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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, 2012
OR

☐ TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from to .
Commission File No. 001-33093

LIGAND PHARMACEUTICALS INCORPORATED
(Exact name of registrant as specified in its charter)

Delaware	**77-0160744**
(State or other jurisdiction of incorporation or organization)	**(IRS Employer Identification No.)**
11119 North Torrey Pines Rd., Suite 200 La Jolla, CA	**92037**
(Address of Principal Executive Offices)	**(Zip Code)**

Registrant's telephone number, including area code: (858) 550-7500
Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	**Name of Each Exchange on Which Registered**
Common Stock, par value $.001 per share	The NASDAQ Global Market of The NASDAQ Stock Market LLC
Preferred Share Purchase Rights	The NASDAQ Global Market of 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 ☐ No ☒

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934. Yes ☐ 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 ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, 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 ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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, or a non-accelerated filer or a smaller reporting company. See definition of "large accelerated filer," "accelerated filer" and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

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

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

The aggregate market value of the Registrant's voting and non-voting stock held by non-affiliates was approximately $295.9 million based on the last sales price of the Registrant's Common Stock on the NASDAQ Global Market of the NASDAQ Stock Market LLC on June 30, 2012. For purposes of this calculation, shares of Common Stock held by directors, officers and 10% stockholders known to the Registrant have been deemed to be owned by affiliates which should not be construed to indicate that any such person possesses the power, direct or indirect, to direct or cause the direction of the management or policies of the Registrant or that such person is controlled by or under common control with the Registrant.

As of March 1, 2013, the Registrant had 20,208,248 shares of Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the Registrant's 2013 Annual Meeting of Stockholders to be filed with the Commission on or before April 30, 2013 are incorporated by reference in Part III of this Annual Report on Form 10-K. With the exception of those portions that are specifically incorporated by reference in this Annual Report on Form 10-K, such Proxy Statement shall not be deemed filed as part of this Report or incorporated by reference herein.

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AVAILABLE INFORMATION:

We file electronically with the Securities and Exchange Commission (or SEC) our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K and, as necessary, amendments to these reports, pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended. The public may read or copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC 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 <http://www.sec.gov>.

You may obtain a free copy of our annual reports on Form 10-K, quarterly reports on Form 10-Q and current reports on Form 8-K and amendments to those reports which are posted as soon as reasonably practicable after filing on our website at <http://www.ligand.com>, by contacting the Investor Relations Department at our corporate offices by calling (858) 550-7500 or by sending an e-mail message to investors@ligand.com. You may also request information via the Investor Relations page of our website.

PART I

Caution: This discussion and analysis may contain predictions, estimates and other forward-looking statements that involve a number of risks and uncertainties, including those discussed in Item 1A. "Risk Factors." This outlook represents our current judgment on the future direction of our business. These statements include those related to our royalty revenues, collaborative revenues and milestones, and product development. Actual events or results may differ materially from our expectations. For example, there can be no assurance that our revenues or expenses will meet any expectations or follow any trend(s), that we will be able to retain our key employees or that we will be able to enter into any strategic partnerships or other transactions. We cannot assure you that we will receive expected royalties or other revenues to support our ongoing business or that our internal or partnered pipeline products will progress in their development, gain marketing approval or achieve success in the market. In addition, future arbitration, litigation or disputes with third parties may have a material adverse effect on us. Such risks and uncertainties, and others, could cause actual results to differ materially from any future performance suggested. We undertake no obligation to release publicly the results of any revisions to these forward-looking statements to reflect events or circumstances arising after the date of this annual report. This caution is made under the safe harbor provisions of Section 21E of the Securities Exchange Act of 1934, as amended.

References to "Ligand Pharmaceuticals Incorporated", "Ligand", the "Company", "we" or "our" include our wholly owned subsidiaries - Ligand JVR, Allergan Ligand Retinoid Therapeutics, Seragen, Inc., or Seragen; Pharmacopeia, LLC; Neurogen Corporation, CyDex Pharmaceuticals, Inc., Metabasis Therapeutics, and Nexus Equity VI LLC, or Nexus.

We were incorporated in Delaware in 1987. Our principal executive offices are located at 11119 North Torrey Pines Road, Suite 200, La Jolla, California, 92037. Our telephone number is (858) 550-7500.

Item 1. Business

Overview

We are a biotechnology company that operates with a business model focused on developing or acquiring revenue generating assets and coupling them to a lean corporate cost structure. Our goal is to create a sustainably profitable business and generate meaningful value for our stockholders. Since a portion of our business model is based on the goal of partnering with other pharmaceutical companies to commercialize and market our assets, a significant amount of our revenue is based largely on payments made to us by partners for royalties, milestones and license fees. We recognized the important role of the drug reformulation segment in the pharmaceutical industry and in 2011 added Captisol® to our technology portfolio. Captisol is a powerful formulation technology that has enabled six FDA approved products, including Onyx's Kyprolis® and Baxter International's Nexterone® and is currently being developed in a number of clinical-stage partner programs. In comparison to our peers, we believe we have assembled one of the largest and most diversified asset portfolios in the industry with the potential to generate significant revenue in the future. The therapies in our development portfolio address the unmet medical needs of patients for a broad spectrum of diseases including hepatitis, muscle wasting, multiple myeloma, Alzheimer's disease, dyslipidemia, diabetes, anemia, epilepsy, FSGS and osteoporosis. We have established multiple alliances with the world's leading pharmaceutical companies including GlaxoSmithKline, Onyx Pharmaceuticals, Merck, Pfizer, Baxter International, Bristol-Myers Squibb, Celgene, Lundbeck Inc., Eli Lilly and Co., Spectrum Pharmaceuticals and The Medicines Company.

Business Strategy

Our business model is designed to create value for stockholders by assembling a diversified portfolio of biotech and pharmaceutical revenue streams and operating that business with an efficient and low corporate cost structure. Our goal is to become a sustainably profitable company that offers investors an opportunity to participate in the promise of the biotech industry in a diversified, lower-risk business than a typical biotech. Our business model is based on the concept of doing what we do best; drug discovery, reformulation and partnering with other pharmaceutical companies to leverage what they do best (late-stage development, regulatory management and commercialization) to ultimately generate our revenue. Our revenue consists mostly of license fees, milestones, royalties from the partners that license our drugs and technologies, and Captisol material sales. In addition to discovering our own proprietary drugs, we use an aggressive acquisition strategy to bring in new assets, pipelines, and technologies to aid in generating additional potential new revenue streams. The principal elements of our strategy are set forth below.

We are assembling a large portfolio of fully funded programs through acquisition and licensing to drive future profitability. We have assembled a portfolio of over 70 fully-funded partner programs that are in all stages of development, from preclinical research to awaiting commercialization. These assets represent the next wave of potential marketed drugs that could generate revenue for us. We assemble this portfolio by either licensing out our own proprietary drug development programs or acquiring existing partnered programs from other companies. For our internal programs, we generally plan to advance drug candidates through early-stage drug development and/or clinical proof-of-concept. We believe partnerships are not only a source of research funding, license fees, future milestone payments and royalties, but they also position our assets with companies that have the expertise to obtain regulatory approval and successfully launch and commercialize these assets. We believe that focusing on discovery and early-stage drug development while benefiting from our partners' proven development and commercialization expertise will reduce our internal expenses and allow us to have a larger number of drug candidates progress to later stages of drug development.

We sell Captisol material to a broad range of customers. We are the sole provider of a proprietary formulation technology known as Captisol. Captisol is a well validated chemically-modified cyclodextrin that improves the solubility, stability, and pharmicokinetics of many drugs. We receive revenue from the selling of Captisol material to our partners that have either licensed our proprietary Captisol-enabled drugs or have taken a license to use Captisol with their own internal programs.

We discover and develop compounds that are promising drug candidates. We discover, synthesize and test numerous compounds to identify those that are most promising for clinical development. We perform extensive target profiling and base our selection of promising development candidates on product characteristics such as initial indications of safety and efficacy. We believe that this focused strategy allows us to eliminate unpromising candidates from consideration sooner without incurring substantial clinical costs. Our goal is to partner our programs early in the development and regulatory life-cycle.

