelstat, with Janssen responsible for the operational implementation of those activities. In addition, either of the parties may propose to the joint development committee imetelstat development for any new indications not then provided for in the joint CDP and if the parties agree such development should be conducted outside of the joint CDP, each of Geron and Janssen would be entitled to independently undertake such development at its own cost, subject to the other party's obligation to provide reimbursement for its specified portion of the costs plus a premium for such independent development following marketing approval of imetelstat in such newly proposed indication as a result of such independent development. In the event that we do not exercise our U.S. Opt-In Rights following Janssen's Continuation Election, the joint governance structure under the Collaboration Agreement would be dissolved, a joint oversight committee would monitor the progress of the collaboration, and we would have no further rights to conduct any independent imetelstat development.

After a Continuation Election by Janssen, the Collaboration Agreement would remain in effect until the expiration of the last-to-expire patent or the royalty obligations on sales of imetelstat cease, unless terminated earlier. If Janssen does not effect a Continuation Election, then the Collaboration

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

10. LICENSE AGREEMENTS (Continued)

Agreement would terminate and all rights would revert to us. Janssen may terminate the Collaboration Agreement at any time for convenience and due to a safety-related concern. If a notice of termination from Janssen occurs, we would be entitled to certain continued operational support and cost-sharing under various circumstances and all rights would revert to us.

The terms of the Janssen Collaboration Agreement contain multiple deliverables, which include at inception: (i) exclusive worldwide rights to develop and commercialize imetelstat for all indications, (ii) transfer of know-how and intellectual property, including our obligation to procure supply for manufacturing imetelstat for up to nine months after the effective date of the Collaboration Agreement, (iii) participation on the joint steering committees and working groups and (iv) potential participation in selling imetelstat in the United States, if approved for commercial sale. We concluded the license for exclusive worldwide rights to develop and commercialize imetelstat has standalone value to Janssen based on the technical and financial resources of Janssen, including Janssen's drug development experience, sizeable employee base with specific experience in hematologic malignancies, and sufficient capital to independently develop imetelstat on a global basis. Since Janssen has final decision-making authority in the event a unanimous decision cannot be reached by the joint steering committees, we determined our participation on the joint steering committees does not represent a non-contingent deliverable under the Collaboration Agreement. In addition, we determined our potential participation in selling imetelstat in the United States does not represent a non-contingent deliverable because such participation is uncertain and dependent on the drug being approved for commercial sale, which is not within our control. Accordingly, we have determined delivery of the license rights granted by us to Janssen, together with our performance of the technology transfer-related activities, represents the sole non-contingent deliverable under the Collaboration Agreement. Therefore, we will account for our delivery of the license rights and our performance of the technology transfer-related activities as a single unit of accounting. We currently expect completion of the technology transfer-related activities to occur by September 30, 2015 at which point we expect to fully recognize the $35,000,000 upfront payment from Janssen as license fee revenue. As a result, we have not recognized any revenue related to the Collaboration Agreement in 2014. We have determined that each of the additional potential milestone payments to us under the Collaboration Agreement, including: (i) the Continuation Fee at the time of the Continuation Election, (ii) the Full U.S. Rights Fee if we do not exercise our U.S. Opt-In Rights and (iii) payments based on the achievement of certain development, regulatory or commercial milestones, represent substantive milestones. Consequently, we will recognize revenue for these payments in their entirety upon successful accomplishment of the respective milestone. Royalties on future product sales of imetelstat, if successfully commercialized under the Collaboration Agreement, will be recognized as revenue when earned.

The cost-sharing arrangement with Janssen for the Initial Phase 2 MF Study and the Initial Phase 2 MDS Study began in 2015. Therefore, we have not recorded any payables to Janssen or receivables from Janssen in 2014.

GE Healthcare UK Limited

In June 2009, we entered into a worldwide exclusive license and alliance agreement with GE Healthcare UK, Limited, or GEHC, to develop and commercialize cellular assay products derived from human embryonic stem cells, or hESCs, for use in drug discovery, development and toxicity screening. In connection with the GEHC agreement, we recognized $825,000 as license fee revenue in our

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

10. LICENSE AGREEMENTS (Continued)

consolidated statements of operations for the year ended December 31, 2012 which reflects the full recognition of a license payment from GEHC related to the exercise of an option to expand the scope of their original 2009 license agreement to include exclusive global rights to our intellectual property and know-how for the development and sale of cellular assays derived from induced pluripotent stem cells. Upon the closing of the divestiture of our stem cell assets on October 1, 2013, the GEHC agreement, including any future revenue payments thereunder, was transferred to Asterias. No license fee revenue was recognized under the GEHC agreement in 2013. For a further discussion of the divestiture of our stem cell assets, see Note 7 on Divestiture of Stem Cell Assets.

Telomerase Activation Sciences, Inc.

In December 2012, we entered into a Termination and Assignment Agreement, or the Assignment Agreement, with Asia Biotech Corporation, or Asia Biotech, and Telomerase Activation Sciences, Inc., or TA Sciences, pursuant to which we agreed to assign to TA Sciences the intellectual property, including patents previously licensed to Asia Biotech, related to our telomerase activation technology. As consideration for the assignment and fulfillment of the obligations set forth in the Assignment Agreement, we received a non-refundable, upfront payment of $2,500,000 from TA Sciences, which we recognized in full as other income in our consolidated statements of operations for the year ended December 31, 2012, and TA Sciences does not have further payment obligations to us. In addition, Asia Biotech's future royalty obligations under the original license agreement have been terminated.

11. INCOME TAXES

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes. Significant components of our deferred tax assets are as follows:

	December 31,	
	2014	2013
	(In thousands)	
Net operating loss carryforwards	$ 281,300	$ 271,800
Purchased technology	—	6,300
Research credits	23,400	22,700
Capitalized research and development	2,100	6,600
License fees	500	700
Other—net	7,600	10,100
Total deferred tax assets	314,900	318,200
Valuation allowance for deferred tax assets	(314,900)	(318,200)
Net deferred tax assets	$ —	$ —

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

11. INCOME TAXES (Continued)

We record net deferred tax assets to the extent we believe these assets will more likely than not be realized. In making such determination, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax planning strategies and recent financial performance. Forming a conclusion that a valuation allowance is not required is difficult when there is negative evidence such as cumulative losses in recent years. Because of our history of losses, the net deferred tax assets have been fully offset by a valuation allowance. The valuation allowance decreased by $3,300,000 and $5,500,000 during the years ended December 31, 2014 and 2013, respectively, and increased by $14,200,000 during the year ended December 31, 2012. Approximately $4,900,000 of the valuation allowance for deferred tax assets relates to benefits of stock option deductions which, when recognized, will be allocated directly to contributed capital.

As of December 31, 2014, we had domestic federal net operating loss carryforwards of approximately $774,000,000 expiring at various dates beginning in 2018 through 2034, and state net operating loss carryforwards of approximately $395,000,000 expiring at various dates beginning in 2015 through 2034, if not utilized. We also had federal research and development tax credit carryforwards of approximately $14,900,000 expiring at various dates beginning in 2018 through 2034, if not utilized. Our state research and development tax credit carryforwards of approximately $13,000,000 carry forward indefinitely.

Due to the change of ownership provisions of the Tax Reform Act of 1986, utilization of a portion of our domestic net operating loss and tax credit carryforwards may be limited in future periods. Further, a portion of the carryforwards may expire before being applied to reduce future income tax liabilities.

We adopted the provision of the standard for accounting for uncertainties in income taxes on January 1, 2007. Upon adoption, we recognized no material adjustment in the liability for unrecognized tax benefits. At December 31, 2014, we had approximately $17,100,000 of unrecognized tax benefits, none of which would currently affect our effective tax rate if recognized due to our deferred tax assets being fully offset by a valuation allowance.

A reconciliation of the beginning and ending amounts of unrecognized tax benefits is as follows (in thousands):

Balance as of December 31, 2013	$ 11,600
Increase related to prior year tax positions	5,100
Increase related to current year tax positions	400
Settlements	—
Reductions due to lapse of applicable statute of limitations	—
Balance as of December 31, 2014	$ 17,100

If applicable, we would classify interest and penalties related to uncertain tax positions in income tax expense. Through December 31, 2014, there has been no interest expense or penalties related to unrecognized tax benefits.

We do not currently expect any significant changes to unrecognized tax benefits during the fiscal year ended December 31, 2015. In certain cases, our uncertain tax positions are related to tax years that remain subject to examination by the relevant tax authorities. Tax years for which we have

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

11. INCOME TAXES (Continued)

carryforward net operating loss and credit attributes remain subject to examination by federal and most state tax authorities.

12. SEGMENT INFORMATION

Our executive management team represents our chief decision maker. We view our operations as one segment, the discovery and development of therapeutic products for oncology. As a result, the financial information disclosed herein materially represents all of the financial information related to our principal operating segment.

13. CONSOLIDATED STATEMENTS OF CASH FLOWS DATA

	Year Ended December 31,		
	2014	2013	2012
	(In thousands)		
Supplemental operating activities:			
Issuance of common stock for services rendered to date or to be received in future periods	$ —	$ —	$ 69
Issuance of common stock for 401(k) matching contributions	$ 313	$ 839	$ 1,361
Reclassification between deposits and other current assets	$ 190	$ 219	$ 526
Supplemental investing activities:			
Net unrealized loss on marketable securities	$ (70)	$ (54)	$ (38)

We have not made any cash payments for taxes or interest for the years ended December 31, 2014, 2013 and 2012.

14. SELECTED QUARTERLY FINANCIAL INFORMATION (UNAUDITED)

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
	(In thousands, except per share amounts)			
Year Ended December 31, 2014				
Revenues	$ 474	$ 341	$ 160	$ 178
Operating expenses	9,205	9,004	10,067	9,189
Net loss	(8,440)	(8,734)	(9,549)	(8,947)
Basic and diluted net loss per share	$ (0.06)	$ (0.06)	$ (0.06)	$ (0.06)
Year Ended December 31, 2013				
Revenues	$ 765	$ 112	$ 181	$ 225
Operating expenses[(1)]	12,750	9,077	8,914	9,500
Net loss	(11,897)	(8,947)	(8,254)	(9,281)
Basic and diluted net loss per share	$ (0.09)	$ (0.07)	$ (0.06)	$ (0.07)

(1) The fourth quarter of 2013 includes approximately $430,000 in restructuring charges in connection with the closure our research laboratory facility located at 200 Constitution Drive, Menlo Park, California. See Note 6 on Restructurings.

GERON CORPORATION

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS (Continued)

14. SELECTED QUARTERLY FINANCIAL INFORMATION (UNAUDITED) (Continued)

Basic and diluted net losses per share are computed independently for each of the quarters presented. Therefore, the sum of the quarters may not be equal to the full year net loss per share amounts.

15. SUBSEQUENT EVENT

In light of projected reduced operational demands as a result of the Collaboration Agreement with Janssen, on March 3, 2015, we announced an organizational resizing to reduce our workforce from 39 to 21 positions, representing a reduction of approximately 46% of our workforce. We expect the majority of the reduction in our workforce to be completed by the end of the third quarter of 2015. In connection with the resizing, we anticipate incurring aggregate restructuring charges of approximately $1,900,000, of which approximately $1,500,000 is expected be paid in cash during 2015. The aggregate projected restructuring charges represent one-time termination benefits, comprised principally of severance, benefit continuation costs, outplacement services and non-cash stock-based compensation expense associated with the elimination of 18 positions. The majority of these charges are expected to be recognized in the first half of 2015. We may incur other charges and will record these expenses in the appropriate period as they are determined.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

(I) Evaluation of Disclosure Controls and Procedures

We have carried out an evaluation under the supervision and with the participation of management, including our principal executive officer and principal financial officer, of our disclosure controls and procedures (as defined in Rule 13a-15(e) of the Securities Exchange Act of 1934, as amended) as of the end of the period covered by this annual report on Form 10-K. Based on their evaluation, our principal executive officer and principal financial officer concluded that our disclosure controls and procedures were effective as of December 31, 2014.

It should be noted that any system of controls, however well designed and operated, can provide only reasonable assurance, and not absolute assurance, that the objectives of the system are met. In addition, the design of any control system is based in part upon certain assumptions about the likelihood of future events. Because of these and other inherent limitations of control systems, there can be no assurance that any design will succeed in achieving its stated goals in all future circumstances. Accordingly, our disclosure controls and procedures are designed to provide reasonable, not absolute, assurance that the objectives of our disclosure control system are met and, as set forth above, our principal executive officer and principal financial officer have concluded, based on their evaluation as of the end of the period covered by this report, that our disclosure controls and procedures were effective to provide reasonable assurance that the objectives of our disclosure control system were met.

(II) Changes in Internal Control over Financial Reporting

There was no change in our internal control over financial reporting during the quarter ended December 31, 2014 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

(III) Management's Report on Internal Control over Financial Reporting

Internal control over financial reporting refers to the process designed by, or under the supervision of, our Chief Executive Officer and Chief Financial Officer, and effected by our board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles, and includes those policies and procedures that:

(1) Pertain to the maintenance of records that in reasonable detail accurately and fairly reflect the transactions and dispositions of our assets;

(2) Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and

(3) Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Management is responsible for establishing and maintaining an adequate internal control over financial reporting for us. Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, this risk.

Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework set forth in "Internal Control—Integrated Framework" issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework). Based on our evaluation under the framework set forth in "Internal Control—Integrated Framework," our management concluded that our internal control over financial reporting was effective as of December 31, 2014. The effectiveness of our internal control over financial reporting as of December 31, 2014 has been audited by Ernst & Young LLP, an independent registered public accounting firm, as stated in their report which is included herein.

(IV) Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of Geron Corporation

We have audited Geron Corporation's internal control over financial reporting as of December 31, 2014, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) (the COSO criteria). Geron Corporation's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, Geron Corporation maintained, in all material respects, effective internal control over financial reporting as of December 31, 2014 based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Geron Corporation as of December 31, 2014 and 2013, and the related consolidated statements of operations, comprehensive loss, stockholders' equity and cash flows for each of the three years in the period ended December 31, 2014 of Geron Corporation and our report dated March 11, 2015 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Redwood City, California
March 11, 2015

ITEM 9B. OTHER INFORMATION

None.

PART III

Certain information required by Part III is omitted from this annual report on Form 10-K because we will file with the U.S. Securities and Exchange Commission a definitive proxy statement pursuant to Regulation 14A in connection with the solicitation of proxies for Geron's Annual Meeting of Stockholders expected to be held in May 2015, or the Proxy Statement, not later than 120 days after the end of the fiscal year covered by this annual report on Form 10-K, and certain information included therein is incorporated herein by reference.

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Identification of Directors and Nominees for Director

The information required by this item concerning our directors and nominees for director is incorporated by reference from the section captioned "Proposal 1: Election of Directors" contained in our Proxy Statement.

Identification of Executive Officers

The information required by this item concerning our executive officers is set forth in Part I, Item 1 of this annual report on Form 10-K.

Code of Ethics

We have adopted a Code of Conduct with which every person who works for Geron, including our board of directors, is expected to comply. The Code of Conduct is publicly available on our website under the Investor Relations section at www.geron.com. This website address is intended to be an inactive, textual reference only; none of the material on this website is part of this annual report on Form 10-K. If any substantive amendments are made to the Code of Conduct or any waiver granted, including any implicit waiver, from a provision of the Code to our Chief Executive Officer, Chief Financial Officer or Corporate Controller, we will disclose the nature of such amendment or waiver on that website or in a report on Form 8-K.

Copies of the Code of Conduct will be furnished without charge to any person who submits a written request directed to the attention of our Corporate Secretary, at our offices located at 149 Commonwealth Drive, Suite 2070, Menlo Park, California, 94025.

Section 16(a) Compliance

Information concerning Section 16(a) beneficial ownership reporting compliance is incorporated by reference from the section captioned "Section 16(a) Beneficial Ownership Reporting Compliance" contained in the Proxy Statement.

Certain Corporate Governance Matters

The information required by this item concerning our audit committee, audit committee financial expert and procedures by which stockholders may recommend nominees to our board of directors, may be found under the section captioned "Corporate Governance Matters" contained in the Proxy Statement.

ITEM 11. EXECUTIVE COMPENSATION

The information required by this item is incorporated by reference from the sections captioned "Compensation Discussion and Analysis," "Compensation Committee Report," "Executive Compensation Tables," "Compensation of Directors" and "Compensation Committee Interlocks and Insider Participation" contained in the Proxy Statement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this item is incorporated by reference from the sections captioned "Equity Compensation Plans" and "Security Ownership of Certain Beneficial Owners and Management" contained in the Proxy Statement.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this item is incorporated by reference from the sections captioned "Proposal 1: Election of Directors" and "Certain Transactions" contained in the Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item is incorporated by reference from the section captioned "Principal Accountant Fees and Services" contained in the Proxy Statement.

PART IV

ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES

(a) (1) Consolidated Financial Statements

Included in Part II, Item 8 of this Report:

(2) Financial Statement Schedules

Financial statement schedules are omitted because they are not required or the information is disclosed in the financial statements listed in Item 15(a)(1) above.

(3) Exhibits

See Exhibit Index.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

GERON CORPORATION

Date: March 11, 2015

By: /s/ OLIVIA K. BLOOM

OLIVIA K. BLOOM
Executive Vice President, Finance,
Chief Financial Officer and Treasurer

POWER OF ATTORNEY

KNOW BY ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints, jointly and severally, John A. Scarlett, M.D., and Olivia K. Bloom, and each one of them, attorneys-in-fact for the undersigned, each with the power of substitution, for the undersigned in any and all capacities, to sign any and all amendments to this annual report on Form 10-K, and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his or her substitutes, may do or cause to be done by virtue hereof.

IN WITNESS WHEREOF, each of the undersigned has executed this Power of Attorney as of the date indicated opposite his/her name.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ JOHN A. SCARLETT JOHN A. SCARLETT	President, Chief Executive Officer and Director (Principal Executive Officer)	March 11, 2015
/s/ OLIVIA K. BLOOM OLIVIA K. BLOOM	Executive Vice President, Finance, Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	March 11, 2015
/s/ DANIEL M. BRADBURY DANIEL M. BRADBURY	Director	March 11, 2015
/s/ KARIN EASTHAM KARIN EASTHAM	Director	March 11, 2015
/s/ THOMAS HOFSTAETTER THOMAS HOFSTAETTER	Director	March 11, 2015
/s/ HOYOUNG HUH HOYOUNG HUH	Director	March 11, 2015
/s/ V. BRYAN LAWLIS V. BRYAN LAWLIS	Director	March 11, 2015
/s/ SUSAN M. MOLINEAUX SUSAN M. MOLINEAUX	Director	March 11, 2015
/s/ ROBERT J. SPIEGEL ROBERT J. SPIEGEL	Director	March 11, 2015

EXHIBIT INDEX

Exhibit Number	Description	Incorporation by Reference			
		Exhibit Number	Filing	Filing Date	File No.
2.1	Asset Contribution Agreement by and among Geron Corporation, BioTime, Inc. and Asterias Biotherapeutics, Inc. (formerly known as BioTime Acquisition Corporation)	2.1	8-K	January 8, 2013	000-20859
3.1	Restated Certificate of Incorporation	3.3	8-K	May 18, 2012	000-20859
3.2	Certificate of Amendment of the Restated Certificate of Incorporation	3.1	8-K	May 18, 2012	000-20859
3.3	Amended and Restated Bylaws of Registrant	3.1	8-K	March 19, 2010	000-20859
4.1	Form of Common Stock Certificate	4.1	10-K	March 15, 2013	000-20859
4.2	Form of 2005 Warrant	4.2	8-K	April 25, 2005	000-20859
4.3	Form of 2011 Warrant	Attachment to 10.1	10-Q	November 3, 2011	000-20859
10.1	Form of Indemnification Agreement	10.1	10-K	March 7, 2012	000-20859
10.2	Amended and Restated 1996 Employee Stock Purchase Plan*	10.2	10-Q	July 31, 2009	000-20859
10.3	1996 Directors' Stock Option Plan, as amended*	Appendix B	Def 14A	April 15, 2003	000-20859
10.4	Amended and Restated 2002 Equity Incentive Plan*	4.1	S-8	June 4, 2010	333-167349
10.5	Form of Stock Option Agreement under 2002 Equity Incentive Plan*	10.6	10-K	March 15, 2013	000-20859
10.6	Form of Restricted Stock Award Agreement under 2002 Equity Incentive Plan*	10.7	10-K	March 15, 2013	000-20859
10.7	Amended and Restated 2006 Directors' Stock Option Plan*	10.5	10-Q	November 7, 2013	000-20859
10.8	2011 Incentive Award Plan*	10.1	8-K	May 16, 2011	000-20859
10.9	Form of Stock Option Agreement under 2011 Incentive Award Plan*	10.11	10-K	March 15, 2013	000-20859
10.10	Form of Restricted Stock Award Agreement under 2011 Incentive Award Plan*	10.12	10-K	March 15, 2013	000-20859
10.11	Form of Non-Employee Director Stock Option Agreement under 2011 Incentive Award Plan*	10.37	10-K	March 17, 2014	000-20859

Exhibit Number	Description	Incorporation by Reference			
		Exhibit Number	Filing	Filing Date	File No.
10.12	2014 Employee Stock Purchase Plan*	10.1	8-K	May 23, 2014	000-20859
10.13	Stock Purchase Agreement between the Registrant and Angiochem, Inc., effective as of January 5, 2011	10.1	8-K	January 7, 2011	000-20859
10.14†	California Institute for Regenerative Medicine Notice of Loan Award	10.1	10-Q	November 3, 2011	000-20859
10.15	Amended and Restated Severance Plan, effective as of May 23, 2013*	10.1	8-K	May 24, 2013	000-20859
10.16	Employment agreement between the Registrant and John A. Scarlett, M.D., effective as of September 29, 2011*	10.2	10-Q	November 3, 2011	000-20859
10.17	First Amendment to Employment Agreement between the Registrant and John A. Scarlett, M.D., effective as of February 11, 2014*	10.5	8-K	February 14, 2014	000-20859
10.18	Employment agreement between the Registrant and Stephen N. Rosenfield, effective as of February 16, 2012*	10.32	10-K	March 7, 2012	000-20859
10.19	First Amendment to Employment Agreement between the Registrant and Stephen N. Rosenfield, effective as of September 24, 2013*	10.4	8-K	September 27, 2013	000-20859
10.20	Employment agreement between the Registrant and Andrew J. Grethlein, effective as of September 17, 2012*	10.2	10-Q	November 2, 2012	000-20859
10.21	First Amendment to Employment Agreement between the Registrant and Andrew J. Grethlein, effective as of February 11, 2014*	10.4	8-K	February 14, 2014	000-20859
10.22	Employment agreement between the Registrant and Craig C. Parker, effective as of December 3, 2012*	10.25	10-K	March 15, 2013	000-20859
10.23	First Amendment to Employment Agreement between the Registrant and Craig C. Parker, effective as of September 24, 2013*	10.3	8-K	September 27, 2013	000-20859
10.24	Second Amendment to Employment Agreement between the Registrant and Craig C. Parker, effective as of February 11, 2014*	10.3	8-K	February 14, 2014	000-20859

Exhibit Number	Description	Incorporation by Reference			
		Exhibit Number	Filing	Filing Date	File No.
10.25	Employment agreement between the Registrant and Olivia K. Bloom, effective as of December 7, 2012*	10.26	10-K	March 15, 2013	000-20859
10.26	First Amendment to Employment Agreement between the Registrant and Olivia K. Bloom, effective as of September 24, 2013*	10.2	8-K	September 27, 2013	000-20859
10.27	Second Amendment to Employment Agreement between the Registrant and Olivia K. Bloom, effective as of February 11, 2014*	10.1	8-K	February 14, 2014	000-20859
10.28	Employment agreement between the Registrant and Melissa A. Kelly Behrs, effective as of January 31, 2013*	10.28	10-K	March 15, 2013	000-20859
10.29	First Amendment to Employment Agreement between the Registrant and Melissa A. Kelly Behrs, effective as of September 24, 2013*	10.1	8-K	September 27, 2013	000-20859
10.30	Second Amendment to Employment Agreement between the Registrant and Melissa A. Kelly Behrs, effective as of February 11, 2014*	10.2	8-K	February 14, 2014	000-20859
10.31†	Office Lease Agreement by and between the Registrant and Exponent Realty, LLC, effective as of February 29, 2012	10.36	10-K/A	March 27, 2012	000-20859
10.32	Third Amendment to Office Lease Agreement by and between the Registrant and Exponent Realty, LLC, effective as of February 27, 2014	10.1	8-K	March 4, 2014	000-20859
10.33	At-the-Market Issuance Sales Agreement, dated October 8, 2012, by and between the Registrant and MLV & Co. LLC	10.1	8-K	October 9, 2012	000-20859
10.34	Transfer Agreement by and between Registrant and Mayo Clinic, effective July 31, 2014	10.1	10-Q	November 5, 2014	000-20859
10.35	Non-Employee Director Compensation Policy, as amended*				
10.36††	Collaboration and License Agreement by and between the Registrant and Janssen Biotech, Inc., dated November 13, 2014				

Exhibit Number	Description	Incorporation by Reference			
		Exhibit Number	Filing	Filing Date	File No.
12.1	Computation of Ratio of Earnings to Fixed Charges				
23.1	Consent of Independent Registered Public Accounting Firm				
24.1	Power of Attorney (see signature page)				
31.1	Certification of Chief Executive Officer pursuant to Form of Rule 13a-14(a), as Adopted Pursuant to Section 302(a) of the Sarbanes-Oxley Act of 2002, dated March 11, 2015				
31.2	Certification of Chief Financial Officer pursuant to Form of Rule 13a-14(a), as Adopted Pursuant to Section 302(a) of the Sarbanes-Oxley Act of 2002, dated March 11, 2015				
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, dated March 11, 2015**				
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, dated March 11, 2015**				
101	The following materials from the Registrant's annual report on Form 10-K for the year ended December 31, 2014, formatted in Extensible Business Reporting Language (XBRL) include: (i) Consolidated Balance Sheets as of December 31, 2014 and 2013, (ii) Consolidated Statements of Operations, Comprehensive Loss, Stockholders' Equity and Cash Flows for each of the three years in the period ended December 31, 2014, and (iii) Notes to Consolidated Financial Statements.				

† Confidential treatment has been granted for certain portions of this exhibit. Omitted information has been filed separately with the Securities and Exchange Commission.

†† Confidential treatment has been requested for certain portions of this exhibit. Omitted information has been filed separately with the Securities and Exchange Commission.

* Management contract or compensation plan or arrangement.

** The certifications attached as Exhibits 32.1 and 32.2 that accompany this annual report on Form 10-K, are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of this Form 10-K), irrespective of any general incorporation language contained in such filing.

GERON CORPORATION
NON-EMPLOYEE DIRECTOR COMPENSATION POLICY

ORIGINALLY ADOPTED BY THE BOARD OF DIRECTORS: MARCH 10, 2014

AMENDED BY THE BOARD OF DIRECTORS: FEBRUARY 12, 2015

Each member of the board of directors (the "***Board***") of Geron Corporation (the "***Company***") who is not an Employee (as defined in the Geron Corporation 2011 Incentive Award Plan (the "***2011 Plan***")) (each, a "***Non-Employee Director***") will be eligible to receive cash and equity compensation as set forth in this Geron Corporation Non-Employee Director Compensation Policy (this "***Policy***"). The cash and equity compensation described in this Policy will be paid or granted, as applicable, automatically and without further action of the Board to each Non-Employee Director who is eligible to receive such cash or equity compensation, unless such Non-Employee Director declines the receipt of such cash or equity compensation by written notice to the Company. This Policy will become effective on the date it is approved by the Board (as set forth above). Capitalized terms not explicitly defined in this Policy but defined in the 2011 Plan will have the same definitions as in the 2011 Plan.

1. CASH COMPENSATION.

(a) Annual Retainers. Each Non-Employee Director will be eligible to receive the following annual retainers for service as (i) a member and/or chairperson of the Board and (ii) a member or chairperson of a committee of the Board ("***Committee***") set forth below, as applicable.

Board or Committee	Type of Retainer*	Amount (Per Year)
Board	Chair	$ 30,000
	Member	$ 42,500
Audit Committee	Chair	$ 25,000
	Member (Non-Chair)	$ 12,500
Compensation Committee	Chair	$ 15,000
	Member (Non-Chair)	$ 7,500
Nominating and Corporate Governance Committee	Chair	$ 10,000
	Member (Non-Chair)	$ 5,000

* The chairperson of the Board is eligible to receive a retainer for service as the chairperson and an additional retainer for service as a member of the Board. The chairperson of each Committee is eligible to receive a retainer for service as the chairperson, but not an additional retainer for service as a member of the Committee.

The annual retainers will be paid in arrears in four equal quarterly installments, earned upon the completion of service in each calendar quarter. Notwithstanding the foregoing, each person who is elected or appointed to be a Non-Employee Director or who is appointed to serve on one of the Committees set forth above or as the chairperson of the Board or one of the Committees set forth above, in each case other than on the first day of a calendar quarter, will be eligible to receive a pro rata amount of the annual retainers described above with respect to the calendar quarter in which such person becomes a Non-Employee Director, a member of one of the Committees, or the chairperson of the Board or one of the Committees, as applicable, which pro rata amount reflects a reduction for each day during the calendar quarter prior to the date of such election or appointment.

The annual retainers will be paid on a pro-rata basis in arrears after the end of each quarter in the form of cash, or alternatively, at each Non-Employee Director's election in January each calendar year during an open trading window in the form of fully vested shares of Common Stock issued under the 2011 Plan based on the fair market value of the Common Stock (as determined in accordance with the 2011 Plan) on the date the retainer payment would otherwise have been paid (i.e., the last day of the quarter). An election to be paid in Common Stock will be applied to each quarter's payment during the calendar year of such election.

(b) Expenses. Each Non-Employee Director will be eligible for reimbursement from the Company for all reasonable out-of-pocket expenses incurred by the Non-Employee Director in connection with his or her attendance at Board and Committee meetings.

To the extent that any taxable reimbursements are provided to a Non-Employee Director, they will be provided in accordance with Section 409A of the Internal Revenue Code of 1986, as amended, and the Treasury Regulations and other guidance thereunder and any state law of similar effect, including, but not limited to, the following provisions: (i) the amount of any such expenses eligible for reimbursement during the Non-Employee Director's taxable year may not affect the expenses eligible for reimbursement in any other taxable year; (ii) the reimbursement of an eligible expense must be made no later than the last day of the Non-Employee Director's taxable year that immediately follows the taxable year in which the expense was incurred; and (iii) the right to any reimbursement may not be subject to liquidation or exchange for another benefit.

2. EQUITY COMPENSATION. The options described in this Policy will be granted under the 2011 Plan and will be subject to the terms and conditions of the 2011 Plan and the applicable Award Agreements.

(a) Initial Grants. Each person who first becomes a Non-Employee Director, whether through election by the stockholders of the Company or appointment by the Board to fill a vacancy, automatically will be granted a nonqualified stock option to purchase 70,000 shares of Common Stock (a "***First Director Option***") on the date of his or her initial election or appointment to be a Non-Employee Director. For the avoidance of doubt, the Executive Chairman of the Board will not be eligible to receive a First Director Option pursuant to this Section 2(a).

(b) Annual Grants. On the date of each annual meeting of the Company's stockholders, each person who is then a Non-Employee Director and will be continuing as a Non-Employee Director following the date of such annual meeting (other than any Non-Employee Director receiving a First Director Option on the date of such annual meeting) automatically will be granted a nonqualified stock option to purchase 35,000 shares of Common Stock (a "***Subsequent Director Option***"). For the avoidance of doubt, the Executive Chairman of the Board will not be eligible to receive a Subsequent Director Option pursuant to this Section 2(b).

(c) Terms of Options.

(i) Exercise Price. The exercise price of each First Director Option and Subsequent Director Option will be equal to 100% of the fair market value of the Common Stock subject to such option (as determined in accordance with the 2011 Plan) on the date such option is granted.

(ii) Vesting. Each First Director Option and Subsequent Director Option will vest and become exercisable as follows:

(A) Each First Director Option will vest and become exercisable in installments cumulatively as to 33 1/3% of the shares of Common Stock subject to such option on each of the first, second and third anniversaries of the date of grant of such option, subject to the Non-Employee Director's continuous service with the Company or an Affiliate through such dates.

(B) Each Subsequent Director Option will vest and become exercisable as to 100% of the shares of Common Stock subject to such option on the earlier of (i) the date of the next annual meeting of the Company's stockholders or (ii) the first anniversary of the date of grant of such option, subject to the Non-Employee Director's continuous service with the Company or an Affiliate through such dates.

(C) Notwithstanding Sections 2(c)(ii)(A) and 2(c)(ii)(B) above, the vesting of a First Director Option and Subsequent Director Option will be subject to (i) full acceleration in the event of a Change in Control and (ii) partial acceleration in the event of the Non-Employee Director's Termination of Service by reason of the Non-Employee Director's total and permanent disability (as defined in Section 22(e)(3) of the Code) or death pursuant to, and in accordance with, each Award Agreement.

3. TERM OF POLICY. This Policy shall continue in effect until the expiration of the 2011 Plan; *provided*, *however*, that it may be revised or rescinded by action of the Board prior to such date.

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit 10.36

COLLABORATION AND LICENSE AGREEMENT

This Collaboration and License Agreement (the ***"Agreement"***) is made and entered into as of November 13, 2014 (the ***"Execution Date"***), by and between Geron Corporation, a Delaware corporation with offices at 149 Commonwealth Drive, Menlo Park, California (***"Geron"***) and Janssen Biotech, Inc., a Pennsylvania corporation with offices at 800/850 Ridgeview Drive, Horsham, Pennsylvania 19044 (***"Janssen"***). Geron and Janssen are at times referred to herein collectively as the ***"Parties"*** and individually as a ***"Party"***.

BACKGROUND / RECITALS

WHEREAS, Geron is a company having considerable knowledge and experience in discovering, researching, and developing telomerase inhibitors, and has been developing its proprietary drug candidate imetelstat (also known as GRN163L) for treating certain hematologic myeloid malignancies, and owns or otherwise controls certain patent rights, know-how and other rights related to imetelstat;

WHEREAS, Janssen has considerable knowledge and experience, directly and through delegation to certain Affiliates, in developing, promoting, and marketing various pharmaceutical products throughout the world;

WHEREAS, Janssen, under the confidentiality terms of the Prior CDAs (as defined below), has reviewed proprietary information provided by Geron or its Third Party collaborators relating to Geron's imetelstat program, and Janssen desires to obtain certain license rights relating to imetelstat from Geron and to collaborate with Geron in the further development of imetelstat on the terms and conditions hereof; and

WHEREAS, Geron is willing to grant Janssen certain license rights relating to imetelstat on the terms and conditions hereof.

NOW, THEREFORE, for and in consideration of the covenants and obligations contained herein, the Parties hereby agree as follows:

ARTICLE I: DEFINITIONS

Unless the context otherwise requires, the terms in this Agreement with initial letters capitalized shall have the meanings described below or the meaning as designated in the indicated places throughout this Agreement.

1.1 "Acceptance" means, in reference to a Drug Application, receipt of a written communication from the applicable Regulatory Authority acknowledging that it has received the Drug Application and that the Drug Application is sufficiently complete to permit a substantive review for approval purposes. For illustrative purposes, Acceptance of an NDA by the FDA may be provided in an FDA Filing Communication Letter. Where the NDA is submitted on a rolling basis, Acceptance will not occur until all parts or modules forming the NDA have been completed

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

and submitted to the FDA and the FDA has acknowledged that the NDA is sufficiently complete to permit such substantive review, and the Acceptance of an MAA by the EMA may be provided in the form of written confirmation from the EMA that the MAA submission is validated (with respect to eligibility for review via the centralized procedure) and considered to be sufficiently complete to permit such substantive review.

1.2 "Accounting Standards" means GAAP or International Financial Reporting Standards (IFRS), as appropriate, as generally and consistently applied in compliance with Applicable Laws throughout the relevant company's organization at the relevant time.

1.3 "Action" means any claim, action, cause of action or suit (whether in contract or tort or otherwise), litigation (whether at law or in equity, whether civil or criminal), controversy, assessment, arbitration, investigation, hearing, charge, complaint, demand, notice or proceeding of, to, from, by or before any Governmental Authority.

1.4 "Active Substance" means: (a) an active pharmaceutical ingredient or drug substance comprising GRN163, in unconjugated or any conjugated form; or (b) a Bioequivalent of such pharmaceutical ingredient or drug substance described in clause (a) (e.g., a homologous oligonucleotide having substantial identity to the oligonucleotide sequence of GRN163 having pharmaceutically or pharmacologically equivalent telomerase inhibitory activity, or any other biological activity that is (at the relevant time) recognized by the FDA or another Regulatory Authority as the predominant or primary mechanism of action in humans, such as may be reflected in associated product labelling or package insert information at the relevant time) as GRN163 in unconjugated or conjugated form; or (c) a salt, hydrate, solvate, polymorph, stereoisomer, prodrug, or metabolite of any of the foregoing pharmaceutical ingredients or drug substances described in clauses (a) or (b). For the avoidance of doubt, Active Substances include lipid-conjugated forms of GRN163 with a non-peptide-like chemistry linkage or backbone, such as, for example, GRN163L or the N3'->P5' thiophosphoramidate of GRN163 covalently linked to a lipid group other than palmitoyl. For purposes of illustration and for clarity, and notwithstanding the foregoing, all compositions of matter Covered by any claim pending at any time or issued in any Patent Right within the Imetelstat COM Patent Family shall be deemed Active Substances hereunder.

1.5 "Acquiror" has the meaning set forth in Section 16.1.2.

1.6 "Additional Development Proposal" has the meaning set forth in Section 4.9.1.

1.7 "Additional Studies" means those clinical studies set forth in the Work Plan of the CDP other than the Initial Studies.

1.8 "Affiliate" means, with respect to a designated Party or entity, any entity controlling, controlled by, or under common control with such Party or entity. For purposes of this definition only, "control" means: (a) where the entity is a corporate entity, direct or indirect ownership of 50% or more of the stock or shares having the right to vote for the election of directors of such entity; and (b) where the entity is other than a corporate entity, the possession, directly or indirectly, of the power to direct, or cause the direction of, the management or policies of such entity, whether through the ownership of voting securities, by contract or otherwise.

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[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1.9 "Aggregate Detail Effort" means the aggregate number of Details determined by Janssen in good faith to be provided by Janssen (and Geron, where Geron has exercised its Co-Promotion Option) in order to Promote a Licensed Product in accordance with the US Promotional Plan during a given Janssen Calendar Year (or portion thereof) following Regulatory Approval of the Licensed Product in the United States during which there is Innovator Protection in the United States for such Licensed Product.

1.10 "Agreement" has the meaning set forth in the Preamble.

1.11 "Alliance Manager" has the meaning set forth in Section 3.10.

1.12 "AML" means acute myeloid leukemia (also known as acute myelogenous leukemia or acute nonlymphocytic leukemia).

1.13 "Ancillary Agreements" means, collectively, the Manufacturing Agreement, the Pharmacovigilance Agreement, the IND Transfer Agreement(s) (if any), and the Co-Promotion Agreement, each upon execution thereof.

1.14 "Anti-Corruption Laws" means the FCPA and related regulations in the United States, and equivalent anti-bribery laws and regulations under Applicable Laws in other jurisdictions.

1.15 "Applicable Laws" means the applicable provisions of any national, supranational, regional, state and local laws, treaties, statutes, rules, regulations, administrative codes, guidance, ordinances, judgments, decrees, directives, injunctions, orders, permits, of or from any court, arbitrator, Regulatory Authority, or Governmental Authority having jurisdiction over or related to the subject item.

1.16 "Approved Materials" means the promotional materials for a Licensed Product having Regulatory Approval in the Co-Promote Territory, including the Product Label and Insert, and sales force training materials for such Licensed Product, in each case, as approved by Janssen and supplied to Geron, which are to be used by Geron in co-Detailing the Licensed Product in the Co-Promote Territory pursuant to the Co-Promotion Agreement.

1.17 "Audited Party" has the meaning set forth in Section 9.6.2.

1.18 "Audited Site" means any site or facility of a Party or any of its Affiliates, Third Party sublicensees, or Third Party contractors (such as under any Existing Third Party Agreement) or subcontractors hereunder, as the case may be, in which any clinical study or manufacturing of Licensed Products for human use is conducted, and which is undergoing an inspection or audit by a Regulatory Authority or a Party as provided hereunder, such as pursuant to Section 4.11.3 or Section 7.4.2.

1.19 "Auditing Party" has the meaning set forth in Section 9.6.2.

1.20 "Balance Ceiling" has the meaning set forth in Section 9.8.2.

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1.21 "Bankruptcy Code" means Title 11 of the United States Code, as may be amended or superseded from time to time.

1.22 "Bankruptcy" means, with respect to a Party, that: (a) the Party has been declared insolvent or bankrupt by a court of competent jurisdiction; or (b) a voluntary or involuntary petition in bankruptcy is filed in any court of competent jurisdiction against the Party and such petition has not dismissed within ninety (90) days after filing; or (c) the Party has made or executed an assignment of substantially all of its assets for the benefit of creditors.

1.23 "Bioequivalent" means, with respect one drug substance (or active pharmaceutical ingredient) contained in one pharmaceutical product in reference to the drug substance (or active pharmaceutical ingredient) of another pharmaceutical product, that: (a) the two substances are pharmaceutically or pharmacologically equivalent to each other through the same predominant or primary mechanism of action and their bioavailabilities (rate and extent of availability) after administration in the same molar dose are similar to such a degree that their effects, with respect to both efficacy and safety, can be expected to be essentially the same; or (b) the two substances are or would be recognized by a Regulatory Authority as being biologically equivalent or biosimilar *in vivo* such that the Regulatory Approval of one such substance could be supported by the reference to the Regulatory Approval of the other.

1.24 "Breaching Party" has the meaning set forth in Section 14.2.1.

1.25 "Budget Variance Limit" means an amount that is, on an annual basis, [*] percent ([*]%) of the aggregate budgeted amount for a Janssen Calendar Year pursuant to the Development Budget set forth in the CDP for such year, not taking into consideration: (a) any unexpended amounts under the

Development Budget rolled over from the immediately prior Janssen Calendar Year to the applicable Janssen Calendar Year due to delay in the Development activities under the CDP associated with such amounts or underspending with regard to the Development activities under the CDP associated with such amounts; and (b) any increases in the Development Budget due to the acceleration into the applicable Janssen Calendar Year of the timing of Development activities previously planned under the CDP for the subsequent Janssen Calendar Year, provided that such increases are for accelerations limited to [*] ([*]) months or less and provided that the baseline Development Budget for such subsequent Janssen Calendar Year is reduced by such amount accordingly.

1.26 **"Business Day"** means a weekday on which banking institutions in the United States are generally open for business.

1.27 **"CAPA"** means a written recovery plan or proposal of corrective and preventative actions.

1.28 **"CDP"** or **"Clinical Development Plan"** means the written plan of activities and associated budget as agreed on by the Parties (including by operation of Section 4.8.1) for the overall program of collaborative Development of the Licensed Product toward Regulatory Approval in the Major Market Countries for certain Oncology Indications in the Field, including all clinical studies to be funded together by the Parties at the applicable funding ratio or respective funding percentages as provided hereunder.

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1.29 **"Change of Control"** means, with respect to a specified Party: (a) the acquisition, directly or indirectly, by a Person or "group" (whether in a single transaction or multiple transactions) of more than 50% of the voting power of such Party or of beneficial ownership of (or the right to acquire such beneficial ownership) of more than 50% of the outstanding equity or convertible securities of such Party (including by tender offer or exchange offer); (b) any merger, consolidation, share exchange, business combination, recapitalization, sale of a majority of assets of (i.e., having a fair market value (as determined by the Board of Directors of such Party in good faith) in excess of 50% of the fair market value of all the assets of such Party and its subsidiaries immediately prior to such sale), or similar corporate transaction involving such Party (whether or not including one or more wholly owned subsidiaries of such Party), other than: (i) transactions involving solely such Party and/or one or more Affiliates, on the one hand, and one or more of such Party 's Affiliates, on the other hand, and/or (ii) transactions in which the stockholders of such Party immediately prior to such transaction hold at least 50% of the voting power of the surviving company or ultimate parent company of the surviving company; or (c) as a result of a single or multiple transaction(s) by a Person or group, the occupation of a majority of the seats (other than vacant seats) on the board of directors (or similar governing body of such Party) by any directors or Persons who were not (i) members of such body on the Execution Date of this Agreement, (ii) appointed by members of such body on the Execution Date of this Agreement or by members of such body so appointed, or (iii) nominated for election to such body by any Persons described in preceding clauses (i) or (ii); or (d) the adoption of a plan relating to the liquidation or dissolution of such Party. For purposes of this definition, the terms "group" and "beneficial ownership" shall have the meaning accorded in the U.S. Securities Exchange Act of 1934 and the rules of the U.S. SEC thereunder in effect as of the Execution Date hereof.

1.30 **"Claim"** has the meaning set forth in Section 13.1.

1.31 **"Clinical Investigation Laws"** means Applicable Laws relating to human clinical investigations, such 21 C.F.R. Parts 50, 54, 56 and 312 and then-current Good Clinical Practice, each as in effect and as amended from time to time.

1.32 **"CMC Know-How"** means the Know-How relating to the chemistry, Manufacture, and controls of the Active Substance and/or Licensed Product (such as the data and information typically contained in the CMC section of an NDA), including data, procedures, techniques, and information resulting from any: test method development and stability testing, process development, process validation, process scale-up, formulation development, delivery system development, quality assurance and quality control development, and other related activities, but excluding any Know-How pertaining to assays for measuring telomerase activity and/or telomere length (such as included in the Geron Assay Know-How).

1.33 **"Collaboration Activities"** means the Parties' collaborative activities (performed directly and/or, as may be permitted hereunder, on their behalf through their Affiliates, Third Party sublicensees and/or Third Party subcontractors) performed to the extent expressly provided hereunder: (a) in the Development Program under the CDP; and (b) in Promoting a Licensed Product under the US Promotional Plan in the event Geron has exercised its US Opt-In Rights.

1.34 **"Combination Product"** means: (a) any Licensed Product that includes, in addition to at least one Active Substance, one or more other drug substances or active ingredients;

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or (b) a bundling of any Licensed Product with another product in the Field, as a combination sold together for a single invoiced price.

1.35 **"Commercialization" or "Commercialize"** means activities directed to marketing, promoting, offering for sale, or selling a product for use in the Field, including commercial Manufacturing, conducting any Post Marketing Studies, developing and coordinating speaker programs, managed care contract sales, Detailing, Medical Affairs activities, and distribution and importation activities in support thereof.

1.36 **"Competing Oncology Product"** means, in reference to a particular Licensed Product, any other product that is in clinical development or is approved for a use in the Field for treating an Oncology indication by acting through the same predominant or primary mechanism of action in humans as the Licensed Product or that is substitutable (i.e., on a pharmaceutical formulary) for the Licensed Product in the Co-Promote Territory.

1.37 "Compliance Working Group" means a Working Group advising the JSC and the JMC with respect to any compliance issues under Health Care Law and Drug Regulation Laws relating to any Co-Promotional matters hereunder.

1.38 "Confidential Information" has the meaning set forth in Section 11.1.

1.39 "Continuation Notification" has the meaning set forth in Section 2.1.8.

1.40 "Control" means, with respect to any designated intellectual property or right pertaining thereto, possession by a Party (whether directly by ownership (either sole or joint) or license from a Third Party, or indirectly through an Affiliate having ownership or license from a Third Party) of the ability to grant to the other Party a license, sublicense, right of access, or other right to or under such intellectual property or intellectual property right as provided herein, without violating the terms of any agreement with any Third Party.

1.41 "Co-Promote Territory" means the United States.

1.42 "Co-Promotion" means the Promoting of the Licensed Product under the same tradename or branding by Sales Representatives of either Party in the Co-Promotion Territory. When used as a verb **"Co-Promote"** shall mean to engage in Co-Promotion.

1.43 "Co-Promotion Agreement" means the Agreement to be entered into by and between Geron or its Affiliate and Janssen or its designated Affiliate upon Geron being granted Co-Promotion rights pursuant to Sections 2.2.4 and 5.1, setting forth the terms pursuant to which the Parties will Co-Promote the Licensed Product in the Co-Promotion Territory, including the terms set forth in Article V and such appropriate terms and conditions typically used by Janssen at such time to engage Third Party contract providers of promotional services of its drug products in accordance with its compliance program and policies and Applicable Law. A copy of such terms and conditions used by Janssen as of the Execution Date is attached as Exhibit N.

1.44 "Co-Promotion Exercise Notice" has the meaning set forth in Section 5.1.2.

1.45 "Co-Promotion Exercise Period" has the meaning set forth in Section 2.2.4.

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1.46 "Co-Promotion Option" means the option of Geron, effective upon its timely election under Section 5.1 following its exercise of its US Rights Option pursuant to Section 2.2.2, to fulfill its obligation to support twenty percent of the Promoting Costs in the United States by providing twenty percent (20%), subject to any ramp-up as provided in Section 5.2, of the Aggregate Detail Effort with Sales Representatives employed by Geron, in accordance with the terms and conditions of Article V.

1.47 "Corporate Integrity Agreement" means the Corporate Integrity Agreement Between The Office of Inspector General of the Department of Health and Human Services and Johnson & Johnson dated October 31, 2013, which is publicly available at https://www.janssenbiotech.com/company/pharmaceutical-affiliate-corporate-integrity-agreement.

1.48 "Cost of Goods" means the applicable Party or its Affiliate's reasonable and necessary internal and out-of-pocket (paid to Third Parties) costs incurred in Manufacturing the applicable Licensed Product or component thereof supplied hereunder (including, for the avoidance of doubt, costs for acquiring or procuring materials used in Manufacturing, including for purposes of synthesizing any Active Substance or any of its intermediates or precursors, or of formulating an Active Substance into the finished Licensed Product), as determined in accordance with its cost accounting policies that are in accordance with Accounting Standards and consistently applied across such Party's and its Affiliates manufacturing network to other products that they manufacture.

1.49 "Cover" means, in reference to a claim of a Patent Right in a particular country or other jurisdiction with respect to particular subject matter (such as a composition of matter, product, manufacturing or other process, or method of use), that the claim (as interpreted under principles of patent law in such jurisdiction) reads on or encompasses such subject matter.

1.50 "CPR Rules" has the meaning set forth in Section 15.2.2.