Our Asset Portfolio

We have a portfolio of over 80 current and future potential revenue generating programs, over 70 of which are fully funded by our partners. We expect to receive royalties from seven marketed products in 2013 and have multiple partnered programs at Phase IIb through NDA submission which represent our future upcoming potential revenue generating programs. While many of these programs have been disclosed publicly, a significant number of our partners and their programs remain undisclosed to protect competitive and proprietary information about these programs.

Select Late-Stage Development or Commercial Programs

We have multiple partnered programs in our portfolio that are either in or nearing the regulatory approval process. These programs represent the next series of potential royalty generating assets in our portfolio.

Promacta (GSK)

GSK's Promacta® (Eltrombopag) is the first oral thrombopoietin (TPO) receptor agonist therapy for the treatment of adult patients with chronic immune (idiopathic) thrombocytopenic purpura, or ITP. In late 2008, the U.S. Food and Drug Administration, or FDA, granted accelerated approval of Promacta for the treatment of thrombocytopenia in patients with chronic ITP, who have had an insufficient response to corticosteroids, immunoglobulins or splenectomy.

In 2010, GSK received approval for Revolade® (eltrombopag/Promacta) from the European Medicines Agency's Committee for Medicinal Products for Human Use (CHMP) and from the Japanese Ministry of Health, Labour and Welfare for the oral treatment of thrombocytopenia (reduced platelet count) in adults with the blood disorder chronic ITP.

In February 2011, the FDA granted GSK full approval status for Promacta in the US following the submission of long- term safety data from post-marketing clinical studies, as well as the completion of other commitments that verify the clinical benefit to patients. Additionally, it was reported in November 2011 that the Risk Evaluation and Mitgation Strategies (REMS) program that Promacta had been operating under in the US was being significantly reduced in scope by the FDA due to data that had been submitted by GSK demonstrating the long term safety of Promacta.

In May 2012, GSK submitted a variation to the existing Marketing Authorization Application to the European Medicines Agency for Promacta/Revolade as a treatment for thrombocytopenia in adult patients with chronic hepatitis C infection to enable the initiation of interferon-based therapy and during interferon-based therapy. That application is currently under review by the European Medicines Agency.

In November 2012, the FDA approved Promacta for the treatment of thrombocytopenia (low blood platelet counts) in patients with chronic hepatitis C to allow them to initiate and maintain interferon-based therapy. Promacta is the first supportive care treatment available to patients who are ineligible or poor candidates for interferon-based therapy due to their low blood platelet counts. Promacta in combination with interferon-based therapy has been shown to improve a patient's chance of achieving a sustained virologic response (SVR) or viral cure.

Promacta is authorized for use in 92 countries. We are entitled to receive tiered royalties on annual net sales of Promacta. GSK has listed a patent in the FDA's Orange Book for Promacta with an expiration date in 2027.

AGGREGATE NET SALES IN EACH CALENDAR YEAR	ROYALTY RATE
Less than $100M annual sales	4.7%
On portion of sales in range of $100M - $200M	6.6%
On portion of sales in range of $200M - $400M	7.5%
On portion of sales greater than $400M	9.4%
On portion of sales greater than $1.5B	9.3%

* Net royalties due Ligand after payment to Rockefeller

Kyprolis (Onyx, Phase III/NDA, Multiple Myeloma)

Ligand (formerly CyDex) and Onyx Pharmaceuticals (formerly Proteolix) entered into a collaboration in 2005 to develop the Captisol-enabled IV formulation of Carfilzomib for refractory multiple myeloma. In July 2012, Onyx received accelerated approval from the FDA for Kyprolis (Carfilzomib) for injection. We earned a milestone payment of $0.6 million upon FDA approval. Kyprolis is formulated with Ligand's Captisol and is used for the treatment of patients with multiple myeloma who have received at least two prior therapies, including bortezomib and an immunomodulatory agent, and have demonstrated disease progression on or within 60 days of completion of the last therapy. The indication for Kyprolis is based on response rate. Under our agreement with Onyx, we are entitled to receive milestones, tiered royalties ranging between 1.5% and 3% as shown in the table below, and revenue from clinical and commercial Captisol material sales.

AGGREGATE NET SALES IN EACH CALENDAR YEAR	ROYALTY RATE
Up to, and including, $250 million	1.5%
$251 million to $500 million	2.0%
$501 million to $750 million	2.5%
Above $750 million	3.0%

Avinza (Pfizer)

We currently receive royalty revenues from Pfizer, Inc., or Pfizer, for sales of the pain therapeutic Avinza®. In February 2007, we completed the sale of our Avinza product line to King Pharmaceuticals (or King). As a result of the sale, we receive royalties on the net sales of Avinza through 2017. Royalties are paid at a rate of 5% on sales up to $200 million and a higher rate above $200 million. In October 2010, Pfizer announced the acquisition of King.

Viviant/Conbriza (Pfizer)

In 2010, our partner Pfizer launched Viviant® (bazedoxifene) in Japan for the treatment of postmenopausal osteoporosis. The drug is also marketed in Spain under the brand name Conbriza® through a co-promotion with Almirall, an international pharmaceutical company based in Spain. Viviant was approved in 2009 by the European Commission (under the trade name Conbriza) for the treatment of postmenopausal osteoporosis in women at increased risk of fracture. Viviant, a selective estrogen receptor modulator (SERM), is a result of the successful research collaboration between Wyeth (now a subsidiary of Pfizer) and us that began in 1994. Pfizer is responsible for the registration and worldwide marketing of bazedoxifene, a synthetic drug specifically designed to reduce the risk of osteoporotic fractures while also protecting uterine tissue. We are entitled to receive tiered royalties on net sales of bazedoxifene. Any such royalties may be subject to reduction or offset for past milestone payments and/or may be subject to other terms and conditions set forth in our agreement with Pfizer.

Nexterone (Baxter International)

In 2006, Ligand outlicensed Nexterone, an injectable formulation combining amiodarone and Captisol, to Baxter International, or Baxter (formerly Prism Pharmaceuticals, Inc.). Under the terms of the agreement, Baxter is responsible, under an exclusive worldwide license, for all development and commercialization of Nexterone at its sole expense. In 2010, Nexterone was approved by the FDA and launched in the United States in 2011. We are supplying Captisol to Baxter for use in accordance with the terms of the license agreement under a separate supply agreement. Baxter has paid milestone payments and is obligated to pay royalties to us on sales of Nexterone through early 2029.

Bazedoxifene/conjugated estrogens (BZA/CE)(Pfizer, Submitted in the US and EU, Post-Menopausal Symptoms)

In 2010, our partner Pfizer launched Viviant (bazedoxifene) in Japan for the treatment of postmenopausal osteoporosis. Pfizer has combined Viviant with Premarin to create a combination therapy for the treatment of post-menopausal symptoms in women. Pfizer has completed Phase III studies of bazedoxifene and filed an approval submission with the FDA and EMA in 2012. For the year ended December 31, 2012, we received $0.3 million for the filing submissions with the FDA and the EMA. We are entitled to receive tiered royalties on all net sales of bazedoxifene, whether alone or in combination with other products. Any such royalties may be subject to reduction or offset against past milestone payments and/or may be subject to other terms and conditions set forth in our agreement with Pfizer.

Promacta (GSK, Oncology)

GSK is conducting Phase II clinical studies of Promacta for oncology-related thrombocytopenia in patients with solid tumors, Myelodysplastic Syndrome (MDS), or Secondary Acute Myeloid Leukemia (AML) after MDS. Promacta is also in Phase II studies for patients with Aplastic Anemia.