1.51 "Credited Amount" has the meaning set forth in Section 9.8.1.

1.52 "Contemplated License Activities" has the meaning set forth in Section 1.81.

1.53 "Cure Period" has the meaning set forth in Section 14.2.1.

1.54 "Currency Hedge Rate" means the weighted average hedge rate to be used for local currency of each country, other than the United States, of the Licensed Territory as calculated by Janssen based on the outstanding external foreign currency forward hedge contract(s) of Johnson & Johnson's Global Treasury Services Center (GTJRC) and its Affiliates with Third Party banks.

1.55 "Current Manufacturing Contracts" means any and all material agreements by and between Geron and any Third Party relating to the Manufacturing of GRN163 or GRN163L drug substance or finished product in effect (including as to any material provisions surviving any termination) as of the Execution Date. Geron hereby represents and warrants that the contracts identified in Exhibit M constitute all of the Current Manufacturing Contracts (including any amendments) of which Geron is aware as of the Execution Date.

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1.56 "Data" means any and all research data, results, pharmacology data, medicinal chemistry data, preclinical data, clinical data (including investigator reports (both preliminary and final), statistical analysis, expert opinions and reports, safety and other electronic databases), in any and all forms, including files, reports, raw data, source data (including patient medical records and original patient report forms, but excluding patient-specific data to the extent required by Applicable Laws) and the like, in each case directed to, or used in the Development, Manufacture or Commercialization of any Licensed Product or Active Substance hereunder.

1.57 "Detail" means, with respect to a Licensed Product, an interactive face-to-face visit by a Sales Representative for such Licensed Product following its Regulatory Approval for use in the Field with a healthcare professional having prescribing authority or who is able to influence prescribing decisions, within the target audience during which approved uses, safety, effectiveness, contraindications, side effects, warnings and/or other relevant characteristics of the Licensed Product are discussed in an effort to increase prescribing preferences of the Licensed Product for its approved uses. Details may include First Position Details and Second Position Details (as defined below). For the avoidance of doubt: Medical Affairs activities and related activities conducted by medical support staff (such as medical science liaisons) do not constitute Details; and E-details, activities conducted at conventions or similar gatherings, and activities performed by market development specialists, managed care account directors and other personnel not performing face-to-face sales calls or not specifically trained with respect to a Licensed Product will not constitute Details. **"First Position Detail"** means a Detail in which the applicable product is Detailed before any other product and the predominant portion of time is devoted to the Detailing of such product. **"Second Position Detail"** means a Detail in which the applicable product is Detailed in the second position (i.e., no more than one other product is presented to or discussed with the healthcare professional before such product) and the second most predominant portion of time is devoted to the Detailing of such product. When used as a verb, to **"Detail"** or perform **"Detailing"** means to engage in a Detail.

1.58 "Develop" means any and all pre-clinical, clinical, and other research activities to study a drug candidate or product and develop it toward Regulatory Approval, (including any such activities conducted after such Regulatory Approval as a condition for the grant of such Regulatory Approval, other than Post-Marketing Studies), for marketing or Commercialization in the Field, including toxicology and ADME tests, analytical method development, stability testing, process development and improvement, process validation, process scale-up prior to first Regulatory Approval, formulation development, delivery system development, quality assurance and quality control development, statistical analysis, pre- and post-approval clinical studies or trials, regulatory affairs, and regulatory activities. For clarity, the definition of "Development" shall include all activities under the Global Development Plan but exclude all Commercialization activities. **"Developing"** and **"Development"** shall each have a correlative meaning.

1.59 "Development Budget" means the written budget as set forth in the CDP (as may be amended from time to time by written agreement of the Parties) or an IDP (as may be amended from time to time by the applicable Party), as the case may be, for conducting the Development activities as described in such development plan, including the budget specifying Supply Costs for clinical supplies used in connection with the applicable Development activities.

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1.60 "Development Costs" means the FTE Costs for Development FTEs and Out-of-Pocket Costs incurred by the Parties and their Affiliates in Developing any Licensed Products in the Field in accordance with this Agreement and the Global Development Plan or a CDP or IDP, as the case may be, pursuant to its Development Budget therein, including any such costs directly associated with: (a) Development (other than Manufacturing) activities performed in direct support of the clinical studies of Licensed Product specified in the Work Plans of the applicable CDP or IDP; (b) Manufacturing activities and Supply Costs (with respect to clinical supply) of Licensed Products used for clinical studies set forth in the applicable CDP or IDP; (c) purchasing or packaging Third Party comparator drugs, or Third Party drugs or devices to be used in combination with a Licensed Product, in each case to be used in a clinical study under the applicable CDP or IDP; (d) disposal of clinical samples in a clinical study under the applicable CDP or IDP; (e) preparing and making Regulatory Filings (such as INDs or NDAs) for Licensed Products in support of clinical studies or other Development activities under the applicable CDP or IDP; (f) performing Manufacturing Development activities under the applicable CDP or IDP relating to chemistry, manufacturing, and controls (CMC) and the development of CMC Know-How for inclusion in a Regulatory Filing such as an NDA, such as (i) manufacturing process, formulation and delivery system development and improvement, validation, and scale-up planning and process design; (ii) stability testing development; (iii) quality assurance/quality control development; and (iv) qualification and validation of Third Party contract manufacturers of clinical supplies of Licensed Products, in each case to the extent required for Regulatory Approval of a Licensed Product; (g) establishing and updating a global safety database for Licensed Products based on data from clinical use of the Licensed Product in the Development Program anywhere in the Territory; and (h) developing any *in vitro* or companion diagnostics for use with a Licensed Product in accordance with any applicable Work Plan set forth in the applicable CDP or IDP. For the avoidance of doubt, Development Costs exclude any milestone payments hereunder for any Development milestone events, capital expenditures (such as costs of scaled-up Manufacturing equipment for commercial production), costs associated with further scale-up activities after first Regulatory Approval not under the CDP, and any costs not included in a Development Budget, such as by way of example, costs attributable to general corporate activities, executive management, investor relations, treasury services, business development, corporate government relations, external financial reporting, legal matters (including Patent Costs), and other overhead not already captured in the definition of FTE Rate.

1.61 "Development FTE" means an FTE employed by a Party or its Affiliate expended in directly performing or supporting any Development activities under the CDP, such as scientific, medical, technical, or other personnel as appropriate for the applicable Development activity, including administrative employees dedicating more than fifty percent (50%) of their FTE time to support Development activities hereunder. For clarity, such administrative employees include such dedicated personnel in compound development team leadership and project management, but exclude back-office employees such as human resources, accounting, information technology, and legal personnel.

1.62 "Development Program" means the activities performed by either or both of the Parties and any of their respective Affiliates, Third Party subcontractors, or Third Party sublicensees in the Development of any Licensed Products, including all Development activities under the Global Development Plan.

1.63 "Development Program Invention" means an invention (whether or not patentable) arising in the Development Program directly from any Development activities performed by (directly) or on behalf of (by any Affiliates, Third Party sublicensees, or Third Party subcontractors of) either or both of the Parties or arising directly from any Post Marketing Studies of Licensed Product performed by or on behalf of Janssen, which invention is necessary or useful for the Manufacturing or Development of any Active Substance or Licensed Product, or for the Commercialization of any Licensed Product, including any invention made in the Development Program pertaining to the Manufacture, preparation, formulation, administration, delivery, dosing, or use in the Field of any Active Substance or Licensed Product. Notwithstanding the foregoing, if Janssen (directly or through its Affiliates or Third Party sublicensees) performs during the Term any research activities outside the scope of the activities set forth in the Global Development Plan, which activities result in the discovery of either a novel Active Substance (including through structural modifications of GRN163L to optimize its properties) or novel use in the Field, then such discoveries shall be deemed within the scope of Development Program Inventions hereunder.

1.64 "Development Program IP" means the Development Program Know-How and Development Program Patent Rights, collectively.

1.65 "Development Program Know-How" means any and all Know-How generated or developed in the Development Program from any Development activities performed by (directly) or on behalf of (by any Affiliates, Third Party sublicensees, or Third Party subcontractors of) either or both of the Parties or from any Post Marketing Studies of Licensed Product performed by or on behalf of Janssen hereunder, which Know-How directly relates to any Active Substance or Licensed Product, including for purposes of illustration: any Development Program Inventions; Data and other information relating to any form of an Active Substance or Licensed Product, any method of using an Active Substance or Licensed Product, any process or material for Manufacturing, formulating, or delivering an Active Substance or Licensed Product, the use of any Active Substance in any Combination Product, any companion diagnostic for use in Developing or Commercializing a Licensed Product in the Field, any material or process for making an Active Substance or Licensed Product, any method of using, testing, or characterizing an Active Substance or Licensed Product; and any data and other information contained in any Regulatory Filings relating to any Licensed Product.

1.66 "Development Program Patent Right" means any Patent Right, Controlled by either or both of the Parties, that includes (as filed or at any other time during its pendency in a Patent Office) any claim Covering (generally or specifically) any Development Program Invention. For purposes of illustration, exemplary Development Program Patent Rights may include one or more claims Covering any Active Substance or Licensed Product form, any method of using any Active Substance or Licensed Product, any process or material for manufacturing, formulating, or delivering any Active Substance or Licensed Product, any Combination Product to the extent it directly relates to an Active Substance hereunder (excluding, for the avoidance of doubt, Patent Rights directed to other active ingredients alone), or any companion diagnostic for use in connection with the Development or Commercialization of the Licensed Product in the Field.

1.67 "Development Proposal Criteria" means, with respect to a Proposed Trial, a general description of the study design, clinical study endpoints, clinical methodology, and

monitoring requirements, and the budget estimate of Out-of-Pocket Costs and FTE Costs associated therewith, together with an analysis of projected return on investment of such trial.

1.68 "Diligent Commercialization Efforts" means, with respect to the efforts to be expended by Janssen following receipt of Regulatory Approval for a Licensed Product in a Major Market Country or any other country in which Janssen has obtained Regulatory Approval for a Licensed Product, expending commercially reasonable efforts, by or on behalf of Janssen (through its and its Affiliates' and Third Party sublicensees' collective activities), to Commercialize the Licensed Product in such country that are consistent with the efforts typically expended in the human pharmaceutical industry by similarly resourced companies under similar circumstances (considering, for example, technical challenges, market potential, regulatory requirements, patient population, and competitive position) in such country.

1.69 "Diligent Development Efforts" means, with respect to the efforts to be expended by a designated Party regarding its Development obligations under this Agreement, expending commercially reasonable efforts, by or on behalf of such Party (through its and its Affiliates' and Third Party subcontractors' collective activities) to conduct the applicable Development activities (including in the event of any clinical hold imposed by any Regulatory Authority on any particular IND or clinical trial for a Licensed Product under the Global Development Plan, expending efforts to seek to remove such clinical hold, if, and to the extent, it is commercially reasonable to do so) that are consistent with the efforts typically expended in the human pharmaceutical industry by similarly resourced companies under similar circumstances (considering, for example, technical challenges, market potential, regulatory requirements, patient population, and competitive position).

1.70 "Dispute" means any dispute, claim, or controversy arising from or regarding this Agreement, including the interpretation, application, breach, termination, or validity of any provision hereof. For the avoidance of doubt, any matter within the decision-making authority of the JSC or any other Joint Committee shall not be deemed a Dispute merely if a unanimous decision cannot be reached if one of the Parties has the final decision making authority on such matter; however, if a controversy between the Parties arises regarding the interpretation of any provisions hereunder pertaining to any Joint Committee decision that cannot be made due to such controversy, such controversy shall be deemed a Dispute to the extent of such controversy.

1.71 "Drug Application" means an NDA, MAA, or equivalent application, submitted to a Regulatory Authority in a particular jurisdiction, for marketing approval of a pharmaceutical or drug product.

1.72 "Drug Regulation Laws" means Applicable Laws regulating drugs and pharmaceutical products, such as the Federal Food, Drug, and Cosmetic Act, 21 U.S.C. § 301 *et. seq.*, the Prescription Drug Marketing Act of 1987, the Controlled Substances Act, 21 U.S.C. § 801 *et. seq.*, and policies issued by the FDA, each as in effect and as amended from time to time.

1.73 "Effective Date" means the effective date of this Agreement, which shall be the date (following the Execution Date) that is the first Business Day immediately following the date on which the Parties have actual knowledge that all applicable waiting periods under the HSR Act with respect to the transactions contemplated hereunder have expired or have been terminated.

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1.74 "EMA" means the European Medicines Agency or any successor agency for the EU.

1.75 "EU Major Market Country" means the [*].

1.76 "European Union" or **"EU"** means the countries of the European Economic Area, as it is constituted on the Effective Date and as it may be modified from time to time after the Effective Date.

1.77 "Excess Development Costs" means, (a) prior to the first full Janssen Calendar Year following first Regulatory Approval of a first Licensed Product in the first Major Market Country, the portion of the Development Costs for all of the Additional Studies under the CDP for a given Janssen Calendar Year that, in the aggregate, exceeds the sum of (x) the total Development Costs set forth in the Initial Development Budget for such Additional Studies for such Janssen Calendar Year, plus (y) the Budget Variance Limit, and (b) thereafter, the portion of the Development Costs for the Additional Studies under the CDP for a given Janssen Calendar Year that, in the aggregate, exceeds the sum of (x) the total Development Costs set forth in the annual Development Budget for the Additional Studies for such Janssen Calendar Year, plus (y) the Budget Variance Limit.

1.78 "Execution Date" has the meaning set forth in the Preamble.

1.79 "Executive Officers" means (a) for Geron, the Chief Executive Officer of Geron and (b) for Janssen, (i) if a matter pertains to the Development of a Licensed Product, the Global Head of Janssen R&D or the Global Therapeutic Area Head for Janssen Oncology; or (ii) if a matter pertains to the Commercialization of a Licensed Product, the Worldwide Chairman, Pharmaceuticals of Johnson & Johnson, the President of Janssen, or the General Manager, Oncology of Janssen; or (iii) if a matter pertains to the Manufacture of a Licensed Product, the Vice President, Supply Chain of Janssen Supply Group, LLC. In the event that the position of any of the Executive Officers identified in this Section no longer exists due to a corporate reorganization, corporate restructuring or the like that results in the elimination or modification of the identified position, the applicable Executive Officer shall be replaced with another senior officer with responsibilities and seniority comparable to the eliminated or modified position.

1.80 "Existing Third Party Agreements" means the (a) Current Manufacturing Contracts; (b) Pre-Existing Licenses to Third Parties; (c) Pre-Existing Licenses from Third Parties; and (d) any and all agreements between Geron and a Third Party in effect as of the Execution Date, other than the [*] or any agreement described in clauses (a) through (c), and which contain any terms relating to the Development, Manufacture, or Commercialization of GRN163 or GRN163L, (collectively, the **"Additional Pre-Existing Third Party Agreements"**). Geron represents and warrants that Exhibit B-3 lists all of the material Additional Pre-Existing Third Party Agreements described in clause (d) of this Section, including any amendments thereto, of which Geron is aware as of the Execution Date.

1.81 "Existing Blocking Third Party Patent Rights" means any issued Patent Rights owned or controlled by a Third Party (and not included in Geron Product Patent Rights) that (i) include one or more claims that would be infringed by the Development, Manufacture (including,

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with respect to any claims of such Patent Rights that Cover any manufacturing processes used in such Manufacture, those process steps or features that are in accordance with those process steps or features of any manufacturing processes as utilized by or on behalf of Geron as of the Execution Date, including under the Current Manufacturing Contracts, but excluding any process steps or features that are changed from such manufacturing processes), or Commercialization of GRN163 or GRN163L, or a Licensed Product due solely to the extent of its inclusion of GRN163 or GRN163L as an active agent (and not to the inclusion of any other active or inactive agent or ingredient in the Licensed Product) (any such Development, Manufacture, or Commercialization activity, the "**Contemplated License Activities"**), and (ii) which as of the Execution Date, Geron knew or reasonably should have known, include any such claims that would be infringed by any such Contemplated License Activity.

1.82 "Ex-US Studies" means those clinical studies of Licensed Product set forth in the Global Development Plan that are not US Studies, which for clarity are intended to support Regulatory Approval in one or more countries not including the United States, regardless of where such studies are performed.

1.83 "Expert Proxy Resolution" means the procedure for obtaining a decision on an issue within the JSC's authority that requires a unanimous vote of the JSC as expressly provided hereunder, in the event that the JSC does not reach a unanimous decision and, after escalation, the Parties' Executive Officers also do not reach a mutual decision of the escalated issue, which procedure is set forth in Section 3.11.

1.84 "FCPA" means the U.S. Foreign Corrupt Practices Act (15 U.S.C. § 78dd-1 et. seq.), as may be amended at the relevant time.

1.85 **"FDA"** means the United States Food and Drug Administration or any successor agency thereto for the United States.

1.86 **"Field"** means the prevention, treatment, and/or diagnosis of any and all human disorders or medical conditions, including all Indications in Oncology.

1.87 **"Finance Working Group"** means a Working Group advising the JSC or any other Joint Committee with respect to the reporting and reconciliation of any Development Costs or US Promotional Costs incurred hereunder.

1.88 **"First Commercial Sale"** means, with respect to a Licensed Product in a country, the first commercial sale for monetary value of such Licensed Product by or on behalf of Janssen (or any of its Affiliates, Third Party distributors, or Third Party sublicensees) to a Third Party purchaser for end-use or consumption in the Field following Regulatory Approval in such country. For the avoidance of doubt, sales of Licensed Product for clinical study purposes, early access programs (such as to provide patients with a Licensed Product prior to Regulatory Approval, for example, pursuant to treatment INDs or protocols, named patient programs and compassionate use programs), and similar uses shall not constitute a First Commercial Sale. In addition for clarity, a sale of a Licensed Product between (i) Janssen or any of its Affiliates and (ii) Janssen and any of its Third Party sublicensees (such as contract manufacturers, suppliers, or distributors for consignment, where such sale is not a final sale to a wholesaler or retailer) shall not constitute a

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First Commercial Sale, and in each case the First Commercial Sale shall be deemed to occur upon a subsequent resale by a Third Party sublicensee to a Third Party purchaser for end use. For clarity, only one such sale transaction (the final sale) with respect to a unit of Licensed Product will be deemed to constitute the First Commercial Sale.

1.89 **"First Indication"** has the meaning set forth in Section 1.139.

1.90 **"FTE"** means the equivalent of the work of one qualified employee or agent for the applicable activities, full time, for one year (constituting [*] working hours). For clarity, no more than [*] hours per year (or equivalent pro-rata portion thereof for a period less than 12 months) may be charged for an individual contributing work factoring into any reimbursable FTE costs hereunder, regardless of how much additional work time is contributed by such individual during such period. An individual contributing work for less than [*] hours per year shall be deemed a fraction of an FTE on a pro-rata basis.

1.91 **"FTE Costs"** means the FTE Rate times the number of FTEs expended during the applicable financial period. The FTE Costs shall be determined based on time (as calculated in pro-rated FTEs) actually spent performing the applicable Development activities, unless another basis is expressly specified herein or otherwise agreed in advance by the Parties in writing.

1.92 **"FTE Rate"** means the monetary rate at which FTEs expended by a Party during the applicable financial reporting period will accrue toward such Party's FTE Costs hereunder. The Parties agree that the FTE Rate for Development work shall be [*] dollars ($[*]) per allocable FTE, and the FTE Rate for Detailing work by Sales Representatives (the **"Sales Force FTE Rate"**) shall be [*] dollars ($[*]) per allocable Sales Representative. Each such FTE Rate shall be adjusted annually, based on changes in the Consumer Price Index (as quoted by the U.S. Department of Labor, Bureau of Labor Statistics) plus [*] percent ([*]%), with the first adjustment taking effect in the 2015 Janssen Calendar Year. Each Party acknowledges that the foregoing FTE Rate for Development work has been set to include all salary, employee benefits, routine supplies, and other expenses, including support staff and overhead for or directly allocable to an FTE and that the foregoing Sales Force FTE Rate is likewise fully loaded for Sales Representative Detailing work.

1.93 **"GAAP"** means United States generally accepted accounting principles applied on a consistent basis.

1.94 **"Generic Erosion"** means that a Generic Product alone has, or multiple Generic Products in the aggregate have, attained, on a Licensed Product-by-Licensed Product basis and on a country-by-country basis, at least [*] ([*]%) market share of prescription volume in a Janssen Calendar Quarter of the applicable Licensed Product in the applicable country, as measured by the IMS data or other marketing data issued by a reputable data source acceptable to both Parties.

1.95 **"Generic Product"** means, on a Licensed Product-by-Licensed Product basis and on a country-by-country basis, a product that is the same as, or Bioequivalent to, the Active Substance contained within such Licensed Product, and the application for Regulatory Approval for which is submitted through an Abbreviated NDA or foreign equivalent thereof that references

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any NDA or supplemental NDA or any foreign equivalent thereof for the Licensed Product. For clarity, Generic Product will not include an authorized (by Janssen) generic of a Licensed Product.

1.96 **"Geron Assay IP"** means the Geron Assay Know-How and the Geron Assay Patent Rights, collectively.

1.97 **"Geron Assay Know-How"** means any and all Know-How owned (and accordingly Controlled) by Geron (directly or through any of its Affiliates), as of the Execution Date or during the Term, that pertains to any assays for measuring telomerase activity and/or telomere length. Geron hereby

represents and warrants that the Geron Assay Know-How includes the assay methods and materials (other than reagents and kits generally available for commercial purchase without restrictions on use from Third Party vendors) described in the two protocols set forth in Exhibit K.

1.98 "Geron Assay Patent Rights" means: (a) any and all Patent Rights owned (and, accordingly Controlled) by Geron (directly or through any of its Affiliates), as of the Execution Date or during the Term, that include any claim Covering any assay method or material for measuring telomerase activity and/or telomere length; and (b) the Patent Rights licensed by Geron pursuant to the license agreement dated May 17, 2001 by and between Geron and McMaster University. The Geron Assay Patent Rights include the Patent Rights listed on Exhibits P-1 and P-2.

1.99 "Geron Co-Promotion Decision Package" has the meaning set forth in Section 2.2.3.

1.100 "Geron Decision Package" has the meaning set forth in Section 2.2.1 .

1.101 "Geron Development Program IP" means the Geron Development Program Know-How and Geron Development Program Patent Rights, collectively.

1.102 "Geron Development Program Know-How" means the Development Program Know-How Controlled by Geron (directly or through any of its Affiliates), including Geron's interest in any Joint Development Program Know-How.

1.103 "Geron Development Program Patent Rights" means the Development Program Patent Rights Controlled by Geron (directly or through any of its Affiliates), including Geron's interest in any Joint Development Program Patent Rights.

1.104 "Geron Election Period" has the meaning set forth in Section 2.2.2.

1.105 "**Geron Election Notification**" has the meaning set forth in Section 2.2.2.

1.106 "Geron IDP Trial Costs" has the meaning set forth in Section 4.9.4.

1.107 "Geron Product IP" means the Geron Product Know-How and Geron Product Patent Rights, collectively.

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1.108 "Geron Product Know-How" means (a) any Know-How related to the Development, Manufacture and/or Commercialization of any Active Substance or Licensed Product, including any Active Substance's or Licensed Product's Data and properties, Development, uses, synthesis or manufacture, formulation, or administration (including as contemplated by this Agreement), and (b) any Know-How that is incorporated by Geron or any of its Affiliates into the Development, Manufacture, use and/or Commercialization of any Active Substance or Licensed Product during the Term, which Know-How in each case (a) and (b) is either (i) Controlled by Geron (directly or through any of its Affiliates) as of the Effective Date or (ii) developed outside of the Development Program and comes within the Control of Geron (directly or through any of its Affiliates) during the Term, but in all cases excluding [*].

1.109 "Geron Product Patent Rights" means any Patent Rights, Controlled by Geron (directly or through any of its Affiliates) as of the Effective Date or during the Term, or that come into the Control of Geron (directly or through any of its Affiliates) outside the Development Program but during the Term, that include at any time at least one claim Covering, generically or specifically: (a) any Geron Product Know-How; or (b) any composition, form, formulation, preparation, administration, delivery, or dosing of any Active Substance or Licensed Product, or any method of using any Active Substance or Licensed Product, or any process or material for manufacturing, formulating, preparing, administering, delivering, or dosing any Active Substance or Licensed Product, in each case excluding [*]. The Geron Product Patent Rights include the Patent Rights listed on Exhibits D-1, D-2, and D-3.

1.110 "[*]" has the meaning set forth in Section 5.5.1.

1.111 "Geron Promotional Funding Amount" has the meaning set forth in Section 5.5.1.

1.112 "Geron Promotional Share" means the actual percentage, up to a maximum of twenty percent (20%), of Sales Representative PDEs expended by Geron in Detailing Licensed Product in the United States during any period during which it is Co-Promoting such Licensed Product while there is Innovator Protection in the United States for a Licensed Product following its Regulatory Approval by the FDA.

1.113 "Geron Reimbursement Amount" has the meaning set forth in Section 4.9.5.

1.114 "**[*]**" means the portion of the Geron Reimbursement Amount set forth in Section 4.9.5.

1.115 "Geron Reimbursement Downpayment" has the meaning set forth in Section 4.9.5.

1.116 "Global Development Plan" means the CDP and any IDPs, collectively, which together shall provide the written plans and budgets for the overall program of Development of Licensed Product toward Regulatory Approval in the Major Market Countries for any Oncology Indications or other applications in the Field, including Work Plans and Development Budgets (with each Party's respective allocation of costs, if any) for (a) clinical trials (including any Party-sponsored clinical studies and investigator-initiated clinical studies) and non-clinical

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studies, (b) regulatory responsibilities for obtaining Regulatory Approval in the applicable countries, and (c) the associated timelines for such activities, all as may be updated or amended from time to time in accordance with the terms of this Agreement. For clarity, the Global Development Plan shall include any clinical studies initiated by Geron, or any of its Affiliates or Third Party contractors under any Existing Third Party Agreements, before the Execution Date and conducted to any extent during the Term.

1.117 "Good Clinical Practice" or **"GCP"** means the current standards for clinical trials for pharmaceuticals, as set forth in the ICH guidelines and applicable regulations promulgated thereunder, as amended from time to time, and such standards of good clinical practice as are required by the European Union and other organizations and governmental agencies in countries in which a Product is intended to be sold to the extent such standards are not less stringent than United States Good Clinical Practice.

1.118 "Good Laboratory Practice" or **"GLP"** means the current standards for laboratory activities for pharmaceuticals, as set forth in the FDA's Good Laboratory Practice regulations or the Good Laboratory Practice principles of the Organization for Economic Co-Operation and Development, as amended from time to time, and such standards of good laboratory practice as are required by the European Union and other organizations and governmental agencies in countries in which a Product is intended to be sold, to the extent such standards are not less stringent than United States Good Laboratory Practice.

1.119 "Good Manufacturing Practice" or **"GMP"** means the current quality assurance standards that ensure that pharmaceutical products are consistently produced and controlled in accordance with the quality standards appropriate to their intended use as defined in 21 C.F.R. § 210 and 211, European Directive 2003/94/EC, Eudralex 4, Annex 16, and applicable United States, European Union, Canadian and ICH guidance or equivalent laws in other jurisdictions to the extent no less stringent.

1.120 "Government Health Care Programs" means the Medicare program (Title XVIII of the Social Security Act), the Medicaid program (Title XIX of the Social Security Act), TRICARE, the Federal Employee Health Benefits Program, and other foreign, federal, state and local governmental health care plans and programs.

1.121 "Government Order" means any order, writ, judgment, injunction, decree, stipulation, ruling, determination or award entered by or with any Governmental Authority.

1.122 "Governmental Authority" means any United States federal, state or local or any foreign government, or political subdivision thereof, or any multinational organization or authority, or any authority, agency, or commission entitled to exercise any administrative, executive, judicial, legislative, police, regulatory or taxing authority or power, any court or tribunal (or any department, bureau or division thereof), or any governmental arbitrator or arbitral body.

1.123 "GRN163" means the N3'->P5' thiosphosphoramidate oligonucleotide having the structure set forth in Exhibit A-1, which is referred to by Geron internally and in certain of its publications as GRN163.

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1.124 "GRN163L" means the N3'->P5' thiosphosphoramidate oligonucleotide having the structure set forth in Exhibit A-2, which reflects GRN163 covalently linked to palmitoyl, or the sodium (or any other) salt thereof, which is also referred to as imetelstat.

1.125 "Health Care Laws" means Applicable Laws relating to Government Health Care Programs, Private Health Care Plans, privacy and confidentiality of patient health information and human biological materials, including, in the United States, federal and state Applicable Laws pertaining to the federal Medicare and Medicaid programs (including the Medicaid rebate program); federal Applicable Laws pertaining to the Federal Employees Health Benefit Program, the TRICARE program and other Government Health Care Programs; federal and state Applicable Laws applicable to health care fraud and abuse, kickbacks, physician self-referral and false claims (including 42 U.S.C. § 1320a-7a, 42 U.S.C. § 1320a-7b, 42 U.S.C. § 1395nn and the federal Civil False Claims Act, 31 U.S.C. § 3729 *et. seq.*); the Health Insurance Portability and Accountability Act of 1996; and 45 C.F.R. Part 46, as well as similar Applicable Laws in the Licensed Territory, each as in effect and as amended from time to time.

1.126 "Hematological Cancer" means any cancer arising in the blood or in bone forming tissues (e.g., bone marrow or lymph nodes), including MDS, MF, leukemia (including AML), lymphoma, or multiple myeloma.

1.127 "HSR Act" means the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and the rules and regulations promulgated thereunder, or foreign equivalent thereof under Applicable Law.

1.128 "HSR Clearance" means, as pertaining to this Agreement, the expiration or termination of all applicable waiting periods and requests for information (and any extensions thereof) under the HSR Act.

1.129 "HSR Filing" means (a) filings by Janssen and Geron with the United States Federal Trade Commission and the Antitrust Division of the United States Department of Justice of a Notification and Report Form for Certain Mergers and Acquisitions (as that term is defined in the HSR Act) with respect to the matters set forth in this Agreement, together with all required documentary attachments thereto, or (b) equivalent filings with applicable Governmental Authorities having jurisdiction over requests for HSR Clearance.

1.130 "ICH" means the International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use.

1.131 "IDP" or **"Independent Development Plan"** means a written plan prepared by or on behalf of a Party hereunder for Development of Licensed Product in the Field to be independently conducted by such Party (directly or through its Affiliates, Third Party sublicensees or Third Party

subcontractors) as expressly permitted hereunder (including under Section 4.8 or Section 4.9), at its own expense, including the Work Plans and Development Budget, as may be updated or amended from time to time by such Party.

1.132 "Imetelstat COM Patent Family" means the series or family of Geron Product Patent Rights which consists of: (a) U.S. Patent No. 7,494,982 and (b) those other Geron Product

Patent Rights related thereto by way of priority (such as a continuing application thereof, a parent or provisional application serving as a basis of priority therefor, or by claiming a common priority right therewith) under Applicable Law, in each case including foreign counterparts of any of the foregoing.

1.133 "IND" means an Investigational New Drug Application filed with the FDA, or a similar application filed with a Regulatory Authority outside of the United States for authorization to commence a clinical study, such as a clinical trial application or a clinical trial exemption, or any related regulatory submission, license or authorization.

1.134 "IND Transfer Agreement" means a written agreement between the Parties relating to a particular IND for a clinical study of GRN163L filed on or before the Effective Date by or on behalf of Geron or a Third Party counterparty to an Existing Third Party Agreement pertaining to such IND or ongoing clinical study thereunder, which written agreement is entered into between the Parties or among the Parties and any such Third Party after the Effective Date hereof and provides for the transfer to Janssen of the IND or any responsibilities of Geron under the Existing Third Party Agreement.

1.135 "Indemnified Party" has the meaning set forth in Section 13.1.

1.136 "Indemnified Persons" shall mean, with respect to a Party, such Party and its Affiliates, and their respective officers, directors, employees, and agents.

1.137 "Indemnifying Party" has the meaning set forth in Section 13.1.

1.138 "Independent Promotional Plan" means the written plan prepared by Janssen setting forth its plans for Detailing supporting Janssen's Commercialization of Licensed Product after applicable Regulatory Approval in (a) the United States if Geron does not have US Opt-In Rights, and (b) countries other than the United States, as such plan may be amended or updated from time to time by Janssen.

1.139 "Indication" means a specific therapeutic or prophylactic indication set forth in labeling for a given drug product (such as a Licensed Product), as approved by a Regulatory Authority, identifying an application for which the drug product, as applicable, may be marketed for use to prevent or treat a particular disease or medical condition. On a product-by-product and country-by-country basis, **"First Indication"** for a specified disease or medical condition means the Indication for such specified disease or medical condition as set forth in the product label for the drug product, as applicable, that receives the first Regulatory Approval in such country based on a pivotal clinical study and is for treating a patient population; and **"Second Indication"** means an additional Indication for the same specified disease or medical condition as set forth in the First Indication for such drug product, as applicable, which additional Indication receives Regulatory Approval based on a different pivotal clinical study and is for treating an additional patient population (distinct from that treated by the First Indication).

1.140 "Inferior Rights" means any rights, under any Geron Product Patent Rights not licensed to Janssen under this Agreement that, after the Effective Date and to the extent not

prohibited herein, Geron exercises, practices, or otherwise exploits itself or through an Affiliate or grants to any Third Party, that relate to a product other than a Licensed Product.

1.141 "Inferior Rights Holder" means a holder of Inferior Rights (whether Geron or its Affiliate or Third Party licensee, as the case may be).

1.142 "Initial Development Budget" means the initial Development Budget for the Development activities in the Work Plans for the Initial Studies and US Studies that would be included in the CDP as set forth in Section 4.8.1 if Geron were to exercise its US Opt-In Rights, as provided to Geron in the Geron Decision Package pursuant to Section 2.2.1.

1.143 "Initial Global Development Plan" means the Global Development Plan as of the Execution Date, which is attached to this Agreement as Exhibit C and includes: (a) the initial CDP including the Work Plan and Development Budget for each of the Initial Studies; and (b) Additional Studies that are US Studies planned as of the Execution Date, which shall be incorporated into the CDP if Geron exercises it US Opt-In Rights pursuant to Section 2.2.2, and which shall be incorporated into a Janssen IDP if Geron does not so exercise such rights.

1.144 "Initial Studies" means both the Lead Phase 2 MF Study and Lead Phase 2 Low-Risk MDS Study.

1.145 "In-Licensed Geron Product Patent Rights" has the meaning set forth in Section 12.5.8.

1.146 "Innovator Protection" means, with respect to the applicable Licensed Product having Regulatory Approval in a given country, that either or both of the following protections pertaining to the Active Substance of the Licensed Product is/are in force in such country: (a) at least one Valid Claim of the Geron Product Patent Rights or Development Program Patent Rights in such country Covers either (i) the Active Substance contained in the Licensed Product as a composition of matter, or (ii) a method of using the Active Substance or the Licensed Product corresponding to its First Indication approved by the Regulatory Authority in such country; and/or (b) Regulatory Exclusivity Rights protect the Active Substance of the Licensed Product (e.g., as a new chemical entity, data exclusivity, pediatric exclusivity, or the like) or its First Indication (e.g., if an orphan drug Indication) approved for the Licensed Product by the Regulatory Authority in such country.

1.147 "Janssen Alternative Election Period" has the meaning set forth in Section 2.1.8(b).

1.148 "Janssen Calendar Quarter" means a financial quarter based on a Janssen Calendar Year; provided, however, that the first Janssen Calendar Quarter and the last Janssen Calendar Quarter may be partial quarters as applicable under the relevant Janssen Calendar Year.

1.149 "Janssen Calendar Year" means a year based on Janssen's universal calendar for that year used by Janssen for internal and external reporting purposes (a copy of which for the year 2014 and 2015 is attached hereto as Exhibit I); provided, however, that the first Janssen Calendar Year and the last Janssen Calendar Year of the applicable period (such as the Royalty Term) may be a partial year as the case may be.

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1.150 "Janssen Development Program IP" means the Janssen Development Program Know-How and Janssen Development Program Patent Rights, collectively.

1.151 "Janssen Development Program Know-How" means the Development Program Know-How Controlled by Janssen (directly or through any of its Affiliates), including Janssen's interest in any Joint Development Program Know-How.

1.152 "Janssen Development Program Patent Rights" means the Development Program Patent Rights Controlled by Janssen (directly or through any of its Affiliates), including Janssen's interest in any Joint Development Program Patent Rights.

1.153 "Janssen Election Period" has the meaning set forth in Section 2.1.8.

1.154 "Janssen IDP Based Regulatory Approval" has the meaning set forth in Section 4.9.5.

1.155 "Janssen IDP Trial Costs" has the meaning set forth in Section 4.9.5.

1.156 "Janssen INDs" has the meaning set forth in Section 4.4.1(b).

1.157 "Janssen Parent" means Johnson & Johnson, a New Jersey corporation.

1.158 "Janssen Product IP" means the Janssen Product Know-How and Janssen Product Patent Rights, collectively.

1.159 "Janssen Product Know-How" means any Know-How that is incorporated by Janssen or any of its Affiliates into the Development, Manufacture, use and/or Commercialization of any Active Substance or Licensed Product during the Term, and that either is (a) Controlled by Janssen or any of its Affiliates as of the Effective Date or (b) developed outside of the Development Program and comes within the Control of Janssen or any of its Affiliates during the Term.

1.160 "Janssen Product Patent Rights" means any Patent Rights, Controlled by Janssen or any of its Affiliates as of the Effective Date or that come into the Control of Janssen or any of its Affiliates outside the Development Program but during the Term, that include at any time at least one claim Covering, generically or specifically: (a) any Janssen Product Know-How; or (b) any composition, form, formulation, preparation, administration, delivery, or dosing of any Active Substance or Licensed Product, or any method of using any Active Substance or Licensed Product, or any process or material for manufacturing, formulating, preparing, administering, delivering, or dosing any Active Substance or Licensed Product, in each case ((a) and (b)) as and to the extent incorporated into the Licensed Product or the Development, Manufacture, use and/or Commercialization of any Active Substance or Licensed Product by Janssen or any of its Affiliates during the Term.

1.161 "JDC" or **"Joint Development Committee"** means a joint development subcommittee of the JSC, as further defined in Section 3.1.

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1.162 "JMC" or **"Joint Marketing Committee"** means a joint marketing subcommittee of the JSC, as further defined in Section 3.1.

1.163 "Joint Committee(s)" shall refer (a) in the singular, to each of the Joint Steering Committee, the Joint Development Committee, and the Joint Marketing Committee individually, and (b) in the plural, to the Joint Steering Committee, the Joint Development Committee, and the Joint Marketing Committee collectively.

1.164 **"Joint Development Program Invention**" has the meaning set forth in Section 10.2.1.

1.165 **"Joint Development Program Know-How**" means any Development Program Know-How owned jointly by the Parties.

1.166 **"Joint Development Program Patent Rights**" means any Development Program Patent Rights owned jointly by the Parties.

1.167 **"Joint Steering Committee"** or **"JSC"** means a joint steering committee formed by representatives of each Party that is responsible for providing high-level oversight and decision-making regarding the Collaboration Activities, as further provided in Article III.

1.168 **"Jointly Owned Geron Product Patent Rights"** has the meaning set forth in Section 12.5.8.

1.169 **"Know-How"** means any and all technical, scientific, and other know-how (whether or not patentable), data, and other information, as well as materials, including: inventions, trade secrets, research and Development data, plans, procedures, experimental techniques, material specifications, and assay or test protocols; biological, chemical, pharmacological, toxicological, pharmaceutical, pre-clinical, clinical, safety, and quality control data and information; Manufacturing methods and formulas; and molecules, chemical entities, reagents, starting materials, reaction intermediates, building blocks, synthetic products, delivery systems, excipients, ingredients, formulations, and compositions of matter.

1.170 **"Launched Product"** has the meaning set forth in Section 14.6.2(h).

1.171 **"Lead Phase 2 Low-Risk MDS Study"** means the Phase 2 clinical study of GRN163L for patients with MDS at low risk of progression to AML, based on International Prognostic Scoring System (IPSS) and/or the World Health Organization 2008 classification for MDS, or any such other classification scheme as may be agreed upon by the JSC, that is set forth in the initial CDP.

1.172 **"Lead Phase 2 MF Study"** means the Phase 2 clinical study of GRN163L for MF that is set forth in the initial CDP.

1.173 **"Lead Phase 2 MF Study Data Package"** means the de-identified clinical trial results in the form of the protocol-specified primary analysis from the Lead Phase 2 MF Study as identified in the CDP.

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1.174 **"Lead Phase 2 MF Study Read-Out"** means the date of the JSC's delivery of the Lead Phase 2 MF Study Data Package to both Parties.

1.175 **"Lead Phase 2 MF Study Suspension Period"** has the meaning set forth in Section 2.1.8(b).

1.176 **"Licensed Product"** means a product for use in the Field comprising an Active Substance, alone or in combination with other ingredients, such as excipients and other inactive ingredients as well as any other active ingredients.

1.177 **"Licensed Territory"** means the entire world, including all of its countries and their possessions and territories.

1.178 **"Losses"** means damages, losses, liabilities, costs (including costs of investigation and defense), fines, penalties, Government Orders, taxes, expenses or amounts paid in settlement (in each case, including reasonable attorneys' and experts fees and expenses), resulting from a Claim in an Action of a Third Party or Governmental Authority, and incurred by a Party (or other Indemnified Person as provided in Article XIII) as a result of such Action.

1.179 **"MAA"** means (a) a marketing authorization application filed with (i) the EMA under the centralized EMA filing procedure or (ii) a Regulatory Authority in any European country if the centralized EMA filing procedure is not used; or (b) any other equivalent or related regulatory submission, in either case to gain approval to market a Product in any country in the European Union, in each case including, for the avoidance of doubt, amendments thereto and supplemental applications.

1.180 **"Major Market Country"** means any of the [*].

1.181 **"Manufacturing Agreement"** means a written agreement signed by both Parties including the agreed-upon plan, and terms and conditions, for procuring for the applicable Party (with respect to its IDP) or Parties (with respect to the CDP), as the case may be, including through the engagement of any Third Party contract manufacturers, suppliers of starting materials and reagents, Active Substances and Licensed Products of sufficient quality in amounts adequate to meet the demands as needed for conducting the clinical studies of Licensed Products pursuant to the Global Development Plan, including a plan of activities aimed to promptly transition to Janssen responsibility for Manufacturing, and having Manufactured, Active Substances and Licensed Products for Development purposes under the CDP and any IDPs, provided that (for clarity), (a) the Supply Costs for procuring such supplies for each clinical study under the CDP shall be allocated pro rata in accordance with each Party's respective percentage share of Development Costs for such clinical study as provided hereunder (such as in Section 7.2), and (b) the Supply Costs for procuring such supplies for each clinical study under a Party's IDP shall be borne by such Party (subject to any right of reimbursement that may arise pursuant to the terms hereof, such as Section 4.9).

1.182 **"Manufacturing"** means, in reference to a Licensed Product, activities performed to manufacture such Licensed Product into final form for end use in the Field, including producing starting materials used to manufacture the Active Substance of the Licensed Product,

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manufacturing (including through multiple synthesis steps) such starting materials into Active Substance (e.g., in bulk form), formulating the Active Substance into Licensed Product in finished dosage form, filling, finishing, packaging, labeling, performing quality assurance testing and release, and shipping and storing the packaged Licensed Product.

1.183 "Mayo IST Contract" means the Investigator Sponsored Trial Agreement between Geron and the Mayo Clinic dated October 5, 2012, as amended April 4, 2013, June 13, 2013, August 14, 2013, October 17, 2013 and May 2, 2014 (as may be further amended from time to time), which has been superseded by the Clinical Trial Agreement by and between Geron and Mayo Clinic, dated July 31, 2014, as amended September 2, 2014 and September 16, 2014 (as may be further amended from time to time) under which a clinical study of GRN163L entitled "A Pilot Open-Label Study of the Efficacy and Safety of Imetelstat (GRN163L) in Myelofibrosis and other Myeloid Malignancies," has been and is being, as of the Execution Date, performed by the Mayo Clinic under the direction of Dr. Tefferi (IND No. 116129).

1.184 "MDS" means myelodysplastic syndrome.

1.185 "Medical Affairs" means medical affairs activities performed by or on behalf Janssen and its Affiliates and any sublicensees, in connection with any Licensed Product sold by or on behalf of Janssen hereunder, including providing medical scientific liaison support, coordinating the distribution of medical and scientific information and materials relating to the Licensed Product, developing and conducting medical education programs relating to the Licensed Product for healthcare providers, overseeing field based medical science liaisons, and coordinating medical communications and field medical education.

1.186 "MF" means myelofibrosis.

1.187 "MHLW" shall mean the Ministry of Health, Labour and Welfare of Japan and any successor agency thereto.

1.188 "Named Indications" means, individually and collectively, MF, MDS and AML.

1.189 "NDA" means a new drug application or biologics license application submitted to the FDA for purposes of obtaining Regulatory Approval for a new drug in the United States, for a particular Indication, including, for the avoidance of doubt, amendments thereto and supplemental applications.

1.190 "Net Sales" means, with respect to a Licensed Product following its Regulatory Approval and commencing with the First Commercial Sale, the gross amounts invoiced on sales of the approved Licensed Product by or on behalf of a specified Party (directly or through any of its Affiliates or Third Party sublicensees) to a Third Party purchaser for end use in an arms-length transaction, less the following customary deductions, determined in accordance with Accounting Standards and standard internal policies and procedures consistently applied throughout the organization of the Party recording such sales to calculate revenue for financial reporting purposes, to the extent specifically and solely allocated to the sale of such Licensed Product to such purchaser and actually taken, paid, accrued, allowed, included, or allocated based on good

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faith estimate, in the gross sales prices with respect to such sales (and consistently applied as set forth below):

(a) normal and customary [*] in the form of [*] with respect to sales of such Licensed Product (to the extent not already reflected in the amount invoiced) [*];

(b) [*] to the extent included [*] (but specifically excluding, for clarity, [*]);

(c) [*] to the extent included in the price and separately itemized on the invoice price;

(d) [*] on sales of such Licensed Product [*] pursuant to Applicable Law by reason of [*];

(e) [*] actually granted upon [*] of such Licensed Product, [*];

(f) [*] actually granted to [*]; and

(g) [*] associated with [*].

All aforementioned deductions shall only be allowable to the extent they are commercially reasonable, and shall be determined, on a country-by-country basis, as incurred in the ordinary course of business in type and amount consistent with the Party's, the Affiliate's, or sublicensee's (as the case may be) business practices consistently applied across its product lines and in compliance with Accounting Standards and verifiable. All such discounts, allowances, credits, rebates and other deductions shall be fairly and equitably allocated to such Licensed Product and other products of the Party and its Affiliates and sublicensees such that such Licensed Product does not bear a disproportionate portion of such deductions. For clarity, sales of a Licensed Product by and between a Party and its Affiliates and sublicensees (including those that are distributors), or between the Parties (or their respective Affiliates or sublicensees), are not sales to Third Parties and shall be excluded from Net Sales calculations for all purposes so long as such Licensed Product is subsequently resold to a Third Party end-user. For the avoidance of doubt, sales of a Licensed Product for use in conducting clinical trials of such Licensed Product in a country in order to obtain the first Regulatory Approval of such Licensed Product in such country shall be excluded from Net Sales calculations for all purposes. Also, notwithstanding anything to the contrary above, sales of a Licensed Product for any compassionate use or named patient sales shall be excluded from Net Sales calculations. Additionally for clarity, only a single sales transaction with respect to a particular unit of Licensed Product, made at the time Janssen or any of its Affiliates or sublicensees sells such Licensed Product to a Third Party purchaser for end use in an arms-length transaction, will qualify as the basis for determining the Net Sales amount for such unit. The calculation of Net Sales for any Combination Product shall be adjusted pursuant to Section 8.3.4(c) below.

1.191 "Non-Breaching Party" has the meaning set forth in Section 14.2.1.

1.192 "Notice of a Claim" has the meaning set forth in Section 13.2.1.

1.193 "Oncology" means any type or form of Hematological Cancer or Solid Tumor Cancer.

1.194 "Ongoing Studies" means the clinical studies of GRN163L initiated by or assumed by Geron, prior to the Execution Date and identified in Exhibit Q.

1.195 "Out of Budget Modification" has the meaning set forth in Section 3.7.1(c).

1.196 "Out-of-Pocket Costs" means amounts paid by a Party or its Affiliates to any Third Party subcontractors hereunder, for services or materials provided by such subcontractors to directly support the applicable Development or Promoting activities co-funded (to any extent) by the Parties, or clinical supply activities, as expressly provided hereunder, to the extent such services or materials apply directly to activities under the applicable CDP or IDP, or the US Promotional Plan, or the Manufacturing Plan, as the case may be. The specific allocation of each Party's share of co-funded Out-of-Pocket Costs is otherwise specified in this Agreement. For clarity, Out-of-Pocket Costs do not include payments for a Parties' or its Affiliates' internal: salaries or benefits; facilities; utilities; general office or facility supplies; insurance; or information technology, capital expenditures or the like.

1.197 "Party" and **"Parties"** have the meaning set forth in the Preamble.

1.198 "Patent Controversy" means any Dispute between the Parties to the extent that it involves an issue relating to the inventorship, claim scope or interpretation, infringement, enforceability, patentability, or validity of any Patent Right hereunder, and including any such issues relevant to any Prosecution activities hereunder.

1.199 "Patent Costs" means all out-of-pocket costs reasonably incurred by or on behalf of a Party (such as a designated Affiliate) in Prosecuting applicable Patent Rights.

1.200 "Patent Office" means the United States Patent and Trademark Office, European Patent Office, or other Governmental Authority responsible for the examination of patent applications or granting of patents in a country, region, or supra-national jurisdiction.

1.201 "Patent Representative" means the patent attorney or agent representing a Party as described in Section 3.3.

1.202 "Patent Rights" means, in reference to a designated invention, all original (priority establishing) patent applications claiming such invention filed anywhere in the world, including provisionals and nonprovisionals, and all related applications thereafter filed, including any continuations, continuations-in-part, divisions, or substitute applications, any patents issued or granted from any such patent applications, and any reissues, reexaminations, renewals or extensions (including by virtue of any supplementary protection certificates) of any such patents, and any confirmation patents or registration patents or patents of addition based on any such patents, and all foreign counterparts or equivalents of any of the foregoing.