Captisol-enabled Melphalan IV (Spectrum Pharmaceuticals, Pivotal, Stem Cell Transplant Conditioning)

In March 2013, we licensed the full world-wide rights to Captisol-enabled melphalan IV to Spectrum Pharmaceuticals, Inc. The Captisol-enabled, PG-free melphalan program uses a new intravenous formulation of melphalan for the multiple myeloma transplant setting, and has been granted Orphan designation by the FDA. The formulation avoids the use of propylene glycol, which has been reported to cause renal and cardiac side-effects that limit the ability to deliver higher quantities of therapeutic compounds. The use of the Captisol® technology to reformulate melphalan is anticipated to allow for longer administration durations and slower infusion rates, potentially enabling clinicians to safely achieve a higher dose intensity of pre-transplant chemotherapy.

Under the terms of the license agreement, we will receive a $3 million license fee and are eligible to receive more than $50 million in potential milestone payments. We are also eligible to receive significant double-digit royalties on future net sales of the Captisol-enabled melphalan product. This program is currently enrolling patients in a pivotal clinical trial.

Merck Captisol Program, Molecule Undisclosed(Merck, Phase III, Undisclosed Indication)

Ligand and Merck entered into a Captisol supply agreement in June 2011 for an undisclosed Merck program. Merck is currently conducting a pivitol study for this program and we expect Merck to potentially file a 505(b)(2) in 2013 for approval to market this Captisol program. Financial terms of the relationship remain undisclosed, but we expect to generate revenue through the supply of Captisol for this program.

Captisol-enabled Clopidogrel (The Medicines Company, Phase III, Anti-coagulant)

In June 2011, we licensed the full world-wide rights to our Captisol-enabled clopidogrel program to The Medicines Company. Clopidogrel is the active ingredient in Plavix®, the world's leading anti-platelet medication which is currently only available in an oral formulation. The Captisol-enabled clopidogrel formulation is designed to provide an intravenous option in situations where the administration of oral platelet inhibitors is not feasible or desirable. We received an upfront payment of $1.8 million, $0.9 million of which was remitted to the former CyDex shareholders. We are eligible to receive up to $8 million in milestones, net of amounts owed and royalties on annual worldwide net sales. In addition, we will also supply both the clinical and commercial requirements of Captisol for this program, now known as MDCO-157, and if the intravenous formulation is approved for commercialization, we will be the exclusive supplier of Captisol for the product.

The Medicines Company is planning to initiate a pivotal study for the program in 2013 and is developing the product for global markets.

RE-021 program (Retrophin, Phase II, FSGS)

In early 2012, we licensed the world-wide rights to RE-021 (formerly known as DARA-a Dual Acting Receptor Antagonist of Angiotension and Endothelin receptors) to Retrophin, Inc., or Retrophin. Retrophin intends to develop RE-021 for orphan indications of severe kidney diseases including Focal Segmental Glomerulosclerosis (FSGS) as well as conduct proof-of-concept studies in resistant hypertension and diabetic nephropathy. Certain patient groups with severely compromised renal function exhibit extreme proteinuria resulting in progression to dialysis and a high mortality rate. RE-021, with its unique dual blockade of angiotensin and endothelin receptors, is expected to provide meaningful clinical benefits in mitigating proteinuria in indications where there are no approved therapies. We received an upfront payment of $1 million, net of amounts owed to third parties.

In late 2012, we received a milestone payment of 620,000 shares of common stock in partner Retrophin, Inc. Former license holders are entitled to receive 15% of the proceeds received upon sale of the securities. We may receive over $75 million in milestones as well as 9% in royalties on potential future worldwide sales by Retrophin.

In early 2013 we received a $1.4 million milestone payment from Retrophin, Inc. We will remit $0.2 million to former license holders under the terms of a previous license agreement for RE-021.

Dinaciclib program (Merck, Phase IIb/III, Refractory CLL)

In October 2012, our licensee, Merck, initiated a Phase IIb/III adaptive clinical trial for Dinaciclib for the treatment of patients with refractory chronic lymphocytic leukemia (CLL). As a result, we received a $2 million milestone payment upon initiation of the clinical study. Under our collaboration and license agreement with Merck, we are entitled to receive future milestones and royalties. CLL is a slow-progressing disease, affecting the blood and bone marrow, as well as the lymph nodes or other organs, and is the most common type of leukemia affecting adults. Dinaciclib is derived from a collaboration initiated in 1998 by Pharmacopeia (now a wholly owned subsidiary of Ligand).

Beta-Secretase Inhibitor (Merck, Phase II/III, Alzheimer's Disease)

The development agreement for the beta-secretase inhibitor program (or BACE) was entered into in 2009 between Ligand (formerly Pharmacopeia) and Merck (formerly Schering-Plough), under a 1998 agreement, for the treatment of Alzheimer's disease. This disease is characterized by plaques of the toxic amyloid-beta protein within the brain. Beta secretase is believed to be a key enzyme in the production of amyloid-beta protein. Amyloid-beta is formed when the larger amyloid precursor protein (APP) is cleaved by two enzymes, beta-secretase and gamma-secretase, which releases the amyloid-beta fragment. A beta-secretase inhibitor is expected to reduce amyloid-beta generation in Alzheimer's disease patients.

In December 2012, Merck initiated a Phase II/III clinical trial for its lead BACE inhibitor product candidate, MK-8931, evaluating its safety and efficacy in patients with mild-to-moderate Alzheimer's disease. Ligand is entitled to royalties on potential future sales by Merck.

Captisol-enabled Carbamazepine-IV (Lundbeck, Phase III, Epilepsy)

The development and commercialization agreement for Captisol-enabled carbamazepine-IV began in 2004 between Lundbeck (formerly Ovation Pharmaceuticals) and us for the use of Captisol in the formulation of CE carbamazepine-IV. Lundbeck is developing CE carbamazepine-IV for the management of acute seizure disorder for hospital or emergency settings. CE carbamazepine-IV is currently being evaluated in a Phase III clinical trial.

Captisol-enabled Delafloxacin (Rib-X, Phase III, Infection)

The development and commercialization agreement for Captisol-enabled delafloxacin began in 2008 between Rib-X Pharmaceuticals and us for the use of Captisol in the formation of delafloxacin. Delafloxacin is a novel hospital-focused fluoroquinolone antibiotic candidate with potency against a variety of quinolone-resistant Gram-positive and Gram-negative bacteria, including quinolone-resistant, methicillin-resistant Staphylococcus aureus (MRSA). In the first half of 2013, Rib-X plans to initiate the first of two planned Phase III clinical trials of delafoxacin for the treatment of acute bacterial skin and skin structure infections (ABSSSI), including infections caused by MRSA.

Fructose-1,6-bisphosphatase Inhibitor (Undisclosed, Phase II)

In September 2012, Ligand entered into an option agreement with an undisclosed partner for the clinical development of an undisclosed novel inhibitor of the fructose-1,6-bisphosphatase (FBPase) enzyme for the treatment of type 2 diabetes. The undisclosed partner paid a $50,000 upfront option fee.

Fablyn (Unpartnered, Estrogen receptor modulator)

In October 2011, we entered into a license agreement with Chiva Pharmaceuticals, Inc., or Chiva. We granted to Chiva an exclusive worldwide license, with sub-license rights, to our intellectual property rights related to Fablyn, a selective estrogen receptor modulator. In October 2012, we entered into a settlement agreement and mutual release with Chiva, pursuant to which we resolved all disputes, including our primary claim in arbitration relating to payments due under the License Agreement. We also agreed to terminate the Fablyn license agreement and all assets related to Fablyn, including all relevant patents, know-how, properties, rights, interests and other tangible and intangible assets owned or controlled by Chiva were returned to us. Under the settlement agreement, Chiva agreed to pay $0.1 million and we agreed to drop our claim for $1.7 million asserted in arbitration.

Under the Fablyn license agreement, we have been paid and will retain $2.5 million in license fees. Having reclaimed the rights to Fablyn per the settlement agreement, we will seek new potential partners or licensees for Fablyn.

Internal Product Development Programs

As summarized in the table below, we are developing several proprietary products for a variety of indications. These programs represent our future licensing opportunities to expand our partnered asset portfolio.

Program	Disease/Indication	Development Phase
Selective Androgen Receptor Modulator	Various	Phase II-ready
Captisol-enabled Topiramate	Epilepsy	Phase I/II
Glucagon Receptor Antagonist	Diabetes	Pre-IND
HepDirect	Liver Diseases	Preclinical
Oral Human Granulocyte Colony Stimulating Factor	Neutropenia	Preclinical
Oral Erythropoietin	Anemia	Preclinical

Selective Androgen Receptor Modulator (SARM)

Our LGD-4033 is a non-steroidal selective androgen receptor modulator (SARM) that is expected to produce the therapeutic benefits of testosterone with improved safety, tolerability and patient acceptance due to a tissue-selective mechanism of action and an oral route of administration. We have discovered several novel orally active, non-steroidal SARM compounds, including LGD-4033, based on tissue-specific gene expression and other functional, cell-based technologies. In animal models, LGD-4033 demonstrated anabolic activity in muscles, anti-resorptive and anabolic activity in bones and a robust selectivity for muscle and bone versus prostate and sebaceous glands. Phase I single and multiple dose escalation studies of LGD-4033 were conducted in a total of 116 healthy male subjects. The safety, tolerability and preliminary efficacy of LGD-4033 was evaluated in the double-blind, placebo-controlled Phase I multiple ascending dose study. Healthy male subjects were randomized to receive 0.1, 0.3 or 1.0 mg LGD-4033 or placebo once daily over 21 days. Key findings of this study included: LGD-4033 was safe and well tolerated at all doses following daily oral administration for three weeks in young healthy males; no clinically significant dose-related adverse events were reported; no clinically significant changes in liver function tests, PSA, hematocrit or ECG were seen; positive dose-dependent trends in lean muscle mass increase were observed with drug-treated subjects; positive dose-dependent trends in functional exercise and strength measures were consistent with anabolic activity. LGD-4033 is positioned to enter into Phase II development, and potential studies include evaluation of LGD-4033 in conditions such as muscle wasting associated with cancer (cachexia), acute rehabilitation (e.g. hip fracture), and acute illness.

Captisol-enabled Topiramate IV

We are developing a proprietary Captisol-enabled formulation of topiramate for the treatment of acute epileptic seizures. Topiramate is sold under the trade name Topamax® and is currently only available in an oral formulation. The Captisol-enabled topiramate formulation is designed to provide an intravenous or intramuscular option for hospitalized epilepsy patients where oral topiramate is not an option. In completed Phase I studies, Captisol-enabled topiramate has demonstrated a faster onset of action than the orally administered drug.

Glucagon Receptor Antagonist Program

We are currently developing small molecule glucagon receptor antagonists for the treatment of Type II diabetes mellitus. Compounds that block the action of glucagon may reduce the hyperglycemia that is characteristic of this disease. Glucagon stimulates the production of glucose by the liver and its release into the blood stream. In diabetic patients, glucagon secretion is abnormally elevated and contributes to hyperglycemia in these patients. Clinical proof of concept studies with glucagon receptor antagonists in Type 2 diabetic patients were reported at the American Diabetes Association Annual Meeting in 2011 and 2012, supporting the potential benefit of this therapeutic target. Our advanced glucagon antagonist compound blocks glucagon action in human hepatocytes in vitro, reduces blood glucose in animal models of Type 1 and Type 2 diabetes, has demonstrated good oral bioavailability in rodents, and has a safety profile in preclinical studies suitable for further clinical development. We are preparing to file an IND for this program.

HepDirect HCV Inhibitor Program

We are developing novel small molecule inhibitors of the Hepatitis C virus using our HepDirect technology platform. Data from current lead molecules suggest that directing these molecules to the liver using the HepDirect technology could produce fewer side effects and has the potential for an overall superior risk-benefit ratio compared to non HepDirect therapies.

Oral Human Granulocyte Colony Stimulating Factor (GCSF) Program

We have discovered a novel series of small molecules that selectively activate human granulocyte colony stimulating factor (GCSF) receptor function in a manner distinct from GCSF, but similar to the mechanism of small-molecule human thrombopoietin receptor (hTPOR) agonists, such as eltrombopag (Promacta®). The goal of our GCSFR agonist program is to develop a non-peptide, small molecule, oral GCSFR agonist that is a convenient, cost-effective alternative as compared to recombinant human GCSF for the treatment of neutropenia and other related indications. The lead compound, LG7455, activates the GCSF-GCSFR signaling pathway and induces the differentiation of human bone marrow cells into granulocytes. Further optimization of the LG7455 structure series could lead to a first-in-class, once-daily, oral medication for the treatment of congenital, chronic or chemotherapy-induced neutropenia.

Oral EPO Program

Erythropoietin (EPO) acts on its receptor to stimulate the differentiation of bone marrow hematopoietic cells to form red blood cells. Various recombinant human EPO derivatives are marketed as erythropoiesis-stimulating agents (ESAs) for the treatment of anemia due to renal failure or cancer chemotherapy. We have discovered a series of orally-available, small molecule partial agonists of the EPO receptor with unique mechanism of action that should provide additional benefit in the treatment of anemia with improved safety, tolerability, and patient acceptance due to the convenience of oral administration and the lack of excessive erythropoietic stimulation. The lead compound, LG5640, has demonstrated high potency and oral bioavailability in the mouse, rat and monkey.

Other Internal Programs Awaiting Further Development Funding, Either Through Ligand or a Partner

- Aplindore (Phase II, Restless Leg/Parkinson's)
- Captisol-enabled Nasal Budesonide (Phase I, Allergic Rhinitis)
- Thyroid Receptor-beta Agonist (Preclinical, Dyslipidemia)
- Histamine H3 Receptor Antagonist (Preclinical, Cognitive Disorders)
- Glucokinase Activator (Preclinical, Diabetes)
- DGAT Inhibitor (Preclinical, Diabetes)
- CCR1 Inhibitor (Preclinical, Oncology)
- CRTH2 Inhibitor (Preclinical, Inflammation)
- Topical JAK3 (Preclinical, Inflammation)
- Others

Technology

We employ various research laboratory methods to discover and conduct preclinical development of new chemical entities. These methods are performed either in our own laboratories or in those of contract research organizations under our direction.

Our discovery work is based on certain technologies and acquired special expertise related to intracellular receptors and the receptors for hematopoietic growth factors. Intracellular receptors are involved in the actions of non-peptide hormones and drugs such as selective estrogen receptor modulators, or SERMs, and SARMs. Hematopoietic growth factor receptors are involved in the differentiation and proliferation of blood cell progenitors, the formation of new blood cells, and the action of drugs such as Promacta, Epogen and Neumega. We use and have developed particular expertise in co-transfection assays, which measure gene transcription in response to the activation of a target receptor, and gene expression in cells selected for expression of particular receptors or transfected with cDNA for particular receptors. Some of these methods are covered by patents issued to or licensed by us, some are trade secrets, and some are methods that are in the public domain, but that we may use in novel ways to improve our efficiency in identifying promising leads and developing new chemical entities.

In connection with our merger with Metabasis, we acquired certain HepDirect technology. HepDirect technology supplements our core drug discovery technology platform of ligand-dependent gene expression. HepDirect is a prodrug technology that targets delivery of certain drugs to the liver by using a proprietary chemical modification that renders a drug biologically inactive until cleaved by a liver-specific enzyme.

In connection with our acquisition of CyDex, we acquired the Captisol drug formulation platform technology. We use this technology to improve the solubility, stability, and/or pharmacokinetics of drugs, whether in our own internal development pipeline or those of our partners.

Manufacturing

We currently have no manufacturing facilities and rely on third parties, including our collaborative partners, for clinical production of any products or compounds.