1.203 "Patent Term Extension" means an extension of the term of any issued patent, or a right of protection equivalent to such an extension, granted under the U.S. Drug Price Competition and Patent Term Restoration Act of 1984, the Supplementary Protection Certificate

of the member states of the EU, or another similar law or regulation in any other country or jurisdiction. For clarity, a pediatric extension obtained by application to or through approval of a Patent Office extending the term of any patent shall be deemed a Patent Term Extension.

1.204 "Patent Working Group" means the Working Group that advises the Joint Committee on any patent matters as more fully set forth in Section 3.3.

1.205 "PDE" means a primary detailing equivalent contributed by a Sales Representative to Detailing of Licensed Product.

1.206 "Person" means any individual, entity or Governmental Authority.

1.207 "Pharmacovigilance Agreement" means a written pharmacovigilance agreement between the Parties executed hereunder pursuant to Section 4.6.4.

1.208 "Phase 3 High-Risk MDS Study" means a Phase 3 clinical study of a Licensed Product for patients with MDS at high risk of progression to AML, based on International Prognostic Scoring System (IPSS) and/or the World Health Organization 2008 classification for MDS, as generally outlined in the CDP.

1.209 "Phase 1" means, in reference to a clinical study (or trial) of a Licensed Product, that such study is conducted in healthy human subjects or patients to generate information on product safety and tolerability (as a primary purpose), and as applicable pharmacological activity or pharmacokinetics, as more fully described in US federal regulation 21 C.F.R. § 312.21(a) and its equivalents in other jurisdictions. For purposes of illustration, Phase 1 Development of a Licensed Product may include a Phase 1b study designed to assess the safety and pharmacokinetics of a Licensed Product as a single agent or in combination with other standard of care agents used to treat a particular Indication.

1.210 "Phase 2" means, in reference to a clinical study of a Licensed Product following one or more Phase 1 studies, that such study is conducted in the target patient population for an Indication for determining the safety, efficacy, and dose-ranging of the Licensed Product, which study is prospectively designed to generate sufficient data (if successful) to commence a Phase 3 study or to file for accelerated marketing approval, as more fully described in US federal regulation 21 C.F.R. § 312.21(b) and its equivalents in other jurisdictions. For clarity, the Lead MF Phase 2 Study and the Lead Phase 2 Low-Risk MDS Studies shall be deemed Phase 2 studies (and not Phase 3 or Phase 2/3 studies).

1.211 "Phase 3" means, in reference to a clinical study of a Licensed Product following one or more Phase 2 studies, that such study is a pivotal study in human patients to establish the safety and efficacy of the Licensed Product for a particular Indication, which study is prospectively designed to demonstrate with statistical significance that the Licensed Product is sufficiently safe and effective for use in the Indication to support the filing of a Drug Application for approval to market such Licensed Product for such Indication in any jurisdiction, as more fully described in US federal regulation 21 C.F.R. § 312.21(c) and its equivalents in other jurisdictions.

1.212 "Post Marketing Studies" means any clinical trials or studies conducted with a Licensed Product after receipt of Regulatory Approval of the Licensed Product, which are

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conducted voluntarily in order to enhance marketing or scientific knowledge of the Licensed Product and are not required by Regulatory Authorities or are not intended to support Regulatory Approval of a Licensed Product for a new Indication or other material change to the Product Label and Insert**.**

1.213 "Pre-Existing Licenses from Third Parties" means any and all agreements by and between Geron and any Third Party, in effect as of the Execution Date, and pursuant to which the Third Party grants (by express terms, whether or not using the word "license") Geron any license or sublicense (or use or other exploitation) rights to or under any Third Party's Patent Rights or Know-How that are necessary or useful for Developing, Manufacturing, or Commercializing any Active Substance or Licensed Product, but excluding any Current Manufacturing Contracts and the [*]. Geron represents and warrants that the Pre-Existing Licenses from Third Parties pertaining to GRN163 and/or GRN163L of which Geron is aware as of the Execution Date are listed on Exhibit B-2.

1.214 "Pre-Existing Licenses to Third Parties" means any and all agreements by and between Geron and any Third Party, in effect as of the Execution Date, and pursuant to which Geron grants (by express terms, whether or not using the word "license") such Third Party any license or sublicense (or use or other exploitation) rights to or under any Geron Product IP, but excluding any Current Manufacturing Contracts. Geron represents and warrants that the Pre-Existing Licenses to Third Parties of which Geron is aware as of the Execution Date are listed on Exhibit B-1.

1.215 "Prior CDAs" means, collectively, (a) the Mutual Confidential Disclosure Agreement effective October 31, 2013, entered into between Janssen's Affiliate, Janssen Global Services, LLC, and Geron, as amended on March 20, 2014; (b) the Confidential Disclosure Agreement dated June 18, 2014, entered into between Geron, Janssen Global Services, LLC and [*]; and (c) the Confidential Disclosure Agreement dated June 18, 2014, entered into between Geron, Janssen Global Services, LLC and [*].

1.216 "Private Health Care Plans" means non-governmental Third Party health care payors and plans, including insurance companies, health maintenance organizations and other managed care organizations, Blue Cross and Blue Shield plans, and self-funded employers.

1.217 "Product Infringement" has the meaning set forth in Section 10.4.2.

1.218 "Product Label and Insert" means, with respect to a Licensed Product for use in the Field, (a) any display of written, printed or graphic matter upon the container in which the Licensed Product is immediately contained, outside container, wrapper or other packaging of the Licensed Product, and (b) any written, printed or graphic material on or within the package from which the Licensed Product is to be dispensed, including any package insert or other patient information provided with the product.

1.219 "Product Trademark Rights" means any Trademark Rights pertaining to an Active Substance or Licensed Product Controlled by a Party hereunder.

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1.220 "Promoting" means Detailing in promotion of a Licensed Product being sold for use in the Field (excluding, for the avoidance of doubt, any Medical Affairs activities).

1.221 "Promoting Costs" means the total costs incurred by either or both of the Parties in carrying out Promoting under the US Promotional Plan as determined by: (a) multiplying the Sales Force FTE Rate times the total Sales Rep PDE Value of the applicable Party's/Parties' Sales Representatives or (b) using other accounting methodology in accordance with Applicable Law and Accounting Standards as the JSC may establish under advice of the JMC and the Finance Working Group.

1.222 "Promotional Budget Variance Ceiling" means an amount that is [*] percent ([*]%) of the Geron Promotional Funding Amount for a Janssen Calendar Year pursuant to the budget for the Promoting Costs set forth in the US Promotional Plan.

1.223 "Proposed Publications" has the meaning set forth in Section 11.6.2.

1.224 "Proposed Resolution" has the meaning set forth in Section 3.11.2.

1.225 "Proposed Trial" means a clinical study of Licensed Product for an Oncology Indication, other than a Named Indication, that is not, at the time proposed, supported by the scope of Development activities under the CDP or any IDP.

1.226 "Proposing Party" has the meaning set forth in Section 4.9.1.

1.227 "Prosecuting" means, in reference to a designated Patent Right, preparing a Patent Right in application form for filing in any Patent Office, or performing activities associated with filing, prosecuting, maintaining, defending, or correcting the Patent Right in any Patent Office proceeding or with appeal of a Patent Office decision therefrom, including with respect to any post-grant proceeding, supplemental examination, post-grant review, *inter parte* review, reexamination, reissue, interference, or opposition proceeding in any Patent Office. For the avoidance of doubt, Prosecuting excludes any infringement suit or other legal Action to enforce a Patent Right or declaratory judgment suit or other legal Action initiated by a Third Party to challenge in court the validity or enforceability of a Patent Right. **"Prosecute"** and **"Prosecution"** shall each have a correlative meaning.

1.228 "Prosecuting Party" means the Party with the current right to Prosecute the applicable Patent Right as set forth in Section 10.3.

1.229 "Prosecution Contact" means a Party's designated patent attorney or agent identified in a notice to the other Party (as may be updated from time to time) as its contact for communications between the Parties regarding the Prosecuting of any Geron Product Patent Rights or Development Program Patent Rights.

1.230 "Publishing Party" has the meaning set forth in Section 11.6.2.

1.231 "QA Working Group" means a Working Group advising the JSC or JDC with respect to quality assurance matters pertaining to lots or batches of Licensed Product that are Manufactured for clinical trials set forth in the Global Development Plan.

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1.232 "Regulatory Approval" means the approval of the applicable Regulatory Authority necessary for the marketing and sale of a pharmaceutical or drug product for an Indication in the Field in a country, including any and all approvals that may be required in such country for pricing and reimbursement. For purposes of illustration, in addition to approval of a Drug Application: Regulatory Approval in [*] includes approval of a [*]; Regulatory Approval in [*] includes [*]; Regulatory Approval in [*] includes [*]; Regulatory Approval in [*] includes [*]; and Regulatory Approval in the [*] includes [*].

1.233 "Regulatory Authority" means any federal, national, multinational, state, provincial or local regulatory agency, department, bureau or other governmental entity with authority over the marketing and sale of a pharmaceutical product in a country, such as the FDA in the United States, EMA in the EU, and MHLW in Japan.

1.234 "Regulatory Exclusivity Right" means a right or protection, granted by a Regulatory Authority in a jurisdiction, providing with respect to a Licensed Product in such jurisdiction: (a) marketing exclusivity that prevents the Regulatory Authority from accepting or approving a Drug Application (whether new or abbreviated), submitted by a party other than Janssen (or any of its Affiliates or Third Party sublicensees), for a generic or competing version of a pharmaceutical product comprising a compound that is a Bioequivalent to the Active Substance in the Licensed Product, such as through new molecular entity or orphan drug exclusivity granted by the FDA, or an exclusive right to sell pursuant to the data exclusivity provisions under EC Directives 2004/27/EC and 2001/83/EC and Regulation 726/2004/EC, or marketing exclusivity granted in respect of pediatric studies under Regulation 1901/2006, or Section 505A(a) of the FDC Act; or (b) data protection for regulatory data submitted by Janssen relating to the Licensed Product against unfair commercial use or public release consistent with, or no less stringent than, TRIPs Article 39.3.

1.235 "Regulatory Filing" means any documentation comprising or relating to or supporting any filing or application with any Regulatory Authority with respect to a Licensed Product, or its use or potential or investigative use in humans, including any documents submitted to any Regulatory Authority and all supporting Data, including INDs, supportive documents enabling a clinical program, NDAs and MAAs, and all correspondence with any Regulatory Authority with respect to any Licensed Product (including minutes of any meetings, telephone conferences or discussions with any Regulatory Authority).

1.236 "Requesting Party" has the meaning set forth in Section 11.5.2.

1.237 "Reverted Licensed Products" has the meaning set forth in Section 14.6.2(c).

1.238 "Reviewing Party" has the meaning set forth in Sections 11.5.2 and 11.6.2.

1.239 "Right of Reference" has the meaning set forth for such term in 21 C.F.R. § 314.3(b) or any equivalent thereto under any Applicable Law in jurisdictions outside the United States.

1.240 "Royalty Term", as applicable to Net Sales of each particular Licensed Product in a given country, has the meaning set forth in Section 8.3.1.

1.241 "Sales Force FTE Rate" has the meaning set forth in Section 1.92.

1.242 "Sale Rep FTE Contribution" means, with respect to a particular Sales Representative who Details a Licensed Product in the United States during a given Janssen Calendar Year, the total time, not exceeding one full-time FTE, equal to the summation of {each Detail visit of such Sales Representative times the Sales Rep PDE Value for such Detail made during such Janssen Calendar Year}.

1.243 "Sales Rep PDE Value" means, with respect to a particular Sales Representative who Details a Licensed Product in the United States during a given Janssen Calendar Year, the allowance (as reflected in the following sentence) for Detailing time expended by such Sales Representative toward the Aggregate Detailing Effort pursuant to the US Promotional Plan in such Janssen Calendar Year, to determine the value of a physician Detailing equivalent ("**PDE**"). Notwithstanding the foregoing, the determined Sales Rep PDE Value for a full-time Sales Representative who Details a Licensed Product for one Janssen Calendar Year in the United States shall be: (a) [*]% to the extent such Sales Representative Details the Licensed Product as the First Position Detail; and (b) [*]% to the extent such Sales Representative Details the Licensed Product as the Second Position Detail. For the avoidance of doubt, if a Sales Representative Details the Licensed Product in different positions in different Details (e.g., First Position Detail in a portion of the Details and Second Position Details in other Details), then a pro rata share of the foregoing percentages will be used to determine the Sale Rep PDE Value for calculating the Sales Rep FTE Contribution.

1.244 "Sales Representative" means a sales representative of a Party (or, in the case of Janssen, its Affiliate) who performs Details of Licensed Product.

1.245 "Second Indication" has the meaning set forth in Section 1.139.

1.246 "Solely Owned Geron Product Patent Rights" has the meaning set forth in Section 12.5.8.

1.247 "Solid Tumor Cancer" means any cancer other than Hematological Cancers.

1.248 "Supply Costs" means: (a) in reference to any clinical supplies of Licensed Product (in bulk or finished product form) that may be supplied through a Third Party contract manufacturer, with JSC approval, by a Party for any clinical studies under the Global Development Plan, such Party's Out-of-Pocket Costs incurred in having such supplies Manufactured on its behalf; and (b) in reference to any clinical supplies of Licensed Product (in bulk or finished product form) that may be manufactured, with JSC approval, by Janssen or any of its Affiliates for any clinical studies under the Global Development Plan, Janssen's or the applicable Affiliate's Cost of Goods for such supplies plus a mark-up of [*] percent ([*]%).

1.249 "Taxes" means any present or future taxes, levies, imposts, duties, charges, assessments or fees of any nature (including any interest thereon).

1.250 "Term" means the term of this Agreement as set forth in Section 14.1.

1.251 "Third Party Product Liability Action" has the meaning set forth in Section 13.4.1.

1.252 "Third Party" means any person, entity, or other party other than a Party to this Agreement or any of its Affiliates.

1.253 "Trademark Rights" means all registered and unregistered trademarks (including all common law rights thereto), service marks, trade names, brand names, logos, taglines, slogans, certification marks, internet domain names, trade dress, corporate names, business names and other indicia of origin, together with the goodwill associated with any of the foregoing, and all applications, registrations, extensions, and renewals thereof throughout the world, and all rights therein provided by international treaties and conventions.

1.254 "United States", **"US"** or **"U.S."** means the United States of America, including its territories and possessions.

1.255 "US Promotional Budget" means the written budget as developed by Janssen for Detailing activities in the United States described in the US Promotional Plan.

1.256 "US Promotional Plan" means the written plan as developed by Janssen for the Detailing activities supporting Janssen's Commercialization of Licensed Product in the United States after its Regulatory Approval by the FDA while there is Innovator Protection for such Licensed Product in the U.S., as such plan may be amended, supplemented, or updated from time to time. The initial US Promotional Plan shall include the Aggregate Detail Effort and number of Details to be conducted by Janssen, or, where Geron has exercised its Co-Promotion Option, by each Party, consistent with the Geron Promotional Share for the period following Regulatory Approval of the Licensed Product in the United States through the end of the first full Janssen Calendar Year thereafter.

1.257 "US Opt-In Rights" has the meaning set forth in Section 2.2.2.

1.258 "US Studies" means those clinical studies of Licensed Product that, as set forth in the Global Development Plan, are intended to support Regulatory Approval of the Licensed Product in the United States, whether or not also supportive of Regulatory Approval in any other countries and regardless of where such studies are performed.

1.259 "[*]" means the [*], between [*].

1.260 "Valid Claim" means a claim of any unexpired patent issued or granted by a Patent Office that has not been revoked or held unenforceable or invalid by a decision of a court or Governmental Authority of competent jurisdiction from which no appeal can be taken, or with respect to which an appeal is not taken within the time allowed for appeal, and that has not been disclaimed or admitted to be invalid or unenforceable through reissue, disclaimer, or otherwise.

1.261 "Work Plans" means the portion of the CDP or IDP, as the case may be, constituting the written plans (including any GANTT charts) for the Development of Licensed Product describing the activities to be performed by the Parties (and their respective responsibilities therefor) or a Party, as the case may be.

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1.262 "Working Group" means a joint team composed of representatives of the Parties with appropriate background and experience formed to advise the JSC or any other Joint Committee hereunder on matters of a particular nature, such as those specified herein.

ARTICLE II: LICENSE GRANTS AND GERON OPT-IN RIGHTS

2.1 Geron Grants.

2.1.1 Development License. Subject to the terms and conditions of this Agreement, Geron hereby grants to Janssen an exclusive (even as to Geron, except to the extent Geron expressly retains or is expressly granted back rights under this Agreement), worldwide license, with the right to sublicense in accordance with Section 2.1.6, under the Geron Product IP and Geron Development Program IP, to Develop and have Developed Active Substances and Licensed Products in the Field and to make and Manufacture, have made and Manufactured, use, have used, and import Active Substances and Licensed Products for such purposes. The license rights granted under this Section 2.1.1 shall commence on the Effective Date and run throughout the Royalty Term, and continue thereafter on a fully paid-up basis, subject to the termination provisions under Section 2.1.8 (c) and Article XIV.

2.1.2 Commercialization License. Subject to the terms and conditions of this Agreement, Geron hereby grants to Janssen an exclusive (even as to Geron, except to the extent Geron expressly retains or is expressly granted back rights under this Agreement), worldwide license, with the right to sublicense in accordance with Section 2.1.6, under the Geron Product IP and Geron Development Program IP, to Commercialize and have Commercialized, offer for sale and sell, and have offered for sale and sold, Active Substances and Licensed Products for use in the Field and to make, have made, use, have used, and import Active Substances and Licensed Products for such purposes. The license rights granted under this Section 2.1.2 shall commence on the Effective Date and continue, on a Licensed Product-by-Licensed Product and country-by-country basis, throughout the Royalty Term for a particular Licensed Product in a particular country, and continue thereafter on a fully paid-up basis with respect to such Licensed Product in such country, subject to the termination provisions under Section 2.1.8 (c) and Article XIV.

2.1.3 License under Geron Assay IP. Subject to the terms and conditions of this Agreement, Geron hereby grants to Janssen a non-exclusive, worldwide license, with the right to sublicense in accordance with Section 2.1.6, under the Geron Assay Patent Rights, to make, use, and import the Geron Assay Know-How to perform any assays for measuring telomerase activity and/or telomere length to characterize any Active Substance or Licensed Product or assess nonclinical or clinical samples solely in connection with Janssen's Development, Manufacture and Commercialization of Active Substances and Licensed Products in accordance with the licenses granted to it under Section 2.1.1 and/or Section 2.1.2.

2.1.4 Certain Limitations. Geron represents and warrants that the Geron Product Patent Rights existing as of the Effective Date set forth on Exhibit D-2 are jointly owned by Geron and the Third Parties identified in such Exhibit and that, subject to Applicable Laws, Geron has an equal, undivided interest in each such Geron Product Patent Right. Janssen acknowledges that the exclusive rights granted by Geron to Janssen pursuant to Sections 2.1.1 and

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2.1.2 under the Jointly Owned Geron Product Patent Rights are only with respect to Geron's joint ownership interest in and to such Geron Product Patent Rights, subject to Applicable Laws.

2.1.5 Pre-Existing Licenses. Geron represents and warrants that it has provided Janssen with true copies of the Pre-Existing Licenses to Third Parties set forth on Exhibit B-1, and that no other agreements exist between Geron and any Third Party which impact any of the rights Geron is able to license to Janssen under the Geron Product IP. Janssen acknowledges that the exclusive rights granted by Geron with respect to the Geron Product Patent Rights under Sections 2.1.1 and 2.1.2 are subject to the terms of the Pre-Existing Licenses to Third Parties listed on Exhibit B- 1, as such agreements are in effect as of the Execution Date.

2.1.6 Sublicensing. In the event that Janssen grants any sublicense of the license rights granted to Janssen under this Section 2.1 to any Affiliates or any Third Parties, Janssen shall remain responsible for its obligations under this Agreement and shall be responsible for the performance of the relevant sublicensee and the compliance by such sublicensee with the terms and conditions of this Agreement.

2.1.7 Study Data and Lead Phase 2 MF Study Data Package. Each Party shall provide the JSC promptly with de-identified data and other results received from clinical studies of any Licensed Product conducted under the Global Development Plan for which it, or its Affiliate or Third Party subcontractor or sublicensee, holds the IND. Upon the JSC's compilation of the complete Lead Phase 2 MF Study Data Package it shall make available a copy to each Party and advise each Party of such availability.

2.1.8 Janssen License Continuation Election.

(a) Janssen Continuation Election. If Janssen wishes to retain its license rights granted under Section 2.1, then within the period ending on the earlier of:

(i) the date that is [*] ([*]) days after the Lead Phase 2 MF Study Read-Out; and

(ii) the date that is [*] ([*]) months after dosing of a Licensed Product in the [*] patient in the first Phase 3 MF study conducted under the Global Development Plan; (the "**Janssen Election Period**"),

Janssen shall provide Geron with written notice electing to continue the Development of the Licensed Product (in this case, a "**Continuation Notification**").

(b) Janssen Alternative Continuation Election in Event of Study Termination or Clinical Hold. In the event that the Lead Phase 2 MF Study has been either terminated early pursuant to Section 3.7.3 or placed on clinical hold or suspended by a Regulatory Authority for a consecutive [*] ([*])-month period (such [*] ([*])-month period, the "**Lead Phase 2 MF Study Suspension Period**") and, a first Phase 3 MF study has not been (or is not able to be) initiated under the Global Development Plan prior to the termination of the Lead Phase 2 MF Study or prior to or during the [*] ([*])-month period that the Lead Phase 2 MF trial is on clinical hold or suspended, then, unless such clinical hold or suspension is lifted prior to the expiry of such

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[*] ([*])-month period, Janssen shall retain its license rights granted under Section 2.1, if, within the period (such period, the "**Janssen Alternative Election Period**") ending:

(i) the date that is twenty-four (24) months after dosing of the Licensed Product in the [*] patient in the Lead Phase 2 MDS Study; or

(ii) if the Lead Phase 2 MDS Study has not commenced as of (x) [*] ([*])-months after the termination of the Lead Phase 2 MF Study, or (y) expiry of the Lead Phase 2 MF Study Suspension Period, (1) the date that is twenty-four (24) months after the termination pursuant to Section 3.7.3 of the Lead Phase 2 MF Study or commencement of the Lead Phase 2 MF Study Suspension Period,

Janssen provides Geron with written notice electing to continue the Development of the Licensed Product (in this case, also a **"Continuation Notification"**).

(c) Effect of Election. Geron shall notify Janssen in writing of the date of commencement of the Janssen Election Period or Janssen Alternative Election Period, as the case may be. In the event Janssen timely delivers a Continuation Notification pursuant to Section 2.1.8(a) or 2.1.8(b), Geron's option to exercise US Opt-in Rights pursuant to Section 2.2 below shall come into effect upon Geron's receipt of such notice. In the event Janssen fails to provide Geron with a Continuation Notification within the applicable election period under Section 2.1.8(a) or 2.1.8(b), then in the absence of Janssen providing a notice of termination under Section 14.5.1, Janssen shall be deemed to have provided Geron with written notification to terminate this Agreement under Section 14.5.2 effective on the first day following the end of the Janssen Election Period or Janssen Alternative Election Period, as the case may be. In the event that the Janssen Election Period and Janssen Alternative Election period are both running, then Janssen shall be deemed to have provided a timely Continuation Notification so long as it provides such notice prior to the expiry of the last-to-expire of the Janssen Election Period or Janssen Alternative Election Period. For example, if the Lead Phase 2 MF Study has been placed on clinical hold or suspended by a Regulatory Authority for a consecutive [*] ([*])-month period, but such hold is lifted and the study resumes after expiry of the Lead Phase 2 MF Study Suspension Period, then Janssen may provide a continuation notice during the Janssen Election Period or Janssen Alternative Election Period.

2.2 Geron Options for the United States.

2.2.1 Geron Decision Package. In the event Janssen provides a Continuation Notification under Section 2.1.8 above, then within [*] ([*]) days thereafter Janssen shall provide to Geron the following, to the extent such items are in the possession of Janssen and its Affiliates by the date of delivery of any Continuation Notification and have not yet been provided to Geron, directly or through the JSC: (i) preliminary and/or interim (as the case may be under the applicable trial protocol) de-identified data, results and analysis from the Lead Phase 2 Low Risk MDS Study; (ii) a proposed Work Plan setting forth the design and synopsis (and associated Development Budget) for those Additional Studies which are US Studies and that would be included, pursuant to Section 4.8.1, under the CDP if Geron were to exercise its US Opt-In Rights, whether or not such Additional Studies have been initiated by Janssen as of such time; (iii) the

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then-projected date of First Commercial Sale in the U.S. of the Licensed Product being developed under the CDP along with a preliminary estimate of the average annual Promoting Costs in the U.S. for the Licensed Product; and (iv) the following Development Cost information associated with any Development activities under the Global Development Plan (only to the extent that such activities have been initiated by Janssen as of such time) for any Additional Studies that are US Studies that, pursuant to Section 4.13.1(b), would become incorporated into the CDP upon Geron's exercise of its US Opt-In Rights: (x) the total Development Costs, if any, incurred through the end of the last full Janssen Calendar Quarter immediately preceding the date of the Geron Decision Package; (y) a good faith estimate of the Development Costs incurred since the last day of the last full Janssen Calendar Quarter immediately preceding the date of the Geron Decision Package; and (z) a good faith projection of the Development Costs anticipated to be incurred during the period between the date of the Geron Decision Package and the end of the Geron Election Period, in each case under the Development Budget associated with such Additional Studies (collectively, the "**Geron Decision Package**"). For the avoidance of doubt, the Initial Development Budget for any such Additional Studies that are US Studies referenced in clause (ii) above shall not become subject to the annual Budget Variance Limit, and Geron shall owe to Janssen no part of the Development Costs incurred thereunder, or any part of the Development Costs described in clause (iv) above, unless and until Geron exercises its US Opt-In Rights and thereupon such studies and the Initial Development Budget are incorporated into the CDP.

2.2.2 Geron Election for US Opt-In Rights. Within [*] ([*]) days after receiving the complete Geron Decision Package (the "**Geron Election Period**"), Geron shall notify Janssen in writing (a "**Geron Election Notification**") as to whether Geron elects to: (i) co-fund with Janssen the further Development of Licensed Product beyond the Initial Studies of the Licensed Product (including all Additional Studies that are US Studies) toward Regulatory Approval in the United States, with Geron responsible for twenty percent (20%) of the total Development Costs (including Supply Costs) of the Parties for such Development activities, including the US Studies, as set forth in the CDP; and (ii) support twenty percent (20%) of the Promoting activities under the US Promotional Plan for Licensed Product in the United States, either through contribution of twenty percent (20%) of the Sales Representative Details upon Geron's exercise of its Co-Promotion Option under Section 5.1 and its qualification to Co-Promote under Section 5.1.3, or reimbursement of 20% of the Promoting Costs incurred by Janssen under the US Promotional Budget, as the case may be, with reconciliation for such ramp-up time during which such percentage of Details described in clause (ii) is less than 20% as set forth in Section 5.5.4 (such rights and obligations under clauses (i) and (ii) collectively, the "**US Opt-In Rights**").

2.2.3 U.S. Co-Promote Decision Package. In order to facilitate Geron's determination of whether to exercise the Co-Promotion Option granted under Section 2.2.4 below, within [*] ([*]) days of Janssen's receipt of a Geron Election Notice exercising US Opt-In Rights under Section 2.2.2 above, Janssen shall provide Geron with: (a) any updates to the Geron Decision Package information provided under Section 2.2.1; and (b) a preliminary promotional plan for such Licensed Product summarizing at a high level the Promotional activities planned for such Licensed Product in the United States, including an estimate of the average annual Aggregate Detailing Effort for Promoting Licensed Product in the U.S. following the then-projected date of First Commercial Sale in the U.S. (the "**Geron Co-Promotion Decision Package**").

2.2.4 Geron U.S. Co-Promote Option. If, and only if, Geron has provided a Geron Election Notification exercising its US Opt-In Rights in accordance with Section 2.2.2 above, then upon such exercise Janssen shall and hereby does grant Geron the Co-Promotion Option, exercisable by notice to Janssen at any time during the period running from the date of such Geron Election Notification through the date that is [*] ([*]) days from the date of receipt of Geron's Co-Promotion Decision Package pursuant to Section 2.2.3 (the "**Co-Promotion Exercise Period**"), to Co-Promote Licensed Product in the Co-Promote Territory during the period of Innovator Protection in the United States for such Licensed Product, subject to the terms and conditions of Article V hereof.

2.3 Geron Rights for Development Program and Co-Promotion.

2.3.1 Development Program. Janssen hereby grants Geron a non-exclusive worldwide license under the applicable Geron Product IP, Geron Development Program IP, Janssen Development Program IP and Janssen Product IP, in each case during the term of the Development Program hereunder, to Develop and have Developed, use, have used, and import Licensed Products in the Field pursuant to the Global Development Plan, and to make and Manufacture, and have made and Manufactured Licensed Product pursuant to the Manufacturing Agreement for use in Development activities pursuant to the Global Development Plan and pursuant to the Manufacturing Agreement, the Pharmacovigilance Agreement, and the IND Transfer Agreement(s), if any.

2.3.2 Co-Promotion. Effective only in the event Geron exercises the Co-Promotion Option pursuant to Section 5.1 below other terms and conditions of Article V hereof, Janssen shall grant back to Geron a non-exclusive limited license under the applicable Geron Product IP and Geron Development Program IP, and Janssen shall grant to Geron a non-exclusive limited license under the applicable Janssen Development Program IP and Janssen Product IP, in each case without any right to sublicense to Third Parties or Affiliates, solely for Geron to Co-Promote Licensed Product, following Janssen's receipt of Regulatory Approval therefor in the United States, by providing 20% of the Aggregate Detail Effort in the Co-Promote Territory during the Period of Innovator Protection therein pursuant to the US Promotional Plan, subject to the terms and conditions of Article V hereof and the Co-Promotion Agreement. Notwithstanding anything to the contrary herein, the foregoing limited Co-Promotion rights granted to Geron under this Section shall not be assignable or otherwise transferable by Geron (but, for clarity, shall be subject to Section 5.16.2 in the event of a Change of Control of Geron).

2.4 Licenses Constitute IP under Bankruptcy Code. All rights and licenses granted under or pursuant to any section of this Agreement, including Section 2.1 hereof, are rights to "intellectual property" as defined in Section 101(35A) of the Bankruptcy Code. Each Party hereby acknowledges, on behalf of itself and its Affiliates, "embodiments" of intellectual property pursuant to the Bankruptcy Code include the following: (a) Data from the research and Development of Licensed Products, (b) Active Substance and Licensed Product samples and inventory, (c) Licensed Product formulations, (d) laboratory notebooks and records from either Party's research relating to any Active Substance or Licensed Product, including from the Development Program, (e) results from clinical studies of Licensed Products, (f) Regulatory Filings and Regulatory Approvals relating to Licensed Products, and (g) marketing, advertising and promotional materials relating to Licensed Products.

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2.5 No Trademark Licenses. Geron represents and warrants that, as of the Effective Date, it does not own or otherwise control any Product Trademark Rights pertaining to GRN163L. Janssen therefore acknowledges that this Agreement does not grant Janssen any license rights under any Trademark Rights of Geron.

2.6 No Other Rights. No rights other than those expressly set forth in this Agreement are granted by one Party to the other Party hereunder, and no additional rights shall be deemed granted to either Party by implication, estoppel, or otherwise, with respect to any Patent Rights, Know-How, or other intellectual property rights.

2.7 Geron Covenants. Except as expressly permitted under this Agreement, Geron shall not, directly or through any Affiliate or Third Party, during the Term hereof: (a) make, have made, or import, or grant any Third Party any right under the Geron Product IP or Geron's interest in any Development Program IP to make, have made, or import, GRN163, GRN163L, or any Licensed Product containing GRN163 or GRN163L, except for Development purposes hereunder and for any transitional Manufacturing activities in accordance with Article VII; (b) develop, commercialize, offer for sale or sell, or grant any Third Party any right under the Geron Product IP or Geron's interest in any Development Program IP to develop, commercialize, offer for sale or sell, GRN163, GRN163L, or any Licensed Product containing GRN163 or GRN163L, for any use, whether inside or outside the Field, alone or in combination with any other product; (c) commercialize, or grant any Third Party any right to commercialize, any Active Substance that is Covered at any time by any claim of the Imetelstat COM Patent Family for any use; (d) commercialize, or grant any Third Party any right to commercialize, under the Geron Product IP or Geron's interest in any Development Program IP, any Active Substance that is for a use identified in the literature or generally known to be based on its telomerase inhibitory activity or otherwise through the same predominant or primary mechanism of action as the Licensed Product; or (e) conduct, or fund or otherwise support any Third Party in the conduct of, any clinical trial outside the Development Program involving the use of any Active Substance or Licensed Product.

ARTICLE III: OVERSIGHT OF COLLABORATIVE ACTIVITIES

3.1 Establishment of JSC and Subcommittees. Promptly after the Effective Date, the Parties shall establish a Joint Steering Committee **(JSC)**, as well as a Joint Development Committee **(JDC)** that shall report to the JSC, each composed of three (3) representatives from Geron and three (3) representatives from Janssen (which may include, for clarity, any employees or agents of its Affiliates), as quorum members. In the event Geron exercises its US Opt-In Rights under Section 2.2.2, then the Parties shall promptly thereafter establish a Joint Marketing Committee **(JMC)** that shall also report to the JSC, composed of three (3) representatives from Geron and three (3) representatives from Janssen as quorum members. The JSC may, as necessary or appropriate and agreed to by the JSC, establish additional subcommittees and delegate tasks within its authority as expressly provided for hereunder to such subcommittees, and any such additional subcommittees shall constitute Joint Committees hereunder. The JMC and JDC each may, as necessary or appropriate, establish one or more Working Groups and assign tasks to such Working Group to develop advice to facilitate such Joint Committee and the JSC's decision-making within its authority (for the avoidance of doubt, no Working Group shall have

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any decision-making authority). The members of the Joint Committees shall be appropriately qualified and experienced in order to make a meaningful contribution to meetings and render decisions within its scope of authority hereunder. Each Party may replace its representatives on any Joint Committee by written notice to the other Party. In addition to any specific Working Groups referenced hereunder, the JSC may establish additional Working Groups composed of representatives of the Parties with appropriate functional expertise to advise the JSC on any matter within its authority hereunder. For the avoidance of doubt, no decision within the authority of the JSC or another Joint Committee may be delegated to a Working Group.

3.2 JSC Responsibilities.

3.2.1 For Development of Licensed Products. With respect to Development of Licensed Products hereunder, the JSC, directly or through delegation to the Joint Development Committee, shall, subject to Section 3.7, have authority to:

(a) oversee and monitor the Collaboration Activities of the Parties with respect to the Lead Phase 2 MF Study, the Lead Phase 2 Low-Risk MDS Study under the CDP and any other studies (co-funded by the Parties pursuant to the terms hereof at any respective percentage share or ratio) under the CDP, including any Additional Studies under the CDP in support of Development toward or to maintain Regulatory Approval in the United States in the event Geron exercises US Opt-In Rights pursuant to 2.2.2;

(b) monitor the activities of each Party under its respective IDP (if any);

(c) review the results and progress of the Development Program under the Global Development Plan, including periodic reviews of preliminary, interim and final data, results and analyses from the studies under the Global Development Plan, including clinical, regulatory and safety data, results, reports and analyses (including those contained in Janssen's global safety database);

(d) review and approve from time to time any modifications or amendments to the CDP Work Plans and associated Development Budgets (for co-funded studies, whether Initial Studies or Additional Studies) within the Budget Variance Limit;

(e) for other desired modifications to the CDP not within the scope of authority of the JSC (such as any modification that would increase the Development Budget for co-funded studies in excess of the Budget Variance Limit, or a substantial modification of the design of the Lead Phase 2 MF Study or the Lead Phase 2 Low-Risk MDS Study), propose to the Parties, for consideration and potential agreement by the Parties, any amendments to the CDP;

(f) recommend to the Parties any Development Program Inventions for claiming in new Development Program Patent Rights;

(g) discuss potential publication strategies with respect to any Development Program results (subject to any subcontractual obligations to any Third Party subcontractors pertaining to publications of their results); and

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(h) under the advice of the QA Working Group, monitor and oversee the Manufacture of Active Substances and Licensed Products for clinical studies under the Global Development Plan, order audits of Manufacturing sites for clinical supplies intended for use in the Development Program and monitor the implementation of any CAPA plans, and, subject to Section 3.7.6, accept or reject any source of lots of Licensed Product Manufactured for clinical supply based on suitability for use in any clinical study under the CDP.

3.2.2 For Promoting of Licensed Products. With respect to the Promoting of Licensed Products hereunder following Geron's exercise of its US Opt-In Rights, the JSC, directly or through delegation to the Joint Marketing Committee, shall have authority to:

(a) oversee and monitor the Promoting activities of Janssen, or the Parties if Geron has been granted Co-Promoting Rights pursuant to Sections 2.2.4 and 5.1, under the US Promotional Plan;

(b) monitor the activities of Janssen under the Independent Promotional Plan;

(c) recommend to the Parties proposed modifications to the US Promotional Plan;

(d) if Geron has been granted Co-Promoting Rights, perform any other oversight function with respect to Co-Promotion of Licensed Products in the Co-Promote Territory as may be specifically delegated to the JSC in the Co-Promotion Agreement (if any);

(e) review and discuss Janssen's Promotional plans for the Licensed Product in the US and all other Major Market Countries in which the Licensed Product obtains Regulatory Approval; and

(f) where Geron has exercised its Co-Promote Option, review and discuss Janssen's Medical Affairs plans in the Co-Promote Territory, including (i) field-based medical education activities and grant-based medical education programs; (ii) any Post Marketing Studies; and (iii) the scientific presentation and publication strategy relating to the Licensed Products.

Notwithstanding anything to the contrary herein, neither the JSC nor JMC shall have authority to modify the US Promotional Plan or US Promotional Budget (as developed pursuant to Section 5.4.2), and Janssen shall have sole responsibility for all Commercialization decisions, including with respect to designing and approving all promotional materials for Licensed Products to be used by Sales Representatives who Detail such Licensed Products and all other promotional activities and programming in support of Licensed Products, all Medical Affairs activities, and the design and implementation of any Post Marketing Studies.

3.3 Patent Working Group. Each Party shall establish and appoint its members to a patent Working Group comprising three to five representatives from each of Geron and Janssen (the **"Patent Working Group"**), including a patent attorney or agent designated by such Party as its lead contact (**"Patent Representative"**), for discussing any patent matters coming before any Joint Committee pertaining to the Development, Manufacture, or Promoting of any Licensed

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Products hereunder. No Joint Committee or other Working Group shall discuss any issue relating to any Geron Product Patent Rights, Development Program Patent Rights, or any Patent Rights of Third Parties relevant to the Development, Manufacture, or Promoting of any Licensed Products (including with respect to any of their scope, patentability, validity, Prosecution, or infringement), unless both Parties' Patent Representatives are present, and the Patent Working Group may hold meetings separate from or in connection with the meetings of any Joint Committee or Working Group as appropriate to discuss such issues relating to any such Patent Rights. The Parties' Patent Representatives shall be solely responsible for documenting at their discretion any issues discussed by any Joint Committee or other Working Group relating to any Patent Rights, which documents and the content of such discussions shall be held in strict confidence by the Parties to protect their common interests and preserve the privileged status of any attorney-client communication, advice, or legal opinion reflected therein. The Parties acknowledge that the Patent Working Group is established for purposes of advising the Joint Committees, and that Article X governs responsibilities for Prosecuting and enforcing the Geron Product Patent Rights and Development Program Patent Rights.

3.4 Joint Committee Meetings. The JSC shall meet quarterly for as long as the Parties are conducting Collaboration Activities under this Agreement, and at such other times as the Parties may agree. The JSC shall determine the frequency and schedule of any other Joint Committee Meetings, provided that the JDC, and the JMC, if established, shall meet every quarter or more frequently as the Parties otherwise agree. The first meeting of the JSC shall be held as soon as reasonably practicable, but in no event later than [*] ([*]) days after the Effective Date. Meetings shall be held at such place or places as are mutually agreed or by teleconference or videoconference, provided that at least the quorum members of each Party are present at any Joint Committee meeting. Each Party may from time to time invite a reasonable number of participants in addition to its representatives on a Joint Committee (such as Working Group members), to attend any Joint Committee meeting, which additional participants shall not be members and shall attend the Joint Committee

meeting on an ad hoc basis in a non-voting capacity. The Joint Committee meetings will be chaired by Janssen. The chairperson shall set agendas for Joint Committee meetings in advance, provided that the agendas will include any matter within the authority of the Joint Committee hereunder reasonably requested by Geron to be addressed. The Parties will rotate the responsibility for recording, preparing and, within a reasonable time, issuing draft minutes of each Joint Committee meeting to each Party's members for review, and the chairperson shall issue to the Parties final minutes signed or otherwise approved in writing (such as via an electronic signature) by a Janssen Joint Committee representative and a Geron Joint Committee representative.

3.5 Meeting Expenses. Each Party shall bear its own costs, including travel expenses, incurred by its Joint Committee members or by any additional non-member participants of such Party in connection with their attendance at Joint Committee meetings and other activities related to any Joint Committee; for the avoidance of doubt, such costs shall not be included in Development Costs.

3.6 Decision-making. Decisions of a Joint Committee within its scope of authority hereunder shall be made by unanimous vote, with Janssen's representatives to the Joint Committee collectively having one (1) vote and Geron' representatives to the Joint Committee collectively having one (1) vote. Decisions of any Joint Committee reporting to the JSC shall be memorialized

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in its meeting minutes, but not become effective until ratified by the JSC by unanimous vote. Decisions of the JSC shall be memorialized in its meeting minutes. If the JSC fails to reach unanimous decision on a matter within its authority that has been pending in excess of [*] ([*]) days (or such other period as the Parties may agree in writing), the matter shall be referred to applicable Executive Officers of the Parties, who shall attempt to reach a mutual decision. In the event that the Executive Officers cannot reach a mutual decision with regard to such matter, then Janssen shall have the deciding vote, subject to Section 3.7.

3.7 Certain Limitations on Decision-Making.

3.7.1 Modifications to Work Plans and Budgets; Budget Variance Limit.

(a) Ongoing Studies and Initial Studies. The Work Plans and Development Budgets for the Ongoing Studies and Initial Studies as of the Effective Date are part of the CDP under the Initial Global Development Plan. Any proposed modification to the Work Plan or Development Budget for any Ongoing Study or Initial Study (whether prior to or after any decision by Geron to exercise its Opt-In Rights) shall be subject to the approval of the JSC and the decision making authority set forth in Section 3.6, provided, however that Janssen shall not have the deciding vote thereon, and provided that (i) Geron shall not unreasonably withhold its consent to any of modifications proposed by Janssen in good faith to the Work Plan or Development Budget with respect to the Initial Studies, and (ii) the Parties' decision-making with respect to the Initial Studies is subject to Sections 3.7.2 and 3.7.3.

(b) Additional Studies. The Work Plan and Development Budget for the Additional Studies as of the Effective Date are part of the Initial Global Development Plan. Prior to Geron's exercise of its US Opt-In Rights, Janssen shall have the right to modify the Work Plan and/or related Development Budget with respect to the Additional Studies as set forth in Section 4.1. Upon Geron's exercise of its US Opt-In Rights, the Initial Development Budget and associated Work Plan(s) provided in the Geron Decision Package for the Additional Studies that are US Studies shall be part of the Development Budget and Work Plan(s) under the CDP, and subsequently, the approval of any proposed modification (other than any Out of Budget Modifications, which are subject to Section 3.7.1(c)) to the Work Plan or Development Budget with respect to any Additional Study in the CDP (including any modification to any study in the then-current CDP or the addition of any new US Study required or deemed advisable for Regulatory Approval of a Named Indication, but not including any Proposed Trials, the decision making mechanism for which is set forth in Section 4.9) shall be subject to the approval of the JSC and the decision making authority set forth in Section 3.6.

(c) Out of Budget Modifications for Additional Studies. Upon Geron's exercise of its US Opt-In Rights, the Initial Development Budget provided in the Geron Decision Package for the Additional Studies that are US Studies shall be the Development Budget under the CDP going forward thereafter, subject to the Annual Budget Variance Limit as it pertains to JSC decision making hereunder. Any proposed modification to the then current CDP Work Plans and associated Development Budget with respect to the Additional Studies that has the effect of increasing the aggregate budgeted amount for such Additional Studies under the Development Budget allocated for any particular Janssen Calendar Year by more than the Budget Variance Limit shall be deemed an **"Out of Budget Modification"** and shall be outside the JSC's

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decision-making authority pursuant to Section 3.6. Upon either Party's request, the JSC shall prepare for the Parties' consideration a draft amendment to the CDP Work Plans and Development Budget to reflect any such proposed Out of Budget Modification, to enable the Parties to better understand and evaluate such proposed Out of Budget Modification. No such Out of Budget Modification shall become effective, however, unless and until it is memorialized in writing and signed by both Parties. Notwithstanding the foregoing, Geron shall not unreasonably withhold its consent to any of Janssen's proposed Out of Budget Modifications to the Development Budget of the CDP that are due to: (a) increases in projected Development Costs, based on more current information or updated assumptions, to be incurred in the normal course of completing any Additional Studies or related activities set forth in the then-current Work Plan in excess of any Development Costs in the Development Budget for such activities; (b) any new studies required by the FDA or deemed advisable by the JSC for the Regulatory Approval of the Licensed Product in one (1) or more Named Indication(s); and/or (c) the addition of a Work Plan and associated Development Budget to perform supplemental activities proposed by Janssen that are reasonably necessary as ancillary activities to the conduct and completion of any Additional Study, in accordance with its then-current protocol, in each case as set forth in the then-current CDP, provided that, as of the [*] full Janssen Calendar Year following [*] Regulatory Approval of the [*] Licensed Product in the [*] Major Market Country only, Geron may, at its

discretion, withhold its consent in its sole determination if any such proposed Out of Budget Modification during any such Janssen Calendar Year either (x) is, or (y) causes the aggregate Out of Budget Modifications for such Janssen Calendar Year to be, in excess of [*] US dollars ($[*]) in aggregate (and, for clarity, such [*] US dollars ($[*]) cap shall not apply to any Out of Budget Modifications proposed before the end of the [*] full Janssen Calendar Year following the [*] Regulatory Approval of the [*] Licensed Product in such Major Market Country).

3.7.2 Material Modifications of the Protocol of an Initial Study. Any material modification of the protocol for an Initial Study regarding its study design, including with respect to patient enrollment criteria, statistical analysis plan, clinical pharmacology and bioanalytical methods, PK/PD assessments, endpoints, and size and timing of readouts, but excluding any change in dosage of Licensed Product, shall be made only by the unanimous decision of the JSC, which decision shall not be subject to Janssen's final decision-making authority under Section 3.6 in the event of the failure of the JSC or the Parties' Executive Officers to reach a unanimous decision; provided, however, that Geron's JSC representatives shall not unreasonably withhold its consent, including with respect to any such material modification which is required by any Regulatory Authority. If the JSC and the Parties' Executive Officers fail to reach a unanimous decision with respect to any other proposed material modification (i.e., not required by any Regulatory Authority), excluding a Licensed Product dosage change, to the protocol for an Initial Study, the Parties shall refer such issue to Expert Proxy Resolution in accordance with Section 3.11. For clarity, (a) Section 3.7.3, and not this Section 3.7.2, shall apply to any proposed or required discontinuation or early termination of an Initial Study and (b) the foregoing provisions of this Section 3.7.2 shall not be construed as otherwise limiting Janssen's final decision-making authority in the event a unanimous decision cannot be reached for other matters within the scope of the JSC's authority. For clarity, a change in dosage of Licensed Product in any protocol for an Initial Study shall not constitute a material modification of the protocol and Janssen shall retain its final decision-making authority under Section 3.6 in the event of failure of the JSC or the Parties' Executive Officers to reach a unanimous decision with respect to such a dosage change.

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3.7.3 Discontinuation of an Initial Study. Except as provided in Section 4.14, any proposed discontinuation or early termination of an Initial Study by a Party (other than any clinical hold or suspension of the study by a Regulatory Authority), including by ceasing enrollment of additional patients required by the protocol, shall be made only by the unanimous decision of the JSC, which decision shall not be unreasonably withheld or delayed, and subject to escalation to the Executive Officers pursuant to Section 3.6. In the event of failure of the Parties' Executive Officers to reach a unanimous decision, notwithstanding Section 3.6, such unresolved issue shall not be subject to Janssen's final decision-making authority, except in the case where either (a) such discontinuation is required by any Regulatory Authority, (b) the continuation (or continued enrollment of additional patients) of a particular Initial Study would be unethical or unreasonable due to a safety-related reason such that, based on the good-faith assessment by Janssen of relevant data, continuation of such Initial Study has resulted in, or has a significant risk of resulting in, the occurrence of a safety or tolerability finding that would raise material concerns regarding the clinical benefit of the Licensed Product for its target population in such Initial Study (for example, harm significantly in excess of an acceptable side-effect profile), or (c) if the continuation (or continued enrollment of additional patients) of such Initial Study would be unethical due to insufficient efficacy based on a futility analysis for such Initial Study (as may be set forth in the applicable protocol). With respect to any unresolved issue regarding a proposed discontinuation of an Initial Study which is other than that described in the foregoing clauses (a), (b) or (c), if the Executive Officers cannot agree upon such discontinuation, then such issue regarding the proposed discontinuation of the Initial Study shall be subject to the Expert Proxy Resolution under Section 3.11.

3.7.4 Prosecution of Geron Product Patent Rights and Development Program Patent Rights Governed by Article X. Notwithstanding any other provision of this Agreement to the contrary, decisions regarding the Prosecution of any Geron Product Patent Rights or Development Program Patent Rights shall not be within the JSC's authority, and the provisions of Article X of this Agreement shall govern Prosecution of such Patent Rights.

3.7.5 Accounting Methodology for Promoting Costs. Notwithstanding any other provision of this Agreement to the contrary, any failure of the JSC and, if referred to them under Section 3.6, the Parties' Executive Officers, to reach a unanimous decision regarding the particular accounting methodology to be used to determine the Promoting Costs as set forth in Section 1.221(b) shall be subject to Janssen's final decision-making authority under Section 3.6, provided that the particular accounting methodology determined as a result of the application of such final decision making, under advice of the Finance Working Group, is compliant with Accounting Standards and Applicable Law and consistent with accounting methodology for similar promotional costs as consistently applied by Janssen.

3.7.6 Acceptability of Existing Clinical Lots. Notwithstanding any other provision of this Agreement to the contrary, any failure of the JSC and the Parties' Executive Officers to reach a unanimous decision regarding the acceptability of any unexpired batches or lots of Licensed Product that were Manufactured on behalf of Geron before the Effective Date in compliance with GMPs and other Applicable Laws and remain within specifications shall not be subject to Janssen's final decision-making authority under Section 3.6. In the event of any such failure, the Parties shall refer such issue for Expert Proxy Resolution pursuant to Section 3.11.

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3.8 No Authority to Modify Agreement. Notwithstanding anything to the contrary herein, neither the JSC nor any other Joint Committee (nor any Working Group) shall have any authority to: (a) modify any provision set forth in the body of this Agreement, including any payment conditions or terms or obligations of the Parties, which provisions may be modified only by written agreement of the Parties; or (b) resolve any Disputes.

3.9 Dissolution of JSC. Notwithstanding anything to the contrary above, in the event Geron has not exercised its US Opt-In Rights under Section 2.2.2, and provided that (or upon) the Lead Phase 2 MF Study and Lead Phase 2 Low-Risk MDS Study have been completed or otherwise terminated,

then: (a) the JSC and all of its subcommittees (including the JDC and JMC) shall dissolve; (b) the Parties shall form a joint oversight committee composed of from one to three representatives of each Party, which will meet on at least a quarterly basis until the First Commercial Sale of a Licensed Product in the United States and thereafter on a semi-annual basis; (c) Janssen shall provide to Geron in confidence at each such meeting of such joint oversight committee a reasonable overview of the results of and plans for Janssen's Development and Commercialization activities hereunder; and (d) Janssen shall provide Geron in confidence with quarterly written progress reports summarizing Janssen's Development and Commercialization activities hereunder. On reasonable request of Geron, but no more than once per year during the Term, Janssen shall supplement such reports by providing reasonable information to facilitate Geron's assessment of whether Janssen is complying with the diligence obligations under this Agreement. All information provided in any joint oversight committee meetings or reports under this Section shall be treated as Janssen's Confidential Information hereunder.

3.10 Alliance Managers. Each Party shall designate a single alliance manager for coordinating interactions between the Parties regarding any activities contemplated under this Agreement (**"Alliance Manager"**). Such Alliance Managers will be responsible for the day-to-day worldwide coordination of the Collaboration Activities and will serve to facilitate routine communication between the Parties. Such Alliance Managers shall have experience and knowledge appropriate for managers with such project management responsibilities. Each Party may change its designated Alliance Manager from time to time upon written notice to the other Party.

3.11 Expert Proxy for Undecided JSC Matters Requiring Unanimous Vote.

3.11.1 Any issue within the JSC's decision-making authority that is not subject to Janssen's final decision-making authority under Section 3.6 and requires a unanimous vote of the JSC as expressly provided in Section 3.7, for which the JSC fails to reach a unanimous decision and further for which the Parties' Executive Officers fail to reach a mutual decision of the escalated issue pursuant to Section 3.6, shall be resolved pursuant to the procedures set forth in this Section 3.11 ("**Expert Proxy Resolution**").

3.11.2 Any decision to be made on behalf of the Parties by Expert Proxy Resolution will be made as follows. Upon the failure of the JSC and Parties' Executive Officers to reach a decision of an applicable issue described in Section 3.7, the JSC shall notify the Parties of the issue to be submitted for Expert Proxy Resolution. Following receipt of such notice, the Parties shall confer and attempt in good faith to mutually select and engage a single external expert to resolve the issue. Such expert shall be neutral and independent of both Parties and all of their

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respective Affiliates, shall have significant experience and expertise in clinical development, product manufacturing, and/or regulatory affairs pertaining to pharmaceutical products and appropriate for considering the unresolved issue. If the Parties cannot agree on such single expert within [*] ([*]) days of the JSC notice, then each Party shall select one (1) such expert and the two (2) experts selected by the Parties shall appoint a third expert, and the decision shall be rendered by the 3-expert panel, provided, that all such three (3) experts must meet the foregoing criteria and shall be mutually engaged by the Parties under a written contract acceptable to both Parties within [*] ([*]) days of each expert's selection or appointment. Within [*] ([*]) days after the expert(s) is/are selected or appointed (as the case may be), each Party will deliver to the expert(s) and the other Party a written memorandum setting forth the unresolved issue, its proposed decision, relevant information and supporting arguments or rationale (each a "**Proposed Resolution**" of the applicable Party), such memorandum not to exceed [*] ([*]) pages in length (with double-spaced typeface of least 10 point font). The Parties will also provide the expert (s) with a copy of this Agreement, as may be amended at such time. Within [*] ([*]) days after receipt of the other Party's Proposed Resolution, each Party may submit to the expert(s) (with a copy to the other Party) a response to the other Party's Proposed Resolution, such response not to exceed [*] ([*]) pages in length (with double-spaced type face of at least 10 point font). Neither Party may have any other communications (either written or oral) with any expert(s) other than as expressly permitted in this Section; provided, that the expert(s) may convene a hearing if the expert(s) so choose(s) to ask questions of the Parties. Within [*] ([*]) days after appointment or selection of the required expert(s), the expert(s) will render a written decision selecting one of the proposed decisions set forth in the Proposed Resolutions (without modification unless the Parties mutually agree). The decision of the expert(s) shall be final and memorialized by the JSC as its own, and the Parties shall share equally the out-of-pocket costs incurred in engaging the expert(s).

3.11.3 For the avoidance of doubt, Expert Proxy Resolution does not apply to the resolution of any Dispute, and the expert(s) shall have no power or authority to award either Party any relief or render any decision other than as expressly provided in Section 3.7.

ARTICLE IV: DEVELOPMENT

4.1 Clinical Development Plans. All Development of the Licensed Product shall be conducted pursuant to either the CDP or an IDP. The Initial Global Development Plan as of the Effective Date (attached hereto as Exhibit C) includes: (a) the Work Plan and Development Budget of the initial CDP for each of the Initial Studies; (b) the proposed Work Plan and Development Budget for Additional Studies which are US Studies intended as of the Execution Date to support the Regulatory Approval of a Licensed Product containing GRN163L in one or more Named Indications by the FDA and planned for future implementation depending on the Parties' evaluation of clinical data and other results from ongoing studies; (c) certain Work Plans and Development Budgets for the Ongoing Studies, which shall remain the sole financial responsibility of Geron unless the Parties expressly agree in writing to co-fund any Development Costs incurred after the Effective Date to conduct, complete and/or close out any such Ongoing Studies, as specified in the associated Development Budget(s) for the applicable Ongoing Studies as set forth in the CDP; and (d) the Work Plans and Development Budgets for any new US Studies intended to support further Development of Licensed Product for Regulatory Approval in the United States, regardless of whether or not Geron ultimately elects to exercise its US Opt-in Rights. The Parties acknowledge that the Initial Global Development Plan is preliminary and

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provides high-level Work Plans and estimated Development Budgets for both the Initial Studies and certain Additional Studies. The Parties, through the JSC, shall use commercially reasonable efforts to agree upon an updated and more detailed CDP of the Global Development Plan in due course after the Effective Date and prior to the beginning of the Geron Election Period as further information develops, subject to Sections 3.7.1, 3.7.2, and 3.7.3. For clarity, until such time, if ever, that Geron exercises its US Opt-In Rights, Janssen shall have sole discretion to update and modify the Work Plans and associated Development Budget for the Additional Studies under the Global Development Plan, provided that it keeps the JSC apprised of such updates or modifications.

4.2 Development Diligence.

4.2.1 Janssen shall use Diligent Development Efforts to Develop at least [*] Licensed Product toward a [*] Regulatory Approval in each of the Named Indications, and if such Development is successful, to seek Regulatory Approval for each such Named Indication for each of the Major Market Countries. Janssen shall also use Diligent Development Efforts to initiate or have initiated, at a commercially reasonable time, any Additional Study of a Licensed Product for each other Indication to the extent specified in the then-current CDP, considering at such time circumstances such as the evolving data and other results from prior or ongoing clinical studies of the Licensed Product and other data pertaining to the developability of the Licensed Product.

4.2.2 Without limiting Section 4.2.1, each Party shall use Diligent Development Efforts to perform its respective Development activities under the CDP. Each Party (and its Affiliates and Third Party subcontractors) shall conduct its Development activities in good scientific manner and in compliance with Applicable Law, including laws and regulations regarding environmental, safety, and industrial hygiene, Good Laboratory Practice, Good Clinical Practice, Informed Consent, Institutional Review Board requirements, pharmacovigilance, and all applicable requirements relating to the protection of human subjects of clinical studies. Notwithstanding anything to the contrary herein, a Party shall not be obligated to undertake or continue any Development activities with respect to a Licensed Product if such Party reasonably determines that performance of such Development activity would violate Applicable Law or pose an unacceptable safety risk to clinical study subjects.

4.2.3 Without limiting the obligations set forth in Section 4.2.1 and 4.2.2, promptly following the Effective Date and the finalization of the protocols for the Initial Studies, Janssen shall commence, and each Party shall use Diligent Development Efforts to conduct, each of the Initial Studies, all in material accordance with the CDP, including the associated Development Budget. For clarity, each Party acknowledges that any timelines reflected in the CDP for the Initial Studies are good-faith approximations only, and shall not be construed as imposing an obligation to strictly adhere to any such timelines, subject to the foregoing in this Section 4.2.

4.3 Transfer of Know-How.

4.3.1 From Geron's Prior Work. After the Effective Date, and notwithstanding anything to the contrary in any written plans of the Parties (whether or not appended to this Agreement as an Exhibit), Geron shall provide to Janssen, on a reasonable rolling

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basis, copies of, or access to, at mutually agreed times during normal business hours on Business Days and upon reasonable notice, and permit Janssen to make copies at Janssen's expense of, Geron Product Know-How relating to GRN163L arising from Geron's and its Affiliates' and Third Party contractors' activities before the Effective Date recorded in any form (including laboratory notebook entries, database entries, monographs, reports, and slide presentations); provided that (i) Geron shall prioritize the transfer of any particular Geron Product Know-How set forth in any written plans of the Parties that may be appended hereto or otherwise agreed upon, and (ii) copies of any laboratory notebook entries of such Geron Product Know-How may be provided promptly after Janssen delivers a Continuation Notification, provided that until such time Geron shall provide copies of any such laboratory notebook entries relating to certain of such Know-How as may be reasonably requested by Janssen. Thereafter during the Term, Geron shall use reasonable efforts to promptly provide Janssen upon its reasonable request with copies of any other Geron Product Know-How.

4.3.2 From Work in Development Program. To the extent that Geron is performing or otherwise involved in any Development activities hereunder (including through the JDC), (i) Janssen shall provide to Geron, directly or through meetings of the Joint Development Committee or JSC, copies of any Development Program Know-How developed by or on behalf of Janssen that is necessary or useful for the performance of any Development activities to be performed by or on behalf of Geron under the CDP or a Geron IDP, and (ii) Geron shall provide to Janssen, directly or through meetings of the Joint Development Committee or JSC, copies of all Development Program Know-How developed by or on behalf of Geron, including any Development Program Know-How that may be necessary or useful for making, using, Developing under the CDP or a Janssen IDP, Manufacturing, or Commercializing any Licensed Product.

4.4 Responsibility for Regulatory Filings; Responsibility for CMC Development.

4.4.1 INDs and Other Regulatory Filings. The provisions of this Section 4.4.1 shall apply to the clinical Development Program.

(a) Existing Geron-held INDs.

(i) Ongoing Clinical Studies. With respect to each IND for an Ongoing Study listed in Exhibit O, the Parties shall use commercially reasonable efforts to enter into a mutually acceptable IND Transfer Agreement to enable Janssen to assume responsibility for performing the activities set forth in Exhibit O and such activities as may be hereafter agreed by the Parties in any IND Transfer Agreement. Geron shall remain responsible in all cases for all costs and liabilities arising in connection with its performance of, or failure to perform, any activities or obligations with respect to any Ongoing Study (x) prior to the Effective Date and thereafter until IND transfer for such Ongoing Study, and (y) regardless of the date of such IND transfer as specified or assigned in Exhibit O for Geron's performance, in both cases (x) and (y) in relation to each Ongoing Study listed on Exhibit O, unless the Parties agree otherwise in any IND Transfer Agreement. Geron shall reimburse Janssen for the Development Costs expended by Janssen in connection with its performance of the activities or obligations set forth in Exhibit O and any IND Transfer Agreement, unless such IND Transfer Agreement provides otherwise. Until such time (if any) that the Parties are able to enter into a mutually acceptable IND Transfer Agreement with respect to any such IND described in this subsection, at Geron's request, Janssen

shall use commercially reasonable efforts to expend the FTE resources necessary to assist Geron (as Geron's designee) in performing any activities specified in Exhibit O for Geron's performance, such as by preparing Regulatory Filings for review and submission by Geron, and Geron shall (x) remain responsible for all costs and liabilities arising from acts, or any failure to act, in relation to such Geron-held INDs, and (y) shall reimburse Janssen for the Development Costs expended by Janssen in connection with its performance of such requested activities. For clarity, Exhibit O is intended to assign to the Parties their respective internal operational responsibilities hereunder (and not, e.g., allocate or transfer any liabilities or costs), and in the event of any inconsistency between the terms of Exhibit O and the body of this Agreement, the body of this Agreement shall control.

(ii) Publication of Results from Ongoing Studies and Other Studies. For clarity, Section 11.6 shall apply to the clinical studies listed in Exhibit C, Exhibit O, and Exhibit Q.

(b) INDs for New Clinical Studies. Unless otherwise agreed in writing by the Parties, Janssen shall be responsible for filing and maintaining (directly and through its Affiliates and any Third Party subcontractors) all new INDs, and/or maintaining (directly and through its Affiliates and any Third Party subcontractors) all INDs transferred to Janssen pursuant to any IND Transfer Agreement(s), for any new clinical studies of any Licensed Product initiated after the Effective Date under the CDP, including the Initial Studies (the "**Janssen INDs**"). Geron shall use commercially reasonable efforts upon Janssen's request to cooperate, and have any of Geron's applicable Third Party contractors subject to any applicable Existing Third Party Agreements cooperate, to facilitate Janssen's establishment of a sponsorship IND and/or assumption of responsibility for any transferred IND, and its electronic updating, for clinical studies under the CDP. Unless the JSC decides otherwise or an IND Transfer Agreement otherwise provides, the Party having an IDP shall be responsible for filing and maintaining (directly or through any Affiliates or Third Party subcontractors) all INDs for any clinical studies of any Licensed Product initiated after the Effective Date under such Party's IDP (and, to the extent necessary for a Geron IDP, Janssen shall provide Geron a right of cross-reference to Janssen's INDs). As between the Parties, except as expressly provided otherwise hereunder or in any IND Transfer Agreements, as of the Effective Date Janssen shall be solely responsible for interactions with any Regulatory Authorities with respect to Licensed Product under any Janssen IND for any new clinical studies of any Licensed Product initiated after the Effective Date under the CDP and any IND and clinical study transferred by Geron to Janssen pursuant to any IND Transfer Agreement, and the filing and maintaining (directly or through a designated Affiliate or Third Party subcontractor or, where necessary, Geron) of Regulatory Filings for Licensed Product under such Janssen INDs. Janssen shall own all Regulatory Filings made in connection with the Development of, or seeking Regulatory Approval for, any Licensed Products under any Janssen IND. Janssen shall own and hold any Regulatory Approvals for a Licensed Product.

(c) Ownership of INDs. For clarity, with regard to INDs for a Licensed Product filed or sponsored by a Party in the conduct of the Development activities hereunder, such Party shall be deemed to own each such IND filed in its name except as otherwise may be set forth in any IND Transfer Agreement. Additionally, in accordance with Section 4.12, Geron hereby grants to Janssen, and Janssen shall have (directly and through its Affiliates), a Right of Reference with respect to each such IND held by or on behalf of Geron, for use by Janssen for

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Development purposes hereunder, and accordingly Regulatory Authorities considering any Regulatory Filing relating to a Licensed Product being Developed hereunder shall be permitted to rely on and otherwise use the applicable information in such Geron-held INDs.

4.4.2 CMC Development. Janssen shall have responsibility for managing all Collaboration Activities relating to the development of chemistry, manufacturing, and controls technology and associated Know-How for the Manufacture of Licensed Products, which activities for clarity do not include actual production and testing of clinical supplies, which Manufacturing activities are governed by Section 7.1 below. Except as may be otherwise provided herein or in the CDP, Geron's role in performing any such Collaboration Activities (excluding any obligations under its Current Manufacturing Contracts and any other Existing Third Party Agreements) shall be to provide Janssen, upon Janssen's reasonable request and pursuant to a CDP Work Plan and associated Development Budget, FTE assistance for the design, conduct, and troubleshooting of such chemistry, manufacturing, and control Know-How development activities and related Development studies, and any costs incurred by or on account of Geron in connection with such assistance shall be deemed Development Costs under the CDP and reimbursed at the FTE Rate.

4.5 Regulatory Meetings. Janssen shall be responsible (directly and through its Affiliates and any sublicensees and, where necessary, through Geron) for all interactions with Regulatory Authorities in connection with its Regulatory Filings hereunder. Subject to Applicable Law, however, Geron shall have the right to designate a silent observer to attend all material meetings, conferences and discussions by Janssen or its Affiliate with Regulatory Authorities pertaining to Development of the Licensed Products in the Field under the CDP, and such observer shall treat all information observed or discussed therein relating to any Licensed Products as Janssen's trade secret Confidential Information. Janssen shall provide Geron with reasonable advance notice of all such meetings or conferences with any Regulatory Authorities.

4.6 Regulatory Reporting; Safety Database.

4.6.1 Responsibility. After the filing of an IND by Janssen (or the transfer of an IND by Geron to Janssen, as applicable) for an Initial Study of a Licensed Product under the CDP, as between the Parties, any reports (including adverse event reports) made to any Regulatory Authority in connection with any Development activities, conducted or sponsored by or on behalf of either or both of the Parties hereunder for any Licensed Product, shall be made exclusively by Janssen in accordance with the terms and conditions of the Pharmacovigilance Agreement. In the case that Geron has contributed to any information or data in the report being submitted to a Regulatory Authority, Janssen shall provide Geron with a copy of such report for comment in advance, unless time does not reasonably permit, considering the circumstances, Janssen to do so.

4.6.2 Adverse Event Reporting. Promptly (such as within [*] Business Days) after a Party becomes informed of any serious adverse event ("**SAE**") in any clinical trial involving a Licensed Product, it shall notify the other Party and such notifying Party shall thereafter continue to provide additional information to the other Party relevant to such SAE, including to the extent necessary for such other Party to comply with all Applicable Laws (including securities laws or regulations and the applicable rules of any public stock exchange). Geron acknowledges and agrees that Janssen, as the Party having the right to hold any Drug Application for any Licensed Product hereunder, may be required to submit information and file

reports to various Regulatory Authorities on a Licensed Product under clinical investigation, a Licensed Product proposed for Promoting, and/or a marketed Licensed Product, including such information as typically required at the time of initial filing for investigational use in humans and at the time of a request for Regulatory Approval of a new Licensed Product. In addition, Janssen may be required to provide supplemental information on a Licensed Product at periodic intervals and to report adverse events or drug experiences at more frequent intervals depending on the severity of the experience and whether or not the event is unexpected. With respect to any Development activities conducted by or on behalf of Geron under the Global Development Plan, upon reasonable request of Janssen, Geron shall: (a) provide Janssen with all adverse event information and safety-related data available to or within the Control of Geron from any pre-clinical laboratory, animal toxicology, pharmacology studies, or clinical studies, as reasonably may be necessary or expected to be necessary for Janssen to comply with all Applicable Laws pertaining to the Licensed Product; and (b) report and provide such information to Janssen in such a manner and time so as to enable Janssen to comply with all Applicable Laws.

4.6.3 Global Safety Database. Janssen shall establish a global safety database for such Licensed Product, including for storing safety data from clinical studies of Licensed Product under INDs held by Janssen and for storing safety data within the Geron Product Know-How. For each Licensed Product Developed under the CDP or any Janssen IDP, Janssen shall maintain in the global safety database information relating to adverse events and pregnancy reports for such Licensed Product, which shall include serious adverse event data (and any other information relating to other adverse events Janssen decides to include at its reasonable discretion), which Janssen may use for regulatory reporting and responding to safety queries from Regulatory Authorities. Promptly after the Effective Date and during the Term, to the extent Geron is conducting or has conducted any Development activities under the CDP or any Geron IDP, Geron shall, and shall cause its Affiliates and Third Party contractors to, disclose all information relating to adverse events and pregnancy reports from clinical use of Licensed Product in its or their possession and Control to Janssen for inputting into its global safety database within a mutually agreed period of time. Each Party shall handle all serious adverse events information and other safety data that comes into its possession during Development and Commercialization of any Licensed Product hereunder in accordance with all Applicable Laws. During the time Geron is the regulatory sponsor for any IND under the Global Development Plan, or has continuing obligations as set forth in Exhibit O, with respect to a Licensed Product, upon Geron's good faith request Janssen shall promptly make available to Geron such information from Janssen's global safety database for the Licensed Product as Geron deems necessary in good faith to fulfill Geron's pharmacovigilance reporting and other compliance obligations under Applicable Law to the applicable Regulatory Authority(ies) in connection with such sponsorship, and to enable Geron to fulfill its obligations as set forth in Exhibit O.

4.6.4 Pharmacovigilance Agreement. Within [*] ([*]) days of the Effective Date, each Party shall identify its safety representative to the other Party to lead negotiations between the Parties regarding the processes and procedures for sharing adverse event information, which processes and procedures shall be documented in a written pharmacovigilance agreement signed by the Parties (the "**Pharmacovigilance Agreement**") not later than [*] ([*]) days of the Parties' identification of their respective safety representatives or such other time as the Parties may otherwise agree. The Pharmacovigilance Agreement shall define safety data exchange procedures concerning adverse events, including adverse drug reactions, with respect to any

Licensed Products, sufficient to permit each Party and its Affiliates and subcontractors or sublicensees, as the case may be, to comply with requirements of Applicable Laws pertaining to drug safety and pharmacovigilance, including, to the extent applicable, those obligations contained in Health Care Laws imposed by Regulatory Authorities. The Pharmacovigilance Agreement shall reflect that Janssen shall own and maintain a comprehensive (global) safety database of adverse events, pregnancy reports, and other safety data reported anywhere in the world from human use of any Licensed Products anywhere in the Licensed Territory.

4.7 Conditional Subcontracting. A Party may subcontract any of its Development activities hereunder to any Third Party, provided that: (a) such Party executes a written subcontract agreement with such Third Party that contains, in all material respects, the applicable obligations and covenants hereunder; and (b) a Party may not subcontract to a Third Party for its sponsorship of any clinical study (including any investigator initiated study) of Licensed Product under the CDP without the JSC's prior written approval, except as expressly provided in the CDP; and (c) Geron may not subcontract to a Third Party for its sponsorship of any clinical study (including any investigator initiated study) of Licensed Product under a Geron IDP without the JSC's prior written approval. A Party engaging any subcontractor shall be responsible for the performance of the subcontractor, and hereby warrants its compliance with the material terms hereof.

4.8 Geron's US Opt-In Rights

4.8.1 Division of IDP and CDP Studies based on Geron Opt-In Decision. In the event Geron exercises its US Opt-In Rights within the Geron Election Period pursuant to Section 2.2.2, then the Work Plan and Development Budget for all Additional Studies which are US Studies, at such time included in the Global Development Plan shall be deemed to have been and be included in the CDP, effective for purposes of allocating responsibility for costs under Section 4.13 as of the initiation of activities under such Work Plan. For the avoidance of doubt, the Work Plans and Development Budgets for any Ex-US Studies that may at such time be included in the Global Development Plan, other than any set forth in a Geron IDP, shall be included in an IDP of Janssen.

4.8.2 Effect of Failure to Exercise. In the event Geron elects not to exercise its US Opt-In Rights or fails to make a timely election within the Geron Election Period, then the Work Plans and Development Budgets for all US Studies that are at such time included in the Global Development Plan and any other studies set forth in the CDP at such time, other than the Initial Studies, shall be deemed to have been and be incorporated into an IDP of Janssen. In addition, any Ex-US Studies in the Global Development Plan intended to be conducted by or on behalf of Janssen, its Affiliates and/or sublicensees shall also be included in one or more IDP(s) of Janssen. For the avoidance of doubt, if Geron does not exercise its US Opt-In Rights as provided in Section 2.2.2, then (i) Janssen's license rights to Commercialize Licensed Products in the United States under Section 2.1.2 above shall become and remain exclusive (even as to Geron), and Janssen shall be solely responsible for all activities and costs associated therewith as set forth in Section 4.13.2, and (ii) Geron shall have no right to undertake any Development of Licensed Product other than as provided in the CDP or any Geron IDP.

4.8.3 Janssen Independent Development Activities. For the avoidance of doubt, nothing herein shall restrict Janssen from independently undertaking any Development

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activities for a Licensed Product (including initiating any new clinical study) or repeating any clinical study previously conducted under the CDP or any IDP that failed to meet its primary endpoints, provided that: (i) in the event Janssen independently undertakes any such activities, they shall be deemed within the scope of the Development Program and the terms of this Agreement shall continue to apply thereto; (ii) in the event Geron exercises its US Opt-In Rights, Janssen shall first propose any activities for a Proposed Trial not already subject to an IDP or the CDP to the JDC pursuant to Section 4.9.1; and (iii) all of Janssen's Development activities under this Agreement shall be performed pursuant to the CDP or one or more IDPs, regardless of whether Geron exercises its US Opt-In Rights.

4.9 Additional Development for Proposed Trials.

4.9.1 Additional Development Proposals. If, (i) Janssen, before Geron exercises its US Opt-In Rights, or (ii) either Party, after Geron exercises its US Opt-In Rights, desires to undertake any Proposed Trial of Licensed Product, then such Party shall submit to the JDC a written proposal for the addition of such trial to the CDP (an "**Additional Development Proposal**"). Each Additional Development Proposal shall include the Development Proposal Criteria for the Proposed Trial and such other general content as the JSC may require; provided, however, that if the Party proposing such Proposed Trial (the **"Proposing Party"**) does not have all the information required to complete the Development Proposal Criteria package, it shall submit such information as it then has available in connection with the Additional Development Proposal, and the JDC may elect to form a preclinical Working Group to evaluate the Proposed Trial of the Licensed Product for such Oncology Indication and direct such Working Group to complete the information lacking from such Development Proposal Criteria, and thereafter the completed Additional Development Proposal shall be submitted to the JDC for review. The JDC shall promptly consider the Additional Development Proposal and, no later than [*] ([*]) days of its receipt, forward it to the JSC along with the JDC's consensus comments, including its decision as to whether it believes that there is a high degree of confidence that the conduct of the Proposed Trial or its results will not adversely affect other Development or Commercialization of the Licensed Product. The JSC shall within [*] ([*]) Business Days (or such other time as may be agreed by the Parties) of its receipt of the Additional Development Proposal and the JDC's comments, render the JSC's decision to the Parties as to whether or not it unanimously recommends that the Parties amend the CDP (including the Development Budget) to include the Proposed Trial.

4.9.2 Adoption of Additional Development Proposals. If the JDC unanimously recommends the adoption of any Additional Development Proposal and the JSC ratifies such recommendation, the Parties shall thereafter enter into good-faith negotiations to modify, by a written amendment to this Agreement, the CDP (and the Development Budget) based on such Additional Development Proposal, its associated budget, and the allocation of the Development Costs for such Proposed Trial between the Parties (with, unless otherwise agreed in the amendment, twenty percent (20%) of such Development Costs being allocated to Geron if Geron has exercised its US Opt-In Rights under Section 2.2.2). Upon the Parties executing such written amendment to the CDP, the Proposed Trial shall be deemed to be an Additional Study within the scope of the Development activities thereunder and the Development Costs for such trial shall be allocated between the Parties as specified in such written amendment.

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4.9.3 Effect of Failure to Agree. If the JDC does not unanimously recommend the adoption of any Additional Development Proposal, or if the JSC recommends against inclusion of the Proposed Trial in the CDP, or the Parties are unable to reach a written agreement to amend the CDP to include a Proposed Trial within [*] ([*]) days of the JSC's recommendation under Section 4.9.2, then, provided that the JDC and JSC each have decided that there is a high degree of confidence that the conduct of the Proposed Trial (considering its potential results or outcomes) by the Proposing Party will not adversely affect other Development or Commercialization of the Licensed Product, the Proposing Party may, upon notice to the other Party, elect to conduct the Proposed Trial independently at its own expense, and the Proposed Trial shall be deemed within the scope of the Development Program and the Global Development Plan (but not the CDP, for clarity) and the terms of this Agreement shall continue to apply thereto, and: (a) the Proposing Party shall provide the JSC and the other Party with an IDP for such trial, as may be updated from time to time; and (b) the JSC (and JDC) shall have no decision-making authority with respect to the conduct of such Proposed Trial, although it shall have authority to monitor the Proposing Party's progress and review the results from the Proposed Trial under the IDP. For the avoidance of doubt, this Section 4.9.3 provides the only means by which Geron may conduct any Development activities with respect to any Active Substance or Licensed Product independent of the CDP, and Geron may not conduct any clinical trials of any Active Substance or Licensed Product except pursuant to the CDP or a Geron IDP hereunder.

4.9.4 Geron Additional Development. In the case that Geron is the Proposing Party under Section 4.9.3 and successfully conducts a Proposed Trial under a Geron IDP (for clarity, excluding the clinical trials identified in Exhibits O and Q) at its expense, it shall notify Janssen in writing and

provide a reasonably detailed accounting of Geron's Out-of-Pocket Costs and FTE Costs reasonably incurred in conducting the Proposed Trial under Geron's IDP (collectively, the **"Geron IDP Trial Costs"**). Upon receipt of such notice, and notwithstanding anything to the contrary herein, Janssen shall promptly seek Regulatory Approval in any Major Market Country in which registration is supported by the final data available upon completion of the Proposed Trial under the Geron IDP based on data from such Geron trial (such as to expand any Licensed Product labeling to include a new Oncology Indication supported by the Proposed Trial) and shall pay Geron an amount equal to [*] percent ([*]%) of the difference resulting from (x) the Geron IDP Trial Costs minus (y) the FTE Costs and Out-of-Pocket Costs incurred by Janssen in seeking Regulatory Approval, which amount will be due upon Janssen's receipt of Regulatory Approval for such expanded Licensed Product labeling and payable within [*] ([*]) days thereafter.

4.9.5 Janssen Additional Development. In the event Geron exercises its US Opt-In Rights under Section 2.2.2 and in the case that Janssen is the Proposing Party under Section 4.9.3 and successfully conducts a Proposed Trial (which, for clarity, would not include any Ex-US Study) under a Janssen IDP at its expense and obtains Regulatory Approval based on data from such trial (such as to expand any Licensed Product labeling to include a new Oncology Indication supported by the trial) (such Regulatory Approval, a **"Janssen IDP Based Regulatory Approval"**), it shall so notify Geron in writing of such Janssen IDP Based Regulatory Approval, and provide a reasonably detailed accounting of Janssen's Out-of-Pocket Costs and FTE Costs reasonably incurred in conducting such Proposed Trial (for clarity, other than an Ex-US Study) under Janssen's IDP (the **"Janssen IDP Trial Costs"**), in which event Geron shall pay Janssen an amount equal to [*] percent ([*]%) of the Janssen IDP Trial Costs (the **"Geron Reimbursement**

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Amount"), which Geron Reimbursement Amount will be due upon Janssen's receipt of the Janssen IDP Based Regulatory Approval and payable as follows: at Geron's election by notice to Janssen provided within [*] ([*]) days of Geron's receipt of the notice of the Janssen IDP Based Regulatory Approval for a particular Additional Study under a Janssen IDP, Geron shall pay, within [*] ([*]) days of such notice and Janssen's provision of an invoice, an amount (the "**Geron Reimbursement Downpayment**") that is the lesser of: (i) the full Geron Reimbursement Amount; or (ii) an amount equal to the greater of [*] US dollars ($[*]) and [*] percent ([*]%) of the total amounts paid by Janssen to Geron in the prior [*] ([*]) months in the form of upfront or milestone payments or royalties. With such payment of the Geron Reimbursement Downpayment, Geron shall and hereby does grant Janssen a credit and right of offset for [*] as assessed pursuant to Section 9.9 (the ["*****"]), which credit Janssen may thereafter apply in accordance with Section 9.8.1, for any [*]. Notwithstanding anything to the contrary herein, Geron's right under this Section 4.9.5 to [*] shall be subject to Section 9.8, including the Balance Ceiling under Section 9.8.2.

4.9.6 Suspension of Independent Trial. If, at any time after the commencement of a Proposed Trial under an IDP by a Party, the other Party determines reasonably and in good faith that such trial is reasonably likely to adversely affect the Development or Commercialization of any Licensed Product in the Field, such Party shall so notify the Party conducting the trial and it shall be promptly thereafter discontinued (subject to such ethical obligations to continue support of patients already enrolled in the clinical trial under the IDP as the Party conducting it may in good faith determine), unless and until the JSC decides that such trial should be permitted to resume or continue.

4.10 Progress Reports

4.10.1 Day-to-Day Responsibility. Each Party shall be responsible for day-to-day implementation of the Development activities for which it (or its Affiliate) has or otherwise is assigned responsibility under the CDP or any IDP and shall keep the JDC and the other Party reasonably informed as to the progress of such activities and results (including Development Program Know-How) therefrom.

4.10.2 Development Reports. At each meeting of the Joint Development Committee, each Party will report on the Development activities such Party and its Affiliates has performed or caused to be performed since the last meeting of the JDC, including periodic reviews of preliminary, interim and final data, results and analyses from the studies under the Global Development Plan. In addition, each Party shall provide the JDC with such other information as may be reasonably requested by the JDC or the other Party with respect to such Development activities. If a Party fails to adequately provide such report at a meeting of the Joint Development Committee, or at any other time upon the reasonable request of either Party, the other Party may request, and such Party will provide to such other Party, a written progress report that includes information regarding Development activities in support of clinical studies, such as regarding accrual, site initiation, progress on protocol writing, meeting requests and briefing documents, and any other information within its Control as is reasonably necessary to convey a reasonably comprehensive understanding of the status or results of the applicable Development activity.

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4.11 Auditing.

4.11.1 Compliance Inspections. With respect to any facility or site at which a Party, its Affiliate or its Third Party contractor or subcontractor conducts any Manufacturing, clinical, or regulated (e.g., under GLP, GCP, or GMP) Development activities pursuant to this Agreement, the other Party shall have the right, as permitted by and subject to the terms and conditions of any applicable Existing Third Party Agreement or as otherwise expressly permitted by the applicable Third Party Manufacturer, at its expense, upon reasonable written notice to such Party (and if applicable, such Affiliate or contractor or subcontractor), and during normal business hours, to inspect such site and facility and any records relating thereto, once per year or more often with cause, to verify the other Party's compliance with the terms of this Agreement and with all Applicable Laws, including GLP, GCP, and GMP, and current standards for pharmacovigilance practice. Such inspection shall be subject to the confidentiality provisions set forth in Article XI. Each Party agrees to use commercially reasonable efforts to include in any contract or other written arrangement with its subcontractors, a clause permitting the other Party to exercise its rights under this Section 4.11.1.

4.11.2 Site Audits. Janssen (through Janssen R&D Global Research & Development Quality Assurance or any successor organization responsible for quality assurance for Janssen and its Affiliates) will be responsible for establishing audit plans for each clinical study assigned to a Party in the CDP. The provisions of Section 7.4.2 below shall govern audits of sites Manufacturing clinical supplies of Licensed Products.

4.11.3 Regulatory Audits. The Parties shall cooperate in good faith in the event any Regulatory Authority inspects any site where clinical studies or Manufacturing of clinical supplies of Licensed Products are conducted by or on behalf of a Party pursuant to this Agreement, whether such Audited Sites is such Party's or its Affiliate's or contractor's (such as, in the case of Geron, under an Existing Third Party Agreement) or subcontractor's hereunder as permitted by and subject to the terms and conditions of any applicable Existing Third Party Agreement or as otherwise expressly permitted by the applicable Third Party. Each Party shall notify the other Party within [*] ([*]) Business Days after receiving notification of any Regulatory Authority inspection at any site where clinical studies or Manufacturing of clinical supplies of the Active Substance and/or Licensed Products are conducted. Each Party shall be given a reasonable opportunity (taking into account the timing and notice provided by the applicable Regulatory Authority and the terms of any applicable Existing Third Party Agreement) to assist in the preparation of the other Party's Audited Site for inspection, where appropriate, and to attend any inspection by any Regulatory Authority of the other Party's Audited Site, and the summary, or wrap-up, meeting with a Regulatory Authority at the conclusion of such inspection. If such attendance would result in the disclosure of the other Party's or its Audited Site's Confidential Information unrelated to the subject matter of this Agreement, the Parties shall enter into a confidentiality agreement covering such unrelated subject matter. In the event that any Audited Site is found to be non-compliant with one or more Applicable Laws, Good Laboratory Practice, Good Clinical Practice, Good Manufacturing Practice, or current standards for pharmacovigilance practice, the non-compliant Party (or, in the case of Geron, its applicable contractor under an Existing Third Party Agreement) shall submit to the other Party a CAPA plan within [*] ([*]) Business Days after receiving notification of such non-compliance from the non-compliant Audited Site and shall use commercially reasonable efforts to cause such non-compliant Audited Site to implement such CAPA plan promptly after submission. Each Party agrees to use commercially reasonable efforts to include in any agreement or other written arrangement

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(including any amendment to any applicable Existing Third Party Agreement), entered into after the Effective Date, with its applicable contractors or subcontractors (as the case may be), a clause permitting the other Party to exercise its rights under this Section 4.11.3.

4.12 Rights of Reference and Access to Data. Janssen shall have a Right of Reference to Geron's or its Affiliate's drug master file, if any, and any other Regulatory Filings (whether made before or during the Term hereof) Controlled by Geron anywhere in the world related to any Licensed Products, and Janssen shall also have a right to review, access and request copies of such Regulatory Filings and any Know-How (including data) therein and use such Know-How in connection with the performance of Janssen's obligations and exercise of its rights under this Agreement, including inclusion of such Know-How in its own Regulatory Filings for Licensed Products; provided, however, that with respect to Know-How obtained from a trial conducted under an IDP at Geron's expense in accordance with Section 4.9 above, Janssen's right to cross-reference or include such Know-How obtained at Geron's expense shall be subject to satisfaction of the payment obligation set forth in Section 4.9.4, if applicable. Geron hereby grants to Janssen a "Right of Reference," as that term is defined in 21 C.F.R. § 314.3(b) in the United States, or an equivalent exclusive right of access/reference in any other country or region of the world, to any Regulatory Filing, including Geron's or its Affiliate's clinical dossiers, Controlled by Geron that relates to any Licensed Product, for use by Janssen in exploitation of its Development and Commercialization rights relating to Licensed Products in the Field pursuant to this Agreement. Geron or its Affiliate shall provide a signed statement to this effect, if requested by Janssen, in accordance with 21 C.F.R. § 314.50(g)(3) or the equivalent as required in any other country or region of the world, or otherwise provide appropriate notification of such right of Janssen to the applicable Regulatory Authority. In the event Geron conducts any Development activities under a Geron IDP, Geron shall have a similar Right of Reference to Regulatory Filings Controlled by Janssen and Know-How therein solely to the extent needed for purposes of conducting Geron's activities under the Geron IDP, in the same manner as such rights are granted to Janssen under this Section 4.12, and this Section 4.12 shall apply to the Parties with respect thereto, *mutatis mutandis*.

4.13 Sharing of Costs of Development Program.

4.13.1 CDP Cost Allocation.

(a) 50/50 Sharing. Subject to Sections 4.13.3 and 4.13.4 below, the Development Costs (including Supply Costs) incurred collectively by the Parties in connection with the Lead Phase 2 MF Study and Lead Phase 2 Low-Risk MDS Study pursuant to the CDP shall be borne fifty percent (50%) by Janssen and fifty percent (50%) by Geron. For clarity, should Janssen elect to conduct any Additional Studies set forth in the Global Development Plan prior to the end of the Geron Election Period, Janssen shall bear one hundred percent (100%) of all Development Costs (including Supply Costs) incurred in connection with the conduct of any such Additional Studies, subject to reimbursement of a portion of such costs as set forth in Section 4.13.1(b) in the event Geron exercises its US Opt-In Rights.

(b) 80/20 Sharing. Upon Geron's exercise of its US Opt-In Rights under Section 2.2.2, then, subject to Section 4.8.1, the Development Costs (including Supply Costs) incurred by the Parties in connection with any Additional Studies or other Development

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activities described in the CDP (whether initiated on or before the date of Geron's exercise of the US Opt-In Rights, but for clarity excluding any Ex-US Studies or other studies under any IDP) shall be borne eighty percent (80%) by Janssen and twenty percent (20%) by Geron. Accordingly, if any Development activities under a Work Plan for any Additional Studies that become incorporated into the CDP as of Geron's exercise of its US Opt-In Rights were initiated by Janssen prior to such exercise, and Janssen paid any Development Costs incurred under the Development Budget associated therewith, including any Manufacturing costs not related to the Initial Studies, then Janssen shall provide Geron with a report of such Development Costs as part of the Geron Decision Package (as set forth in Section 2.2.1) and the Finance Working Group shall review such Janssen Development Costs incurred through the time of Geron's exercise and advise the JDC of any true-up payment, which such payment shall be owed to Janssen within [*] ([*]) days of invoice therefor,

in order to satisfy Geron's obligation to contribute twenty percent (20%) of such Development Costs incurred prior to such exercise. For clarity, the date upon which any such true-up payment due from Geron becomes payable may not be [*].

4.13.2 IDP Costs. As provided in Section 4.9.3 above and subject to Section 4.13.3(d) below, the Party performing any Development Program activities under its IDP shall be solely responsible for all costs associated therewith, subject to Janssen's payment with respect to any Proposed Trial under a Geron IDP under Section 4.9.4, or Geron's payment to Janssen with respect to any Proposed Trial under a Janssen IDP under Section 4.9.5. For clarity, in the event Geron exercises its US Opt-In Rights, while the Parties shall share the Development Costs under the CDP as set forth in Section 4.13.1(b), Janssen shall bear one hundred percent (100%) of all Development Costs (including Supply Costs) for the Ex-US Studies as such costs are incurred under one or more Janssen IDPs. For further clarity, if Geron does not exercise its US Opt-In Rights, Janssen shall bear one hundred percent (100%) of the Development Costs incurred in connection with activities conducted by or on behalf of Janssen, its Affiliates and/or its sublicensees for further Development activities as such activities are conducted under the Janssen IDP.

4.13.3 Development Budget Updates and Cost Reporting.

(a) The Parties shall use commercially reasonable efforts to update, on an annual basis, the Development Budget of the CDP for the upcoming year of the Development Program, to be approved by the JSC or agreed on in writing by the Parties (as the case may be under Section 3.7.1) no later than December 1st of each applicable year.

(b) The Finance Working Group shall advise the JDC, who shall establish reasonable financial procedures consistent with Accounting Standards and Applicable Laws for the Parties to determine estimated Development Costs for updating the Development Budget under the CDP each Janssen Calendar Quarter before its end, to enable each Party to appropriately accrue its share of Development Costs for financial reporting purposes. Each Party shall record its itemized Development Costs incurred by it and its Affiliates, and maintain such records, in accordance with Accounting Standards and in a manner to permit the Party to comply with the financial reporting procedures established by the Joint Development Committee, under the advice of the Finance Working Group, which procedures shall be consistent with the financial reporting requirements of the Parties and Applicable Laws.

(c) The Finance Working Group shall also review and advise the JDC of potential discrepancies and other finance and accounting matters related to Development Costs under the CDP. Within [*] ([*]) days after the end of each applicable Janssen Calendar Quarter, each Party shall submit to the Finance Working Group and the Joint Development Committee a report, in accordance with the established financial procedures, of all Development Costs under the CDP incurred by such Party during such Janssen Calendar Quarter. Within [*] ([*]) days following the receipt of such report, each Party shall have the right to request reasonable additional information and documentation related to the other Party's and its Affiliates' Development Costs during such Janssen Calendar Quarter in order to confirm that such other Party's spending is in conformance with the then-current Development Budget.

(d) Notwithstanding anything to the contrary herein, any license payments (including any fees, milestones, or royalties) due from Geron to any Third Party under any Pre-Existing Licenses from Third Parties or any Additional Pre-Existing Third Party Agreements (but not including any such payments resulting from modified terms under any written amendments to any such agreements entered into after the Effective Date hereof, provided that Janssen provided express written approval in advance for Geron to enter into each such amendment including the modified terms thereof, and further provided that such payments are expressly included as shared Development Costs under the CDP under this Agreement), on account of any Development of Licensed Product hereunder shall be a sole expense of Geron, and not be deemed Development Costs allocable to any extent to Janssen hereunder. In addition, any license payments (including any fees, milestones, or royalties) due under any Unblocking License Agreement shall be a sole expense of Geron (and may be treated as Credited Amounts pursuant to Section 9.8), and not be deemed Development Costs allocable to any extent to Janssen hereunder.

4.13.4 Reconciliation to Allocate Development Costs; [*] Geron Excess Development Costs.

(a) If one Party (with its Affiliates) incurs in a Janssen Calendar Quarter more than its share as provided for in Section 4.13.1 (after considering applicable financial reports as provided in Section 4.13.3) of the total actual Development Costs under the Development Budget set forth in the CDP, then such Party shall provide the other Party with an invoice for the portion of Development Costs incurred that are allocable hereunder to the other Party, and the other Party shall reimburse the invoicing Party to reconcile the allocation of Development Costs incurred in such Janssen Calendar Quarter consistent with Section 4.13.3. Any such amounts shall be due and payable [*] ([*]) days from receipt of an invoice for the applicable amount due. In addition, if any validation batches or lots of Licensed Product made under the CDP are later sold by Janssen or its Affiliates or sublicensees as commercial supply, then Janssen shall refund Geron its share of the Development Costs previously allocated under the Development Budget to the Manufacture of such batches later used for Commercialization.

(b) Notwithstanding the provisions of Section 4.13.4(a) above, if, Excess Development Costs accrue with regard to an approved Out of Budget Modification for the Development Budget for any Additional Studies in the CDP, then Geron shall have the right, upon notice to Janssen within [*] ([*]) days of Geron's receipt of an invoice for Development Costs that include any Excess Development Costs, to [*], in which event [*]. For clarity, the rights granted to Geron [*] under this Section 4.13.4(b) shall be limited to [*]. Notwithstanding anything to the

contrary herein, Geron's right under this Section 4.13.4(b) [*] shall be subject to Section 9.8, including the Balance Ceiling under Section 9.8.2. For further clarity, the provisions of this Section 4.13.4 shall not apply to any Development Costs associated with the Initial Studies.

4.14 Suspension of Clinical Study for Safety Reason. Notwithstanding anything to the contrary herein, if an Independent Safety Board determines that any clinical study of a Licensed Product ongoing in the Development Program would pose an unacceptable safety risk for any subjects or patients participating in such study, then neither Party shall be obligated to continue such clinical study. Notwithstanding Section 3.7.3, either Party may delay or suspend any Development activities with respect to an ongoing clinical study of a Licensed Product if such Party reasonably believes that such clinical study would pose such an unacceptable safety risk. For clarity, permanent discontinuance of any Initial Study (including after such study has been delayed or suspended in accordance with this Section 4.14) shall be subject to Section 3.7.3.

4.15 Records.

4.15.1 Maintenance of Research Records. Each of the Parties shall maintain, or cause to be maintained, records of any of its respective Collaboration Activities conducted by it in material compliance with Applicable Law (including the requirements of GCP, GLP and GMP, in each case to the extent applicable), and the requirements of its corporate records retention policies consistent therewith. Such records shall be complete and accurate and shall fully and properly reflect all work done and results achieved in the performance of the foregoing activities in a manner appropriate for any regulatory purpose and, when applicable and permitted under this Agreement, for use in connection with the filing of Patent Rights and the Prosecution of Patent Rights. Such records shall be retained for the longer of either: (a) such period as is required by such retaining Party's corporate record retention policies; (b) such period as may be required by Applicable Law; or (c) the Term of this Agreement, unless a Party first offers to deliver such records to the other Party for its keeping, and delivers to such Party any records it may reasonably request, before destroying or disposing of such records.

4.15.2 Access to Records. Subject to the terms and conditions of this Section, each Party shall have the right, at mutually agreed times during normal business hours on Business Days and upon reasonable notice, to obtain from the other Party access to and copies (at its own cost) of the records maintained by the other Party pursuant to Section 4.15.1 solely to the extent relating to any Active Substance, Licensed Product, or any Development, Manufacturing, or Commercialization activities hereunder, or any intellectual property or associated rights licensed or obtained hereunder, including (a) to enable the requesting Party to conduct reasonable diligence on matters potentially giving rise to liability on the part of the requesting Party according to Applicable Law or the requirements of this Agreement, or to conduct a defense of itself with respect to any such liability, if and to the extent that a fact, circumstance or event has arisen that gives the requesting Party a reasonable basis to believe that it has or may incur such liability; (b) to meet its obligations to Regulatory Authorities with respect to a Licensed Product; (c) to Prosecute or enforce any Patent Rights hereunder; or (d) otherwise exploit any rights hereunder.

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ARTICLE V: OPTIONAL CO-PROMOTION

5.1 Geron's Determination and Exercise of Co-Promotion Option.

5.1.1 The terms of this Article V shall apply to the Parties' Co-Promoting of Licensed Product hereunder following Geron's exercising of its Co-Promotion Option granted under Section 2.2.4 to Co-Promote Licensed Product by providing 20% of the Aggregate Detail Effort in the Co-Promote Territory during the Period of Innovator Protection therein, pursuant to Section 5.1.2 below.

5.1.2 At any time during the Co-Promotion Exercise Period, which for clarity shall expire [*] ([*]) days from receipt of the Geron Co-Promotion Decision Package unless extended by written agreement of the Parties, Geron shall have the right to provide Janssen with written notification (the **"Co-Promotion Exercise Notice"**) electing to exercise Geron's Co-Promotion Option under Section 2.2.4, which notice for election shall include a written certification that Geron or any Affiliate of Geron does not as of such time possess, or have any option to obtain, any rights to market or promote any pharmaceutical ingredient or drug substance which constitutes a Competing Oncology Product at the time of such election. For clarity, any written certification under the foregoing sentence shall be deemed a warranty by Geron hereunder that, to the best of its knowledge at the time of Geron's exercise of its Co-Promotion Option, neither Geron nor any Affiliate that Geron has at such time possesses, or has an option to obtain, any rights to market or promote a pharmaceutical ingredient or drug substance which constitutes a Competing Oncology Product at the time of such election. For further clarity, the Parties acknowledge that the relevant time for determining whether a particular product, for which Geron then has an option or other right to in-license, or an outright license, under an agreement with a Third Party, qualifies as a Competing Oncology Product under this Section 5.1.2, is not the Effective Date, but rather the date upon which Geron provides Janssen with such Co-Promotion Exercise Notice.