We currently outsource the production of Captisol to Hovione FarmaCiencia SA, or Hovione, a major supplier of APIs and API intermediates located in Portugal. In 2002, CyDex entered into a Captisol supply agreement with Hovione, under which Hovione is our exclusive supplier of Captisol and is restricted from supplying Captisol to third parties, so long as specified conditions are met. In addition to its main manufacturing site in Loures, Portugal, Hovione will qualify a second site in Macau if our forecast requirements for Captisol exceed the capabilities of the Loures site. We have ongoing minimum purchase commitments under the agreement and are required to pay Hovione an aggregate minimum amount during the agreement term. Hovione must supply amounts exceeding our forecasts by a fixed percent. In 2008, we entered into an amendment to the supply agreement, under which we and Hovione agreed to reduce our minimum annual purchase requirement of Captisol and to extend the term of the agreement.

We pay Hovione unit prices, in U.S. dollars, for all Captisol supplied after the commercial production date, which prices may be adjusted for fluctuation in currency exchange rates, change in raw material prices and change in the Portuguese consumer price index. Additionally, prices may be adjusted based on requested changes to the Captisol manufacturing process or specifications.

In the event of a Captisol supply interruption, we are permitted to designate and, with Hovione's assistance, qualify one or more alternate suppliers. If the supply interruption continues beyond a designated period, we may terminate the agreement. In addition, if Hovione cannot supply our requirements of Captisol due to an uncured force majeure event or if the unit price of Captisol exceeds a set figure, we may obtain Captisol from a third party. To date, we have not qualified any alternate suppliers. In December 2011, the contract was amended to allow certain bulk quantities of Captisol to be distributed directly from Hovione. Additionally, in 2012, we qualified a Hovione site in Cork, Ireland to perform certain manufacturing steps to provide back-up and increased capacity to the Loures site.

Unless terminated earlier, the agreement will continue until it expires in December 2019. The term will automatically continue after the initial term for successive two year renewal terms, unless either party gives written notice of its intention to terminate the agreement no less than two years prior to the expiration of the initial term or renewal term. In addition, either party may terminate the agreement for the uncured material breach or bankruptcy of the other party or an extended force majeure event. We may terminate the agreement for extended supply interruption, regulatory action related to Captisol or other specified events.

For further discussion of these items, see below under "Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations."

Research and Development Expenses

Research and development expenses from continuing operations were $10.8 million, $10.3 million, and $22.1 million in 2012, 2011 and 2010, respectively, of which 100%, 99%, and 61%, respectively, were sponsored by us.

There were no research and development expenses from discontinued operations in 2012, 2011 and 2010.

Competition

Some of the drugs we and our collaborative partners are developing may compete with existing therapies or other drugs in development by other companies. A number of pharmaceutical and biotechnology companies are pursuing intracellular receptor-related approaches to drug discovery and development. Furthermore, academic institutions, government agencies and other public and private organizations conducting research may seek patent protection with respect to potentially competing products or technologies and may establish collaborative arrangements with our competitors.

Many of our existing or potential competitors, particularly large pharmaceutical companies, have greater financial, technical and human resources than we do and may be better equipped to develop, manufacture and market products. Many of these companies also have extensive experience in preclinical testing and human clinical trials, obtaining FDA and other regulatory approvals and manufacturing and marketing pharmaceutical products.

Our competitive position also depends upon our ability to attract and retain qualified personnel, obtain patent protection or otherwise develop proprietary products or processes, and secure sufficient capital resources for the often substantial period between technological conception and commercial sales. For a discussion of the risks associated with competition, see below under "Item 1A. Risk Factors."

Government Regulation

The manufacturing and marketing of our products, our ongoing research and development activities and products being developed by our collaborative partners are subject to regulation for safety and efficacy by numerous governmental authorities in the United States and other countries. In the United States, pharmaceuticals are subject to rigorous regulation by federal and various state authorities, including the FDA. The Federal Food, Drug and Cosmetic Act and the Public Health Service Act govern the testing, manufacture, safety, efficacy, labeling, storage, record keeping, approval, advertising and promotion of our products. There are often comparable regulations that apply at the state level. Product development and approval within this regulatory framework takes a number of years and involves the expenditure of substantial resources.

The steps required before a pharmaceutical agent may be marketed in the United States include (1) preclinical laboratory tests, (2) the submission to the FDA of an IND, which must become effective before human clinical trials may commence, (3) adequate and well-controlled human clinical trials to establish the safety and efficacy of the drug, (4) the submission of an NDA to the FDA and (5) the FDA approval of the NDA prior to any commercial sale or shipment of the drug. In addition to obtaining FDA approval for each product, each domestic drug-manufacturing establishment must be registered with the FDA and, in California, with the Food and Drug Branch of California. Domestic manufacturing establishments are subject to pre-approval inspections by the FDA prior to marketing approval, then to biennial inspections, and must comply with current Good Manufacturing Practices (cGMP). To supply products for use in the United States, foreign manufacturing establishments must comply with cGMP and are subject to periodic inspection by the FDA or by regulatory authorities in such countries under reciprocal agreements with the FDA.

For both currently marketed and future products, failure to comply with applicable regulatory requirements after obtaining regulatory approval can, among other things, result in the suspension of regulatory approval, as well as possible civil and criminal sanctions. In addition, changes in existing regulations could have a material adverse effect on us.

We are also increasingly subject to regulation by the states. A number of states now regulate, for example, pharmaceutical marketing practices and the reporting of marketing activities, controlled substances, clinical trials and general commercial practices. We have developed and are developing a number of policies and procedures to ensure our compliance with these state laws, in addition to the federal regulations described above. Significant resources are now required on an ongoing basis to ensure such compliance. For a discussion of the risks associated with government regulations, see below under “Item 1A. Risk Factors.”

Patents and Proprietary Rights

We believe that patents and other proprietary rights are important to our business. Our policy is to file patent applications to protect technology, inventions and improvements to our inventions that are considered important to the development of our business. We also rely upon trade secrets, know-how, continuing technological innovations and licensing opportunities to develop and maintain our competitive position.

Royalties we currently receive from Pfizer on Avinza represent a portion of our ongoing revenue. The United States patent on Avinza is not expected to expire until November 2017; however, applications for generic forms of Avinza have been submitted to the FDA. The last to expire United States patents relating to Promacta is not expected to expire until August 2027. The last to expire United States patents related to Captisol is not expected to expire until 2029. Subject to compliance with the terms of the respective agreements, our rights to receive royalty payments under our licenses with our exclusive licensors extend for the life of the patents covering such developments. For a discussion of the risks associated with patent and proprietary rights, see below under “Item 1A. Risk Factors.”

Human Resources

As of February 1, 2013, we had 21 full-time employees, of whom 6 are involved directly in scientific research and development activities. Of these employees, 5 hold Ph.D. or M.D. degrees.

ITEM 1A. RISK FACTORS

The following is a summary description of some of the many risks we face in our business. You should carefully review these risks in evaluating our business, including the businesses of our subsidiaries. You should also consider the other information described in this report.

Revenues based on sales of Promacta represent a substantial portion of our overall current and/or expected future revenues.

GSK is obligated to pay us royalties on its sales of Promacta. These payments are expected to be a substantial portion of our ongoing revenues for some time. As a result, any setback that may occur with respect to Promacta could significantly impair our operating results and/or reduce the market price of our stock. Setbacks for Promacta could include problems with shipping, distribution, manufacturing, product safety, marketing, government regulation, safety issues, licenses and approvals, intellectual property rights, competition with existing or new products and physician or patient acceptance of the products, as well as higher than expected total rebates, returns or discounts.

Revenues based on sales of Kyprolis represent a substantial portion of our overall expected future revenues.

Revenue from Onyx based on sales of Kyprolis are expected to be a substantial portion of our revenue in the future and any setbacks that occur with respect to Kyprolis could significantly impair our future operating results and/or reduce the market price of our stock. Setbacks for Kyprolis could include problems with shipping, distribution, manufacturing, product safety, marketing, government regulation, safety issues, licenses and approvals, intellectual property rights, competition with existing or new products and physician or patient acceptance of the products, as well as higher than expected total rebates, returns or discounts.

Revenue from sales of Captisol material to our collaborative partners represents a significant portion of our current revenue and our continued development and supply of Captisol is subject to a number of risks.

In January 2011, we completed our merger with CyDex, in which we obtained exclusive rights to the Captisol technology, in addition to other product candidates. All of CyDex's products and product candidates, as well as the technology that it outlicenses, are based on Captisol. We must coordinate with our collaborative partners concerning the development, manufacturing, regulatory and intellectual property protection strategies for Captisol and new development product candidates. In addition, we rely on our collaborative partners for many aspects of our Captisol developmental and commercialization activities, and we are subject to risks related to their financial stability and solvency.

In addition, Ligand or its partners are attempting to develop product candidates that may contain significantly higher levels of Captisol than in any currently-approved product and has directed developers to demonstrate an adequate safety margin and specifically acceptable renal safety. If products or product candidates incorporating Captisol technology were to cause any unexpected adverse events, whether in preclinical studies, clinical trials or as commercialized products, whether as a result of Captisol or otherwise, the perception of Captisol safety could be seriously harmed. If this were to occur, we may not be able to market Captisol products unless and until we are able to demonstrate that the adverse event was unrelated to Captisol, which we may not be able to do. Further, whether or not the adverse event was a result of Captisol, we could be required by the FDA to submit to additional regulatory reviews or approvals, including extensive safety testing or clinical testing of products using Captisol, which would be expensive and, even if we were to demonstrate that the adverse event was unrelated to Captisol, would delay our marketing of Captisol-enabled products and receipt of revenue related to those products, which could significantly impair our operating results and/or reduce the market price of our stock.

Our product candidates face significant development and regulatory hurdles prior to marketing which could delay or prevent sales and/or milestone revenue.

Before we or our partners obtain the approvals necessary to sell any of our potential products, we must show through preclinical studies and human testing that each product is safe and effective. We and our partners have a number of products moving toward or currently awaiting regulatory action. Failure to show any product’s safety and effectiveness could delay or prevent regulatory approval of a product and could adversely affect our business. The clinical trials process is complex and uncertain. For example, the results of preclinical studies and initial clinical trials may not necessarily predict the results from later large-scale clinical trials. In addition, clinical trials may not demonstrate a product’s safety and effectiveness to the satisfaction of the regulatory authorities. Recently, a number of companies have suffered significant setbacks in advanced clinical trials or in seeking regulatory approvals, despite promising results in earlier trials. The FDA may also require additional clinical trials after regulatory approvals are received. Such additional trials may be expensive and time-consuming, and failure to successfully conduct those trials could jeopardize continued commercialization of a product.

The rates at which we complete our clinical trials depends on many factors, including, but are not limited to, our ability to obtain adequate supplies of the products to be tested and patient enrollment. Patient enrollment is a function of many factors, including the size of the patient population, the proximity of patients to clinical sites, the eligibility criteria for the trial and other potential drug candidates being studied. Delays in patient enrollment for our trials may result in increased costs and longer development times. In addition, our collaborative partners have rights to control product development and clinical programs for products developed under the collaborations. As a result, these collaborative partners may conduct these programs more slowly or in a different manner than expected. Moreover, even if clinical trials are completed, we or our collaborative partners still may not apply for FDA approval in a timely manner or the FDA still may not grant approval.

We rely heavily on collaborative relationships, and any disputes or litigation with our collaborative partners or termination or breach of any of the related agreements could reduce the financial resources available to us, including research and development funding, milestone payments and future royalty revenues.

Our strategy for developing and commercializing many of our potential products, including products aimed at larger markets, includes entering into collaborations with corporate partners and others. These collaborations have provided us with funding and research and development resources for potential products for the treatment of a variety of diseases. However, the funding provided to us by our existing collaborative partners for ongoing research and development under our existing collaborative agreements has ceased. These agreements also give our collaborative partners significant discretion when deciding whether or not to pursue any development program. Our existing collaborations may not continue or be successful, and we may be unable to enter into future collaborative arrangements to develop and commercialize our product candidates.

In addition, our collaborators may develop drugs, either alone or with others that compete with the types of drugs they are developing with us. This would result in increased competition for our programs. If products are approved for marketing under our collaborative programs, revenues we receive will depend on the manufacturing, marketing and sales efforts of our collaborative partners, who generally retain commercialization rights under the collaborative agreements. Generally, our current collaborative partners also have the right to terminate their collaborations under specified circumstances. If any of our collaborative partners breach or terminate their agreements with us or otherwise fail to conduct their collaborative activities successfully (for example, by not making required payments when due, or at all), our product development under these agreements will be delayed or terminated. Disputes or litigation may also arise with our collaborators, including disputes or litigation over ownership rights to intellectual property, know-how or technologies developed with our collaborators. Such disputes or litigation could adversely affect our rights to one or more of our product candidates. Any such dispute or litigation could delay, interrupt or terminate the collaborative research, development and commercialization of certain potential products, create uncertainty as to ownership rights of intellectual property, or could result in litigation or arbitration. The occurrence of any of these problems could be time-consuming and expensive and could adversely affect our business.

We obtain Captisol from a sole source supplier, and if this supplier were to cease to be able to supply Captisol to us, or decline to supply Captisol to us, we would be unable to continue to derive revenue or continue to develop our product candidates until we obtained an alternative source, which could take a considerable length of time.

We currently have one supplier of Captisol, Hovione FarmaCiencia SA, or Hovione, through its agent Hovione LLC. Hovione is a major supplier of APIs and API intermediates located in Portugal. Hovione has other production sites in Cork, Ireland, Macau, China, and Zhejiang, China, but those sites are not yet fully qualified to make Captisol. If a major disaster were to happen at Hovione or Hovione were to suffer major production problems or were to fail to deliver Captisol to us for any other reason, there could be a significant interruption of our Captisol supply. While we carry a significant inventory of Captisol for this type of occurrence, which should permit us to satisfy our existing supply obligations through 2013 under current and anticipated demand conditions, a series of unusually large orders could rapidly deplete that inventory and cause significant problems with our licensees and disrupt our business. In addition, if we fail to supply Captisol under our supply agreements, our customers could obtain the right to have Captisol manufactured by other suppliers, which would significantly harm our business.

We rely on contract manufacturers for the manufacture of Captisol and product candidates, and if these contract manufacturers fail to perform as we expect, we will incur delays in our ability to generate revenue and substantial additional expenses in obtaining new contract manufacturers.

We do not manufacture products or product candidates, but rather contract with contract manufacturers for the manufacture of products and product candidates. With respect to any specific product or product candidate, we only contract with one contract manufacturer due to the high cost of compliance with good manufacturing practices prior to the contract manufacturer being permitted to manufacture the product or product candidate for use in humans. If a contract manufacturer is unable or unwilling to continue to manufacture for us in the future, we would be required to contract with a new contract manufacturer for the specific product or product candidate. In the case of products, this would cause us to lose revenue during the qualification process, and in the case of product candidates, this could cause a delay in the commercialization of the product candidate. In addition, in either case we would incur substantial additional expenses as a result of the new contract manufacturer becoming qualified. Further, if a contract manufacturer were to experience a delay in producing products or product candidates due to a failure to meet strict FDA manufacturing requirements or otherwise, we would also experience a delay in development and commercialization of the product candidate or, in the case of products, sales of the product. This risk is exacerbated in the case of manufacture of injectables, which require heightened sterility and other conditions as well as specialized facilities for preparation.

Expirations of, challenges to or failure to secure patents and other proprietary rights may significantly hurt our business.