5.1.3 Following receipt of a Co-Promotion Exercise Notice from Geron as provided in Section 5.1.2, Janssen and Geron shall use good faith and commercially reasonable efforts to promptly negotiate a mutually acceptable Co-Promotion Agreement consistent with the provisions of this Article V and the terms and conditions of Exhibit N, as may be reasonably updated by Janssen. Upon the Parties' execution of the Co-Promotion Agreement and following Janssen's receipt of Regulatory Approval for Licensed Product in the Co-Promote Territory, Geron shall have the right to Co-Promote Licensed Product in the Co-Promote Territory pursuant to the US Promotional Plan (including any timeline set forth therein for Geron's commencement of Detailing activities in accordance with Section 5.2) in accordance with the terms set forth in this Article V and the Co-Promotion Agreement, provided, however, that Geron shall not permit any of its Sales Representatives to contribute any Details in the Co-Promote Territory until such time that Janssen determines, which determination shall not be unreasonably withheld or delayed, that such Geron Sales Representatives are appropriately trained and otherwise qualified to Co-Promote in accordance with Applicable Law and policies, standards, and Government Orders applicable to Janssen's own Detailing activities.

5.2 Geron Promotional Share Ramp-Up. If Geron exercises its Co-Promotion Option, then following Janssen's determination that Geron's Sales Representatives are qualified as set forth in Section 5.1.3, Geron shall, subject to this Section 5.2, use commercially reasonable efforts, according to a timeline and plan set forth in the US Promotion Plan, which shall be reasonably developed by Janssen after good-faith discussion with Geron and Janssen's consideration of Geron's comments, to ramp up the number of Geron Sales Representatives to

twenty percent (20%) of the Aggregate Detail Effort for Licensed Product in the Co-Promote Territory (such percentage, at a given time, constituting the **"Geron Promotional Share"**). In the event the Geron Promotional Share for any given period while Geron has Co-Promotion rights is less than twenty percent (20%) of the Aggregate Detail Effort under the US Promotional Plan, then Section 5.5.4 shall apply (for reconciliation purposes). For clarity, in lieu of a ramp-up of the Geron Promotional Share, with Geron's consent (which shall not be unreasonably withheld or delayed), the US Promotional Plan may provide for Geron's commencement of its share of the Aggregate Detail Effort at some time other than the actual date of First Commercial Sale of Licensed Product in the Co-Promote Territory, for example, in the event Geron is not capable of providing an adequate proportion of the Aggregate Detail Effort in the Co-Promote Territory upon Regulatory Approval therein of a Licensed Product for a [*] Indication, then, if the date of Geron's Co-Promotion Exercise Notice is less than [*] year before the projected First Commercial Sale of a Licensed Product in the Co-Promote Territory, the US Promotional Plan may provide that such commencement occur on a date that is up to [*] ([*]) months after such Regulatory Approval for the [*] Indication or that follows Regulatory Approval of a Licensed Product for a [*] Indication in the Co-Promote Territory.

5.3 Booking of Sales. For the avoidance of doubt, Janssen (or its Affiliate or Third Party sublicensee, as applicable) will book all sales generated through Geron's Co-Promoting activities in the Co-Promote Territory.

5.4 Governance of Co-Promotion; US Promotional Plan.

5.4.1 The JMC shall have oversight responsibility for the Parties' Detailing activities in the Co-Promote Territory under the Co-Promotion Agreement and the US Promotional Plan, and shall be composed of senior sales managers, marketing managers, and healthcare compliance representatives from each Party having knowledge about Promoting drug products in the Co-Promote Territory, including with respect to compliance with Health Care Laws. Promptly after the Parties execute the Co-Promotion Agreement, the JMC shall establish, and each Party shall appoint an equal number of representatives to, a Compliance Working Group reporting to the JMC to advise it and the JSC on Health Care Laws and Drug Regulation Laws pertaining to Co-Promotional activities of the Parties, including with respect to the implementation of measures for adherence to Janssen's compliance program and policies.

5.4.2 Following the execution of the Co-Promotion Agreement, the Joint Marketing Committee shall in due course review and discuss the US Promotional Plan as developed by Janssen, and shall, subject to the terms and conditions hereof, recommend to the Parties any amendments or updates thereto, including for purposes of reasonably allocating responsibilities toward the Aggregate Detail Effort between the Parties' respective Sales Representatives based on the Geron Promotional Share. The US Promotional Plan for a given Janssen Calendar Year, following Geron's exercise of Co-Promotion rights and the First Commercial Sale of a Licensed Product in the Co-Promote Territory, shall include the Aggregate Detailing Effort as well as the share (number of Details) to be contributed by each Party, accounting for any ramp-up to a 20% Geron Promotional Share pursuant to Section 5.2. The US Promotional Plan shall further address the allocation of Details in the Co-Promote Territory based on reasonable factors (strategic or otherwise) such as geographic/regional considerations and lists of healthcare providers to be targeted for Detailing, with Janssen using reasonable efforts to

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provide Geron's Sales Representatives with a reasonable opportunity for Detailing to high value prescribers, subject to Janssen's overall sales deployment strategy.

5.5 Allocation and Payment of Promoting Costs.

5.5.1 Allocation without Co-Promotion. If Geron has exercised its US Opt-In Rights, but does not have Co-Promotion rights hereunder (e.g., because it did not exercise such Co-Promotion rights or did not qualify for such Co-Promotion, or because such Co-Promotion rights have terminated), then Janssen shall remain responsible for eighty percent (80%), and Geron shall remain responsible for twenty percent (20%), of the Promoting Costs incurred by Janssen in Promoting Licensed Products in the United States pursuant to the US Promotional Plan while there is Innovator Protection therein (the **"Geron Promotional Funding Amount"**). Janssen shall invoice Geron for such Geron Promotional Funding Amount at the end of each Janssen Calendar Quarter, and Geron shall pay such invoice within [*] ([*]) days of receipt thereof. Notwithstanding the foregoing, if Janssen makes any changes to the US Promotional Plan that in the aggregate result in a percentage increase to the Geron Promotional Funding Amount for a given Janssen Calendar Year above the Promotional Budget Variance Ceiling, then Geron shall have the right, upon notice to Janssen within [*] ([*]) days of Geron's receipt of such invoice, to [*], in which case [*]. Notwithstanding anything to the contrary herein, Geron's right under this Section 5.5.1 [*] shall be subject to Section 9.8, including the Balance Ceiling under Section 9.8.2.

5.5.2 No Reimbursement with Full Co-Promotion. Where Geron is exercising its Co-Promotion rights hereunder, in any Janssen Calendar Quarter in which the Geron Promotional Share is twenty percent (20%) of the Aggregate Promotion Effort under the US Promotional Plan, Janssen shall be responsible for its Promoting Costs or any other costs it incurs in providing its requisite eighty percent (80%) of the Aggregate Promotion Effort under the Co-Promotion Agreement, and Geron shall be responsible for all Promoting Costs or any costs it incurs in providing its requisite twenty percent (20%) of the Aggregate Promotion Effort under the US Promotional Plan. For clarity, each of (i) Geron, and (ii) Janssen except for Geron's obligation to reimburse any Promoting Costs due under Section 5.5.4 if the Geron Promotional Share is less than 20%, shall have sole responsibility for all costs and expenses incurred in connection with activities and other work performed by such Party's Sales Representatives hereunder, including salaries, travel expenses and other expenses, providing benefits, deducting federal, state and local payroll taxes, FICA contributions, FUI, DUI and any similar taxes and paying workers' compensation premiums, unemployment insurance contributions and any other payments required by Applicable Laws to be made on behalf of such Party's employees. Nothing in the Agreement shall be construed to conclude that any of a Party's Sales Representatives are agents or employees of the other Party. Without limiting any of its obligations hereunder, each Party shall have sole authority over the terms and conditions of employment of its Sales Representatives, including their hiring, supervision, compensation (including from any incentive plans), discipline, and discharge.

5.5.3 Responsibility for Compensating Sales Representatives. For the avoidance of doubt, if Geron timely delivers a Co-Promotion Exercise Notice, Geron and Janssen each shall be solely responsible for any additional costs incurred in support of Geron's Sales Representatives, or Janssen's Sales Representatives, which are other than those Promoting Costs that are consistent with the US Promotional Budget (including Sales Representative training and supplies of Approved Materials). Each Party shall be solely responsible for any compensation that

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is due to its Sales Representatives in connection with their work hereunder. Each Party hereby represents and warrants that its compensation programs for its Sales Representatives will not, during the time of any Promotion of Licensed Product hereunder, provide financial incentives that, to its knowledge, facilitate the Promotion or Detailing of Licensed Product in violation of any Applicable Law. Geron shall not use a materially different compensation structure for its Sales Representatives than Janssen's compensation structure for its respective Sales Representatives co-Detailing Licensed Products in the Co-Promote Territory hereunder.

5.5.4 Reconciliation for Co-Promoting Ramp-Up or Shortfall. Geron shall provide Janssen with a report for each Janssen Calendar Quarter during which Geron's Sales Representatives performed any Details hereunder, in accordance with Detailing reporting procedures to be established by the JMC under advice of the Finance Working Group, itemizing the Details contributed by Geron under the US Promotional Plan. The Finance Working Group shall review Geron's quarterly Detail reports for a given Janssen Calendar Year while there is Innovator Protection in the Co-Promote Territory, and advise the JMC of any true-up of Promoting Costs owed to Janssen to satisfy Geron's obligation to contribute the equivalent of 20% of the Sales Representative Details during such year in which any Co-Promoting occurs hereunder. Subject to Section 5.5.1, Janssen shall invoice Geron for such Promoting Costs due for each such Janssen Calendar Year, which shall be payable by Geron within [*] ([*]) days of receipt thereof.

5.6 No Subcontracting. Geron's right to Co-Promote by providing Sales Representatives for Detailing under its US Opt-In Rights hereunder is personal and limited to Geron, and may not be delegated to, or otherwise performed under contract by, any Third Party, except as otherwise may be agreed upon by the Parties in the Co-Promote Agreement or otherwise.

5.7 Co-Promotion Diligence; Projected Detail Shortfalls.

5.7.1 Each Party shall use commercially reasonable efforts to perform its Detailing activities (including those involving use of any Approved Materials or Product Samples) in the Co-Promote Territory according to the requirements of the US Promotional Plan, the Co-Promotion Agreement, and in accordance with all Applicable Laws, including Health Care Laws. All Details carried out hereunder by Geron shall be (a) by employees on the payroll of Geron and (b) of a quality equivalent to that provided by Janssen as measured by the same performance standards. No employer-employee relationship shall exist between Janssen and any of Geron's Sales Representatives.

5.7.2 If a Party believes or expects that it will be unable to provide through its Sales Representatives' Details meeting its share of the Aggregate Detailing Effort required to be provided by it for a Janssen Calendar Year pursuant to the US Promotional Plan, it shall promptly notify the other Party and the JMC.

5.8 Training. At a location to be mutually selected by the Parties, Janssen shall provide, at Geron's expense, training (including provision of training materials) to all Geron Sales Representatives on the Detailing of any Licensed Product in the Co-Promote Territory at a level comparable to the training provided to Janssen's own Sales Representatives promoting such Licensed Product in the Co-Promote Territory. Geron shall be responsible for ensuring that its own Sales Representatives are able to perform Detailing as trained, and able to comply with this

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Agreement and the Co-Promote Agreement, all Applicable Laws, industry codes of conduct, and Janssen's policies regarding Detailing, before permitting them to engage in Detailing of the Licensed Product in the Licensed Territory. Notwithstanding the foregoing, Janssen shall have the right to have Geron suspend Detailing of Licensed Products by any of its Sales Representatives if Janssen, in its sole, good faith and reasonable judgment, has any concern regarding their performance with respect to any such compliance matter.

5.9 Promotional Materials. Janssen shall provide Geron, at Geron's expense, with sufficient quantities of Approved Materials to enable Geron's Sales Representatives to perform the Co-Promotional Details in the Co-Promote Territory in accordance with the US Promotional Plan; provided, however, that Janssen shall not be obligated to provide any quantities of Approved Materials beyond those quantities that are sufficient to provide each Sales Representative of Geron with the same quantity of such materials as are provided to each of Janssen's Sales Representatives. Janssen shall have sole responsibility for developing any Approved Materials to be used under the US Promotional Plan so as to be in compliance with all Applicable Laws. Geron shall use only the Approved Materials as provided by Janssen, and Geron shall not alter or in any way modify any of the Approved Materials, nor shall it supplement or substitute any such Approved Materials with its own materials.

5.10 Product Samples. Janssen shall provide Geron with sufficient quantities of Licensed Product samples to enable Geron's Sales Representatives to perform the Co-Promotional Details in accordance with the US Promotional Plan; provided, however, that Janssen shall not be obligated to provide any quantities of samples beyond those quantities that are sufficient to provide each Sales Representative of Geron with the same quantity of samples as are provided to each of Janssen's Sales Representatives. Janssen shall have sole responsibility for manufacturing such samples in compliance with Applicable Laws, including cGMP requirements. Geron shall not alter or in any way modify any of the samples (including their packaging and labeling), nor

shall it supplement or substitute any such Janssen samples with its own samples. Each Party shall distribute samples and promotional materials in compliance with all Applicable Laws, and in furtherance thereof, each Party shall establish, maintain, and adhere to written procedures for Detailing in the Co-Promote Territory to assure that such Party and its Sales Representatives comply with all legal requirements. Geron shall notify Janssen promptly upon learning that any samples shipped by Janssen have been lost or have not been received as scheduled. Geron shall maintain Co-Promotion records as required by Applicable Law and shall allow representatives of Janssen to inspect such records on request. Upon [*] ([*]) days written notice to Geron, Janssen shall be entitled to conduct an inspection and audit of Geron's sample distribution practices by its Sales Representatives and any facilities where samples are stored by Geron. Such inspection and audit shall be made in accordance with Applicable Laws, no more than once per year. Janssen shall be responsible for supplying Sales Representatives with Approved Materials and samples for use in Detailing under the US Promotional Plan.

5.11 Promoting Limitations. Each Party shall instruct its Sales Representatives to do, and shall monitor its Sales Representatives so that such personnel do, the following: (a) limit claims of efficacy and safety for any Licensed Product to those claims that are consistent with approved promotional claims in (and not add, delete, or modify claims of efficacy and safety in the promotion of the Licensed Product in any respect from those claims of efficacy and safety that are contained in) the product labeling for the Licensed Product as approved by the applicable

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Regulatory Authority; (b) not make any changes in Approved Materials provided by Janssen, and use the Approved Materials in a manner that is consistent with both Applicable Law and with the product labeling for the Licensed Product as approved by the applicable Regulatory Authority; and (c) promote and Detail the Licensed Product in adherence in all material respects with all Applicable Laws and, to the extent consistent therewith, corporate policies applicable to Detailing and applicable industry standards in the Co-Promote Territory.

5.12 Risk Management; Returns; Customer Support; Compliance Matters.

5.12.1 Risk Management Systems. Each Party shall cause its Sales Representatives to act in strict adherence with any applicable risk management systems maintained by Janssen for the Licensed Product, to the extent Geron is made aware of such risk management system by Janssen (including through meetings of the JMC or the Compliance Work Group).

5.12.2 Returns; Customer Support. For the avoidance of doubt, Janssen (directly or through any of its Affiliates or Third Party sublicensees) shall be responsible for handling all returns of any Licensed Product being Commercialized by or on behalf of Janssen hereunder. If any such Licensed Product is returned to Geron, then Geron shall promptly ship such Licensed Product, with all other information and materials as received, to Janssen or its designated Affiliate. Geron, if requested by Janssen, shall inform any customer returning such a Licensed Product that it has been returned to Janssen. Janssen (directly or through any of its Affiliates or Third Party sublicensees) shall be responsible for providing all customer support, handling medical queries, and responding to product and medical complaints relating to any Licensed Product Commercialized by or on behalf of Janssen hereunder.

5.12.3 Efforts. Each Party shall use commercially reasonable efforts to execute and to perform, or cause to be performed, the Co-Promotion activities assigned to it under the US Promotional Plan in a diligent manner in compliance with Applicable Laws, including Health Care Laws and the then-current standards for pharmacovigilance practice. Notwithstanding anything to the contrary contained herein, a Party shall not be obligated to undertake or continue any Co-Promotion activities with respect to the Licensed Products if such Party reasonably determines that performance of such Co-Promotion activity would violate Applicable Laws, in which event it shall promptly notify the other Party and the JMC, who shall thereafter convene a meeting in the presence of the Compliance Working Group to discuss potential remedial measures (including by way of any amendment to the US Promotional Plan).

5.12.4 Compliance with Applicable Laws. Each Party shall cause its Sales Representatives to comply with Applicable Laws related to the performance of its obligations under this Agreement and the Co-Promote Agreement, including Drug Regulation Laws, the Federal and State Anti-Kickback Statutes, and all applicable regulations thereunder, applicable AMA and PhRMA Guidelines, as well as any relevant codes of practice.

5.13 Co-Promotion Progress Reports.

5.13.1 Day-to-Day Responsibility. Each Party shall be responsible for day-to-day implementation of its Co-Promotion activities for which it (or with respect to Janssen only, its

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Affiliate) has or otherwise is assigned responsibility under the US Promotional Plan and shall keep the JMC and the other Party reasonably informed as to the progress of such activities.

5.13.2 Reports. Each Party shall provide the JMC a report for each Janssen Calendar Quarter during which such Party's Sales Representatives performed any Co-Promoting hereunder, in accordance with Detailing reporting procedures to be established by the JMC under advice of the Compliance Working Group and Finance Working Group, itemizing the Details contributed by the Party under the US Promotional Plan. If a Party fails to adequately provide such report at a meeting of the Joint Marketing Committee, the other Party may request, and such Party will provide to such other Party, a written progress report that includes information regarding Co-Promotion activities in support of Janssen's Commercialization in the Co-Promote Territory and any other information within its Control as is reasonably necessary to convey a reasonably comprehensive understanding of the status or results of the Co-Promotion activities and compliance with the terms hereof and the Co-Promote Agreement.

5.14 Medical Affairs Responsibility. Janssen shall have sole responsibility for Medical Affairs activities, including responding to all medical questions or inquiries related to any Licensed Product directed to any Party's personnel, such as any that may arise during the performance by Geron of the Co-Promotion Detailing hereunder. Janssen shall ensure that the field based medical science liaisons for each Licensed Product are equally distributed to the Parties' respective Sales Representatives on a pro-rata basis.

5.15 Voluntary Termination of Co-Promotion. Geron may elect to cease its Detailing of the Licensed Products and terminate the Co-Promotion Agreement upon one hundred eighty (180) days advance written notice to Janssen. After any such election, Geron shall cooperate with Janssen, at Janssen's reasonable request, to transition responsibility for providing the then-current Geron Promotional Share of such Detailing of the Licensed Product in the Co-Promote Territory from Geron to Janssen, and thereafter Geron will no longer have the right or obligation to Detail such Licensed Product in the Co-Promote Territory and instead Geron shall reimburse Janssen for twenty percent (20%) of the Promoting Costs incurred by Janssen as provided in Section 6.5.1 (after Geron discontinues its Detailing activities), as if as of such time Geron had not exercised its Co-Promotion Option and had only exercised its US Opt-In Rights.

5.16 Termination of Co-Promotion for Cause. Without limitation of any rights or recourse otherwise provided under this Agreement or any remedy that may be available under Applicable Law, Janssen shall have the right to terminate, upon written notice to Geron, Geron's right to Co-Promote in the Co-Promote Territory and the Co-Promotion Agreement, as follows (in each case upon each occurrence of the specified event with respect to Geron or its permitted successor):

5.16.1 in the event there has occurred a material breach by Geron of any of its obligations under Article V hereof (including in regards to its Co-Promotional Detailing) or the Co-Promotion Agreement, provided that Janssen shall have provided, promptly after becoming aware of such breach, notice thereof to Geron identifying such breach and Geron shall have failed to cure such breach or default (if curable) within [*] ([*]) days from the date Geron received such notice;

5.16.2 in the event there is a Change of Control of Geron (or any permitted successor in interest or a controlling Affiliate thereof), except in the event that either (a) at the time of such Change of Control Geron is contributing, and for at least [*] ([*]) successive months has been contributing, twenty percent of the Aggregate Sales Effort to Co-Promotional Detailing of Licensed Product in the Co-Promote Territory, or (b) such Change of Control of Geron involves the acquisition by, or merger, consolidation, share exchange, business combination, recapitalization, sale of a majority of assets or similar transaction with, an un-Affiliated entity (the **"Acquiror"**) that, together with such entity's Affiliates existing as of the time immediately preceding the Change of Control, has fewer than [*] ([*]) sales representatives detailing human pharmaceutical products on behalf of itself, its Affiliates, and/or any Third Parties, provided that in such event described in subsection (b), Geron shall continue to carry on its Co-Promoting obligations under the US Co-Promotion Plan in the Co-Promote Territory using previously qualified Sales Representatives employed by Geron immediately before such Change of Control, until the party (whether Geron or the Aquiror) employing such Sales Representatives upon the Change of Control enters into a Co-Promotion Agreement with Janssen (which upon execution shall supersede the prior Co-Promotion Agreement) and assumes Geron's obligations under this Article V, whether through any such previously qualified Sales Representatives and/or newly qualified Sales Representatives, provided that, in addition to the exceptions set forth above, in the event such Change of Control results from an event described in Section 1.29(c), Janssen may exercise its termination right under this Section 5.16.2 only if the directors constituting the majority of the seats (other than vacant seats) on the board of directors (or similar governing body of Geron) immediately after such Change of Control event are affiliated with or employed by a pharmaceutical or biotechnology company;

5.16.3 in the event of Geron's Bankruptcy;

5.16.4 in the event Geron or an Affiliate thereof (a) is developing in Phase 2 or later clinical trials a Competing Oncology Product in the Field for one or more Indication(s) for which the Licensed Product is then being Developed or has obtained Regulatory Approval, or (b) is offering for sale, selling, marketing, or promoting a Competing Oncology Product, or (c) is collaborating with or assisting a Third Party to so develop or so commercialize such a Competing Oncology Product (in each case (a), (b) or (c), including the conduct of such activities by Geron or its Affiliate with respect to any particular product which first qualifies as a Competing Oncology Product due to a change in the identification of the primary or predominant mechanism of action of such a product, causing such product to so qualify as a Competing Oncology Product, provided that in such case Geron or its Affiliate shall have at least [*] ([*]) days to cease the activities set forth in (a), (b) or (c) before Janssen shall have the right to terminate Geron's right to Co-Promote in the Co-Promote Territory and the Co-Promotion Agreement hereunder); or

5.16.5 in the event that, after Geron fails to contribute at least [*] percent ([*]%) of its share of the Aggregate Detail Efforts toward Detail targets as specified in the US Promotional Plan for two or more consecutive Janssen Calendar Quarters, Janssen notifies Geron in writing of such Detail shortfall, and Geron fails to remedy such Detail shortfall within [*] ([*]) days of Janssen's notice of the Geron Detail shortfall.

5.17 Records. On a monthly basis, Geron shall provide Janssen with a comprehensive electronic medium record of its Details during the prior month and reflecting Geron's district and

regional configuration in the Co-Promote Territory, and Details actually delivered or performed compared to the Details required under the US Promotional Plan. Each such monthly Co-Promotion Report shall be due to Janssen within [*] ([*]) days after the end of each month while there is Innovator Protection in the Co-Promote Territory.

5.18 Oversight of Co-Promotion. Promptly after delivery of the Co-Promotion Exercise Notice, the JMC shall establish, and each Party shall appoint an equal number of representatives to, a Working Group reporting to the Joint Marketing Committee, which shall have oversight responsibility for the Parties' Detailing activities in the Co-Promote Territory under the Co-Promotion Agreement and the US Promotional Plan, and shall be composed of senior sales managers, marketing managers, and healthcare compliance representatives from each Party having knowledge about Promoting drug products in the Co-Promote Territory, including with respect to compliance with Health Care Laws.

ARTICLE VI: COMMERCIALIZATION

6.1 Commercial Diligence. On a country-by-country basis, until expiration of the Royalty Term, commencing upon Janssen obtaining [*] Regulatory Approval for a Licensed Product in any country, Janssen shall use Diligent Commercialization Efforts to Commercialize such Licensed Product in such country.

6.2 Responsibilities. Subject to Geron's Co-Promotion Option and except as may be otherwise expressly set forth in this Agreement, including Article V, or the Co-Promotion Agreement, Janssen shall be solely responsible (directly and through its Affiliates and any sublicensees) for all Commercialization activities in the Territory with respect to any Licensed Products in exploitation of its license rights granted under Section 2.1 as well as all business decisions in connection therewith, subject to the terms of this Agreement, including Geron's Co-Promote Option rights**,** including those relating to the Manufacturing, distribution, price, and packaging of the Licensed Product. Subject to Section 6.1, each decision whether and when to commercially launch a Licensed Product in any particular country or jurisdiction of the Territory shall be within the discretion of Janssen (acting directly or through its Affiliates and sublicensees). Janssen, directly and through its Affiliates and Third Party sublicensees, will book all sales of Licensed Products made hereunder. Geron acknowledges that nothing herein prohibits Janssen from donating supplies of Licensed Product for humanitarian or charitable purposes.

6.3 Trademarks. Janssen (directly or through its Affiliates and sublicensees) will select its own trademarks under which it will market Licensed Products hereunder and will own the Trademark Rights associated therewith.

6.4 Promotional Plans and Marketing Plans.

6.4.1 Promotional Plans Where Geron has Exercised US Opt-In Rights. In the event Geron has exercised its US Opt-In Rights, then (a) the Joint Marketing Committee shall in due course review and discuss the US Promotional Plan as developed by Janssen, subject to the terms and conditions hereof, and (b) for any and all countries, other than the United States, for which Regulatory Approval of a Licensed Product is obtained by Janssen (directly or through any of its Affiliates and Third Party sublicensees), Janssen shall develop the Independent Promotional

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Plan, a summary of which shall be provided to Geron on an annual basis. If Geron has exercised its US Opt-In Rights, then in the case that Geron has not exercised its Co-Promotion Option then the initial US Promotional Plan shall include the Aggregate Detail Effort and number of Details to be conducted by Janssen, or in the case that Geron has exercised its Co-Promotion Option then the initial US Promotion Plan shall include the Aggregate Detail Effort and number of Details to be conducted by each Party consistent with the Geron Promotional Share, in each case for the period following Regulatory Approval of the Licensed Product in the United States through the end of the [*] full Janssen Calendar Year thereafter, as follows (unless otherwise agreed by the Parties in writing): (a) at least [*] percent ([*]%) of the Details for Licensed Product in United States for the [*] year following the First Commercial Sale of the Licensed Product therein will be First Position Details and the remaining [*] percent ([*]%) will be Second Position Details; and (b) at least [*] percent ([*]%) of the Details for such Licensed Product in the United States for the [*] year following such First Commercial Sale will be First Position Details and the remaining [*] percent ([*]%) will be Second Position Details. For the avoidance of doubt, the foregoing sentence does not prohibit either Party's Sales Representatives from detailing any product other than a Licensed Product as a Third Position Detail.

6.4.2 Promotional Plans Where Geron has not Exercised US Opt-In Rights. In the event Geron has not exercised its US Opt-In Rights, then (a) for both the United States and for any countries, other than the United States, for which Regulatory Approval of a Licensed Product is obtained by Janssen (directly or through any of its Affiliates and Third Party sublicensees), Janssen shall develop the Independent Promotional Plan, a summary of which shall be provided to Geron on an annual basis.

6.4.3 Marketing Plans. Regardless of whether or not Geron has exercised its US Opt-In Rights, following Regulatory Approval of a Licensed Product for any Major Market Country, Janssen shall provide to Geron a report on an annual basis summarizing on a high level, to the extent permitted by Applicable Law, Janssen's marketing plans for the Licensed Product in such country pertaining to medical affairs, launch preparation, and branding.

6.5 Shared Promoting Costs in the United States.

6.5.1 80/20 Allocation. Upon Geron's exercise of its US Opt-In Rights, and where Geron has not timely delivered a Co-Promotion Exercise Notice or during such time that Geron is not providing any Sales Representatives toward Detailing in the Co-Promote Territory if it has exercised its Co-Promotion Option, then the Promoting Costs incurred thereafter by Janssen in connection with Detailing in the US under the US Promotional Plan pursuant to the US Promotional Budget shall be borne eighty percent (80%) by Janssen and twenty percent (20%) by Geron while there is Innovator Protection in the US and thereafter (upon expiration of Geron's Co-Promotion rights if exercised) borne solely by Janssen.

6.5.2 Reporting of Promoting Costs. Upon Geron's exercise of its US Opt-In Rights, the Finance Working Group shall advise the JMC, who shall establish reasonable financial procedures consistent with Accounting Standards and Applicable Laws for the determination of estimated Promoting Costs for updating the US Promotional Budget under the US Promotional Plan each Janssen Calendar Quarter before its end, to enable each Party to appropriately accrue its share of Co-Promoting Costs for financial reporting purposes. Janssen

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shall record its itemized Promoting Costs incurred by Janssen, directly or through its Affiliates, and maintain such records, in accordance with Accounting Standards and Applicable Laws.

6.5.3 Payment. Any amounts owed by Geron to Janssen under this Section 6.5 shall be due and payable [*] ([*]) days from Geron's receipt of an invoice from Janssen for the applicable amount due.

ARTICLE VII: CLINICAL SUPPLY AND PRODUCT MANUFACTURE

7.1 Responsibility for Manufacture. As between Janssen and Geron, Janssen shall be responsible (directly and through its Affiliates and any sublicensees) for overseeing and managing all Licensed Product Manufacturing activities hereunder, including with respect to: (a) Manufacturing and having Manufactured (including by Geron through its Third Party contractors under the Current Manufacturing Contracts and by any Third Party under a subcontract hereunder) of, clinical supplies of Licensed Products for clinical studies under the Global Development Plan; and (b) Manufacturing and having Manufactured its supply of Licensed Products otherwise for the Development (subject to Section 4.13) and/or Commercialization during the Term. Geron shall reasonably cooperate with Janssen to secure the cooperation of Geron's Third Party contractors under any Current Manufacturing Contracts or other Existing Third Party Agreements, as further provided below, provided that Geron's obligation to procure supply of the Licensed Product (including through its Third Party contractors) shall in any event cease at the end of the [*] ([*])-month period after the Effective Date. For the avoidance of doubt, the Parties' responsibility for clinical Supply Costs included in the Development Costs shall remain in any event as provided in Section 7.2 and Section 7.1.3.

7.1.1 Existing Manufacturing Subcontractors. Promptly after the Effective Date, Geron shall use commercially reasonable efforts to assign or otherwise transfer to Janssen material rights and obligations (for the avoidance of doubt, excluding any obligation to make any payments to Third Parties accrued by Geron prior to such assignment or transfer) under those Current Manufacturing Contracts to be selected by the Parties, under terms and conditions to be mutually agreed by the Parties and set forth in the Manufacturing Agreement, subject to the agreement by the applicable counterparties to the Current Manufacturing Contracts to such assignment or transfer on such terms and conditions mutually acceptable to the Parties and such counterparty, after the Effective Date. Upon written agreement of the Parties and the applicable counterparty to any Current Manufacturing Agreement to assign it to Janssen or to supersede it with a replacement agreement with terms and conditions mutually acceptable to the Parties, Janssen shall be the Party solely responsible for the managing of the Manufacture of Licensed Product with such counterparty under the applicable agreement, including with respect to any audits of any Manufacturing sites utilized by such counterparty under the applicable agreement.

7.1.2 Technical Transfer. Promptly after the Effective Date, Geron shall promptly transfer, and shall use commercially reasonable efforts to cause its Third Party contractors under applicable Existing Third Party Agreements (including the Current Manufacturing Contracts) to promptly transfer (as permitted by and subject to the terms and conditions of any applicable Existing Third Party Agreement or as otherwise expressly permitted by the applicable Third Party), to Janssen and/or its designated Affiliate and/or Third Party subcontractor records or copies of all CMC Know-How within the Geron Product Know-How and

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Geron Assay Know-How to the extent such Know-How is in Geron's possession or can be obtained by Geron expending commercially reasonable efforts to obtain such Know-How in the possession of any such Third Party contractor. All such CMC Know-How transferred hereunder or developed in the Development Program shall be treated by each Party as the other Party's trade secret Confidential Information under Article XI of this Agreement. The JSC shall oversee such transfer in a manner that ensures the timely and efficient transition to Janssen and its Affiliates or subcontractors of all such Know-How (whether such CMC Know-How or Geron Assay Know-How) relating to the Manufacture of GRN163 or GRN163L developed as of the Effective Date necessary or useful for the Manufacture or characterization of such Licensed Product in accordance with Applicable Laws for Development, Commercialization and other purposes as contemplated hereunder. Geron shall bear its internal expenses incurred by Geron in transferring any such Know-How (including any payments due to its counterparties under any Current Manufacturing Contracts or Pre-Existing Licenses from Third Parties); for clarity, such costs associated with the Know-How transfer under this Section 7.1.2 shall not be deemed Development Costs.

7.1.3 Termination of Manufacturing Subcontractors. At any time after Janssen (directly or through an Affiliate) is having supplies of the Licensed Product Manufactured by a Third Party subcontractor (including by virtue of any assignment or superseding agreement with respect to a Current Manufacturing Contract once held by Geron) to meet any Development needs hereunder, Janssen may elect to terminate any such subcontract or negotiate any required amendment to wind-down or terminate any such subcontract. Unless otherwise agreed by the Parties in writing (including in a Manufacturing Agreement), all Out-of-Pocket Costs (e.g., cancellation fees and/or non-cancellable payment obligations) resulting from any such termination or winding-down of a Current Manufacturing Contract shall be deemed Development Costs associated with the Initial Studies and borne by the Parties equally, provided, however, that before a Party takes any action to terminate or wind-down any Current Manufacturing Contract, it shall first provide the other Party with an estimate of any such Out-of-Pocket Costs expected to become due as a result of taking such action and an opportunity to comment thereon, which comments shall be provided within [*] ([*]) Business Days of receipt of such estimate.

7.2 Clinical Supply for Clinical Studies under Development Plan.

7.2.1 Cost of Clinical Supply for Clinical Trials under CDP. Unless agreed otherwise by the Parties in the Manufacturing Agreement pursuant to Section 7.2.3, Supply Costs for clinical supplies for Licensed Products for use in clinical studies under the CDP shall be allocated the same as other Development Costs as provided in Section 4.13. For clarity: (a) as reflected in Section 4.13.1(a), each Party shall be responsible for fifty percent (50%) of the Supply Costs of all clinical supplies of Licensed Products needed for conducting the Lead Phase 2 MF Study and Lead Phase 2 Low-Risk MDS Study pursuant to the CDP; and (b) Janssen shall bear eighty percent (80%), and Geron shall bear twenty percent (20%), of the Supply Costs of all clinical supplies of Licensed Products needed for conducting Additional Studies under the CDP pursuant to the Development Budget(s), such as US Studies if Geron has

exercised its US Opt-In Rights. Geron shall be solely responsible for any license payments (including any fees, milestones, or royalties) due to a Third Party under any Unblocking License Agreement.

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7.2.2 Cost of Clinical Supply for Clinical Trials under IDPs. A Party conducting any clinical studies of any Licensed Product under its Independent Development Plan shall be solely responsible for all Supply Costs associated with the acquisition of clinical supplies of Licensed Product for such studies. For any clinical trial under a Geron IDP, the Parties shall enter into a clinical supply agreement that shall include terms related to compensation to Janssen for the supply, management and distribution of clinical supplies of Licensed Product for such trial, and prioritizing supply to any ongoing trials under the CDP ahead of any IDP clinical trials (either Janssen's or Geron's) in the event of a shortage of clinical supplies of Licensed Product.

7.2.3 Manufacturing Supply Agreement. The Parties shall use commercially reasonable efforts to, within [*] ([*]) months of the Effective Date develop a transitional manufacturing plan and Supply Costs budget for the Initial Studies, and within [*] ([*]) months thereafter or such other time as the Parties may agree, enter into a written Manufacturing Agreement to reflect the status of any negotiations in reference to proposed transfers or amendments of any Current Manufacturing Contracts under Section 7.1.1, and which may also include an amendment to the CDP, as necessary, to update the manufacturing plan and Supply Costs budget for the Initial Studies, and provide a manufacturing plan and Supply Costs budget for the Additional Studies, subject to Section 3.7.1 if such amendment results in an increase to the Development Budget greater than the Budget Variance Limit, and any other studies in any Janssen IDP and/or Geron IDP.

7.3 Commercial Supply. Except as expressly provided otherwise herein (including under Section 8.4.3), Janssen shall be solely responsible, at its sole cost and expense to Manufacture, have Manufactured, or otherwise supply all Licensed Products for its Commercialization purposes hereunder.

7.4 Quality Assurance.

7.4.1 Compliance with Laws. Supplies of Licensed Products for human use in any Development or Commercialization activities hereunder shall be Manufactured in compliance with (a) all Applicable Laws relating to GMP; (b) all Applicable Laws relating to the safety, preservation or protection of human health and the environment (including workplace safety, ambient air, surface water, groundwater, land, or subsurface strata) and/or relating to the handling, treatment, transportation or disposal of waste; and (c) the policy of Janssen and its Affiliates on the employment of young persons attached as Exhibit L, as such policy may be updated by notice to Geron. Following transition of all Manufacturing responsibility to Janssen pursuant to Section 7.1, Janssen's quality assurance personnel shall be primarily responsible for ensuring compliance with this Section 7.4.1, including through inspections as provided in Section 7.4.2.

7.4.2 Inspections. With respect to any Manufacturing facility or site at which any Party or any of its Affiliates, Third Party sublicensees, or Third Party (sub)contractors (including under the Current Manufacturing Contracts, whether or not they are transferred to Janssen) is Manufacturing clinical supply of any Licensed Product (whether in bulk active ingredient or finished product form) under this Agreement, the other Party shall have the right, at its expense, upon reasonable written notice provided to the Party Manufacturing or having Manufactured such supply (i.e., the audited Party) and the Audited Site, if a Third Party, and during normal business hours, and as permitted by and subject to the terms and conditions of any applicable Existing Third

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Party Agreement (or as otherwise expressly permitted by a Third Party contractor), to inspect such Audited Site and any records relating thereto once per year, or more often with cause, to verify compliance with the terms of this Agreement and Applicable Laws and GMP, which inspection shall be subject to the confidentiality provisions of this Agreement. If such inspection would result in the disclosure of the Audited Site's Confidential Information unrelated to the subject matter of this Agreement, the Parties (and any applicable Third Party) shall enter into a confidentiality agreement covering such unrelated subject matter. After any such inspection, the auditing Party shall provide written observations to the audited Party, who shall within [*] ([*]) days thereafter provide, or cause its applicable Affiliate or Third Party sublicensee, contractor or subcontractor to provide, written responses to such observations including a proposed CAPA plan, and such response shall include all observations provided by the auditing Party. The JDC shall promptly review the proposed CAPA plan and decide upon a final CAPA plan for implementation by the Audited Site, and provide such final CAPA plan to the audited Party. The audited Party shall thereafter promptly provide such CAPA plan to the Audited Site and use commercially reasonable efforts to cause the Audited Site to implement the CAPA plan promptly after receipt.

ARTICLE VIII: FINANCIAL PROVISIONS

8.1 Upfront and Continuation Payments.

8.1.1 Upfront. In partial consideration of the rights granted to Janssen under this Agreement, an upfront payment in the amount of thirty-five million dollars (US) ($35,000,000) shall be due from Janssen to Geron upon the Effective Date and payable within [*] ([*]) days thereof.

8.1.2 Continuation Fee. In consideration of Janssen's continuation of license rights granted under Section 2.1.1 and 2.1.2, a continuation fee in the amount of sixty-five million US dollars ($65,000,000) shall be due from Janssen to Geron upon Janssen's delivery of a Continuation Notification (or Geron's deemed receipt thereof) pursuant to Section 2.1.8 (a) or (b) and payable within [*] ([*]) days thereafter. Notwithstanding the foregoing, such payment of sixty-five million US dollars ($65,000,000) shall be [*] (for clarity, [*] equals sixty-five million US dollars ($65,000,000)).

8.1.3 Full US Rights Fee. In consideration of Geron waiving its US Opt-In Rights during the Geron Election Period, an additional fee in the amount of seventy million US dollars ($70,000,000) shall be due from Janssen to Geron upon Geron's delivery of a Geron Election Notification not exercising its US Opt-in Rights pursuant to Section 2.2.2 after Janssen's provision of a Continuation Notification pursuant to Section 2.1.8 (a) or (b), which shall be payable within [*] ([*]) days of Janssen's receipt of such Geron Election Notification.

8.2 Milestone Payments. Janssen shall pay each of the milestone payments identified in this Section 8.2 to Geron one time only, upon the first achievement (if any) of the specified milestone event with respect to the first Licensed Product to attain it. For the avoidance of doubt, no further payment shall be due from Janssen upon the achievement of the same milestone event by another Licensed Product.

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8.2.1 Clinical Development Milestones. For clarity, the provisions of only one of the milestone clauses (a) or (b) of this Section 8.2.1 will apply for any Phase 3 clinical study of a Licensed Product under the Global Development Plan, depending on whether or not Geron has exercised its US Opt-In Rights pursuant to Section 2.2.2 as further provided below. In the event that a combined Phase 2/3 clinical study is conducted in respect of a Licensed Product (irrespective of whether that study is initially established as a combined study or transitions into a combined study once it is under way), where the Phase 2 part of that study satisfies the definition of a "Phase 2" clinical study and the Phase 3 part of that trial satisfies the definition of a "Phase 3" clinical study hereunder, the milestone payment set forth in Section 8.2.1(a) or (b), as applicable, shall be payable upon the first dosing of a Licensed Product in the [*] human subject in the Phase 3 part of such clinical study.

(a) Geron Opt-Out. If, and only if, Geron has not notified Janssen of Geron's exercise of US Opt-In Rights prior to the expiration of the Geron Election Period, each of the following milestone payments shall be due from Janssen to Geron one time only, upon the first achievement of the specified milestone event for a Licensed Product:

Milestone Event if Geron does not have US Opt-In Rights		Milestone Payment (US dollars)
(i)	[*]	[*] ($[*])
(ii)	[*]	[*] ($[*])
(iii)	[*]	[*] ($[*])

(b) Geron Opt-In. If, and only if, Geron has notified Janssen of Geron's exercise of US Opt-In Rights prior to the expiration of the Geron Election Period, each of the following milestone payments shall be due from Janssen to Geron one time only, upon the first achievement of the specified milestone event for a Licensed Product:

Milestone Event if Geron has US Opt-In Rights		Milestone Payment (US dollars)
(i)	[*]	[*] ($[*])
(ii)	[*]	[*] ($[*])
(iii)	[*]	[*] ($[*])

8.2.2 Drug Application Filing Milestones for Major Markets. For clarity, the milestone events specified in this Section 8.2.2 will apply, regardless of whether or not Geron has exercised its US Opt-In Rights. Each of the following milestone payments shall be due from Janssen to Geron, one time only, upon the first achievement of the specified milestone event for a Licensed Product:

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Milestone Event		Milestone Payment (US dollars)
(i)	[*]	[*] ($[*])
(ii)	[*]	[*] ($[*])
(iii)	[*]	[*] ($[*])
(iv)	[*]	[*] ($[*])
(v)	[*]	[*] ($[*])
(vi)	[*]	[*] ($[*])

8.2.3 Approval Milestones for First Indications in Major Markets. For clarity, the milestone events specified in this Section 8.2.3 will apply, regardless of whether or not Geron has exercised its US Opt-In Rights. Each of the following milestone payments shall be due from Janssen to Geron, one time only, upon the first achievement of the specified milestone event for a Licensed Product:

Milestone Event for First Indication		Milestone Payment (US dollars)
(i)	[*]	[*] ($[*])
(ii)	[*]	[*] ($[*])
(iii)	[*]	[*] ($[*])
(iv)	[*]	[*] ($[*])
(v)	[*]	[*] ($[*])
(vi)	[*]	[*] ($[*])

8.2.4 Approval Milestones for Second Indications in Major Markets. For clarity, the provisions of only one of the milestone clauses (a) or (b) of this Section 8.2.4 will apply with respect to a Second Indication (for the avoidance of doubt, in each case following achievement of the corresponding milestone with respect to a First Indication), depending on whether or not Geron has exercised its US Opt-In Rights as further provided below.

(a) Geron Opt-Out. If, and only if, Geron has not notified Janssen of Geron's exercise of US Opt-In Rights prior to the expiration of the Geron Election Period, each of the following milestone payments shall be due one time only from Janssen to Geron, upon the first achievement of the specified milestone event by a Licensed Product, provided that the

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corresponding milestone for a First Indication of a Licensed Product as provided in Section 8.2.3 above has been achieved:

Second Indication Milestone Events without Opt-In		Milestone Payment (US dollars)
(i)	[*]	[*] ($[*])
(ii)	[*]	[*] ($[*])
(iii)	[*]	[*] ($[*])
(iv)	[*]	[*] ($[*])
(v)	[*]	[*] ($[*])
(vi)	[*]	[*] ($[*])

(b) Geron Opt-In. If, and only if, Geron has notified Janssen of Geron's exercise of US Opt-In Rights prior to the expiration of the Geron Election Period, each of the following milestone payments shall be due one time only from Janssen to Geron, upon the first achievement of the specified milestone event by a Licensed Product, provided that the corresponding milestone for a First Indication of a Licensed Product as provided in Section 8.2.3 above has been achieved:

Second Indication Milestone Events with Opt-In		Milestone Payment (US dollars)
(i)	[*]	[*] ($[*])
(ii)	[*]	[*] ($[*])
(iii)	[*]	[*] ($[*])
(iv)	[*]	[*] ($[*])
(v)	[*]	[*] ($[*])
(vi)	[*]	[*] ($[*])

8.2.5 One-Time-Only Sales Milestones. Solely upon the first occurrence (if any) of aggregate annual worldwide Net Sales of all Licensed Products sold by or on behalf of Janssen (directly and through its Affiliates and sublicensees) hereunder at any time during the Term first attaining the sales threshold as specified in a milestone described below, Janssen shall pay the corresponding milestone payment to Geron within [*] ([*]) days following the end of the Janssen Calendar Quarter in which such sales milestone event was attained. For the avoidance of doubt, if in the same Janssen Calendar Quarter multiple sales milestone events described below are

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first attained, then the payments for all such milestone events attained as specified below shall be payable at the same time.

Sales Milestone Event		Milestone Payment (US dollars)
(i)	[*] US dollars ($[*])	[*] ($[*])
(ii)	[*] US dollars ($[*])	[*] ($[*])
(iii)	[*] US dollars ($[*])	[*] ($[*])
(iv)	[*] US dollars ($[*])	[*] ($[*])
(v)	[*] US dollars ($[*])	[*] ($[*])

8.2.6 Each Milestone May Be Attained One Time Only. For the avoidance of doubt, the milestone events as specified in this Section 8.2 may be achieved by the same or distinct Licensed Products. Additionally, should a Licensed Product be replaced or backed up by another Licensed Product, no additional milestone payments shall be due under Section 8.2 for milestone events completed by the replacement or back-up Licensed Product for which corresponding milestone payments were previously made to Geron with respect to such replaced Licensed Product.

8.2.7 Notice and Payment for Milestone Events. The applicable Party first becoming aware of the achievement of any milestone event hereunder shall inform the other Party in writing as soon as practicable, but in any event no later than [*] ([*]) Business Days after the achievement of such event, and thereafter Geron may submit to Janssen an invoice for the applicable milestone payment due. Milestone payments due from Janssen to Geron shall be payable [*] ([*]) days from Janssen's receipt of an invoice from Geron for the applicable amount due.

8.3 Royalty Payments.

8.3.1 Royalty Base and Term. The determination of which particular Net Sales of Licensed Products by Janssen and its Affiliates and Third Party sublicensees will form the base of a royalty obligation under this Section 8.3 shall be made on a Licensed Product-by-Licensed Product and country-by-country basis. The period during which royalties will accrue on Net Sales by Janssen and its Affiliates and Third Party sublicensees of a

particular Licensed Product in a given country (the **"Royalty Term"**) shall run, from the date of the First Commercial Sale of such particular Licensed Product by Janssen or its Affiliate or Third Party sublicensee in the given country, until the later of: (a) expiration of the last-to-expire Innovator Protection in the given country for the particular Licensed Product; or (b) ten (10) years from the First Commercial Sale of the particular Licensed Product in the given country. For the avoidance of doubt, only one royalty rate, and obligation to make a royalty payment, shall apply to a particular unit of Licensed Product.

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8.3.2 Royalty Rates in Countries with Innovator Protection. The applicable royalty rate for calculating royalties due on the applicable incremental amount of the aggregate worldwide annual (in a Janssen Calendar Year or the portion thereof falling within the applicable Royalty Term(s)) Net Sales of Licensed Products by Janssen and its Affiliates and Third Party sublicensees in countries with Innovator Protection as provided in Section 8.3.1 shall be determined as provided under the applicable clause (a) or (b) below of this Section 8.3.2. Royalties due shall be calculated by multiplying the applicable increment of aggregate worldwide Net Sales of Licensed Products, made in countries during a Janssen Calendar Year (or portion thereof) during the applicable Royalty Term in such countries, against the applicable royalty rate(s) as identified below, subject to any applicable adjustments or reductions as provided in Section 8.3.4 below, with each royalty rate referred to below applying only to that increment of annual Net Sales that falls within the incremental sales bracket for such royalty rate. For the avoidance of doubt, only one royalty rate, and obligation to make a royalty payment, shall apply to a particular unit of Licensed Product.