The initially filed patents relating to Captisol expired in 2010, 2011 and 2012 in the U.S. and will expire between 2013 and 2016 in most countries outside the U.S. We have also obtained patent protection in the U.S. through 2025 on one or more Agglomerated forms of Captisol and through 2029 on one or more High Purity forms of Captisol. We have obtained patent protection on a number of combinations of APIs and Captisol through three combination patents in the U.S., and we have applied for six additional combination patents in the U.S. relating to the combination of Captisol with specific APIs. Our U.S. combination patent relating to Fosphenytoin expires June 12, 2018 and our U.S. combination patent relating to Amiodarone expires May 4, 2022. Our U.S. combination patent relating to one of our early-stage product candidates expires March 19, 2022. There is no guarantee that these patents will be sufficient to prevent competitors from creating a generic form of Captisol after 2010 and competing against us, or from developing combination patents for products that will prevent us from developing products using those APIs. In addition, most of the agreements in our Captisol outlicensing business, provide that once the relevant patent expires, the amount of royalties we receive will be reduced or eliminated.

Generally, our success will depend on our ability and the ability of our licensors to obtain and maintain patents and proprietary rights for our potential products both in the United States and in foreign countries. Patents may not be issued from any of these applications currently on file, or, if issued, may not provide sufficient protection. Our patent position, like that of many biotechnology and pharmaceutical companies, is uncertain and involves complex legal and technical questions for which important legal principles are unresolved. We may not develop or obtain rights to products or processes that are patentable. Even if we do obtain patents, such patents may not adequately protect the technology we own or have licensed. In addition, others may challenge, seek to invalidate, infringe or circumvent any patents we own or license and rights we receive under those patents may not provide competitive advantages to us. For example, our European patent related to Agglomerated forms of Captisol is currently being opposed and observations have been filed against our European patent application related to high purity Captisol.

Any conflicts resulting from the patent rights of others could significantly reduce the coverage of our patents and limit our ability to obtain meaningful patent protection. We have had and will continue to have discussions with our current and potential collaborative partners regarding the scope and validity of our patents and other proprietary rights. If a collaborative partner or other party successfully establishes that our patent rights are invalid, we may not be able to continue our existing collaborations beyond their expiration. Any determination that our patent rights are invalid also could encourage our collaborative partners to seek early termination of our agreements. Such invalidation could adversely affect our ability to enter into new collaborations.

We may also need to initiate litigation, which could be time-consuming and expensive, to enforce our proprietary rights or to determine the scope and validity of others' rights. If litigation occurs, a court may find our patents or those of our licensors invalid or may find that we have infringed on a competitor's rights. In addition, if any of our competitors have filed patent applications in the United States which claim technology we also have invented, the United States Patent and Trademark Office may require us to participate in expensive interference proceedings to determine who has the right to a patent for the technology.

We also rely on unpatented trade secrets and know-how to protect and maintain our competitive position. We require our employees, consultants, collaborative partners and others to sign confidentiality agreements when they begin their relationship with us. These agreements may be breached, and we may not have adequate remedies for any breach. In addition, our competitors may independently discover our trade secrets.

Our collaborative partners may change their strategy or the focus of their development and commercialization efforts with respect to our alliance products; the success of our alliance products could be adversely affected.

If our collaborative partners terminate their collaborations with us or do not commit sufficient resources to the development, manufacture, marketing or distribution of our alliance products, we could be required to devote additional resources to our alliance products, seek new collaborative partners or abandon such alliance products, all of which could have an adverse effect on our business.

We are currently dependent upon out-licensing our technologies and we may not be successful in entering into additional out-license agreements on favorable terms, which may adversely affect our liquidity or require us to alter development plans on our products.

We have entered into several out-licensing agreements for the development and commercialization of our products. We currently depend on our arrangements with our outlicensees to sell products using our Captisol technology. These agreements generally provide that outlicensees may terminate the agreements at will. If our outlicensees discontinue sales of products using our Captisol technology, fail to obtain regulatory approval for their products using our Captisol technology, fail to satisfy their obligations under their agreements with us, or otherwise choose to utilize a generic form of Captisol should it become available, or if we are unable to establish new licensing and marketing relationships, our financial results and growth prospects would be materially affected. Further, under most of our Captisol outlicenses, the amount of royalties we receive will be reduced or will cease when the relevant patent expires. While we have other more recent patents relating to Captisol with later expiration dates (for example, our high purity patent, U.S. Patent No. 7,635,773 is not expected to expire until 2029 and our morphology patent, U.S. Patent No. 7,629,331 is not expected to expire until 2025), the initially filed patents relating to Captisol expired in 2010 and 2011 in the U.S. and will expire between 2012 and 2016 in most countries outside the U.S. If our other intellectual property rights are not sufficient to prevent a generic form of Captisol from coming to market and if in such case our outlicensees choose to terminate their agreements with us, the source of the vast majority of our Captisol revenue may cease to exist.

Although we expend considerable resources on internal research and development for our proprietary programs, we may not be successful in entering into additional out-licensing agreements under favorable terms due to several factors including:

- the difficulty in creating valuable product candidates that target large market opportunities;
- research and spending priorities of potential licensing partners;
- willingness of and the resources available to pharmaceutical and biotechnology companies to in-license product candidates for their clinical pipelines; or
- differences of opinion with potential partners on the valuation of products we are seeking to out-license.

The inability to enter into out-licensing agreements under favorable terms and to earn milestone payments, license fees and/or upfront fees may adversely affect our liquidity and may force us to curtail or delay development of some or all of our proprietary programs, which in turn may harm our business and the value of our stock.

Third party intellectual property may prevent us or our partners from developing our potential products and we may owe a portion of any payments we receive from our collaborative partners to one or more third parties.

Our success will depend on our ability and the ability of our collaborative partners to avoid infringing the proprietary rights of others, both in the United States and in foreign countries. In addition, disputes with licensors under our license agreements may arise which could result in additional financial liability or loss of important technology and potential products and related revenue, if any. Further, the manufacture, use or sale of our potential products or our collaborative partners' products or potential products may infringe the patent rights of others. This could impact Captisol, Promacta, Kyprolis, Avinza, Viviant and Conbriza (bazedoxifene), Fablyn, and other products or potential products.

Several drug companies and research and academic institutions have developed technologies, filed patent applications or received patents for technologies that may be related to our business. Others have filed patent applications and received patents that conflict with patents or patent applications we have licensed for our use, either by claiming the same methods or compounds or by claiming methods or compounds that could dominate those licensed to us. In addition, we may not be aware of all patents or patent applications that may impact our ability to make, use or sell any of our potential products. For example, US patent applications may be kept confidential while pending in the United States Patent and Trademark Office and patent applications filed in foreign countries are often first published six months or more after filing.

Disagreements or litigation with our collaborative partners could delay our ability and the ability of our collaborative partners to achieve milestones or our receipt of other payments. In addition, other possible disagreements or litigation could delay, interrupt or terminate the research, development and commercialization of certain potential products being developed by either our collaborative partners or by us. The occurrence of any of the foregoing problems could be time-consuming and expensive and could adversely affect our business.

Third parties have not directly threatened an action or claim against us, although we do periodically receive other communications or have other conversations with the owners of other patents or other intellectual property. If others obtain patents with conflicting claims, we may be required to obtain licenses to those patents or to develop or obtain alternative technology. We may not be able to obtain any such licenses on acceptable terms, or at all. Any failure to obtain such licenses could delay or prevent us from pursuing the development or commercialization of our potential products.

In general, litigation claims can be expensive and time consuming to bring or defend against and could result in settlements or damages that could significantly impact our results of operations and financial condition. We cannot predict or determine the outcome of these matters or reasonably estimate the amount or range of amounts of any fines or penalties that might result from a settlement or an adverse outcome. However, a settlement or an adverse outcome could have a material adverse effect on our financial position, liquidity and results of operations.

If our business does not perform according to our expectations, we may not be able to pay off our existing debt.