(a) Geron Opt-Out. If, and only if, Geron has not notified Janssen of Geron's exercise of US Opt-In Rights prior to the expiration of the Geron Election Period, and there is Innovator Protection in the country where the Net Sales of the Licensed Product by Janssen or its Affiliate or Third Party sublicensee occur the following incremental royalty rates shall apply to such Net Sales:

	Incremental sales bracket (aggregate worldwide annual Net Sales of Licensed Products in countries with Innovator Protection), in US dollars	**Royalty Rate**
(i)	Less than or equal to [*] (≤ $[*])	[*] percent ([*]%)
(ii)	Greater than or equal to [*] and less than [*] (≥ $[*] and < $[*])	[*] percent ([*]%)
(iii)	Greater than or equal to [*] and less than [*] (≥ $[*] and < $[*])	[*] percent ([*]%)
(iv)	Greater than or equal to [*] (≥ $[*])	[*] percent ([*]%)

To illustrate the calculation of royalties due for a hypothetical Janssen Calendar Year, if, for example, cumulative annual worldwide Net Sales of Licensed Products upon which royalties accrue as provided in this Section 8.3.2(a) totaled $[*] for a Janssen Calendar Year, then absent any adjustments or reductions pursuant to Section 8.3.4, the royalties due would be calculated as follows: ([*] x $[*]) + ([*] x $[*]) + ([*] x $[*]), + ([*] x $[*]).

(b) Geron Opt-In. If, and only if, Geron has notified Janssen of Geron's exercise of US Opt-In Rights prior to the expiration of the Geron Election Period, and there is Innovator Protection in the country where the Net Sales of the Licensed Product by Janssen or its Affiliate or Third Party sublicensee occur, the following incremental royalty rates shall apply to such Net Sales:

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	Incremental sales bracket (aggregate worldwide annual Net Sales of Licensed Products in countries with Innovator Protection), in US dollars	**Royalty Rate**
(i)	Less than or equal to [*] (≤ $[*])	[*] percent ([*]%)
(ii)	Greater than or equal to [*] and less than [*] (≥ $[*] and < $[*])	[*] percent ([*]%)
(iii)	Greater than or equal to [*]and less than [*] (≥ $[*] and < $[*])	[*] percent ([*]%)
(iv)	Greater than or equal to [*] (≥ $[*])	[*] percent ([*]%)

8.3.3 [*]% Royalty Rate Step-Down in Countries with No Innovator Protection. The applicable royalty rate for calculating royalties due on the applicable incremental amount of the aggregate worldwide annual (in a Janssen Calendar Year or the portion thereof falling within the applicable Royalty Term(s)) Net Sales of Licensed Products by Janssen and its Affiliates and Third Party sublicensees in countries without any Innovator Protection as provided in Section 8.3.1 shall be determined as provided under the applicable clause (a) or (b) below of this Section 8.3.3. Royalties due shall be calculated by multiplying the applicable increment of aggregate worldwide Net Sales of Licensed Products, made in countries during a Janssen Calendar Year (or portion thereof) during the applicable Royalty Term in such countries, against the applicable royalty rate(s) as identified below, subject to any applicable adjustments or reductions as provided in Sections 8.3.4 below, with each royalty rate referred to below applying only to that increment of annual Net Sales that falls within the incremental sales bracket for such royalty rate.

(a) Geron Opt-Out. If, and only if, Geron has not notified Janssen of Geron's exercise of US Opt-In Rights prior to the expiration of the Geron Election Period, and there is no Innovator Protection in the country where the Net Sales of the Licensed Product by Janssen or its Affiliate or Third Party sublicensee occur the following incremental royalty rates shall apply to such Net Sales:

	Incremental sales bracket (aggregate worldwide annual Net Sales of Licensed Products in countries without Innovator Protection), in US dollars	**Royalty Rate**
(i)	Less than or equal to [*] (≤ $[*])	[*] percent ([*]%)
(ii)	Greater than or equal to [*] and less than [*] (≥ $[*] and < $[*])	[*] percent ([*]%)
(iii)	Greater than or equal to [*] and less than [*] (≥ $[*] and < $[*])	[*] percent ([*]%)
(iv)	Greater than or equal to [*] (≥ $[*])	[*] percent ([*]%)

(b) Geron Opt-In. If, and only if, Geron has notified Janssen of Geron's exercise of US Opt-In Rights prior to the expiration of the Geron Election Period, and there is no Innovator Protection in the country where the Net Sales of the Licensed Product by

Janssen or its Affiliate or Third Party sublicensee occur, the following incremental royalty rates shall apply to such Net Sales:

	Incremental sales bracket (aggregate worldwide annual Net Sales of Licensed Products in countries without Innovator Protection), in US dollars	Royalty Rate
(i)	Less than or equal to [*] (≤ $[*])	[*] percent ([*]%)
(ii)	Greater than or equal to [*] and less than [*] (≥ $[*] and < $[*])	[*] percent ([*]%)
(iii)	Greater than or equal to [*] and less than [*] (≥ $[*] and < $[*])	[*] percent ([*]%)
(iv)	Greater than or equal to [*] (≥ $[*])	[*] percent ([*]%)

8.3.4 Adjustments to Royalties.

(a) Compulsory License. If at any time in any country a Third Party shall, under a Government Order by a competent Governmental Authority granting or compelling the granting of a license under a Valid Claim of any Geron Product Patent Rights Covering any Licensed Product sold by or on behalf of Janssen in such country, offer for sale or sell any product in competition with the Licensed Product marketed by or on behalf of Janssen with respect to which royalties become due from Janssen pursuant to Section 8.3.2 above, then Janssen may reduce the royalty rate for calculating royalties due to Geron based on Janssen's and its Affiliates' and Third Party sublicensees' Net Sales of Licensed Product in such country under Section 8.3.2 to be equivalent to the royalty rate payable by the Third Party to Geron under the compulsory license granting the Third Party the right to market the competing product, provided that, Janssen shall not have the right to apply any additional royalty adjustment under the rest of this Section 8.3 or Section 8.4 if Janssen elects to adjust the royalties pursuant to this Section 8.3.4(a).

(b) Generic Competition. In the event a Generic Product is sold by a Third Party in a given country where a Licensed Product is sold by Janssen (directly or through an Affiliate or Third Party sublicensee) during the Royalty Term, and only if and for the duration that Generic Erosion persists for such Licensed Product in such country, the applicable royalty rate for such country under Section 8.3.2 or 8.3.3, as the case may be, shall be reduced by [*] percent ([*]%). The reduced royalty rate will be applied, in retrospect if necessary, to the sales of the applicable Licensed Product in the Janssen Calendar Quarter immediately following the Janssen Calendar Quarter during which Generic Erosion first occurs and such reduced royalty rate shall thereafter continue on a Janssen Calendar Quarter-by-Janssen Calendar Quarter basis during the Royalty Term for so long as such Generic Erosion continues to exist.

(c) Combination Product. In the event a Licensed Product is a Combination Product, the royalty base used to calculate royalties shall be Net Sales of the Combination Product multiplied by an adjustment factor determined as follows: (i) if there is a list price A and B in any country where each active ingredient (including the Active Substance) of the Combination Product is also marketed in a separate product containing the respective active ingredient as the single active ingredient, then the adjustment factor (where the product has two

active ingredients) shall be the fraction A/(A + B), where "A" is the actual average list price to wholesalers of the Licensed Product as sold separately in such country containing the Active Substance as the single active ingredient, and "B" is the sum of the actual average list price of the products as each sold separately in such country containing the other active ingredient of the Combination Product as the single active ingredient; (ii) if there is a list price B but no list price A in any country where only an Active Substance of the Combination Product is also marketed in a separate product containing the Active Substance as the single active ingredient, then the adjustment factor shall be the fraction {1 – (B/C)}, where "B" is as defined above, and "C" is the actual list price to wholesalers of the Combination Product, provided that the value of the fraction cannot be greater or less than one; (iii) in any country where there is no list price B, then the Parties shall negotiate in good faith to determine an appropriate adjustment factor.

(d) Royalty Floor. Notwithstanding anything to the contrary, except for the royalty adjustment set forth in Section 8.3.4(a), in no event shall the total royalty adjustments under this Section 8.3.4 reduce the applicable royalty rate (under Section 8.3.2 or 8.3.3, as the case may be) by more than [*] percent ([*]%) as compared to the rates set forth in section 8.3.2 as a result of all adjustments combined. For the avoidance of doubt, the cap on royalty adjustments under this Section 8.3.4(d) shall not limit the application of any Credited Amounts under Section 9.8 to offset any royalties that become due hereunder.

8.4 Third Party Obligations.

8.4.1 Subcontractors. A Party or its designated Affiliate, in entering into any subcontract with a Third Party for the performance of any subcontracted Collaboration Activities hereunder (including in any jurisdiction in which employees or agents of such Third Party have rights to compensation, remuneration or payments for their inventions under Applicable Laws), shall use commercially reasonable efforts to obligate the Third Party subcontractor in a written subcontract agreement to be solely responsible for any compensation, remuneration or payments due to any of the Third Party's employees or agents on account of their performance of any such activities under the subcontract agreement, including any payment obligations that may arise by operation of Applicable Law in a particular country on account of either Party's exercise of any rights hereunder with respect to any Licensed Products that were invented, in whole or in part, by any such Third Party employees or agents in the performance of such activities. If a Party fails to include

such an obligation in any of its subcontract agreements with any Third Parties, such Party shall be bear any expense incurred in connection with any such payment obligations that may so arise.

8.4.2 Payments due under Pre-Existing Licenses from Third Parties and Existing Third Party Agreements. During the Term of this Agreement, as between the Parties, Geron shall be solely responsible for any and all royalty obligations, milestone payments, remittance of sublicensing income, and any other payments of any type that are or become due under any Pre-Existing Licenses from Third Parties or other Existing Third Party Agreements (but not including any such payments resulting from modified terms under any written amendments to any such agreements entered into after the Effective Date hereof, provided that Janssen provided express written approval in advance for Geron to enter into each such amendment including the modified terms thereof, and further provided that such payments are expressly included as shared Development Costs under the CDP under this Agreement), on account of any activities by or on

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behalf of any of the Parties in accordance with this Agreement (including any Commercialization of Licensed Products by or on behalf of Janssen hereunder), and Janssen will not be obligated to reimburse Geron for any such payments owed under any such agreements (as may be amended), except as the Parties may otherwise expressly agree in writing, such as in any Manufacturing Agreement or in any written agreement signed by both Parties under which Janssen expressly agrees to pay any share of any such payments under a particular Existing Third Party Agreement or reimburse Geron for any share of any such payments made thereunder.

8.4.3 Unblocking License Agreements. If, notwithstanding the indemnification obligations of Geron with respect to Existing Blocking Third Party Patent Rights under Section 13.1, clause (8), after the delivery of a Continuation Notice by Janssen and during the Term, Janssen believes that obtaining rights under any Existing Blocking Third Party Patent Right may be necessary for any of the Contemplated License Activities, Janssen shall call a meeting of the Patent Representatives and designated patent counsel of each Party, who shall discuss such matter in confidence, including whether a license under such Existing Blocking Third Party Patent Right would be necessary, whether any such Existing Blocking Third Party Patent Right is valid, or whether and to what extent other defenses to any potential infringement of any such Existing Blocking Third Party Patent Right exist. Following such meeting, if Geron determines in its reasonable discretion to seek to obtain such a license (which may be non-exclusive) under such Existing Blocking Third Party Patent Right from the relevant Third Party, with the right to sublicense to Janssen, and its Affiliates and sublicensees and subcontractors (an "**Unblocking License Agreement"**), Geron shall make reasonable, good-faith efforts to obtain such an Unblocking License Agreement. In connection with seeking any Unblocking License Agreement, Geron will, where possible, provide to Janssen's designated patent counsel drafts of any such proposed Unblocking License Agreement reasonably in advance of providing such drafts to the applicable Third Party and will consider in good faith the reasonable comments of Janssen regarding such drafts. If Geron enters into an Unblocking License Agreement, (a) it shall and hereby does grant Janssen a sublicense thereunder for purposes of performing Contemplated License Activities, subject to the terms and conditions of such Unblocking License Agreement and clause (b) of this Section 8.4.3; and (b) any license payments (including any fees, milestones, or royalties) due to any Third Party under any such Unblocking License Agreement arising from any such Contemplated License Activities by Janssen and its Affiliates, sublicensees and subcontractors hereunder shall be a sole expense of Geron (and may be treated as Credited Amounts pursuant to Section 9.8), and shall not be deemed Development Costs allocable to any extent to Janssen hereunder. In the event Geron does not elect, after request by Janssen, to obtain an Unblocking Patent License with respect to any Existing Blocking Third Party Patent Right, the terms of the indemnification by Geron under Section 13.1, clause (8) shall continue to apply with respect to such Existing Blocking Third Party Patent Right.

8.4.4 Re-Securing Exclusive Rights to Solely Owned Geron Product Patent Rights if Joint Interest Arises. In the event that, notwithstanding the representation and warranty of Geron under Section 12.5.11, a Third Party obtains ([*]) an ownership interest in any of the Imetelstat COM Patent Rights, or in any other Solely Owned Geron Product Patent Rights that include any claim Covering GRN163L or its use in the Field, then, (a) upon Janssen's request, Geron shall obtain an exclusive, worldwide license, with right to sublicense, to perform Contemplated License Activities under such Third Party's ownership interest in such Patent Rights, and upon Geron entering into an agreement with such Third Party granting Geron such a

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license, Geron shall and hereby does grant Janssen an exclusive (even as to Geron) sublicense, with right to further sublicense, under such license for purposes of performing Contemplated License Activities under such Patent Rights, subject to the terms and conditions of Geron's license agreement with such Third Party and clause (b) of this Section 8.4.4; and (b) any license payments (including any fees, milestones, or royalties) due to such Third Party under any such license agreement arising from the performance of any such Contemplated License Activities by Janssen and its Affiliates, sublicensees and subcontractors hereunder shall be a sole expense of Geron (and may be treated as Credited Amounts pursuant to Section 9.8), and shall not be deemed Development Costs allocable to any extent to Janssen hereunder.

8.5 Cross-Reference to Obligations Relating to Payment of Development Costs and Promoting Costs. The applicable Party allocated responsibility for paying any share or portion of any Development Costs or Promoting Costs incurred hereunder shall bear such payment responsibility pursuant to Section 4.13 or 5.5 above, as the case may be.

ARTICLE IX: GENERAL PAYMENT TERMS

9.1 Invoices. Any payment for an amount due to Geron under this Agreement shall be payable, except as otherwise expressly provided herein, within [*] ([*]) days after Janssen's receipt of an invoice from Geron for such amount due. Each invoice shall specifically refer to this Agreement and Janssen's purchase order number as provided to Geron, and shall provide other information as specified in the form of invoice attached as Exhibit J.

9.2 Royalty Reporting and Payments. Royalty payments due shall be payable in United States dollars [*] ([*]) days after the end of each Janssen Calendar Quarter during the Term. Each payment of royalties due under this Agreement will be accompanied with a royalty report setting forth, on a Licensed Product-by-Licensed Product and country-by-country basis: (a) the amount of Net Sales of Licensed Product by Janssen, its Affiliates and sublicensees; (b) for the United States only, [*]; (c) the conversion of such Net Sales from the currency of sale into US dollars in accordance with Section 9.4 as applicable; and (d) a calculation of the aggregate amount of royalties owed based on such Net Sales, including the methodology used in in order to determine the appropriate royalty tier and royalty payable, showing the application of the reductions, if any, made in accordance with the terms of Section 8.3.4 and any credits granted by Geron to Janssen hereunder as applied by Janssen to offset any such royalties accrued.

9.3 Remittance. All payments due to Geron hereunder shall be made in immediately available funds by electronic transfer, by Janssen (or an Affiliate on its behalf) to the bank account identified below or such other bank account as Geron may designate in writing to Janssen. Any payments due and payable under this Agreement on a date that is not a Business Day may be made on the next Business Day. If, at any time, legal restrictions prevent the prompt remittance of part of or all of the royalties due hereunder with respect to any country where Licensed Products are sold, Janssen shall have the right and option to make such payments by depositing the amount thereof in local currency to Geron's accounts in a bank or depository in such country as directed by Geron or by using such lawful means or methods for remitting payment as Janssen may reasonably determine.

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Name of Bank:	[*]
Bank address:	[*]
Routing/Transit No.	[*]
Credit DDA:	[*]
Account Name:	[*]
For Further Credit:	[*]

9.4 Currency. All payments under this Agreement shall be payable in United States dollars. With respect to sales of a Licensed Product invoiced in a currency other than US dollars, such amounts and the amounts payable hereunder shall be expressed in their United States dollars equivalent calculated using the method described in the remainder of this Section 9.4. For each Janssen Calendar Year during which royalties become due hereunder, Janssen shall provide: (a) the Currency Hedge Rate to be used for the local currency of each country of the Licensed Territory and (b) the calculation of each such Currency Hedge Rate in writing to Geron not later than [*] ([*]) Business Days after the Currency Hedge Rates (for countries other than the U.S. where any royalty-bearing sales of Licensed Products hereunder occur) are available from Janssen or its applicable Affiliates, [*]. Each Currency Hedge Rate for a given country will remain constant throughout the entire Janssen Calendar Year. Janssen shall use the Currency Hedge Rates to convert Net Sales to United States dollars for the purpose of calculating royalties.

9.5 Taxes.

9.5.1 Each Party shall be solely responsible for the payment of all taxes imposed on its share of income arising directly or indirectly from the collaborative efforts of the Parties under this Agreement.

9.5.2 Each Party will make all payments due to the other Party under this Agreement without deduction or withholding for Taxes except to the extent that any such deduction or withholding is required by Applicable Law in effect at the time of payment. [The Parties agree to use commercially reasonable efforts to [*] and to consult in good faith before taking any action that is reasonably expected to result in [*] under this Agreement.

9.5.3 Any Tax required to be withheld on amounts payable by the payor Party under this Agreement will be paid by the payor on behalf of the payee Party to the appropriate Governmental Authority, and the payor will furnish the payee with proof of payment of such Tax. Any such Tax required to be withheld will be an expense of and borne by the payee. If any such Tax is assessed against and paid by the payor, then the payee shall indemnify and hold harmless the payor from such Tax.

9.5.4 The Parties will cooperate with respect to all documentation required by any taxing authority or reasonably requested by either Party to secure a reduction in the rate of applicable withholding Taxes. Within [*] ([*]) Business Days of the Execution Date of this Agreement, each Party will deliver to the other Party an accurate and complete Internal Revenue Service Form W-9 and such form shall be updated and renewed as required by Applicable Law.

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[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

9.6 Records and Audit Rights.

9.6.1 Maintenance of Records. Each Party shall keep (and shall cause its Affiliates and applicable Third Party subcontractors and sublicensees to keep) complete, true and accurate books and records in accordance with Accounting Standards in sufficient detail for the other Party to determine the payments due and costs incurred under this Agreement. Each Party will keep such books and records in accordance with Applicable Law and for at least [*] ([*]) years following the date of the payment to which they pertain.

9.6.2 Audit Right. Upon the written request of a Party (as applicable, the **"Auditing Party"**), not more than once in each calendar year, the other Party (the **"Audited Party"**) shall permit an independent certified public accounting firm of nationally recognized standing selected by the Auditing Party and reasonably acceptable to the Audited Party to have confidential access during normal business hours to such of the records of the Audited Party and its applicable Affiliates or Third Party sublicensees or subcontractors as may be reasonably necessary to verify the accuracy of any payments made under this Agreement for any period ending not more than [*] ([*]) years prior to the date of such request. The accounting firm shall provide each Party a correct and complete copy of the report summarizing the final results of such audit, which shall be treated as the Audited Party's Confidential Information. The Auditing Party shall obligate its accounting firm to keep the Audited Party's information confidential, and shall at the request of the Audited Party cause the Auditing Party's accounting firm to execute a reasonable confidentiality agreement prior to commencing any such audit.

9.6.3 Audit Fees. The fees charged by an accounting firm engaged by a Party in accordance with Section 9.6.2 shall be paid by the Auditing Party, provided, however, that if the audit uncovers an underpayment or overpayment in favor of the Audited Party exceeding [*] percent ([*]%) of the total amount due in accordance with this Agreement, then the fees of such accounting firm shall be paid by the Audited Party. Any underpayments or overpayments discovered by such audit or otherwise will be paid or refunded promptly by the applicable Party within [*] ([*]) days of the date the Auditing Party delivers to the Audited Party such accounting firm's written report, or as otherwise agreed upon by the Parties, plus interest calculated in accordance with Section 9.9.

9.7 Party Making Payment. Geron acknowledges and agrees that, as may be delegated by Janssen from time to time, an Affiliate of Janssen acting as a paying agent for Janssen may make certain payments due to Geron under this Agreement on behalf of Janssen, provided that Janssen shall remain primarily responsible for any such payments due to Geron under this Agreement.

9.8 [*]; Treatment of Credits.

9.8.1 Credits for [*] Owed by Geron. Janssen may deduct portions of (a) any [*] under and in accordance with Section 4.9.5; (b) any [*] under and in accordance with Section 4.13.4(b) ; and (c) any [*] under and in accordance with Section 5.5.1, in each case for which Janssen has received from Geron [*] pursuant to Section 8.2 and [*] under Section 8.3 (each such amount a "**Credited Amount**"), until Janssen has recouped [*], provided that if Janssen has not recouped [*] percent ([*]% of any particular Credited Amount before the earliest of (i) termination of this Agreement, (ii) a Geron Change of Control, or (iii) on an invoice-by-invoice and/or credit notification-by-credit notification basis, the [*] ([*]) anniversary of the later of the original invoice

or credit notification for such particular invoiced or notified Credited Amount, then the remaining unpaid balance of such Credited Amount will become payable upon such date, provided that Geron shall have up until the date that is [*] ([*]) days after receipt of an invoice from Janssen for such unpaid amount to remit such payment for the outstanding balance of such particular invoiced or notified Credited Amount. In the event Janssen applies any Credited Amount [*], (x) Janssen shall apply such Credited Amounts [*], and then the [*], and (y) Janssen shall [*].

9.8.2 Maximum Balance for Credited Amounts; Payment Acceleration. Notwithstanding anything to the contrary herein, Geron shall be obligated to pay down that portion of the cumulative balance of all Credited Amounts on an annual basis that exceeds [*] US dollars ($[*]) (the "**Balance Ceiling**") during any applicable Janssen Calendar Year. Accordingly, in the event that the outstanding balance of the Credited Amounts exceeds the Balance Ceiling, Janssen shall invoice Geron for the portion of the cumulative balance of all Credited Amounts that exceeds the Balance Ceiling, and an amount equal to such portion exceeding the Balance Ceiling will be payable by Geron within [*] ([*]) days of receipt by Geron of an invoice from Janssen for such amount.

9.9 Interest on Late [*] Payments. Interest may be assessed by a payee Party on any amounts payable to it under this Agreement which are not paid by the payor Party on or before the due date for payment hereunder or on any Credited Amounts for which [*]. Such interest shall accrue and be calculated on a daily basis at the rate of [*] percent ([*]%) per annum above the then-current prime rate quoted by Citibank in New York City (but in no event in excess of the maximum rate permissible under Applicable Laws), for the period from the due date for payment or the date Janssen receives a right of credit or offset for a Credited Amount, as the case may be, until the date of actual payment. The payment of such interest shall not limit the payee Party from exercising any other rights it may have as a consequence of the lateness of any payment from the payor Party.

ARTICLE X: INTELLECTUAL PROPERTY MATTERS

10.1 Reporting of Development Program Inventions. Each Party shall promptly report to the JSC and JDC, as well as each Party's Patent Representative, each material Development Program Invention after its reduction to practice by any of its or its Affiliates' or Third Party subcontractors' employees or agents in performing any Development activities under the Global Development Plan.

10.2 Ownership.

10.2.1 U.S. Law Governs. Ownership of each Development Program Invention shall follow inventorship as determined pursuant to principles of United States patent law. Accordingly, (a) all Development Program Inventions invented solely by one or more employees or agents of a Party (or its Affiliates or Third Party subcontractors) shall be owned solely by such Party, and (b) all Development Program Inventions invented jointly by one or more employees or agents of one Party (or its Affiliates or Third Party subcontractors) and by one or more employees or agents of the other Party (or its Affiliates or Third Party subcontractors) ("**Joint Development Program Inventions**") shall be owned jointly by the Parties, subject to the terms of this

Agreement (including any exclusive licenses or other rights in such Development Program Invention expressly granted hereunder). Ownership of each Development Program Patent Right, and the rights afforded a Party having an ownership interest therein (subject to the terms and conditions hereof, including under Article II), shall be determined in accordance with principles of United States patent law, taking into account the inventorship, as properly determined claim by claim under U.S. law. Ownership of each item of Development Program Know-How not constituting a Development Program Invention shall also be determined pursuant to U.S. law.

10.2.2 Confirmatory Assignments. Each Party shall take all reasonable actions requested by the other Party responsible for Prosecuting any Development Program Patent Right that includes (i) any claim Covering any Joint Development Program Invention and/or (ii) a claim Covering any Development Program Invention owned solely by one Party along with a claim Covering any Development Program Invention owned solely by the other Party hereunder to perfect or separately document the other Party's ownership interest rights in such Development Program Patent Right as provided for in this Agreement, including by causing its and its applicable Affiliates' and Third Party subcontractors' employees and agents to execute appropriate assignment documents, and the requesting Party shall not be required to pay any remuneration to the other Party or its Affiliates or Third Party subcontractors, or any of their employees, or agents, for the execution of any assignments or other papers pursuant to this Section. For clarity, each Party (directly or through its applicable Affiliate or Third Party subcontractor) shall be solely responsible for any compensation due to it and its Affiliates' and Third Party subcontractors' employees and agents in connection with the assignment of their respective rights to any Development Program Inventions and associated Development Program Patent Rights pursuant to this Agreement or the exploitation of any Party or its Affiliates or Third Party sublicensees hereunder of any such Development Program Inventions or associated Development Program Patent Rights, including any required by operation of Applicable Law on account of any Commercialization of any such Development Program Inventions by or on behalf of Janssen hereunder.

10.3 Prosecution of Patent Rights.

10.3.1 Communications. Each Party shall use reasonable efforts to handle all communications between the Parties under this Section 10.3 through their Prosecution Contacts and keep such communications in strict confidence to protect their attorney-client privileged status.

10.3.2 Reporting of Filings. A Party planning on filing any priority-establishing or original (in each case, with respect to any claims or new matter described in the patent specification) patent application within the Development Program Patent Rights hereunder shall use reasonable efforts to provide to the other Party, with reasonable advance time such as at least [*] ([*]) days prior to proposed Prosecution filing in a Patent Office (such as a draft application or response to an official action), and provide the other Party an opportunity to comment thereon through its Prosecution Contact. Each Party shall provide to the other, promptly after filing, a copy of each priority-establishing or original (whether provisional or nonprovisional) patent application within the Development Program Patent Rights as filed in the Patent Office and each other substantive Prosecution filing (including any other patent application filed within the Development Program Patent Rights).

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10.3.3 Prosecution Responsibility and Coordination.

(a) Geron Product Patent Rights. With respect to the Geron Product Patent Rights, Geron shall be primarily responsible, through outside patent counsel mutually acceptable to the Parties and engaged by Geron, to Prosecute (or, if a Third Party has the right to control Prosecution of any Geron Product Patent Right under any Pre-Existing Licenses from Third Parties, to represent Geron in the Prosecution of) the Geron Product Patent Rights, provided that for so long as the Agreement remains in effect, Geron shall follow, and instruct the outside patent counsel to follow, any reasonable directions by Janssen as provided by its designated Prosecution Contact in Prosecuting any Geron Product Patent Rights, including with respect to the filing of any continuation, divisional, or other continuing applications. Notwithstanding the foregoing, in providing such Prosecution directions, Janssen shall consider and incorporate: (x) any reasonable comments of Geron's designated Prosecution Contact regarding the filing of a divisional (without introduction of any new matter) of a pending application within the Geron Product Patent Rights, but not within the Imetelstat COM Patent Family, which application, as filed in the Patent Office, provides support under Applicable Law for any claims proposed for the divisional application that specifically focus on subject matter disclosed in the specification of the pending application, other than subject matter Covering any Active Substance or Licensed Product or any invention related thereto (including with respect to any use thereof or any manufacture, or material for manufacture of the Active Substance and/or Licensed Product); and (y) any reasonable comments of Geron's designated Prosecution Contact regarding the further Prosecution of any such divisional application; provided in each case (x) and (y) that Janssen shall not be obligated to adopt any of Geron's proposals if, in the reasonable opinion of Janssen's patent counsel, any Prosecution action with respect to such a divisional proposed by Geron could detrimentally impact the patentability, validity, or enforceability of any Geron Product Patent Rights in any country or is not consistent with Applicable Law. For the avoidance of doubt, the foregoing sentence shall not be construed as granting Geron back any rights to any Active Substances and Licensed Products granted to Janssen under Section 2.1.

(b) Prosecution Costs for Geron Product Patent Rights. Subject to the foregoing Section 10.3.3(a), Geron shall be solely responsible for all Patent Costs incurred in Prosecuting any Geron Product Patent Rights on or before the Effective Date (including those payable to any Third Parties under the Pre-Existing Licenses from Third Parties), and each Party shall bear fifty percent (50%) of the Patent Costs incurred in Prosecuting any Geron Product Patent Rights (including those payable to any Third Parties under the Pre-Existing Licenses from Third Parties) after the Effective Date. Notwithstanding the foregoing, if Geron intends to permit any particular Geron Product Patent Right that is pending in any Patent Office to lapse or become abandoned (including by failure to validate an allowed multi-jurisdictional patent application, such as may be pending in the European Patent Office, in any possible country), Geron shall notify Janssen of such intention at least [*] ([*]) days, or within such other practicable time before the date upon which such Patent Right will lapse or become abandoned, and Janssen shall thereupon have the right, but not the obligation, to assume responsibility for the further Prosecution of such Patent Right (and any continuing application based thereon) and all Patent Costs associated therewith, and in such event: (i) Geron shall reasonably cooperate to promptly effect transfer of Prosecution of such Patent Right to Janssen and assign all of Geron's interest in such Geron Product Patent Right to Janssen; and (ii) such transferred Patent Right shall no longer be deemed to be a Geron Product Patent Right for the purpose of determining the duration of

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Innovator Protection and any royalty obligation of Janssen hereunder unless Geron continues to pay fifty percent (50%) of the Patent Costs incurred in Prosecuting such Patent Right.

(c) Development Program Patent Rights. The Party having a sole ownership interest in any Development Program Patent Rights shall be primarily responsible, through outside patent counsel mutually selected by the Parties, for Prosecuting such Development Program Patent Rights, provided that such Party shall: (i) follow the reasonable direction of the JSC or JDC (under advice of the Patent Working Group) as to selection of country Patent Offices in the Licensed Territory for filing or validating applications to form a family of related Development Program Patent Rights; and (ii) provide the other Party, through its designated Prosecution Contact, a reasonable opportunity to review and comment upon any proposed Prosecution paper to be filed in any Patent Office (including draft responses of official actions). For any Joint Development Program Patent Rights, both Parties shall share primary responsibility, through outside patent counsel mutually selected and engaged by the Parties, for Prosecuting such Joint Development Program Patent Rights, provided that the Parties shall: (i) follow the reasonable direction of the JSC or JDC (under advice of the Patent Working Group) as to the selection of country Patent Offices in the Licensed Territory for filing applications to form a family of related Development Program Patent Rights; and (ii) escalate any Prosecution decision on which the Parties cannot agree to the JSC for its decision, under advice of the Patent Working Group in consultation with the Prosecution Contacts, as to how to direct outside counsel with respect to such Prosecution matter involving the Joint Development Program Patent Rights. Subject to the foregoing, Janssen shall bear all (100% of) the Patent Costs incurred in Prosecuting any Development Program Patent Rights owned solely by Janssen, and each Party shall bear fifty percent (50%) of the Patent Costs incurred in Prosecuting any Development Program Patent Rights owned solely by Geron and any Joint Development Program Patent Rights.

10.3.4 Prosecution Cooperation. Each Party shall provide all reasonable assistance requested by the other Party for Prosecuting any Geron Product Patent Rights or Development Program Patent Rights consistent with the terms hereof, including with respect to the timely completion of filings of Prosecution papers, compliance with Applicable Laws, and recording of assignments to reflect ownership consistent with the terms hereof. A Party Prosecuting any Patent Rights hereunder shall use reasonable efforts to provide the other Party with copies of all material Prosecution papers as filed in or received from any Patent Offices. The Party Prosecuting any Patent Rights hereunder shall, on an annual basis during the Term, provide the other Party with a report identifying the status of any Geron Product Patent Rights or Development Program Patent Rights for which it is primarily responsible for Prosecution, provided, however, that for Joint Development Program Patent Rights, the Parties shall cooperate to jointly prepare such status report.

10.4 Patent Enforcement.

10.4.1 Notice.

(a) Each Party shall notify the other promptly of any apparent, threatened, or actual infringement by a Third Party of any Geron Product Patent Rights or Development Program Patent Rights, or misappropriation of any Geron Product Know-How or Development Program Know-How, of which the Party becomes aware. The notifying Party shall

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promptly furnish the other with all known details or evidence of such infringement or misappropriation.

(b) Each Party shall promptly notify the other of any Third Party communications pertaining to any Geron Product Patent Rights or Development Program Patent Rights that the Party receives pursuant to the Drug Price Competition and Patent Term Restoration Act of 1984 or similar such notice, including notices pursuant to §§ 101 and 103 of such act from persons who have filed an abbreviated NDA (ANDA) or a paper NDA.

10.4.2 Enforcement Actions. For as long as Janssen has license rights to Commercialize Licensed Products under Section 2.1.2, Janssen shall have the initial right, at its expense and in its own name (or in the name of Geron as may be required under Applicable Law), for bringing any infringement suit or other enforcement Action on account of any Third Party infringement of any Geron Product Patent Rights and/or Development Program Patent Rights based on any alleged making, using, selling, offering for sale, importing, or other exploitation of any Active Substance or Licensed Product in infringement of any such Patent Rights, or misappropriation of any Geron Product Know-How or Development Program Know-How providing any Regulatory Exclusivity Rights for any Active Substance or Licensed Product, (each a "**Product Infringement**"), by counsel of its own choice, and Geron will cooperate with Janssen as Janssen may reasonably request in connection with any such Action, including by becoming a party to such action at Janssen's cost, provided that Janssen shall reimburse Geron for its Out-of-Pocket Costs reasonably incurred in connection with rendering such assistance. If Janssen declines to initiate such an enforcement Action against any unabated Product Infringement it shall notify Geron, who shall thereafter have the right (but not the obligation) at Geron's expense and in its own name, to initiate such Action by counsel of its choice, and Janssen shall cooperate with Geron as Geron may reasonably request, including by becoming a party to such action at Geron's cost, and Geron shall reimburse Janssen for its Out-of-Pocket Costs reasonably incurred in connection with rendering such assistance. A settlement or consent judgment or other voluntary final disposition of an Action brought by a Party under this Section may be entered into without the consent of the other Party, provided that such settlement, consent judgment, or other disposition does not admit the invalidity or unenforceability of any Patent Rights owned or Controlled by the other Party, and provided further that any rights granted to a Third Party to continue any activity upon which such Action was based in such settlement, consent judgment, or other disposition shall be limited to the Third Party's product or activity that was the subject of the Action. Damages recovered and any other amounts awarded in any Actions for Product Infringement under this Section shall be allocated to the Party who brought the Action, after reimbursement of each Party's actual expenses incurred in such Actions as provided hereunder, provided that Janssen shall owe Geron royalties as determined in accordance with Section 8.3 based on damage amounts recovered by Janssen due to the Product Infringement (such as in the form of lost profits or reasonable royalties assessed on account of the Third Party's sales of infringing product), after reimbursement of costs incurred in such Action.

10.4.3 Other Enforcement Actions. Geron acknowledges that the outcome of any infringement suit or other enforcement Action on account of any Third Party Infringement, other than a Product Infringement, of any Geron Product Patent Right or Development Program Patent Right

licensed to Janssen under Section 2.1 may detrimentally impact the scope, validity, or enforceability of such Patent Right with respect to potential Product Infringements. Accordingly,

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the Parties shall reasonably cooperate with each other with respect to any infringement suit or other enforcement Action on account of any Third Party infringement of any Geron Product Patent Right or Development Program Patent Right other than the Product Infringements. For clarity, Geron will not be required to enforce any Geron Product Patent Right against any Third Party infringement other than a Product Infringement, provided that if Geron declines to initiate an enforcement Action reasonably requested by Janssen to abate any Third Party's infringing activities (other than Product Infringement) within the scope of Janssen's exclusive rights under any Geron Product Patent Rights or Development Program Patent Rights granted hereunder, then (to the extent permitted by any Existing Third Party Agreements concerning such Geron Product Patent Rights, if applicable) upon Janssen's request Geron shall reasonably cooperate with Janssen so that Janssen may initiate at its own expense such an enforcement Action in the same manner described under Section 10.4.2 above (with respect to Product Infringements).

10.5 Maintenance of Freedom to Operate. The Parties shall use commercially reasonable efforts to avoid infringing any Third Party's Patent Rights in conducting any Development activities under the Global Development Plan. Each Party shall promptly notify the JSC and JDC, through the Patent Representatives, in the event such Party becomes aware of any Third Party's Patent Rights that may pertain to any Development activities of the Parties.

10.6 Patent Term Extensions. As long as Janssen retains Commercialization rights for a Licensed Product under Section 2.1.2, upon Janssen's written request (which shall be by a notice identifying the date of the applicable Regulatory Approval of a Licensed Product and the deadline for filing a Patent Term Extension), the Prosecuting Party shall use reasonable efforts, in each country or jurisdiction where Regulatory Approval for any Licensed Product has been obtained, and if the Applicable Law of such country or jurisdiction permits application for a Patent Term Extension, to apply, at the reasonable direction of Janssen's designated patent counsel, for a Patent Term Extension for a patent within the Geron Product Patent Rights including a Valid Claim Covering such Licensed Product, which patent (if any) shall be selected at Janssen's reasonable judgment after considering the opinion of Janssen's patent counsel regarding its eligibility for a Patent Term Extension. Janssen shall have the right to: (a) identify in any list of patents in a Drug Application the applicable Geron Product Patent Right(s) and Development Program Patent Right(s), as Janssen reasonably believes is appropriate; (b) commence suit for any Product Infringement of any such Geron Product Patent Right(s) or Development Program Patent Right(s) under Applicable Law as permitted under Section 10.4.2; and (c) exercise any rights that may be exercisable by a patent owner, including applying for a Patent Term Extension, of any Geron Product Patent Right(s) or Development Program Patent Right(s) pertaining to an approved Licensed Product Commercialized by Janssen hereunder. Geron agrees to cooperate with Janssen and its Affiliate and Third Party sublicensees of Licensed Products, as applicable, upon Janssen's reasonable request in the exercise of the authorizations granted under this Section, and Geron shall execute such documents and take such additional action as Janssen may reasonably request in connection therewith, including, if requested by Janssen, permitting Geron to be joined as a party in any suit for Product Infringement brought by Janssen hereunder on the terms and conditions set forth in Section 10.4.2, provided that Janssen shall reimburse Geron all reasonable out-of-pocket costs incurred by Geron in taking such action. Geron agrees to cooperate with Janssen and its Affiliate and Third Party sublicensees of Licensed Products, as applicable, upon Janssen's reasonable request in the exercise of the authorizations granted under this Section, and subject to any surviving rights granted by Geron to any Third Party and Geron's obligations remaining under

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applicable Existing Third Party Agreements then in effect (pursuant to their terms as of the Execution Date, except as such may be amended by Geron with Janssen's prior written consent), Geron shall execute such documents and take such additional action as Janssen may reasonably request in connection therewith, including using reasonable efforts to procure the cooperation of any Inferior Rights Holders, such that Janssen shall have (i) the first and a superior right (in relation to any Inferior Rights Holders) to select from all Geron Product Patent Rights and Development Program Patent Rights in a particular country or jurisdiction a particular Patent Right for which it will pursue a Patent Term Extension in such country application, and (ii) the first and a superior right to enforce and defend any patents within the Geron Product Patent Rights and Development Program Patent Rights against infringement pertaining to a Third Party's Licensed Product or a Generic Product.

10.7 Inferior Rights Subordinate to Janssen's.

10.7.1 Notwithstanding anything to the contrary herein, Geron shall use commercially reasonable efforts to ensure that: (a) any Prosecution, enforcement, or other activities of an Inferior Rights Holder pertaining to any Geron Product Patent Rights under any Inferior Rights are done in a reasonable manner to avoid detrimentally impacting the validity or enforceability of any Geron Product Patent Rights pertaining to any Active Substance or Licensed Product in any country; and (b) the Prosecution (including with respect to Patent Term Extensions) and enforcement rights granted by Geron to any Inferior Rights Holder remain subordinate to the rights of Janssen hereunder.

10.7.2 In consideration of the foregoing in this Section 10.7 and the provisions of Section 10.6, if an Inferior Rights Holder Develops a composition of matter in exercise of its Inferior Rights during the Term, then Geron shall use commercially reasonable efforts to procure the cooperation of the Inferior Rights Holder to permit Geron to, with Janssen's consent, segregate, in a divisional application claiming priority to a pending Geron Product Patent Right in each applicable country (where possible under Applicable Law), one or more narrow claims Covering specifically such composition of matter (e.g., as a species-type claim), such that each such divisional application within the Geron Product Patent Rights does not include any claims Covering any Active Substances or Licensed Products or their use. Janssen shall not unreasonably withhold its consent for the filing of such divisionals, provided that, as between the Parties, Geron assumes responsibility for all Patent Costs associated with Prosecuting such divisional and Geron follows the reasonable comments of Janssen with respect to its Prosecution.

10.8 Product Trademarks. Geron represents and warrants that, as of the Effective Date, it does not own or otherwise control any Product Trademark Rights relating to GRN163L, including any trademark applications or registrations or domain names. Janssen shall have (directly and through its Affiliates and Third Party sublicensees Commercializing Licensed Products) the right to brand, at its discretion, the Licensed Products using trademarks and trade names selected at its discretion and to file for, obtain, and maintain at its discretion and cost Product Trademark Rights in its own name.

ARTICLE XI: CONFIDENTIALITY AND PUBLICITY

11.1 Confidential Information.

11.1.1 To facilitate any activities hereunder, a Party (a "disclosing Party") may provide to the other Party (a "receiving Party"), or a Party (in this case a "receiving Party") may otherwise through activities contemplated by this Agreement come into possession of, confidential information or material Controlled, licensed, developed, or possessed by the other Party (in this case, a "disclosing Party"), any such items of confidential information or material, individually or collectively, constituting "**Confidential Information**". Information identified as being confidential that was disclosed by Geron to Janssen under the Prior CDAs shall be considered Confidential Information of Geron under this Agreement and may be used for the purposes permitted hereunder. The receiving Party shall keep all such Confidential Information of the Disclosing Party confidential, and other than as expressly permitted herein, shall not use or disclose, directly or indirectly, any such Confidential Information, whether in tangible or intangible form. A disclosing Party shall take reasonable measures to identify confidential information and material provided by it to the other Party with a "CONFIDENTIAL" or "TRADE SECRET" marking or similar notation. For clarity: Janssen shall be deemed a disclosing Party with respect to the information in the Global Development Plan, US Promotional Plan and Independent Promotional Plan, and data and other information from Development and Commercialization of Licensed Products in exploitation or support of Janssen's license rights under Sections 2.1.1 and 2.1.2 (including as discussed at any Joint Committee meeting or disclosed in any report provided to Geron hereunder), and such information shall be treated as Janssen's Confidential Information hereunder; and Geron shall be deemed a disclosing Party with respect to information in the CDP and any IDP of Geron, and such information shall be treated as Geron's Confidential Information hereunder. Moreover, as of the Effective Date and for as long as Janssen retains any Commercialization rights for a Licensed Product hereunder, any Geron Product Know-How unpublished as of the Effective Date relating to any Active Substance or Licensed Product (including with respect to its discovery, development, preparation, testing, manufacture, formulation, delivery, administration or use), and Development Program Know-How relating to any Licensed Products shall be treated as Janssen's Confidential Information (regardless of ownership of such information). During the applicable period of confidentiality specified in Section 11.1.2 below, each receiving Party shall, and shall cause its Affiliates to, keep in confidence and not to disclose to any Third Party, or use for any purpose, except pursuant to, and in order to carry out, the terms and objectives of this Agreement, including the exercise of such Party's rights and the performance of such Party's obligations under this Agreement (in each case including those surviving any expiration or termination of this Agreement as set forth in Article XIV), any Confidential Information of the other (disclosing) Party.

11.1.2 A receiving Party's obligation of confidentiality and restriction on use as to a disclosing Party's Confidential Information, except for those constituting trade secrets, shall last during the Term and for a period of seven (7) years thereafter. A receiving Party's obligation of confidentiality and restriction on use with respect to the disclosing Party's Confidential Information identified as trade secrets, or typically held in the pharmaceutical industry as trade secrets such as applicable CMC Know-How and promotional and marketing information, shall

continue perpetually for so long as such Confidential Information is unpublished by the disclosing Party and no provision of Section 11.1.3(a) , (c) or (d) applies to such Confidential Information.

11.1.3 The restrictions on a receiving Party's disclosure and use of the disclosing Party's Confidential Information set forth above in this Section 11.1 shall not apply to any particular Confidential Information to the extent that such Confidential Information:

(a) was known by the receiving Party or its Affiliate prior to disclosure by the disclosing Party or its Affiliate hereunder (as evidenced by the receiving Party's or such Affiliate's written records or other competent evidence);

(b) is or becomes part of the public domain through no fault of the receiving Party or its Affiliates in violation of this Agreement;

(c) is disclosed to the receiving Party or its Affiliate by a Third Party having a legal right to make such disclosure without violating any confidentiality or non-use obligation that such Third Party has to the disclosing Party or an Affiliate thereof; or

(d) is independently developed by personnel of the receiving Party or its Affiliate without reliance on or access to the Confidential Information (as evidenced by the receiving Party's or such Affiliate's written records or other competent evidence).

For the avoidance of doubt, each receiving Party may use and disclose the other Party's Confidential Information under appropriate confidentiality obligations substantially equivalent to those in this Agreement, to the receiving Party's Affiliates and, as set forth in written subcontracts as otherwise provided herein, to its Third Party licensees, sublicensees, subcontractors and any other Third Parties to the extent such use and/or disclosure is reasonably necessary to perform its obligations or to exercise the rights granted to it, or reserved by it, under this Agreement.

11.2 Exceptions to Confidentiality Obligations. A receiving Party may disclose Confidential Information of the disclosing Party if the receiving Party obtains the disclosing Party's prior written consent to disclose the identified information. Moreover, the receiving Party may disclose Confidential Information of the disclosing Party solely to the extent required to be disclosed by the receiving Party to comply with Applicable Law (including securities laws or regulations and the applicable rules of any public stock exchange) or to defend or prosecute litigation or comply with an order of a court or other Government Order, provided that the receiving Party notifies the disclosing Party of such order insofar as possible and provides reasonable assistance in obtaining a protective order or confidential treatment preventing or limiting the disclosure and/or requiring that the Confidential Information so disclosed be used only for the purposes for which the law or regulation required, or for which the order was issued. For the avoidance of doubt, (i) Janssen may disclose Geron's Confidential Information as reasonably necessary for making Regulatory Filings in connection with the Development of Licensed Products hereunder; (ii) Geron may disclose Janssen's Confidential Information as reasonably necessary for making Regulatory Filings in connection with the Development of Licensed Products pursuant to Geron's obligations specified in Exhibit O and under any Geron IDP

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hereunder; (iii) Geron, in the event of an early termination by which Geron obtains rights to Develop any Reverted Product pursuant to Section 14.6, may disclose Janssen's Confidential Information as reasonably necessary for making Regulatory Filings in connection with the Development of any such Reverted Licensed Product after such early termination of this Agreement, if applicable; and (iv) a Party controlling Prosecution of any Patent Rights pursuant to this Agreement may disclose the other Party's Confidential Information to Patent Offices in connection with such permitted Prosecution.

11.3 Requirement to Cooperate to Enable Accurate Public Disclosure. To the extent either Party discloses to the other Party any Confidential Information which is a fact, result or event relating to the Development or Commercialization of any Licensed Product or the Collaboration Activities that the receiving Party in good faith reasonably believes is insufficient to either: (a) allow the receiving Party to fully understand the materiality of such Confidential Information for purposes of determining whether the receiving Party is required to disclose, to any Government Authority or publicly, any such Confidential Information in order to comply with Applicable Law (including securities laws or regulations and the applicable rules of any public stock exchange); or (b) meet the need of the receiving Party to keep investors informed regarding the receiving Party's business (i.e., "Investor Information" as defined in Section 11.5.2(a)) pursuant to Section 11.5.2, the disclosing Party agrees to discuss such Confidential Information with the receiving Party and provide any additional information reasonably requested by the receiving Party to enable the receiving Party to assess the materiality in the case of (a) above, and the accuracy and completeness, in the case of (a) and (b) above, of such information for such public disclosure purposes as the case may be, which additional information shall be treated as the disclosing Party's additional Confidential Information and shall be treated in accordance with the terms hereof, including Section 11.2 above or 11.5 below, as the case may be.

11.4 Confidentiality of Agreement Terms. Subject to Sections 11.1.2, 11.1.3, 11.2, 11.3 and 11.5, each Party agrees not to, and to cause its Affiliates not to, disclose to any Third Party any terms of this Agreement without the prior written consent of the other Party hereto, except each Party and its Affiliates may disclose the terms of this Agreement: (a) to advisors (including financial advisors, attorneys and accountants), actual or potential acquisition partners or private investors, and others on a need to know basis, in each case under appropriate confidentiality provisions substantially equivalent to those in this Agreement; or (b) to the extent necessary to comply with Applicable Laws and court orders (including securities laws or regulations and the applicable rules of any public stock exchange).

11.5 Publicity.

11.5.1 Initial Press Releases. After the Effective Date, each Party may issue its respective press release regarding this Agreement attached hereto as Exhibit H (including the existence and certain terms hereof as provided in such Exhibit).

11.5.2 Further Publicity.

(a) Investor Information. Each disclosing Party acknowledges that the other Party receiving the disclosing Party's Confidential Information hereunder may, from time to time: (a) desire to publicly disclose through a (i) press release or (ii) media appearance,

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public announcement or presentation, such as presentations to analysts or shareholders (collectively, **"Investor Presentation(s)"**); or (b) be required to publicly disclose by Applicable Law, or regulation or rule of any stock exchange (**"Required Filing(s)"**), such as Forms 8-K, 10-Q and 10-K (each such disclosure in (a) and (b), a **"Public Disclosure"**), the terms of this Agreement, or significant results or developments regarding any Licensed Products, to keep its investors reasonably informed of the achievement of milestones, significant events in the development and regulatory process of Licensed Products, and commercialization activities and the like, and that such Public Disclosures may pertain to Confidential Information of the other Party that is not otherwise permitted to be disclosed under this Article XI, and which may be beyond what is required to be disclosed by Applicable Law (collectively, "**Investor Information**"). For clarity, "Investor Information" includes solely those items that are beyond what is required to be disclosed under Applicable Law.

(b) Public Disclosure Review Procedure. With respect to any Public Disclosure, except for the initial press release described in Section 11.5.1, the receiving Party (the **"Requesting Party"**) shall provide the other Party (the **"Reviewing Party"**) with: (a) a draft of the Content (as defined in the next sentence) of the draft press release or Required Filing or (b) a summary of the Content of the Investor Presentation, for review, at least [*] ([*]) Business Days (if practicable under the circumstances, or if not practicable, such shorter time) in advance of the issuance of the press release, filing of the Required Filing or scheduled date of the Investor Presentation. The word "**Content**" in this Section 11.5.2(b) means any information relating to the activities contemplated by this Agreement, including Investor Information, and does not include any other business information of the Requesting Party or

information pertaining to the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995 relating to "forward-looking statements." The Reviewing Party may notify the Requesting Party of any reasonable objections or suggestions that the other Party may have regarding the Content in the Public Disclosure provided for review under this Section, and the Requesting Party shall reasonably consider any such objections or suggestions that are provided in a timely manner. The principles to be observed with respect to disclosures of Investor Information shall include accuracy, compliance with Applicable Law and regulatory guidance documents, reasonable sensitivity to potential negative reactions of a Regulatory Authority, reasonable sensitivity to commercial information of value to competitors, the need to keep investors informed regarding the Requesting Party's business, and reasonable sensitivity to avoid [*]. The Requesting Party shall use commercially reasonable efforts to adopt the reasonable requests of the Reviewing Party with respect to its Confidential Information.

11.6 Publications.

11.6.1 Publication Strategy. The JSC, directly or through its Joint Development Committee, shall develop under the advice of the Patent Working Group strategies, and provide guidance to the Parties as to appropriate timings, for scientific publications by either or both of the Parties relating to results from the Development of Licensed Products hereunder. The Parties acknowledge that it may be appropriate for a Party from time to time to enter into agreements with Third Party subcontractors performing Development work, such as academic institutes conducting any clinical studies under the CDP, that include contractual provisions permitting such Third Parties to make publications regarding the results of their subcontract work, and the Parties

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through an appropriate Joint Committee shall reasonably cooperate to facilitate such Third Party publications as permitted under any such Third Party subcontract.

11.6.2 Publication Review. The publication and presentation of the results from the Development Program and the Parties' publication activities relating thereto or to any Licensed Product shall be conducted in accordance with the terms hereof and the guidance of the JSC. Prior to publishing or presenting the results of any Development activities related to a Licensed Product, a Party desiring to submit such a publication (the **"Publishing Party"**) shall provide to the other Party (the **"Reviewing Party"**), at least [*] ([*]) days prior to planned submission for publication or presentation (or such other time as is reasonably practicable in the circumstances), a draft of any proposed abstracts, posters, manuscripts, slides, summaries of oral presentations, or other materials that such Publishing Party (or its or its Affiliate subcontractor) intends to publish or publicly present *(***"Proposed Publications"**). No later than [*] ([*]) days after receipt of any Proposed Publication, a Reviewing Party shall notify the Publishing Party in writing whether the Reviewing Party has an objection to the Proposed Publication, whether due to the inclusion of any of its Confidential Information or to allow time for the applicable Party or Parties to file for patent protection on any invention within the Development Program Know-How. Upon such notice from the Reviewing Party, the Publishing Party shall delay submission to permit the filing of any such desired patent application and, if appropriate based on the advice of the Patent Working Group, a related non-provisional application within one year thereof (such as if any Development work relating to an invention described in the Proposed Publication or an improvement thereof is still ongoing). If a Reviewing Party notifies a Publishing Party that it has such an objection to a Proposed Publication, the Publishing Party shall reasonably cooperate with the Reviewing Party to address such concern. The Publishing Party shall reasonably consider any other suggestions of the Reviewing Party that are provided in a timely manner, and after doing so may proceed with the Proposed Publication, subject to the terms and conditions hereof. For clarity, any proposed publication materials that subcontractor investigators or other Third Parties propose to publish or present, such materials shall be subject to review under this Section to the extent that Geron or Janssen, as the case may be, has the right and time to do so.

11.6.3 Authorship. The Parties shall comply, in any Proposed Publication made pursuant to this Section 11.6 during the Term, with standard academic practice regarding authorship of scientific publications and recognition of contribution of the Parties. Notwithstanding the foregoing, to the extent that a Reviewing Party has either provided funding for an activity relating to the Development of a Licensed Product (by incurring or reimbursing Development Costs with respect thereto), the Reviewing Party's contributions shall be acknowledged in any Proposed Publication that relates to such activity, unless the Reviewing Party requests not to be acknowledged. For clarity, nothing contained in this Section 11.6 shall alter or affect a Party's confidentiality obligations pursuant to this Article XI or obligation to comply with Applicable Laws.

11.7 Publications on Progress and/or Clinical Studies. The Parties agree that nothing herein shall prohibit either Party from publishing any Confidential Information pertaining to any progress, such as clinical studies of a Licensed Product under the Global Development Plan, as required by Applicable Law. Geron acknowledges and agrees that nothing herein shall prohibit Janssen and its Affiliates from publishing any Confidential Information as reasonably required for Janssen's compliance with its then-current policy on the registration and reporting of results of

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pharmaceutical company sponsored clinical studies policy (a copy of which, as of the Execution Date, Janssen has provided to Geron), and Geron further agrees to provide, and to cause its applicable subcontractors to provide, to Janssen such assistance as reasonably requested in connection with fulfilling the requirements set forth in such policy. Subject to the foregoing in this Section, the Parties shall use commercially reasonable efforts to comply with the review procedure set out in Section 11.6 prior to the posting or other publication of any Proposed Publication under this Section 11.7, to the extent consistent herewith.

11.8 Third Party Uses of Clinical Data. Geron acknowledges that Janssen ascribes to certain industry group positions (such as those of PhRMA and AdvaMed) and has adopted policies, in each case regarding disclosing clinical data for certain Third Party uses, including, without limitation, certain research uses. Accordingly, data and information obtained from clinical studies of Licensed Products conducted under this Agreement may be disclosed by Janssen to Third Parties consistent with Janssen's policies, Regulatory Authority requirements, and Applicable Laws, provided that Janssen provides Geron prior written notice of any such disclosure reasonably in advance of such disclosure. Nothing in this Agreement will prohibit such disclosures by Janssen.

ARTICLE XII: REPRESENTATIONS AND WARRANTIES

12.1 Representations of Authority. Geron and Janssen each represents and warrants to the other Party that, as of the Execution Date it has, and through the Effective Date shall retain, full right, power and authority to enter into this Agreement and to perform its respective obligations under this Agreement and that it has the right to grant to the other the licenses and sublicenses granted pursuant to this Agreement.

12.2 Consents. Each Party represents and warrants to the other Party that, except as provided in Section 16.11 (regarding HSR Clearance) and except for any approvals from Regulatory Authorities (including pricing or reimbursement approvals, Manufacturing approvals or similar approvals necessary for the Development, Manufacture or Commercialization of the Licensed Products), all necessary consents, approvals and authorizations of all Government Authorities and other persons required to be obtained by it as of the Effective Date in connection with the execution, delivery and performance of this Agreement have been obtained by the Effective Date.

12.3 No Conflict. Each Party represents and warrants to the other Party that, notwithstanding anything to the contrary in this Agreement, the execution and delivery of this Agreement by such warranting Party, the performance of such Party's obligations hereunder (as contemplated as of the Effective Date), and the licenses and sublicenses to be granted by such Party pursuant to this Agreement (i) do not conflict with or violate any requirement of Applicable Laws existing as of the Effective Date and applicable to such Party, and (ii) do not conflict with, violate, breach or constitute a default under any contractual obligations of such Party or any of its Affiliates existing as of the Effective Date. Each Party shall, and shall cause its Affiliates to, comply with all Applicable Laws pertaining to the Development, Manufacture and Commercialization of the Licensed Products, including applicable Drug Regulation Laws, Clinical Investigation Laws and Health Care Laws.

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12.4 Enforceability. Each Party represents and warrants to the other Party that, as of the Effective Date, this Agreement is a legal and valid obligation binding upon the warranting Party and is enforceable against it in accordance with its terms.

12.5 Additional Representations and Warranties of Geron. Geron represents and warrants to Janssen that, as of the Execution Date:

12.5.1 Geron (a) is not aware of any claim made against it asserting the invalidity, misuse, unregisterability, unenforceability or non-infringement of any of the Geron Product Patent Rights and (b) is not aware of any claim made against it challenging Geron' s ownership of or license rights in any of the Geron Product Patent Rights or making any adverse claim of ownership (whether sole or joint) thereof or license thereto (except for any license expressly set forth in the Pre-Existing Licenses to Third Parties identified in Exhibit B-1).

12.5.2 Other than non-exclusive licenses granted by Geron to Third Parties under the Pre-Existing Licenses to Third Parties identified in Exhibit B-1, which grants do not preclude Janssen from exploiting the full scope of the licenses granted to Janssen under Sections 2.1.1 and 2.1.2 hereof, Geron has not granted any license to any Third Party under any of the Geron Product Patent Rights or any Geron Product Know-How to offer for sale, sell, or otherwise Commercialize a Licensed Product in any field, which license has not expired or been terminated prior to the Execution Date and shall not have granted any such rights as of the Effective Date.

12.5.3 The Geron Product Patent Rights are (and through the Effective Date shall remain) free and clear of any liens, charges and encumbrances (other than non-exclusive licenses granted by Geron to Third Parties, which grants do not preclude Janssen from exploiting the full scope of the licenses granted to Janssen as contemplated hereunder). Neither Geron nor any of its Affiliates or their respective current or former employees, to the best of Geron's knowledge, has misappropriated any of the Geron Product Know-How from any Third Party, and Geron is not aware of any claim by a Third Party that such misappropriation has occurred.

12.5.4 Except as expressly set forth in the applicable Pre-Existing Licenses from Third Parties identified in Exhibit B-2, neither Geron nor, to Geron's knowledge, any of its Third Party licensors of any Geron Product IP is or has been a party to any agreement with the U.S. federal government or an agency thereof pursuant to which the U.S. federal government or such agency provided funding (such as under a grant or contract) for any research or Development work relating to any Licensed Product.

12.5.5 To the best of Geron's knowledge, no written claim of infringement of the Patent Rights of any Third Party has been made nor threatened in writing, (directly or indirectly) against Geron or any of its Affiliates or, to the best of Geron's knowledge, Third Party contractors under any Existing Third Party Agreements, with respect to the Development, Manufacture or Commercialization of any Active Substance or Licensed Product. There are no other judgments or settlements against or owed by Geron or its Affiliates or to which Geron or its Affiliate is a party or, to the best of Geron's knowledge, pending litigation or litigation threatened in writing, in each case relating to any Active Substance or Licensed Product.

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12.5.6 Geron has made available to Janssen for review all material information in Geron's possession and control as of the Execution Date that, to the best of Geron's knowledge, pertains to GRN163 and/or GRN163L, or the Development, Manufacture or Commercialization thereof, including complete and correct copies of the following (to the extent there are any) in Geron's possession and control as of the Execution Date:

(a) adverse event data and reports;

(b) clinical study reports and study data, including all de-identified data, observations, analyses, conclusions, summaries, and reports resulting from the clinical study of GRN163L initiated under the Mayo IST Contract and IND No. 116129; and

(c) Regulatory Authority inspection reports, notices of adverse findings, warning letters, Regulatory Filings and letters and other correspondence with any Regulatory Authorities.

12.5.7 To Geron's knowledge, all of the studies, tests and pre-clinical and clinical trials of the Licensed Products conducted prior to, or being conducted on, the Execution Date have been and on the Execution Date are being conducted in material compliance with Applicable Laws.

12.5.8 To the best of Geron's knowledge, Exhibit D-1 lists all Geron Product Patent Rights owned solely by Geron as of the Execution Date (collectively, the "**Solely Owned Geron Product Patent Rights"**), Exhibit D-2 lists all Geron Product Patent Rights owned jointly by Geron with any Third Party (as identified in such Exhibit) as of the Execution Date and Geron has an equal, undivided interest in each such Geron Product Patent Right (collectively, the "**Jointly Owned Geron Product Patent Rights"**), and Exhibit D-3 lists all Geron Product Patent Rights licensed by Geron from Third Parties, as of the Execution Date (collectively, the "**In-Licensed Geron Product Patent Rights"**). To the best of Geron's knowledge (based on all records that Geron possessed and/or were reasonably available to Geron at any time on or before the Execution Date), the inventorship named as of the Execution Date in each issued Geron Product Patent Right is correct.

12.5.9 To the best of Geron's knowledge, Exhibit P lists all Geron Assay Patent Rights as of the Execution Date. To the best of Geron's knowledge, none of the Know-How described or contained in Exhibit K includes, or was derived from, any Know-How licensed to Geron under any Pre-Existing License from Third Parties or the [*] or any confidential information proprietary to any Third Party.

12.5.10 No Geron Product Patent Right is subject to the [*].

12.5.11 Each Patent Right within the Imetelstat COM Patent Family is owned solely by Geron.

12.6 Further Representations and Warranties of Geron Regarding Pre-Existing Licenses from Third Parties. To the best of Geron's knowledge, Exhibit B-2 lists all Pre-Existing Licenses from Third Parties as of the Execution Date that pertain to GRN163 or GRN163L. Geron represents and warrants that, to the best of its knowledge, as of the Execution

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Date Geron has not entered into, and Geron agrees that, through the Effective Date and during the Term, it shall not enter into, any agreements with any Third Party by virtue of which any royalty or milestone payment or other payment would be owed by Janssen to such Third Party on account of any Commercialization of any Licensed Product by or on behalf of Janssen as contemplated hereunder. Geron represents and warrants that Exhibit B-2 sets forth all Pre-Existing Licenses from Third Parties in which Geron obtained rights to the In-Licensed Geron Product Patent Rights, if any. Geron represents and warrants that, prior to the Execution Date, Geron has provided Janssen with an opportunity to review complete and correct copies of the Pre-Existing Licenses from Third Parties (including any amendments thereof), including all terms and conditions thereof as of the Execution Date. Geron represents and warrants that, to its knowledge, such Pre-Existing Licenses from Third Parties remain in full force and effect as of the Execution Date, except where noted otherwise in Exhibit B-2, and to its knowledge, Geron and each Third Party counterparty has been and is in compliance in all material respects with the terms thereof. Geron covenants that it shall use commercially reasonable efforts not to take or omit to take any actions that would constitute a breach of any Pre-Existing Licenses from Third Parties through the Effective Date and during the Term hereof, and Geron agrees not to enter into any amendment to any Existing Third Party Agreement through the Effective Date or during the Term hereof, in each case which breach or amendment would have a material adverse effect on the Development or Commercialization of Licensed Products as contemplated hereunder. During the Term Geron shall provide Janssen promptly with notice of the occurrence of any such breach (or receipt of notice of an allegation of any such breach).

12.7 No Warranties. EXCEPT AS OTHERWISE EXPRESSLY SET FORTH IN THIS AGREEMENT, NEITHER PARTY MAKES ANY REPRESENTATION OR EXTENDS ANY WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, TO THE OTHER PARTY, AND EACH PARTY HEREBY DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE AND NONINFRINGEMENT WITH RESPECT TO ALL COLLABORATION ACTIVITIES. EACH PARTY HEREBY DISCLAIMS ANY REPRESENTATION OR WARRANTY THAT THE DEVELOPMENT, MANUFACTURE AND COMMERCIALIZATION OF LICENSED PRODUCTS PURSUANT TO THIS AGREEMENT WILL BE SUCCESSFUL OR THAT ANY PARTICULAR SALES LEVEL WITH RESPECT TO LICENSED PRODUCTS WILL BE ACHIEVED.

12.8 No Debarment. Except with regard to Janssen as reflected by, and subject to the terms of, the Corporate Integrity Agreement, each Party represents and warrants that, as of the Effective Date, neither it nor any of its Affiliates has been debarred or is subject to debarment, and neither Party nor any of its Affiliates will use in any capacity, in connection with the Development, Manufacture or Commercialization of the Licensed Products or Products in the Field, any person who has been debarred pursuant to Section 306 of the United States Federal Food, Drug, and Cosmetic Act, or who is the subject of a conviction described in such section. Each Party agrees to inform the other Party in writing immediately if it or any person who is performing services hereunder is debarred or is the subject of a conviction described in Section 306 of the United States Federal Food, Drug, and Cosmetic Act, or if any action, suit, claim, investigation or legal or administrative proceeding is pending or, to the best of such Party's knowledge, is threatened, relating to the debarment or conviction of such Party or any person used in any capacity by such

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Party or any of its Affiliates in connection with the Development, Manufacture or Commercialization of the Licensed Products or Products.

12.9 Compliance with Anti-Corruption Applicable Laws. Each Party shall, and shall cause each of its Affiliates and Third Party subcontractors and sublicensees conducting activities hereunder, to comply with Anti-Corruption Laws and the provisions of Exhibit G attached hereto in connection with the performance of activities under this Agreement.

ARTICLE XIII: INDEMNIFICATION AND INSURANCE

13.1 Indemnification Obligation. Each Party (the "**Indemnifying Party**") shall indemnify and hold harmless the other Party and its Indemnified Persons (collectively, the "**Indemnified Party**") from and against any and all Losses resulting from any Action brought by a Third Party against any Indemnified Party, to the extent such Losses arise from or are based on a claim ("**Claim**") of: (1) the negligence or wilful misconduct of the Indemnifying Party or any of its Indemnified Persons or Third Party sublicensees or subcontractors, in each case in connection with the exercise of such Indemnifying Party's rights, or performance of such Party's obligations, under this Agreement; (2) the Indemnifying Party's or any of its Indemnified Persons' or Third Party sublicensees' or subcontractors' failure to comply with or perform one or more of such Party's or such Affiliate's, as applicable, obligations in this Agreement, or the breach or inaccuracy of one or more of such Indemnifying Party's or such Indemnified Persons', as applicable, warranties in this Agreement; (3) the Indemnifying Party's or any of its Indemnified Persons' or Third Party sublicensees' or subcontractors' making, using, selling, offering for sale, importation, distribution, disposition, or other exploitation of any Development Program IP outside the Development Program; (4) the violation of Applicable Law by the Indemnifying Party or any of its Indemnified Persons or Third Party sublicensees or subcontractors in connection with the exercise of such Indemnifying Party's rights, or performance of such Party's obligations, under this Agreement; (5) the performance of any Development activities by the Indemnifying Party or any of its Indemnified Persons or Third Party sublicensees or subcontractors hereunder; (6) in the case of Janssen as the Indemnifying Party, the Commercialization, Manufacture, use, Promoting (including Detailing), sales, and distribution of any Licensed Products by any employees or agents (including Sales Representatives) of Janssen or any of its Affiliates or Third Party sublicensees hereunder, except in each case to the extent resulting from any inaccuracies or omissions in any safety information or regulatory documentation that relates to the Licensed Product and was provided by Geron to, and reasonably relied upon by, Janssen or any of its Affiliates or any of its Indemnified Persons hereunder; (7) in the case of Geron as the Indemnifying Party, the Promoting of any Licensed Products by any employees or agents (including Sales Representatives) of Geron pursuant to any exercise of Geron's Co-Promotion Option hereunder, except to the extent resulting from any inaccuracies or omissions in any Approved Materials for Detailing Licensed Product, its Product Label and Insert, or safety information or regulatory documentation relating to the Licensed Product that was provided by Janssen to, and reasonably relied upon by, Geron or any of its Indemnified Persons hereunder; or (8) in the case of Geron as the Indemnifying Party, infringement of any Existing Blocking Third Party Patent Right based upon or resulting from any Contemplated License Activities, unless and until such time as, with respect to a given Existing Blocking Third Party Patent Right, an Unblocking License Agreement is entered into by Geron in accordance with Section 8.4.3.

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13.2 Claims for Indemnification.

13.2.1 Notice. In the case of any Action for which an Indemnifying Party may be liable to an Indemnified Person under Section 13.1, the Indemnified Party shall as soon as practicable notify the Indemnifying Party in writing of such Action (a **"Notice of Claim"**). Failure or delay in notifying the Indemnifying Party shall not relieve the Indemnifying Party of any liability it may have to the Indemnified Party, except and only to the extent that such failure or delay causes actual harm to the Indemnifying Party with respect to such Action. The Notice of Claim shall specify in reasonable detail the Action with respect to which such Indemnified Party or any of its Indemnified Persons intends to base a request for indemnification or reimbursement under Section 13.1. Failure to provide such reasonable detail will not relieve the Indemnifying Party of any liability it may have to the Indemnified Party, except and only to the extent that such failure causes actual harm to the Indemnifying Party with respect to such Action. The Indemnified Party shall enclose with the Notice of Claim a copy of all papers served with respect to such Action, if any. The Indemnifying Party shall have the right to assume the defense of such Action, unless it provides notice within [*] ([*]) days from the date on which the Indemnifying Party received the Notice of Claim that the Indemnifying Party waives it right to assume the defense of such Action and any litigation resulting therefrom with counsel of its choice.

13.2.2 Control of Defense. Provided that the Indemnifying Party has not waived its right to assume the defense of an Action pursuant to Section 13.2.1, then, subject to Section 13.2.4, the Indemnifying Party shall have the right to defend, settle and otherwise dispose of such Action.

13.2.3 Cooperation. The Parties shall act in good faith in responding to, defending against, settling or otherwise dealing with such Action pursuant to the terms hereof; provided that (a) an Indemnified Party shall not be obligated to enter into or consent to the entry of any judgment or settlement in relation to any Action as provided in Section 13.2.4, and (b) in any event, an Indemnifying Party shall not be relieved of its obligations under this Section 13.2.3 as a result of any failure of the Indemnified Party to cooperate as provided in this Section 13.2.3, except to the extent that the Indemnifying Party is actually prejudiced by such breach. The Parties shall also cooperate in any such defense by giving each other reasonable access to all non-privileged information relevant thereto to the extent permitted by Applicable Law.

13.2.4 Control by the Indemnifying Party. If the Indemnifying Party assumes control of an Action in accordance with Section 13.2.2, (a) the Indemnified Party may retain separate co-counsel at its sole cost and expense and participate in the defense of the Action, but the Indemnifying Party shall continue to control the investigation, defense and settlement thereof, and (b) the Indemnifying Party will not, without the prior written consent of the Indemnified Party, consent to the entry of any judgment or enter into any settlement with respect to the Action to the extent such judgment or settlement (1) provides for equitable relief (or any other relief other than solely for money damages) against the Indemnified Party or any of its Indemnified Persons, or liability or obligation that cannot be assumed and performed by the Indemnifying Party in full (without any recourse to the Indemnified Party and its Indemnified Persons), (2) provides for any monetary relief that will not be fully discharged by the Indemnifying Party (without any recourse to the Indemnified Party and its Indemnified Persons) concurrently with the effectiveness of such judgment or settlement; provided that the Indemnified Party's consent shall not be unreasonably

withheld, conditioned or delayed to the extent that the sole relief is monetary, (3) does not effect a full and unconditional release of the Indemnified Party and its Indemnified Persons with respect to all claims in such Action (or the portion thereof to which the judgment or settlement relates), or (4) that contains an admission of wrongdoing on the part of the Indemnified Party or its Indemnified Persons. Notwithstanding anything contained herein to the contrary, an Indemnifying Party shall not be entitled to assume the defense of any Action that seeks an injunction or other equitable relief (or any other relief other than solely money damages) against the Indemnified Party.

13.2.5 Interim Control. Unless and until the Indemnifying Party (if any) is determined with respect to any particular Action, the Party subject to such Action shall have the right to defend and control such Action, but shall not have the right to consent to the entry of any judgment or enter into any settlement with respect to the Action for which it would be seeking indemnification or reimbursement hereunder without the prior written consent of the other Party (which consent shall not be unreasonably withheld, conditioned or delayed).

13.2.6 Election Not to Control. If the Indemnifying Party waives control of an Action in accordance with Section 13.2.1, then the Indemnified Party will be entitled to assume control of the Action upon delivery of notice to such effect to the Indemnifying Party; provided that the Indemnifying Party shall have the right to participate in the Action at its sole cost and expense, but the Indemnified Party shall control the investigation, defense and settlement thereof.

13.2.7 Unauthorized Settlements. Whether or not the Indemnifying Party has assumed control of the Action, the Indemnified Party will not consent to the entry of any judgment or enter into any settlement with respect to any Action for which it is seeking indemnification hereunder without the prior written consent of the Indemnifying Party (which consent shall not be unreasonably withheld, conditioned or delayed), and such Indemnifying Party shall not be obligated to indemnify or reimburse the Indemnified Party hereunder for any settlement entered into, or any judgment that was consented to, by the Indemnified Party without the Indemnifying Party's prior written consent.

13.2.8 Allocation. If, in any Action under this Article XIII, the Indemnified Party incurs an amount consisting of both Losses for which the Indemnifying Party is obliged to indemnify the Indemnified Party and Losses not covered by such indemnification, then, to the extent not otherwise determined in a court of competent jurisdiction, the Parties agree to act in good faith and use their reasonable endeavours to determine a fair and reasonable allocation of such Losses. The allocation between the Parties of any such Losses, if not otherwise determined in a court of competent jurisdiction, shall, if the Parties do not reach agreement in writing on such allocation, be determined by arbitration pursuant to Section 15.2. The Parties or the arbitrator, as the case may be, shall make such allocation based on the indemnification and reimbursement principles set forth in this Article XIII. Notwithstanding the foregoing, the Parties shall not be entitled to refer any Dispute with respect to Losses arising under an Action pursuant to this Section 13.2.8 to arbitration to the extent that the liability of either Party for such Losses is being contested in such Action (or any other Action that would be binding with respect to such first Action).

13.3 Mitigation. The Indemnified Party shall, and shall procure that its Indemnified Persons shall, in each instance, take reasonable steps to mitigate any Losses they suffer arising in

connection with any Action in respect of which they seek an indemnity from the other Party under this Agreement.

13.4 Conduct of Product Liability Claims. The provisions of this Section 13.4 shall govern with respect to any Third Party Product Liability Action for which a Party seeks indemnification pursuant to Section 13.1, and the provisions of this Section 13.4 below shall control in the event of any conflict between such provisions and those of Section 13.2 above.

13.4.1 Product Liability Actions. A Party becoming aware of an Action involving a product liability Claim in connection with the human use of any Licensed Product (whether in clinical studies in the Development Program or through Commercialization by Janssen hereunder) shall promptly notify the other Party in the event that any Third Party asserts or files any product liability Claim or Action based thereon relating to alleged defects in a Licensed Product (whether design defects, manufacturing defects, or defects in sales or Promoting) (**"Third Party Product Liability Action"**) against a Party. In the event a Third Party Product Liability Action is initiated against a single Party for which it seeks indemnification from the other as an Indemnifying Party under Section 13.1, the Indemnifying Party shall have control over such action. In such case, the Indemnified Party shall have the right, in its discretion and at its expense, to join or otherwise participate in such Third Party Products Liability Action with legal counsel selected by the Indemnified Party and reasonably acceptable to the Indemnifying Party; and the Indemnifying Party shall have the right to control the defense of such Action, but shall notify and keep the Indemnified Party apprised in writing of such Action and shall consider and take into account the Indemnified Party's reasonable interests and requests and suggestions regarding the defense of such Action. In the event of a Third Party Product Liability Action is initiated against both Parties, Janssen shall control the response to such Third Party Product Liability Action, with each Party responsible for its legal expenses incurred in such Action.

13.4.2 Cooperation. The non-controlling Party of a Third Party Product Liability Action shall reasonably cooperate with the controlling Party in the preparation and formulation of a defense to such Third Party Product Liability Action, and in taking other steps reasonably necessary to respond to such Third Party Products Liability Action. The controlling Party shall have the sole and exclusive right to select its counsel for the defense of such Third Party Products Liability Action. If required under Applicable Law in order for the controlling Party to maintain a suit in response to such Third Party Products Liability Action, the non-controlling Party shall join as a party to the suit. The controlling Party shall assume and pay all of its own out-of-pocket costs incurred in connection with any litigation or proceedings related to such Third Party Products Liability Action, including the fees and expenses of the counsel selected by it, as well as the reasonable out-of-pocket costs of the non-controlling Party associated with providing assistance requested by the controlling Party or joining the suit if requested by the controlling Party or required to maintain the suit. The non-controlling Party shall also have the right to

participate and be represented in any such suit by its own counsel at its own expense. The controlling Party shall not settle or compromise any Third Party Products Liability Action without the consent of the other Party, which consent shall not be unreasonably withheld.

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13.5 Insurance.

13.5.1 During the Term and for a period of five years thereafter, Janssen will secure and maintain in full force and effect adequate insurance coverage against its liabilities under this Agreement, including commercial general liability and product liability insurance in an amount not less than $[*] per occurrence and annual aggregate.

13.5.2 Prior to the initiation of any clinical study or related Development activities under the Global Development Plan, the Party responsible for the applicable activity shall secure and maintain in full force and effect clinical trial insurance in compliance with Applicable Law in those territories where clinical studies are conducted.

13.5.3 Upon written request, each Party shall provide the other with a certificate of insurance evidencing the required coverage hereunder. Notwithstanding the foregoing, either Party's failure to maintain adequate insurance shall not relieve that Party of its obligations set forth in this Agreement.

13.6 Limitation of Liability. NOTWITHSTANDING THE PROVISIONS OF SECTION 15.2.16, NOTHING HEREIN IS INTENDED TO OR SHALL LIMIT OR RESTRICT THE INDEMNIFICATION RIGHTS OR OBLIGATIONS OF ANY PARTY UNDER THIS ARTICLE XIII.

ARTICLE XIV: TERM AND TERMINATION

14.1 Agreement Term. Unless terminated earlier in accordance with this Article XIV, the term of this Agreement (the **"Term"**) shall commence on the Effective Date and shall expire upon the expiration of the last-to-expire Geron Product Patent Right, Development Program Patent Right, or Royalty Term for any Licensed Product sold hereunder.

14.2 Early Termination for Default.

14.2.1 Notice of Default and Cure Period. Upon any material breach of this Agreement by a Party (the **"Breaching Party"**), the other Party (the **"Non-Breaching Party"**) shall have the right to give the Breaching Party notice specifying the nature of such material breach. If the breach of this Agreement is curable, then the Breaching Party shall have a period of [*] ([*]) days from the date of receipt of the notice (the **"Cure Period"**) to cure such material breach in a manner that effectively remedies the harm to the Non-Breaching Party caused by the material breach. Notwithstanding the foregoing, if such breach, by its nature, is curable, but is not reasonably curable within the Cure Period, then provided that such breach is not of a payment obligation hereunder, such Cure Period shall be extended if the Breaching Party provides a written plan for curing such breach to the Non-Breaching Party and uses diligent efforts to cure such breach in accordance with such written plan, provided that no such extension shall exceed [*] ([*]) days (for an extended Cure Period totaling [*] days) without the consent of the Non-Breaching Party. For clarity, this provision shall not restrict in any way either Party's right to notify the other Party of any other breach or to demand the cure of any other breach.

14.2.2 Termination Right for Default. The Non-Breaching Party shall have the right to terminate this Agreement, upon written notice to the Breaching Party: (a) in the event the

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Breaching Party does not notify the Non-Breaching Party within [*] ([*]) days of its notice under Section 14.2.1 that the Breaching Party disputes that it has committed a material breach or that it intends to cure such breach in accordance with Section 14.2.1; and (b) in the event that the Breaching Party has not cured the material breach within the Cure Period. If a Party in good faith raises a Dispute regarding any such termination (including with respect to the existence or materiality of a breach or the sufficiency of a cure) pursuant to the Dispute resolution procedures under Section 15.2, such termination shall be effective only upon a conclusion of the Dispute resolution procedures in Section 15.2 resulting in a determination that there has been an uncured material breach (or, if earlier, abandonment of the Dispute by the Breaching Party). For the avoidance of doubt, the exercise of a termination right under this Section 14.2 by a Non-Breaching Party shall be without prejudice to its right to seek damages or any other remedy on account of the Breaching Party's material breach that may be available at law or in equity, subject to the terms hereof.

14.3 Early Termination for Bankruptcy.

14.3.1 In the event of the Bankruptcy of a Party (or its successor in interest in the event this Agreement is assigned as permitted hereunder), the other Party may terminate this Agreement by notice to the bankrupt Party.

14.3.2 All licenses and other rights granted pursuant to this Agreement by one Party to the other are, and will otherwise be deemed to be, for purposes of Section 365(n) of the U.S. Bankruptcy Code (or comparable provisions of laws of other jurisdictions), licenses of right to "intellectual property" as defined under Section 101 of the U.S. Bankruptcy Code (or comparable provisions of Applicable Laws of other jurisdictions). Notwithstanding anything to the contrary herein, the Parties agree that, in lieu of a Party who is licensed (or sublicensed) any rights from a Party in Bankruptcy terminating this Agreement in its entirety as provided in Section 14.3.1 above: (a) the Party who is a licensee of such rights from the other Party under this Agreement shall, upon such other Party's Bankruptcy, retain and may fully exercise all of the rights and elections under the U.S. Bankruptcy Code (or comparable Applicable

Laws of other jurisdictions); and (b) in the event of the commencement of a bankruptcy proceeding by or against a Party under the U.S. Bankruptcy Code (or comparable provisions of Applicable Laws of other jurisdictions), the Party that is not a party to such Bankruptcy proceeding shall be entitled to a complete duplicate of (or complete access to, as appropriate) any such intellectual property and all embodiments of such intellectual property to which it is granted license or other rights hereunder, and the same, if not already in its possession, will be promptly delivered to it (i) upon any such commencement of a bankruptcy proceeding upon its written request therefor, unless the Party subject to such proceeding elects to continue to perform all of its obligations under this Agreement, or (ii) if not delivered under subsection (i) above, following the rejection of this Agreement by or on behalf of the Party subject to such proceeding upon written request therefor by the non-subject Party. All rights, powers and remedies granted hereunder to a Party as a licensee of any intellectual property rights as provided in this Section are in addition to and not in substitution for any and all other rights, powers and remedies now or hereafter existing at law or in equity, in the event of the commencement of a Bankruptcy Action by or against the granting Party under Applicable Law, and the licensee Party, in addition to the rights, powers and remedies expressly provided herein, shall be entitled to exercise all other such rights and powers and resort to all other such remedies as may now or hereafter exist at law or in equity in such event.

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14.4 Termination by Janssen for Safety Concern. Janssen may terminate this Agreement by written notice to Geron in the event that Janssen determines, in its good-faith judgment, that continued Development or Commercialization of a Licensed Product would be unethical or unreasonable due to a safety-related reason, such as if Janssen believes, based on its good-faith assessment of relevant data, that continuation of human use of a Licensed Product has resulted in, or has a significant risk of resulting in, the occurrence of a safety or tolerability finding that would raise material concerns regarding the clinical benefit of the Licensed Product for its target population (for example, harm significantly in excess of an acceptable side-effect profile). Such termination shall be effective immediately upon Janssen's written notice to Geron.

14.5 Discretionary Termination by Janssen.

14.5.1 Prior to Lead Phase 2 MF Study Read-Out. At any time before the occurrence of the Lead Phase 2 MF Study Read-Out, Janssen may unilaterally terminate this Agreement by written notice to Geron, which termination shall be effective [*] ([*]) days from the date of such notice, and irrespective of whether the Lead Phase 2 MF Study Read-Out occurs during such [*] ([*]) days.

14.5.2 During Janssen Election Period. During the Janssen Election Period, Janssen may unilaterally terminate this Agreement by written notice to Geron, effective the [*] day after expiration of the Janssen Election Period. Alternatively, if Janssen does not timely deliver to Geron a Continuation Notification under Section 2.1.8 during the Janssen Evaluation Period, it shall be deemed to have exercised its right to terminate under this Section 14.5.2 effective immediately on the [*] day after the expiration of the Janssen Evaluation Period.

14.5.3 After Delivery of a Continuation Notice. At any time after Janssen has delivered a Continuation Notification, Janssen may unilaterally terminate this Agreement by notice to Geron, which termination shall be effective [*] ([*]) months from the date of such notice.

14.6 Consequences of Early Termination.

14.6.1 For Geron Breach or Bankruptcy. In the event of an early termination of this Agreement by Janssen under Section 14.2 (Geron material breach) or 14.3.1 (Geron bankruptcy), then upon the effective date of such termination the following provisions shall apply in addition to those provisions set forth in Sections 14.6.6 and 14.7:

(a) the licenses and other rights granted by Geron to Janssen under Section 2.1 shall terminate; and

(b) all licenses granted to Geron under Section 2.2 shall terminate.

14.6.2 For Safety by Janssen, or for Breach by or Bankruptcy of Janssen. In the event of any early termination by Janssen under Section 14.4 (safety) or by Geron under Section 14.2 (Janssen material breach) or 14.3.1 (Janssen Bankruptcy), then as of the effective date of such termination the following provisions shall apply in addition to those provisions set forth in Sections 14.6.6 and 14.7:

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(a) all licenses granted to Janssen under Section 2.1 shall terminate, except that any applicable license shall survive on a non-exclusive basis solely for the purpose and duration of any wind-down activities to be conducted by Janssen in accordance with clause (h) of this Section 14.6.2;

(b) all licenses granted to Geron under Section 2.2 shall terminate;

(c) Janssen will assign to Geron all Regulatory Filings and Regulatory Approvals specific to any Licensed Product being Developed as of such time or previously Developed during the Term, or Commercialized hereunder by Janssen or any of its Affiliates or Third Party sublicensees as of the effective date of termination (a "**Reverted Licensed Product**"), and any Janssen Development Program Know-How contained in such Regulatory Filings and Regulatory Approvals shall be subject to the license grants set forth in Section 14.6.2(e). In such event Janssen shall grant, and does hereby grant, to Geron, a right of reference to any DMF or master files, within the possession and Control of Janssen (directly or through any of its Affiliates) as of the date of notice of such termination (provided, that Janssen covenants not to intentionally relinquish Control prior to such notice of termination) for the

Reverted Licensed Product and/or the Active Substance therein; and Janssen shall take such reasonable actions and execute such other instruments, assignments, and documents as may be reasonably requested by Geron to effect the transfer of rights under such Regulatory Filings and Regulatory Approvals to Geron. If Applicable Law prevents or delays the transfer of ownership of any such Regulatory Filings or Regulatory Approvals to Geron, Janssen shall grant, and does hereby grant, to Geron an exclusive and irrevocable right of access and reference to such Regulatory Filings and Regulatory Approvals for the Licensed Products, and shall cooperate with Geron to make the benefits of such Regulatory Filings and Regulatory Approvals available to Geron or its designee(s). In addition to providing copies of the Regulatory Filings and Regulatory Approvals pursuant to clause (a) of this Section 14.6.2, Janssen shall promptly provide Geron with copies of all other material Janssen Development Program Know-How (including clinical and regulatory data, results, reports, and analyses, and CMC Know-How) pertaining to any Reverted Licensed Products in its possession and Control;

(d) At Geron's request, Janssen shall promptly transfer all safety data from clinical Development or Commercialization of any Reverted Licensed Product in Janssen's possession (including those contained in in Janssen's global safety database) to Geron, and Geron shall accept such transfer of such data and assume all pharmacovigilance responsibility for such products, including with respect to serious adverse event and pregnancy reporting, in accordance with Applicable Law;

(e) (i) Janssen shall grant and hereby grants (effective upon the date of such termination) to Geron a worldwide, exclusive, paid-up (as to Janssen, subject to the terms and conditions hereof) perpetual license, with a right of sublicense, under applicable Janssen Development Program IP (subject to Geron agreeing to assume Janssen's obligations to any Third Parties) solely to the extent reasonably necessary or useful for Geron to make, use, sell, offer for sale or import Reverted Licensed Products; provided, however, that Geron shall agree to assume all payment obligations to any Third Parties arising from Geron's, or its Affiliates' or Third Party sublicensees' exploitation of any such right. For clarity, all such Janssen Development Program IP shall be treated as Janssen's as well as Geron's Confidential Information (regardless of ownership

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of such information), subject to the confidentiality provisions of Article XI; and (ii) at Geron's request, Janssen shall enter into good-faith negotiations to grant Geron a corresponding royalty-bearing, non-exclusive, worldwide license under the Janssen Product IP, provided that Janssen shall not be obligated to enter into any such license if the Parties fail to reach mutually acceptable license terms;

(f) Janssen shall, at Geron's request, use commercially reasonable efforts (provided that, for clarity, such efforts shall not require Janssen to make any payments unless Geron agrees in writing to reimburse Janssen for such payments) to facilitate negotiations between Geron and any of Janssen's Third Party subcontractors or sublicensees performing any ongoing Development, Manufacturing, or Commercialization activities with respect to any Reverted Licensed Product, or, at Geron's reasonable request, and to the extent permissible under any agreement between Janssen and such Third Party subcontractor or sublicensee, provided that such agreement relates only to Reverted Product(s) and subject to Geron's agreement to bear any associated costs, assign such agreement related solely to the Reverted Licensed Product to Geron;

(g) (i) Janssen shall, at Geron's request, transfer to Geron any remaining inventory of Licensed Products (except as set forth in clause (h) of this Section 14.6.2 below) manufactured for Development use in accordance with the CDP, and Geron shall pay Janssen for such inventory in the amount of Cost of Goods plus [*] percent ([*]%), which shall be payable within [*] ([*]) days of Geron's receipt of an invoice for Janssen for such amount; and (ii) Janssen shall, at Geron's request, use commercially reasonable efforts to facilitate an orderly and prompt transition of any Manufacturing of clinical supply of the Reverted Licensed Product and/or its Active Substance then being conducted by Janssen and any of its Affiliates to Geron or its designee, and while such Manufacturing capability is transitioned, supply Geron or its designee with such Active Substance and/or the Reverted Licensed Product for use in Development at a price equivalent to the Cost of Goods therefor plus [*] percent ([*]%) percent, provided that Janssen shall not be obligated to continue to supply such Active Substance and/or Reverted Licensed Product after the earlier of (A) if Janssen is the sole manufacturing source for the Active Substance and/or Reverted Licensed Product, the date falling twenty-four (24) months from the effective date of termination, provided that as of twelve (12) months from the effective date of termination Geron is using commercially reasonable efforts to procure an alternative manufacturing source of Active Substance and/or Reverted Licensed Product, or (B) the date Geron is able to procure an alternative manufacturing source of Reverted Licensed Product sufficient to meet its Development needs; in the event that as of twelve (12) months from the effective date of termination Geron is not using commercially reasonable efforts to procure an alternative manufacturing source of Reverted Licensed Product, then Janssen shall have no further obligation to continue to supply such Active Substance and/or Reverted Licensed Product; in the event that a Third Party is manufacturing Active Substance and/or Reverted Licensed Product, then Janssen shall not be obligated to continue to supply such Active Substance and/or Reverted Licensed Product, provided that the material manufacturing agreement(s) between Janssen and such Third Party can be assigned to Geron, and further provided that all Out-of-Pocket Costs (e.g., cancellation fees and/or non-cancellable payment obligations) resulting from any assignment from Janssen to Geron of any such material manufacturing agreement(s) shall be borne by the Parties equally;

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(h) If Janssen, its Affiliates or sublicensees is selling or having sold, as of the effective date of termination, any Licensed Product in any country for which Regulatory Approval has been obtained (a "**Launched Product**"), then: (i) Geron or its designee shall have the optional right to purchase any part of the remaining stocks of Launched Products in the warehouses and factories of Janssen and its Affiliates at the price equivalent to the Cost of Goods for such stocks of Launched Products plus [*] percent ([*]%), and if Geron does not exercise the optional right to take over any of Janssen and its Affiliates' stocks of Launched Products under this clause, then Janssen shall have the right to continue to sell and have sold the residual salable or usable stocks of the Launched Products for a period of [*] ([*]) months from the effective date of such termination, provided that any royalty payment obligations under Sections 8.2 and 8.3 accruing to Geron on account of Janssen's sale of such remaining stocks during such period shall be made accordingly; (ii) in any case, Janssen shall not be obligated to Promote the Launched Product after the effective date of the termination; and (iii) Janssen shall, at Geron's

request, use commercially reasonable efforts to facilitate an orderly and prompt transition of any Manufacturing of Launched Products then being conducted by Janssen and any of its Affiliates to Geron or its designee, and while such Manufacturing capability is transitioned, supply Geron or its designee with Launched Product at a price equivalent to the Cost of Goods therefor plus [*] percent ([*]%), provided that Janssen shall not be obligated to continue to supply Launched Product after the earlier of (A) if Janssen is the sole manufacturing source for the Launched Product, the date falling twenty-four (24) months from the effective date of termination, or (B) provided that as of twelve (12) months from the effective date of termination Geron is using commercially reasonable efforts to procure an alternative manufacturing source of Launched Product, the date Geron is able to procure an alternative commercial manufacturing source of Launched Product sufficient to meet its Commercialization needs; provided, however, that in the event that as of twelve (12) months from the effective date of termination Geron is not using commercially reasonable efforts to procure an alternative manufacturing source of Launched Product, then Janssen shall have no further obligation to continue to supply such Launched Product; in the event that a Third Party is manufacturing Launched Product, then Janssen shall not be obligated to continue to supply such Launched Product, provided that the material manufacturing agreement(s) between Janssen and such Third Party can be assigned to Geron, and further provided that all Out-of-Pocket Costs (e.g., cancellation fees and/or non-cancellable payment obligations) resulting from any assignment from Janssen to Geron of any such material manufacturing agreement(s) or otherwise transitioning Manufacturing to Geron shall be borne by the Parties equally.

14.6.3 By Janssen Prior to the Lead Phase 2 MF Study Read-Out. In the event of any early termination by Janssen under Section 14.5.1 (prior to the Lead Phase 2 MF Study Read-Out), then as of the effective date of such termination the following provisions shall apply in addition to those provisions set forth in Sections 14.6.6 and 14.7:

(a) all licenses granted to Janssen under Section 2.1 shall terminate, except that any applicable license shall survive on a non-exclusive basis solely for the purpose and duration of any transitional or wind-down activities to be conducted by Janssen in accordance with this Section 14.6.3;

(b) all licenses granted to Geron under Section 2.2 shall terminate;

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(c) the provisions of Sections 14.6.2(c)-(g) shall apply; and

(d) Janssen shall have the following transitional or wind-down obligations (and, for clarity, except as set forth in clauses (i), (ii) and (iii) below, Janssen shall no longer have any obligation to fund any Development Costs incurred under any Development Budget after the effective date of such termination):

(i) with respect to the Lead Phase 2 MF Study, whether or not initiated, but provided that at the time of termination there is no prohibition on initiating or continuing such study by any applicable Regulatory Authority, Janssen shall continue to fund Janssen's 50% share of the Development Costs under the Development Budget of the CDP for such Initial Study incurred after the effective date of such termination through completion of such Initial Study;

(ii) with respect to the Lead Phase 2 Low-Risk MDS Study, only if initiated (with [*] patient dosed), but provided that at the time of termination there is no prohibition on continuing such study by any applicable Regulatory Authority, Janssen shall continue to fund Janssen's 50% share of Development Costs under the Development Budget of the CDP for such Initial Study incurred after the effective date of such termination through the date on which the Lead Phase 2 MF Study is then targeted to be complete as reflected in the CDP as of the date of notice of such termination;

(iii) to the extent any such Initial Study is ongoing as of the date of notice of such termination and being continued pursuant to clause (i) or (ii) of this Section 14.6.3(d), unless Geron requests earlier wind-down of the study or transfer of any responsibilities from Janssen to Geron (in which event Janssen shall reasonably cooperate with such request), Janssen shall continue to execute its Collaboration Activities for such Initial Study pursuant to the CDP, until the earlier of the date of completion of Collaboration Activities for the Lead Phase 2 MF Study or the date that is twelve (12) months from the date of notice of such termination, under the oversight of the JSC, which shall in connection therewith render decisions within its authority hereunder by consensus vote of the Parties' representatives during such time (notwithstanding anything to the contrary herein) and oversee the transfer of responsibilities to Geron during such time; and

(iv) with respect to any Additional Study under the CDP or any clinical study under any Janssen IDP, in each case only for such study (whether under the CDP or any Janssen IDP) if initiated (with [*] patient dosed), but provided that at the time of termination there is no prohibition on continuing such study by any applicable Regulatory Authority, Janssen shall continue to fund the Development Costs allocable under this Agreement to Janssen under the Development Budget of the CDP or Janssen IDP, as applicable, for such study incurred during the period running [*] ([*]) months from the date of notice of such termination; and to the extent any such other clinical study under this clause (iv) is ongoing as of the date of notice of such termination and being continued pursuant to this clause (iv), unless Geron requests earlier wind-down of the study or transfer of any responsibilities from Janssen to Geron (in which event Janssen shall reasonably cooperate with such request), Janssen shall continue to execute its operational activities for any such study under the CDP or Janssen IDP, as applicable, until the date that is twelve (12) months from the date of notice of such termination, under the oversight of

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the JSC, which shall in connection therewith render decisions within its authority hereunder by consensus vote of the Parties' representatives during such time (notwithstanding anything to the contrary herein) and oversee the transfer of responsibilities to Geron during such time.

14.6.4 By Janssen During the Janssen Election Period. In the event of any early termination by Janssen under Section 14.5.2 (during the Janssen Election Period, by notice of termination or failure to deliver a Continuation Notification), then as of the effective date of such termination the following provisions shall apply in addition to those provisions set forth in Sections 14.6.6 and 14.7:

(a) all licenses granted to Janssen under Section 2.1 shall terminate, except that any applicable license shall survive on a non-exclusive basis solely for the purpose and duration of any transitional or wind-down activities to be conducted by Janssen in accordance with this Section 14.6.4;

(b) all licenses granted to Geron under Section 2.2 shall terminate;

(c) the provisions of Sections 14.6.2(c)-(g) shall apply; and

(d) Janssen shall have the following transitional or wind-down obligations (and, for clarity, except as set forth in clause (i), Janssen shall no longer have any obligation to fund any Development Costs under any Development Budget for Initial Studies incurred after the effective date of such termination):

(i) with respect to any Additional Study under the CDP, only if initiated (with [*] patient dosed), but provided that at the time of termination there is no prohibition on continuing such Additional Study by any applicable Regulatory Authority, Janssen shall continue to fund Janssen's share of Development Costs under the Development Budget of the CDP for continuing such Additional Study during the [*] ([*])-month period running from the effective date of termination;

(ii) to the extent the Lead Phase 2 Low-Risk MDS Study or any such Additional Study under the CDP is ongoing as of the effective date of termination and being continued pursuant to clause (i) or (ii) of this Section 14.6.4(d), unless Geron requests earlier wind-down of such study or transfer of any responsibilities from Janssen to Geron (in which event Janssen shall reasonably cooperate with such request), Janssen, during a twelve (12)-month period running from the effective date of such termination, shall continue to perform its Collaboration Activities for each applicable study during such time, under the oversight of the JSC, which shall in connection therewith render decisions within its authority hereunder by consensus vote of the Parties' representatives during such time (notwithstanding anything to the contrary herein) and oversee the transfer of responsibilities to Geron during such 12-month period; and

(iii) with respect to any Additional Study under the CDP or any clinical study under any Janssen IDP, in each case only for such study (whether under the CDP or any Janssen IDP) if initiated (with [*] patient dosed), but provided that at the time of termination there is no prohibition on continuing such study by any applicable Regulatory Authority, Janssen shall continue to fund its share of Development Costs under the Development

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Budget of the CDP or Janssen IDP, as applicable, for such study incurred during the period running [*] ([*]) months from the date of notice of such termination; and to the extent any such other clinical study under this clause (iii) is ongoing as of the date of notice of such termination and being continued pursuant to this clause (iii), unless Geron requests earlier wind-down of the study or transfer of any responsibilities from Janssen to Geron (in which event Janssen shall reasonably cooperate with such request), Janssen shall continue to execute its operational activities for any such study under the CDP or Janssen IDP, as applicable, until the date that is twelve (12) months from the date of notice of such termination, under the oversight of the JSC, which shall in connection therewith render decisions within its authority hereunder by consensus vote of the Parties' representatives during such time (notwithstanding anything to the contrary herein) and oversee the transfer of responsibilities to Geron during such time.

14.6.5 By Janssen After Delivery of a Continuation Notice. In the event of any early termination by Janssen under Section 14.5.3 (after delivery of a Continuation Notification), then as of the effective date of such termination the following provisions shall apply in addition to those provisions set forth in Sections 14.6.6 and 14.7:

(a) all licenses granted to Janssen under Section 2.1 shall terminate, except that any applicable license shall survive on a non-exclusive basis solely for the purpose and duration of any transitional or wind-down activities to be conducted by Janssen in accordance with this Section 14.6.5;

(b) all licenses granted to Geron under Section 2.2 shall terminate;

(c) the provisions of Sections 14.6.2(c)-(h) shall apply;

(d) **(i)** if either (i) Janssen's notice of termination is provided to Geron within [*] ([*]) months after the date of Janssen's Continuation Notification or (ii) if Janssen's notice of termination is provided after the [*] period following the date of Janssen's Continuation Notification, and Geron has exercised its US Opt-In Rights, then in each case:

A. with respect to any Initial Study or Additional Study under the CDP or any clinical study under any Janssen IDP, in each case only for such study (whether under the CDP or any Janssen IDP) if initiated (with [*] patient dosed), but provided that at the time of termination there is no prohibition on continuing such study by any applicable Regulatory Authority, Janssen shall continue to fund its share of Development Costs under the Development Budget of the CDP or Janssen IDP, as applicable, for such study incurred during the period running [*] ([*]) months from the date of notice of such termination; and

B. to the extent any such other clinical study under clause (A) is ongoing as of the date of notice of such termination and being continued pursuant to this clause (i), unless Geron requests earlier wind-down of the study or transfer of any responsibilities from Janssen to Geron (in which event Janssen shall reasonably cooperate with such request), Janssen shall continue to execute its operational activities for any such study under the CDP or Janssen IDP, as applicable, until the date that is twelve (12) months from the date of notice of such termination, under the oversight of the JSC, which shall in connection therewith render decisions within its authority hereunder by consensus vote of the Parties' representatives

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during such time (notwithstanding anything to the contrary herein) and oversee the transfer of responsibilities to Geron during such time; or

(ii) otherwise (if Janssen's notice of termination is provided after the [*] period from the date of Janssen's Continuation Notification but Geron has not exercised its US Opt-In Rights), then Janssen shall have the following obligations:

A. with respect to any Initial Study or Additional Study under the CDP or any clinical study under any Janssen IDP, in each case only for such study (whether under the CDP or any Janssen IDP) if initiated (with [*] patient dosed), but provided that at the time of termination there is no prohibition on continuing such study by any applicable Regulatory Authority, Janssen shall continue to fund its share of Development Costs under the Development Budget of the CDP or Janssen IDP, as applicable, for such study incurred during the period running [*] ([*]) months from the date of notice of such termination; and

B. to the extent any such other clinical study under clause (A) is ongoing as of the date of notice of such termination and being continued pursuant to this clause (B), unless Geron requests earlier wind-down of the study or transfer of any responsibilities from Janssen to Geron (in which event Janssen shall reasonably cooperate with such request), Janssen shall continue to execute its operational activities for any such study under the CDP or Janssen IDP, as applicable, until the date that is twelve (12) months from the date of notice of such termination, under the oversight of the JSC, which shall in connection therewith render decisions within its authority hereunder by consensus vote of the Parties' representatives during such time (notwithstanding anything to the contrary herein) and oversee the transfer of responsibilities to Geron during such time.

14.6.6 Other Provisions Applicable to Any Early Termination. In the event of any early termination of this Agreement, the following provisions shall also apply:

(a) the JSC and all other Joint Committees shall dissolve after completion of the activities and events contemplated in Section 14.6.2, 14.6.3, 14.6.4, or 14.6.5 above, as the case may be;

(b) the Party for which the license granted to it has been terminated in accordance with this Article XIV shall, at the other Party's request (and to the extent and when permitted by Applicable Law), destroy, redact, or return, and cause its Affiliates and Third Party subcontractors and sublicensees to destroy, redact, or return all records to the extent containing, and all materials constituting, the other Party's Confidential Information in its possession and control, and, upon request, provide written certification of such destruction, redaction, or return, provided that such Party may retain in strict confidence one copy of the other Party's Confidential Information for its legal archives.

14.7 Survival. In the event of expiration or termination of this Agreement for any reason, the provisions of Articles I, IX (with respect to accrued payment obligations), XI, XII, XIII, XIV, XV, and XVI and Sections 2.6, 4.15, and 10.2 shall survive, as well as any other provisions that, as apparent from their nature and context are intended to continue or to remain (such as for interpretation purposes), shall survive. Further for the avoidance of doubt, upon

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expiration or termination of this Agreement for any reason, neither Party shall be released from any obligation that accrued prior to the end of the Term hereof. Accordingly, termination or expiration of the Agreement, in whole or in part (including relinquishment of any license right granted hereunder) for any reason, shall be without prejudice to any obligations that accrued prior to such termination or expiration, including any payments due hereunder (regardless of when payable) and any and all damages arising from any breach. In addition, any payments accrued prior to such termination or expiration shall become payable upon the effective date of such termination or expiration or at such earlier time as otherwise provided hereunder.

ARTICLE XV: DISPUTE RESOLUTION

15.1 Referral to Executive Officers. In the event of a Dispute, either Party may refer the matter to the Parties' Executive Officers for attempted resolution. The Executive Officers, in the presence of their legal advisors (including patent counsel if the Dispute involves a Patent Controversy), shall attempt in good faith to resolve any Dispute through negotiations. If the Executive Officers are unable to resolve a Dispute referred to them within [*] ([*]) Business Days (or such other period as may be agreed by the Parties in writing) after such referral and the Dispute does not involve a Patent Controversy, and subject to any other provisions of this Agreement and any applicable Ancillary Agreement, such Dispute shall be resolved as provided below in this Article.

15.2 Arbitration. If the Executives are unable to resolve a Dispute referred to them pursuant to Section 15.1 within [*] ([*]) Business Days after such referral, then other than any dispute subject to Expert Proxy Resolution under Section 3.11, either Geron or Janssen, after attempting to resolve the

Dispute through mediation as provided in Section 15.2.1 below, shall refer the Dispute to binding arbitration pursuant to Section 15.2.2 if, and only if, the Dispute does not involve a Patent Controversy.

15.2.1 Mediation. The Parties shall first attempt in good faith to resolve any Dispute by confidential mediation in accordance with the then-current Mediation Procedure of the International Institute for Conflict Prevention and Resolution ("**CPR Mediation Procedure**") (www.cpradr.org) before initiating arbitration. The CPR Mediation Procedure shall control, except where it conflicts with these provisions, in which case these provisions control. The mediator shall be chosen pursuant to CPR Mediation Procedure. The mediation shall be held in San Francisco, California. Either Party may initiate mediation by written notice to the other Party of the existence of a Dispute. The Parties agree to select a mediator within [*] ([*]) days of the notice and the mediation will begin promptly after the selection. The mediation will continue until the mediator, or either Party, declares in writing, no sooner than after the conclusion of one full day of a substantive mediation conference attended on behalf of each Party by a senior business person with authority to resolve the Dispute, that the Dispute cannot be resolved by mediation. In no event, however, shall mediation continue more than [*] ([*]) days from the initial notice by a Party to initiate meditation unless the Parties agree in writing to extend that period. Any period of limitations that would otherwise expire between the initiation of mediation and its conclusion shall be extended until [*] ([*]) days after the conclusion of the mediation. No discussions between the Parties attempting to resolve a Dispute under Section 15.2 or this Section 15.2.1 will be admissible in arbitration of the Dispute.

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15.2.2 Arbitration. If the Parties fail to reach resolution pursuant to mediation, and a Party desires to pursue resolution of a Dispute other than a Patent Controversy, then the Dispute shall be submitted by either Party for resolution in arbitration pursuant to the then current CPR Non-Administered Arbitration Rules ("**CPR Rules**") (www.cpradr.org), except where they conflict with these provisions, in which case these provisions control.

15.2.3 The arbitration will be held in Chicago, Illinois. All aspects of the arbitration shall be treated as confidential.

15.2.4 The arbitrators will be chosen from the CPR Panel of Distinguished Neutrals, unless a candidate not on such panel is approved by both Parties. Each arbitrator shall be a lawyer with at least 15 years' experience with a law firm or corporate law department of over 25 lawyers or who was a judge of a court of general jurisdiction. To the extent that the Dispute requires special expertise, the Parties will so inform CPR prior to the beginning of the selection process.

15.2.5 The arbitration tribunal shall consist of three arbitrators, of whom each Party shall designate one in accordance with the "screened" appointment procedure provided in CPR Rule 5.4. The chair will be chosen in accordance with CPR Rule 6.4.

15.2.6 If, however, the aggregate award sought by the Parties is less than $5 million and equitable relief is not sought, a single arbitrator shall be chosen in accordance with the CPR Rules.

15.2.7 Candidates for the arbitrator position(s) may be interviewed by representatives of the Parties in advance of their selection, provided that all Parties are represented.

15.2.8 The Parties agree to select the arbitrator(s) within [*] days of initiation of the arbitration. The hearing will be concluded within [*] ([*]) months after selection of the arbitrator(s) and the award will be rendered within [*] ([*]) days of the conclusion of the hearing, or of any post hearing briefing, which briefing will be completed by both sides within [*] ([*]) days after the conclusion of the hearing. In the event the Parties cannot agree upon a schedule, then the arbitrator(s) shall set the schedule following the time limits set forth above as closely as practical.

15.2.9 The Parties shall have the right to conduct and enforce pre-hearing discovery in accordance with the then current Federal Rules of Civil Procedure, unless otherwise agreed by the Parties in writing.

15.2.10 The hearing will be concluded in [*] ([*]) hearing days or less. Multiple hearing days will be scheduled consecutively to the greatest extent possible. A transcript of the testimony adduced at the hearing shall be made and shall be made available to each Party.

15.2.11 All discovery conducted pursuant to the arbitration proceedings will be subject to the then current Federal Rules of Civil Procedure, unless otherwise agreed by the Parties in writing.

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15.2.12 The arbitrator(s) shall decide the merits of any Dispute in accordance with the law governing this Agreement, without application of any principle of conflict of laws that would result in reference to a different law. The arbitrator(s) may not apply principles such as "amiable compositeur" or "natural justice and equity."

15.2.13 The arbitrator(s) are expressly empowered to decide dispositive motions in advance of any hearing and shall endeavor to decide such motions as would a United States District Court Judge sitting in the jurisdiction whose substantive law governs.

15.2.14 The arbitrator(s) shall render a written opinion stating the reasons upon which the award is based. The Parties consent to the jurisdiction of the United States District Court for the district in which the arbitration is held for the enforcement of these provisions and the entry of judgment on any award rendered hereunder. Should such court for any reason lack jurisdiction, any court with jurisdiction may act in the same fashion.

15.2.15 Each Party has the right to seek from the appropriate court provisional remedies such as attachment, preliminary injunction, replevin, etc. to avoid irreparable harm, maintain the status quo, or preserve the subject matter of the Dispute. Rule 14 of the CPR Rules does not apply to this Agreement.

15.2.16 EACH PARTY HERETO WAIVES: ITS RIGHT TO TRIAL BY JURY OF ANY ISSUE UNDERLYING A DISPUTE WITHIN THE SCOPE OF THIS SECTION 15.2; AND, WITH THE EXCEPTION OF RELIEF MANDATED BY STATUTE, ANY CLAIM FOR PUNITIVE, EXEMPLARY, MULTIPLIED, INDIRECT, OR CONSEQUENTIAL DAMAGES OR ATTORNEY FEES.

15.3 Interim or Provisional Relief. Nothing in this Agreement, including Section 15.4, shall preclude either Party from seeking interim or provisional relief in any court of competent jurisdiction, including a temporary restraining order, preliminary injunction or other interim equitable relief concerning a Dispute with the other Party, either prior to or during the dispute resolution procedures set forth in Article XV, to protect the interests of such Party.

15.4 Consent to Jurisdiction. Each Party, for the purpose of enforcing an award under Section 15.2 or for seeking interim or provisional relief as contemplated in Section 15.3 with respect to any Disputed breach of this Agreement, agrees not to raise any objection at any time to the laying or maintaining of the venue of any action, suit or proceeding for such purpose in any such Court, irrevocably waives any claim that such action, suit or other proceeding has been brought in an inconvenient forum, and further irrevocably waives the right to object, with respect to such action, suit or other proceeding, that such Court does not have any jurisdiction over such Party. Each Party further agrees that service of any process, summons, notice or document by registered mail to such Party's notice address provided for in this Agreement shall be effective service of process for any action, suit or proceeding in the Court with respect to any matters to which it has submitted to jurisdiction in this Section.

15.5 Patent Controversies. Notwithstanding anything in this Agreement to the contrary, any Patent Controversy shall be subject to adjudication in accordance with the Applicable Laws of the country or jurisdiction in which the relevant Patent Right is pending or has

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been issued. The Parties agree that the venue of any such adjudication involving a Patent Right pending in or issued by the United States shall be a U.S. federal district court (or appellate body, as necessary) sitting in New York, and for a Patent Right pending in or issued by any other country, any competent court having jurisdiction over the subject of the Patent Controversy sitting in the capital of such country (or if there is not any such competent court in the capital, a location reasonably proximate to the capital), and each Party irrevocably submits to the jurisdiction of such court. Each Party agrees not to raise any objection at any time to the laying or maintaining of the venue of any action, suit or proceeding for such purpose in any such court, irrevocably waives any claim that such action, suit or other proceeding has been brought in an inconvenient forum, including any forum non conveniens argument, and further irrevocably waives the right to object, with respect to such action, suit or other proceeding, that such court does not have any jurisdiction over such Party.

15.6 No Claims against Employees. Each Party undertakes to make no claim and bring no proceedings in connection with this Agreement or its subject matter against any director, officer, employee or agent of the other Party (apart from claims based on fraud or willful misconduct). This undertaking is intended to give protection to individuals: it does not prejudice any right which a Party might have to claim against another Party.

ARTICLE XVI: MISCELLANEOUS

16.1 Assignment; Successors.

16.1.1 The terms and provisions hereof shall inure to the benefit of, and be binding upon, the Parties and their respective successors and permitted assigns. Except as expressly permitted in this Agreement, neither Party may, without the prior written consent of the other Party, assign or otherwise transfer this Agreement. Notwithstanding the foregoing, (a) either Party, without such consent, may assign this Agreement in its entirety to an Affiliate (subject, for clarity, to Section 5.16.2 in the event of an assignment by Geron in certain circumstances); provided, that, except as set forth in clause (b) below, such assignment to an Affiliate shall terminate automatically at such time, if any, as such Affiliate ceases to be wholly-owned, directly or indirectly, by Geron or the Janssen Parent, as the case may be, unless such Affiliate owns (x) more than fifty percent (50%) of the voting equity of Geron or Janssen, or (y) substantially all the assets of Geron and its Affiliates or Janssen and its Affiliates, as the case may be, relating to the Licensed Product, and (b) each of Geron and Janssen, without the prior written consent of the other, may assign its rights under this Agreement, whether by contract or operation of law, to any Third Party that acquires all or substantially all of the business or assets of such Party (whether by merger, reorganization, acquisition, sale or otherwise) relating to the Licensed Product, subject to Section 5.16.2. No assignment of this Agreement shall be valid and effective unless and until the assignee agrees in writing to be bound by all of the terms and conditions of this Agreement and all Ancillary Agreements surviving such assignment. Any assignment of this Agreement not in accordance with this Section 16.1 shall be null and void.

16.1.2 The intellectual property of any Third Party successor in interest or assignee or purchaser of either Party by virtue of any transaction after the Effective Date (such Third Party, as applicable, and its Affiliates as of the day before such transaction, an "**Acquiror**") owned or controlled by such Acquiror immediately prior to the consummation of such transaction (other

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than as a result of a license from the acquired Party), provided that such Acquiror's intellectual property is not used or applied in the Development Program after such consummation, shall be excluded from the Geron Product Patent Rights, Geron Development Program Patent Rights, Janssen Development

Program Patent Rights, Geron Product Know-How, Geron Development Program Know-How, or Janssen Development Program Know-How as applicable.

16.2 Rights Not Diminished. Subject to the terms and conditions hereof, no right of a Party shall be diminished and no obligation of a Party increased during the Term as a result of a permitted assignment by the other Party to a Third Party hereunder, including as a result of a Change of Control of the other Party.

16.3 Choice of Law. This Agreement, its interpretation, construction and performance and the rights granted and obligations arising hereunder, shall be governed by, and construed in accordance with, the laws of the State of New York of the United States of America, exclusive of its conflicts of law rules. Notwithstanding anything to the contrary herein, the interpretation and construction of any Patent Rights shall be governed in accordance with the laws of the jurisdiction in which such Patent Rights were filed or granted, as the case may be.

16.4 Notices. All notices given under this Agreement by either Party to the other Party shall be in the English language, in writing (which shall exclude e-mail),and shall refer specifically to this Agreement and shall be delivered personally, sent by nationally-recognized overnight courier, sent by facsimile, or sent by registered or certified mail, postage prepaid, return receipt requested, to the following respective addresses (or to such other address as may be specified by notice from time to time by the relevant Party):

If to Geron:	Geron Corporation 149 Commonwealth Drive Menlo Park, California 94025 Attention: President & CEO Facsimile No. [*]
With a copy to:	Cooley LLP 3175 Hanover Street Palo Alto, CA 94304 Attn: [*] Facsimile No. [*]
If to Janssen:	Janssen Biotech, Inc. 800/850 Ridgeview Drive Horsham, Pennsylvania 19044 Attention: President Facsimile No. [*]
With a copy to:	Office of the General Counsel Johnson & Johnson One Johnson & Johnson Plaza New Brunswick, NJ 08933 Attention: General Counsel, Pharmaceuticals Facsimile No.: [*]

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16.4.1 Without prejudice to any earlier time at which a notice may be actually given and received, a properly addressed notice shall in any event be deemed to have been received: (a) when delivered, if personally delivered during the recipient's normal business hours; (b) on the Business Day after dispatch, if sent by nationally-recognized overnight courier and proof of delivery is obtained; (c) on the Business Day following electronic confirmation of receipt, if sent by facsimile; and (d) on the third (3rd) Business Day following the date of mailing, if sent by mail.

16.4.2 Where proceedings have been commenced in any arbitration hereunder or court of competent jurisdiction, any documents issued in the course of those proceedings will be served in accordance with the procedural rules governing the service of documents in those proceedings.

16.4.3 This Section 16.4 shall apply to notices required to be given by one Party to the other under this Agreement. Other communications between the Parties that are routine in nature, such as communications between Alliance Managers or the Parties' members of any Joint Committee regarding their ongoing activities performed in the ordinary course of their work under this Agreement, may be made via e-mail. All notices and communications between the Parties hereunder shall be in the English language.

16.5 Severability. If the whole or any provision of this Agreement is held to be invalid, illegal or unenforceable in any jurisdiction for any reason, then, to the fullest extent permitted by Applicable Law, (a) in the case of the illegality, invalidity or unenforceability of the whole of this Agreement, it shall terminate in relation to the jurisdiction in question; and (b) in the case of illegality, invalidity or unenforceability of any provision of this Agreement, that part shall be severed from this Agreement in the jurisdiction in question (but shall remain in full force and effect in all other jurisdictions) and (i) all other provisions hereof shall remain in full force and effect in the relevant jurisdiction and shall be liberally construed in order to carry out the intent of the Parties as nearly as may be possible, and (ii) the Parties agree to use reasonable efforts to negotiate a provision, in replacement of the provision held invalid, illegal or unenforceable, that is consistent with Applicable Law in the relevant jurisdiction and accomplishes, as nearly as possible, the original intention of the Parties with respect thereto.

16.6 Integration. This Agreement constitutes the entire agreement between the Parties hereto with respect to the subject matter of this Agreement and supersedes all previous agreements (executed before the Execution Date hereof), whether written or oral. Notwithstanding the authority granted to the Joint Steering Committee, Joint Development Committee, and Joint Marketing Committee under this Agreement, this Agreement may be amended only in writing signed by duly authorized representatives of each of Geron and Janssen. In the event of a conflict between any terms of any exhibit or other appendix to this Agreement and the body of this Agreement, the body of this Agreement shall control.

16.7 Independent Contractors; No Agency. Neither Party shall have any responsibility for the hiring, firing or compensating the other Party's employees or agents for any employee benefits. No employee or representative of a Party, including any of its (or its Affiliates') Joint Committee members or Sales Representatives, shall have any authority to bind or obligate the other Party to this Agreement to pay any sum or in any manner whatsoever, or to

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create or impose any contractual or other liability on the other Party. For all purposes and notwithstanding any other provision of this Agreement to the contrary, nothing in this Agreement shall be construed as establishing a partnership or joint venture relationship between the Parties.

16.8 Performance by Affiliates. Except as expressly prohibited hereunder, either Party may use one or more of its Affiliates to perform its obligations and duties hereunder, provided that such Party shall remain liable hereunder for the timely payment and performance of all of its obligations and duties hereunder.

16.9 Force Majeure. No Party shall be deemed to have defaulted under or breached this Agreement for failure or delay in fulfilling or performing any term of this Agreement, except for the payment of any amounts under this Agreement, when such failure or delay is caused by or results from causes beyond the reasonable control of the non-performing Party, including fires, floods, embargoes, shortages, epidemics, quarantines, war, acts of war (whether war be declared or not), terrorism, insurrections, riots, civil commotion, acts of God or acts, omissions or delays in acting by any governmental authority. The non-performing Party shall notify the other Party of such force majeure within five (5) Business Days after such occurrence by giving written notice to the other Party stating the nature of the event, its anticipated duration, and any action being taken to avoid or minimize its effect. The suspension of performance shall be of no greater scope and no longer duration than is necessary and the non-performing Party shall use, throughout the period of suspension of performance, commercially reasonable efforts to remedy its inability to perform; provided, however, that in the event the suspension of performance continues for ninety (90) days after the date such force majeure commences, the Parties shall meet to discuss in good faith how to proceed in order to accomplish the objectives of this Agreement; and provided, further, however, that if the suspension of performance continues for more than one (1) year after the date such force majeure commences, either (x) Janssen in the event that Geron is the non-performing Party, or (y) Geron in the event that Janssen is the non-performing Party, shall have the right to terminate this Agreement upon notice to non-performing Party. For purposes of this Agreement a force majeure shall not include a failure to commit sufficient resources, financial or otherwise, to the activities to be conducted pursuant to this Agreement or general market or economic conditions.

16.10 Construction. The headings used herein are for reference and convenience only, and will not enter into the interpretation of this Agreement. References to Sections include subsections, which are part of the related Section. Except as otherwise explicitly specified to the contrary, (i) references to a Section, Article, or Exhibit means a Section or Article of, or Exhibit to, this Agreement and all subsections thereof, unless another agreement is specified; (ii) references to a particular statute or regulation include all rules and regulations thereunder and any successor statute, rules or regulations then in effect, in each case, including any then-current amendments thereto; (iii) words in the singular or plural form include the plural and singular form, respectively; (iv) capitalized terms not expressly defined herein that are corollaries (such as pluralizations and changes in tense) to capitalized terms defined herein shall have the corresponding meanings (v) unless the context requires a different interpretation, the word "or" has the inclusive meaning that is typically associated with the phrase "and/or"; (vi) terms "including," "include(s)," "such as," and "for example" as used in this Agreement mean including the generality of any description preceding such term and will be deemed to be followed by "without limitation"; (vii) whenever this Agreement refers to a number of days, such number will refer to calendar days unless Business Days are specified; (viii) "herein", "hereunder", "hereof", and the like shall be understood to refer

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to this Agreement in its entirety, and not the particular provision or Section in which they appear; (ix) references to a particular Party include such Party's successors and assigns to the extent not prohibited by this Agreement; (x) all words used in this Agreement will be construed to be of such gender or number as the circumstances require; (xi) references to "persons" includes individuals, bodies corporate (wherever incorporated), unincorporated associations and partnerships; (xii) the words "comprise", "comprising", "contain", "containing", "include" and "including" are used in their open, non-limiting form, and shall be understood to include the words "without limitation" even if not expressly stated; (xiii) all references to "dollars" or "$" shall mean United States dollars.

16.11 HSR Clearance; Termination Upon HSR Denial. If either or each of the Parties reasonably determines that an HSR Filing is required by Applicable Law to consummate the transactions contemplated hereunder, each Party shall, within ten (10) Business Days of the Execution Date (or such later time as may be agreed to in writing by the Parties), file with the United States Federal Trade Commission and the Antitrust Division of the United States Department of Justice, and/or with any equivalent Governmental Authority in any other country, as the case may be, any HSR Filing under the HSR Act with respect to the transactions contemplated hereunder. Each Party shall use reasonable efforts to do, or cause to be done, all things necessary, proper and advisable to, as promptly as practicable, take all actions necessary to make the HSR Filings required of any of the Parties or their respective Affiliates under the HSR Act. The Parties shall cooperate with one another to the extent reasonably necessary in the preparation of any such HSR Filing. Each Party shall be responsible for its own out-of-pocket costs and expenses, including filing fees, associated with any HSR Filing, provided, however, that Janssen shall be solely responsible for any fees (other than penalties that may be incurred as a result of actions or omissions on the part of Geron) required to be paid to any Governmental Authority in connection with making any such HSR Filing hereunder. If the Parties make an HSR Filing hereunder, then this Agreement shall terminate (a) at the election of either Party, immediately upon notice to the other Party, if the U.S. Federal Trade Commission or the U.S. Department of Justice, or an equivalent authority in the European Union, seeks a preliminary injunction under the Antitrust Laws against any Party to enjoin the transactions contemplated by this Agreement; (b) at the election of either Party, immediately upon notice to the other Party, in the event that the United States Federal

Trade Commission or the United States Department of Justice, or an equivalent Governmental Authority in the European Union, obtains a preliminary injunction under the Antitrust Laws against any Party to enjoin the transactions contemplated by this Agreement; or (c) at the election of either Party, immediately upon notice to the other Party, in the event that the date of HSR Clearance shall not have occurred on or prior to one hundred eighty (180) days after the effective date of the HSR Filing.

16.12 Execution in Counterparts; Facsimile Signatures. This Agreement may be executed in counterparts, each of which counterparts, when so executed and delivered, shall be deemed to be an original, and all of which counterparts, taken together, shall constitute one and the same instrument even if both Parties have not executed the same counterpart. Facsimile or portable document format (i.e., .pdf), execution and delivery of this Agreement by a Party constitutes a legal, valid and binding execution and delivery of this Agreement by such Party.

[Remainder of this page intentionally blank.]

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IN WITNESS WHEREOF, each Party has caused this Agreement to be duly executed by its authorized representative on the respective date written herein below.

Geron Corporation

By: /s/ John A. Scarlett
Name: John A. Scarlett, MD
Title: President & CEO

Date: November 13, 2014

Janssen Biotech, Inc.

By: /s/ Scott White
Name: Scott T. White
Title: Vice President, NA Oncology

Date: November 13, 2014

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Attachments:

Exhibit A-1:	**GRN163 Structure**
Exhibit A-2:	**GRN163L Structure**
Exhibit B-1:	**Pre-Existing Licenses to Third Parties**
Exhibit B-2:	**Pre-Existing Licenses from Third Parties**
Exhibit B-3:	**Additional Pre-Existing Third Party Agreements**
Exhibit C:	**Initial Global Development Plan, including initial CDP**
Exhibit D-1:	**Solely Owned Geron Product Patent Rights**
Exhibit D-2:	**Jointly Owned Geron Product Patent Rights**
Exhibit D-3:	**In-Licensed Geron Product Patent Rights**
Exhibit E:	**[Intentionally Left Blank.]**
Exhibit F:	**[Intentionally Left Blank.]**
Exhibit G:	**Compliance with Anti-Corruption Laws**
Exhibit H:	**Press Release(s)**
Exhibit I:	**Johnson & Johnson Universal Calendars For 2014 and 2015**
Exhibit J:	**Form of Invoices**
Exhibit K:	**TRAP and TRAPeze Protocols within Geron Assay Know-How**
Exhibit L:	**Janssen Policy on the Employment of Young Persons**
Exhibit M:	**Current Manufacturing Contracts**
Exhibit N:	**Co-Promotion Agreement**
Exhibit O:	**Operational Plans for Ongoing Clinical Trials and Regulatory Transition**
Exhibit P:	**Geron Assay Patent Rights**
Exhibit Q:	**Ongoing Studies**

Exhibit A-1
GRN163 Structure

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit A-2
GRN163L Structure

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit B-1
Pre-Existing Licenses to Third Parties

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit B-2
Pre-Existing Licenses from Third Parties

<19 pages omitted>

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit B-3
Additional Pre-Existing Third Party Agreements

None.

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit C
Initial Global Development Plan

< 6 pages omitted>

[*]

Initial Studies Work Plan

[*]

Proposed Clinical Trial Timing

[*]

Proposed Budget (all values in USD Millions rounded)

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit D-1
Solely Owned Geron Product Patent Rights

<12 pages omitted>

[*]

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit D-2
Jointly Owned Geron Product Patent Rights

<2 pages omitted>

[*]

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Exhibit D-3
In-Licensed Geron Product Patent Rights

None.

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit E
[Intentionally Left Blank.]

Exhibit F
[Intentionally Left Blank.]

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1

Exhibit G
Compliance with Anti-Corruption Laws

Notwithstanding anything to the contrary in this Agreement each Party hereby agrees that:

(i) it shall not perform any actions, in performing any Collaboration Activities or other activities under the Agreement, that are prohibited by Anti-Corruption Laws applicable to one or both Parties to this Agreement;

(ii) it shall not, directly or indirectly, make any payment, or offer or transfer anything of value, or agree or promise to make any payment or offer or transfer anything of value, to a government official or Regulatory Authority employee, to any political party or any candidate for political office or to any other Third Party related to the transaction with the purpose of influencing decisions related to Janssen and/or its business or Geron and/or its business in a manner that would violate Anti-Corruption Laws;

(iii) except as provided in (iv) below, it shall not retain any Government Official in the performance of this Agreement unless it has been approved by the other Party and, if necessary, by the competent authority or authorities and such Government Official's employer;

(iv) the Parties acknowledge that there are instances where a Government Official's knowledge and expertise are considered unique, and services required to be provided by that Government Official cannot reasonably be provided by any other non-Government Official provider. In these cases, a Party may retain a Government Official in connection with this Agreement and without the prior consent of the other Party if and to the extent that:

- the services to be provided by such Government Official are permitted by relevant laws, regulations and codes of practice applicable to the Government Official;
- prior written approval of the Government Official's employer has been obtained; and
- prior approval from a member of the senior management team of the Party wishing to make such engagement has been obtained which confirms the legitimate basis for the engagement of the Government Official, and which also establishes that the engagement is for services legitimately required and not intended to influence the Government Official in his/her capacity as a Government Official;

(v) for the purposes of this Exhibit, **"Government Official"** means:

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

1

- Any officer or employee of a government or any department, agency or instrumentality of a government;
- Any person acting in an official capacity on behalf of a government or any department, agency, or instrumentality of a government;
- Any officer or employee of a state or government-owned company or business;
- Any officer or employee of a Government international organization such as the World Bank or United Nations;
- Any officer or employee of a political party or any person acting in an official capacity on behalf of a political party; and/or
- Any candidate for political office.
- A healthcare professional ("HCP") when they act in an official capacity on behalf of a government, including:
    - HCPs who also hold an official decision making role;
    - HCPs who have responsibility for performing regulatory inspections, government authorizations or licenses; and/or

- HCPs who are temporarily or permanently assigned to work for local, regional or national governments or agencies or supranational bodies.

but shall **not** include HCPs who may be considered Government Officials only because they are employed by, or receive funding, professional service fees or other remuneration from, a government-owned or funded hospital, clinic, university or other healthcare provider organization where they:

a) act solely in their capacity as healthcare professionals (e.g. prescribing, administering and supplying medicines or influencing the same, conducting clinical trials or scientific research); or

b) act as members of advisory boards with no decision making capacity or provide technical, scientific or medical advice to Government Officials in relation to healthcare; AND

c) for both sections a) and b) do not have any official role in the government with the capacity to take decisions that affect business of the relevant Party;

(vi) it shall disclose and make available to a designated individual of the other Party its training practices and materials on Anti-Corruption Laws and on its rules for interactions with healthcare professionals as requested. Each Party will consider in good faith any comments made by the other Party in regard to such training practices and materials;

(vii) it shall maintain a log of all interactions with Government Officials and shall provide such extracts of such log as a relevant to the performance of this Agreement to the other Party on request;

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(viii) it shall certify to the other Party on request (but no more frequently than annually) in a format to be agreed that:

a. training and training materials on Anti-Corruption Laws, as well as applicable rules on interactions with health care professionals, have been provided to all persons employed by it who perform work for it in connection with this Agreement and interact with government officials or health care professionals in the normal course of their responsibilities and that it has provided the necessary training and training materials to subcontractors used by it in the performance of this Agreement;

b. to the best of its knowledge, there have been no violations of Anti-Corruption Laws by it or persons employed by or subcontractors used by it in the performance of this Agreement;

c. its personnel who may be designated as "Key Personnel" by mutual agreement of Janssen and Geron have not changed, except as noted in a schedule attached to the certification provided;

d. it has made no changes in its use of subcontractors to perform the services under this Agreement, except as (1) permitted under this Agreement and (2) noted in a schedule attached to the certification provided by it; and

e. it has maintained true and accurate records necessary to demonstrate compliance with the requirements of this Exhibit;

(ix) each Party shall maintain and provide to the other and its auditors and other representatives with access to records (financial and otherwise) and supporting documentation related to the subject matter of this Agreement as may be requested by the other Party in order to document or verify compliance with the provisions of this Exhibit; and

(x) if a Party materially fails to comply with any of the provisions of this Exhibit, such failure shall be deemed to be a material breach of this Agreement and, upon any such failure, the Non-Breaching Party shall have the right to terminate this Agreement with immediate effect upon written notice to the Breaching Party without the Non-Breaching Party having any financial liability or other liability of any nature whatsoever resulting from any such termination.

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Exhibit H
Press Release(s)

Geron Announces Global Strategic Collaboration with Janssen to Develop and Commercialize Imetelstat

Conference Call Scheduled for Friday Morning, November 14, 2014 at 8:30 AM EST

Menlo Park, Calif., November 13, 2014 — Geron Corporation (Nasdaq: GERN) announced today that the company has entered into an exclusive worldwide license and collaboration agreement with Janssen Biotech, Inc. ("Janssen") to develop and commercialize, imetelstat, Geron's telomerase inhibitor product

candidate, for oncology, including hematologic malignancies, and other human therapeutics uses. Imetelstat is a modified oligonucleotide that is currently in early phase clinical development for myelofibrosis (MF) and may have activity in other hematologic myeloid malignancies such as myelodysplastic syndrome (MDS) and acute myelogenous leukemia (AML). Under the terms of the agreement, Geron will receive an initial payment of $35 million due after the applicable waiting periods under the Hart-Scott Rodino Act and is eligible to receive additional payments up to a potential total of $900 million for the achievement of development, regulatory and commercial milestones, as well as royalties on worldwide net sales. Certain regulatory, development, manufacturing and promotional activities will be managed through a joint governance structure, with Janssen responsible for operational implementation of these activities. All sales will be booked by Janssen.

“By leveraging Janssen’s ability to fully integrate and strategically align global oncology development and commercialization, we expect this collaboration to expand the development of imetelstat across a range of hematologic malignancies and potentially increase the speed with which imetelstat can be made available to patients with these serious, life-threatening diseases,” said Dr. John Scarlett, Geron’s President and Chief Executive Officer.

Development of imetelstat will proceed under a mutually agreed clinical development plan, which is expected to include Phase 2 studies in MF and MDS as initial studies, additional registration studies in MF and MDS, and exploratory Phase 2 and potential follow-on Phase 3 studies in AML. Geron expects the initial Phase 2 study in MF to be initiated in mid-2015, followed later by a Phase 2 MDS study. Development costs for these two studies will be shared between the companies on a 50/50 basis.

Additional details regarding the collaboration can be found in Geron’s Form 8-K filed today with the Securities and Exchange Commission.

Conference Call Information

Geron’s management will host a conference call on Friday morning, November 14 at 8:30 a.m. EST, to discuss the global strategic collaboration with Janssen. Participants can access the conference call live via telephone by dialing 800-322-2803 (U.S.); 617-614-4925 (international). The passcode is 36021748. A live audio-only webcast is also available at http://edge.media-server.com/m/p/dgquhmsw/lan/en. The audio webcast of the conference call will be available for replay approximately one hour following the live broadcast through December 14, 2014.

About Imetelstat

Imetelstat (GRN163L) is a potent and specific inhibitor of telomerase that is administered by intravenous infusion. This first-in-class compound, discovered by Geron, is a specially designed and modified short oligonucleotide, which targets and binds directly with high affinity to the active site of telomerase. Preliminary data suggest disease-modifying activity by imetelstat is by affecting the malignant clone associated with hematologic malignancies. Imetelstat has not been approved for marketing by any regulatory authority.

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About Geron

Geron is a clinical stage biopharmaceutical company developing a first-in-class telomerase inhibitor, imetelstat, in hematologic myeloid malignancies. For more information about Geron, visit www.geron.com.

Use of Forward-Looking Statements

Except for the historical information contained herein, this press release contains forward-looking statements made pursuant to the “safe harbor” provisions of the Private Securities Litigation Reform Act of 1995. Investors are cautioned that statements in this press release regarding: (i) the anticipated effectiveness of the collaboration agreement and that Geron will receive a $35 million payment and potential receipt of development, regulatory, and sales milestones, as well as royalties on potential future sales of imetelstat commercialized under the collaboration with Janssen; (ii) the timing and conduct of planned and potential clinical trials of imetelstat to be conducted under the collaboration with Janssen for MF, MDS and AML, and other potential activities; and (iii) other statements that are not historical facts, constitute forward-looking statements. These statements involve risks and uncertainties that can cause actual results to differ materially from those in such forward-looking statements. These risks and uncertainties, include, without limitation, risks and uncertainties related to: (i) the ability of the parties to satisfy all of the conditions for the effectiveness of the collaboration agreement, including the expiration or termination of waiting periods under the Hart-Scott Rodino Act; (ii) the uncertain and time consuming product development and regulatory process, including whether the parties will succeed in overcoming all of the clinical safety and efficacy, technical, scientific, manufacturing and regulatory challenges in the development and commercialization of imetelstat; (iii) the fact that Geron may not receive any milestone, royalty or other payments from Janssen because Janssen may terminate the collaboration agreement for any reason; (iv) the ability of Geron and Janssen to protect and maintain intellectual property rights for imetelstat; and (v) Geron’s dependence on Janssen, including the risks that if Janssen were to breach or terminate the collaboration agreement or otherwise fail to successfully develop and commercialize imetelstat and in a timely manner, Geron would not obtain the anticipated financial and other benefits of the collaboration agreement and the clinical development or commercialization of imetelstat could be delayed or terminated. Additional detailed information and factors that could cause actual results to differ materially from those in the forward-looking statements is contained in Geron’s periodic reports filed with the Securities and Exchange Commission, including Exhibit 99.1 of the Current Report on Form 8-K filed on November 13, 2014. Undue reliance should not be placed on forward-looking statements, which speak only as of the date they are made, and the facts and assumptions underlying the forward-looking statements may change. Except as required by law, Geron disclaims any obligation to update these forward-looking statements to reflect future information, events or circumstances.

CONTACT:
Kevin Eng, Ph.D.
Investor and Media Relations
650-473-7765
investor@geron.com
media@geron.com

[*] = Certain confidential information contained in this document, marked by brackets, is filed with the Securities and Exchange Commission pursuant to Rule 406 of the Securities Act of 1933, as amended.

Exhibit I
Johnson & Johnson Universal Calendars For 2014 and 2015

<2 pages omitted>

[*]

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Exhibit J
Form of Invoices

From Geron:

Invoice to be printed on official Geron letterhead with date, payee's tax ID, and Janssen's (or its designated Affiliate payor's) P.O. number inserted:

DATE:

INVOICE NO.:

GERON TAX ID:

To:

Janssen P.O. Number:

Terms: Net [*] days

Amount of payment due: $

Payment due according to COLLABORATION AND LICENSE AGREEMENT between Geron Corporation and Janssen Biotech, Inc. executed November 14, 2014, for:

Bill To:
Janssen Biotech, Inc.

Wire Instructions for Remittance:

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Exhibit K
TRAP and TRAPeze Protocols within Geron Assay Know-How

<27 pages omitted>

[*]

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Exhibit L
Janssen Policy on the Employment of Young Persons

[*]

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Exhibit M
Current Manufacturing Contracts

<7 pages omitted>

[*]

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Exhibit N
Co-Promotion Agreement

<21 pages omitted>

[*]

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Exhibit O
Operational Plans for Ongoing Clinical Trials and Regulatory Transition

<3 pages omitted>

[*]

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Exhibit P
Geron Assay Patent Rights

<4 pages omitted>

[*]

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Exhibit Q
"Ongoing Studies"

Clinical studies of GRN163L initiated by or assumed by Geron

Protocol Number	Protocol Title	Phase	Patient Population	Study Status
CP04-151	A Phase I/II, Sequential Cohort, Dose Escalation Trial to Determine the Safety, Tolerability, and Maximum Tolerated Dose of Weekly Administration of GRN163L in Patients with Refractory or Relapsed Chronic Lymphoproliferative Disease	1	Refractory or Relapsed Chronic Lymphoproliferative Disease	[*]
CP05-101	A Phase I, Sequential Cohort, Dose Escalation Trial to Determine the Safety, Tolerability, Maximum Tolerated Dose, and Optimal Infusion Duration of Weekly Administration of GRN163L in Patients with Refractory or Relapsed Solid Tumor Malignancies	1	Refractory or Relapsed Solid Tumor Malignancies	[*]
CP14A004	A Phase I Sequential Cohort, Dose Escalation Trial to Determine the Safety, Tolerability, and Maximum Tolerated Dose of Weekly Administration of GRN163L in Patients with Refractory or Relapsed Multiple Myeloma	1	Refractory or Relapsed Multiple Myeloma	[*]
CP14A005	A Phase I Sequential Cohort, Dose Escalation Trial to Determine the Safety, Tolerability, and Maximum Tolerated Dose of Weekly Administration of GRN163L in Combination with Paclitaxel and Carboplatin in Patients with Advanced or Metastatic Non-Small Cell Lung Cancer	1	Advanced or Metastatic Non-Small Cell Lung Cancer	[*]
CP14A010	A Phase I/II Study of GRN163L in Combination with Paclitaxel and Bevacizumab in Patients with Locally Recurrent or Metastatic Breast Cancer	1	Locally Recurrent or Metastatic Breast Cancer	[*]
CP14A011	A Phase I Study of GRN163L in Combination with Bortezomib and Dexamethasone in Patients with Relapsed or Refractory Multiple Myeloma	1	Relapsed or Refractory Multiple Myeloma	[*]
CP14B012	A Randomized Phase II Study of Imetelstat as Maintenance Therapy after Initial Induction Chemotherapy for Advanced Non-Small Cell Lung Cancer (NSCLC)	2	Advanced NSCLC	[*]

CP14B013	A Phase II Trial to Determine the Effect of Imetelstat (GRN163L) on Patients with Previously Treated Multiple Myeloma	2	Multiple Myeloma	[*]
CP14B014	A Randomized Phase II Study of Imetelstat (GRN163L) in Combination with Paclitaxel (With or Without Bevacizumab) in Patients with Locally Advanced or Metastatic Breast Cancer	2	Recurrent or Metastatic Breast Cancer	[*]
CP14B015	A Phase II Trial to Evaluate the Activity of Imetelstat (GRN163L) in Patients with Essential Thrombocythemia who Require Cytoreduction and Have Failed or Are Intolerant to Previous Therapy, or who Refuse Standard Therapy	2	Essential Thrombocythemia or Polycythemia	[*]
CP14B019 (MC1285)	A Pilot Open-Label Study of the Efficacy and Safety of Imetelstat (GRN163L) in Myelofibrosis and other Myeloid Malignancies	2	Myelofibrosis and other Myeloid Malignancies	[*]

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EXHIBIT 12.1

RATIO OF EARNINGS TO FIXED CHARGES

Our net losses were inadequate to cover fixed charges for each of the periods presented. Accordingly, the following table sets forth the dollar amount of the coverage deficiency. Because of the deficiency, ratio information is not applicable. Amounts shown are in thousands.

	Year Ended December 31,				
	2014	2013	2012	2011	2010
Ratio of earnings to fixed charges[1]	N/A	N/A	N/A	N/A	N/A
Coverage deficiency	$ (35,436)	$ (38,023)	$ (68,512)	$ (96,401)	$ (111,046)

(1) The ratio of earnings to fixed charges was computed by dividing earnings by fixed charges. For this purpose, earnings consist of net loss before fixed charges. Fixed charges consist of estimated interest expense on outstanding lease liabilities, amortization of debt discount and accrual of interest on outstanding debt.

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the following Registration Statements:

1) Registration Statement (Form S-3 No. 333-182537) and in the related prospectuses and prospectus supplements,

2) Registration Statement (Form S-3 No. 333-171611) and in the related prospectuses and prospectus supplements,

3) Registration Statement (Form S-8 No. 333-174350) pertaining to the 2011 Incentive Award Plan, the 2002 Equity Incentive Plan, the 1996 Directors' Stock Option Plan and the 1992 Stock Option Plan,

4) Registration Statement (Form S-8 No. 333-167349) pertaining to the 2002 Equity Incentive Plan,

5) Registration Statement (Form S-8 No. 333-161035) pertaining to the 2002 Equity Incentive Plan,

6) Registration Statement (Form S-8 No. 333-136330) pertaining to the 2002 Equity Incentive Plan and the 2006 Directors' Stock Option Plan,

7) Registration Statement (Form S-8 No. 333-107276) pertaining to the 1996 Directors' Stock Option Plan, and

8) Registration Statement (Form S-8 No. 333-196677) pertaining to the 2014 Employee Stock Purchase Plan;

of our reports dated March 11, 2015, with respect to the consolidated financial statements of Geron Corporation and the effectiveness of internal control over financial reporting of Geron Corporation, included in this Annual Report (Form 10-K) of Geron Corporation for the year ended December 31, 2014.

/s/ Ernst & Young LLP

Redwood City, California
March 11, 2015

EXHIBIT 31.1

CERTIFICATION PURSUANT TO
FORM OF RULE 13A-14(A)
AS ADOPTED PURSUANT TO
SECTION 302(A) OF THE SARBANES-OXLEY ACT OF 2002

I, John A. Scarlett, M.D., certify that:

1. I have reviewed this annual report on Form 10-K of Geron Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 11, 2015

/s/ JOHN A. SCARLETT

JOHN A. SCARLETT, M.D.
President and Chief Executive Officer

EXHIBIT 31.2

CERTIFICATION PURSUANT TO
FORM OF RULE 13A-14(A)
AS ADOPTED PURSUANT TO
SECTION 302(A) OF THE SARBANES-OXLEY ACT OF 2002

I, Olivia K. Bloom, certify that:

1. I have reviewed this annual report on Form 10-K of Geron Corporation;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 11, 2015

/s/ OLIVIA K. BLOOM

OLIVIA K. BLOOM
Executive Vice President, Finance,
Chief Financial Officer and Treasurer

EXHIBIT 32.1

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to 18 U.S.C. Section 1350, as created by Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Geron Corporation (the "Company") hereby certifies, to such officer's knowledge, that:

(i) the accompanying annual report on Form 10-K of the Company for the year ended December 31, 2014 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 11, 2015

/s/ JOHN A. SCARLETT

JOHN A. SCARLETT, M.D.
President and Chief Executive Officer

This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.

EXHIBIT 32.2

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

Pursuant to 18 U.S.C. Section 1350, as created by Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officer of Geron Corporation (the "Company") hereby certifies, to such officer's knowledge, that:

(i) the accompanying annual report on Form 10-K of the Company for the year ended December 31, 2014 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(ii) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: March 11, 2015

/s/ OLIVIA K. BLOOM

OLIVIA K. BLOOM
Executive Vice President, Finance,
Chief Financial Officer and Treasurer

This certification accompanies the Form 10-K to which it relates, is not deemed filed with the Securities and Exchange Commission and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.