Our operations have consumed substantial amounts of cash since inception. As of December 31, 2012, we had negative working capital of $11.6 million. Clinical and preclinical development of drug candidates is a long, expensive and uncertain process. Also, we may acquire companies, businesses or products and the consummation of such acquisitions may consume additional cash. For example, in connection with our 2011 acquisition of CyDex, we entered into a $20 million Loan and Security Agreement, or the Loan Agreement, with a lender. The loan was amended in January 2012 to increase the secured credit facility to $27.5 million. The original $20 million borrowed under the facility bears interest at a fixed rate of 8.6%. The additional $7.5 million bears interest at a fixed rate of 8.9%. Under the terms of the secured debt, we will make interest only payments through March 2013. Subsequent to the interest only payments, the note will amortize with principal and interest payments through the remaining term of the loan. Additionally, we must also make an additional final payment equal to 6% of the total amount borrowed which is due at maturity and is being accreted over the life of the loan. The maturity date of the term loan is August 1, 2014.

We also have a cash-collateralized revolving credit facility under which we may elect to borrow up to $10 million. Amounts borrowed under the revolving credit facility bear interest at a floating rate equal to 200 basis points above the prime rate. All outstanding amounts under the credit facility may become due and payable if we fail to maintain a cash balance equal to the amount outstanding under the credit facility. The maturity date of the revolving credit facility is March 28, 2013.

In October 2011, we filed a Registration Statement on Form S-3 with the Securities and Exchange Commission (“SEC”) for the issuance and sale of up to $30 million of equity or other securities, proceeds from which will be used for general corporate purposes. The Form S-3 provides additional financial flexibility for us to sell shares or other securities as needed at any time. As of December 31, 2012, 302,750 common shares have been issued under this registration statement for total net proceeds of approximately $5.5 million.

We believe that our capital resources, including our currently available cash, cash equivalents, and short-term investments as well as our current and future royalty revenues, will be adequate to fund our operations at their current levels at least for the next 12 months. However, changes may occur that would cause us to consume available capital resources before that time and we may need to complete additional equity or debt financings to fund our operations. Our inability to obtain additional financing could adversely affect our business. Financings may not be available at all or on terms favorable to us. In addition, these financings, if completed, may not meet our capital needs and could result in substantial dilution to our stockholders. If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our research or drug development programs. We may also be required to liquidate our business or file for bankruptcy protection. Alternatively, we may be forced to attempt to continue development by entering into arrangements with collaborative partners or others that require us to relinquish some or all of our rights to technologies or drug candidates that we would not otherwise relinquish.

Our product development involves a number of uncertainties, and we may never generate sufficient collaborative payments and royalties from the development of products to become profitable.

We were founded in 1987. We have incurred significant losses since our inception. As of December 31, 2012, our accumulated deficit was $682.8 million.

Most of our products in development will require extensive additional development, including preclinical testing and human studies, as well as regulatory approvals, before they can be marketed. We cannot predict if or when any of the products we are developing or those being developed with our partners will be approved for marketing. There are many reasons why we or our collaborative partners may fail in our efforts to develop our potential products, including the possibility that: preclinical testing or human studies may show that our potential products are ineffective or cause harmful side effects; the products may fail to receive necessary regulatory approvals from the FDA or foreign authorities in a timely manner, or at all; the products, if approved, may not be produced in commercial quantities or at reasonable costs; the products, if approved, may not achieve commercial acceptance; regulatory or governmental authorities may apply restrictions to our products, which could adversely affect their commercial success; or the proprietary rights of other parties may prevent us or our partners from marketing the products.

Any product development failures for these or other reasons, whether with our products or our partners' products, may reduce our expected revenues, profits, and stock price.

Any future material weaknesses or deficiencies in our internal control over financial reporting could harm stockholder and business confidence on our financial reporting, our ability to obtain financing and other aspects of our business.

As described in Item 9A, we identified material weaknesses as a result of improper accounting for non-routine transactions and the controls over the determination of fair value of contingent liabilities. Our audit committee, after consultation with management has determined that the material weaknesses were a result of inadequate staffing and review processes. As a result of the material weaknesses associated with non-routine transactions, we have added a corporate controller to our finance and accounting staff. While we had processes to identify and apply accounting standards to complex transactions, we enhanced these processes with the addition of a resource with the ability to research and understand the nuances of complex accounting standards. Additionally, we plan to enhance our controls over the determination of the fair value of contingent liabilities by including a formal review of mathematical calculations and completeness of such calculations. Given the material weaknesses, our audit committee, after consultation with management determined that we did not maintain effective internal control over financial reporting. The existence of one or more material weaknesses or significant deficiencies could result in errors in our consolidated financial statements. Substantial costs and resources may be required to rectify any internal control deficiencies. If we fail to achieve and maintain the adequacy of our internal controls in accordance with applicable standards, we may be unable to conclude on an ongoing basis that we have effective internal controls over financial reporting. If we cannot produce reliable financial reports, our business and financial condition could be harmed, investors could lose confidence in our reported financial information, or the market price of our stock could decline significantly. In addition, our ability to obtain additional financing to operate and expand our business, or obtain additional financing on favorable terms, could be materially and adversely affected, which, in turn, could materially and adversely affect our business, our financial condition and the market value of our securities. Moreover, our reputation with customers, lenders, investors, securities analysts and others may be adversely affected.

We may undertake strategic acquisitions in the future and any difficulties from integrating such acquisitions could adversely affect our stock price, operating results and results of operations.

We may acquire companies, businesses and products that complement or augment our existing business. We may not be able to integrate any acquired business successfully or operate any acquired business profitably. Integrating any newly acquired business could be expensive and time-consuming. Integration efforts often take a significant amount of time, place a significant strain on managerial, operational and financial resources and could prove to be more difficult or expensive than we predict. The diversion of our management's attention and any delay or difficulties encountered in connection with any future acquisitions we may consummate could result in the disruption of our on-going business or inconsistencies in standards and controls that could negatively affect our ability to maintain third-party relationships. Moreover, we may need to raise additional funds through public or private debt or equity financing, or issue additional shares, to acquire any businesses or products, which may result in dilution for stockholders or the incurrence of indebtedness.

As part of our efforts to acquire companies, business or product candidates or to enter into other significant transactions, we conduct business, legal and financial due diligence with the goal of identifying and evaluating material risks involved in the transaction. Despite our efforts, we ultimately may be unsuccessful in ascertaining or evaluating all such risks and, as a result, might not realize the intended advantages of the transaction. If we fail to realize the expected benefits from acquisitions we may consummate in the future, whether as a result of unidentified risks, integration difficulties, regulatory setbacks and other events, our business, results of operations and financial condition could be adversely affected. If we acquire product candidates, we will also need to make certain assumptions about, among other things, development costs, the likelihood of receiving regulatory approval and the market for such product candidates. Our assumptions may prove to be incorrect, which could cause us to fail to realize the anticipated benefits of these transactions.

In addition, we will likely experience significant charges to earnings in connection with our efforts, if any, to consummate acquisitions. For transactions that are ultimately not consummated, these charges may include fees and expenses for investment bankers, attorneys, accountants and other advisors in connection with our efforts. Even if our efforts are successful, we may incur, as part of a transaction, substantial charges for closure costs associated with elimination of duplicate operations and facilities and acquired IPR&D charges. In either case, the incurrence of these charges could adversely affect our results of operations for particular quarterly or annual periods.

Revenues based on sales of Avinza could decrease or be eliminated.

Pfizer, as successor to King, is obligated to pay us royalties based on the sales of Avinza. Any setback that may occur with respect to Avinza could reduce our revenue. Setbacks for Avinza could include problems with shipping, distribution, manufacturing, product safety, marketing, government regulation, licenses and approvals, intellectual property rights, competition with existing or new products and physician or patient acceptance of the products, as well as higher than expected total rebates, returns or discounts. Avinza could also face regulatory action and product safety issues and is also subject to generic competition.

If plaintiffs bring product liability lawsuits against us or our partners, we or our partners may incur substantial liabilities and may be required to limit commercialization of our approved products and product candidates, and we may be subject to other liabilities related to the sale of our prior commercial product lines.

We and our partners face an inherent risk of product liability as a result of the clinical testing of our product candidates in clinical trials and face an even greater risk for commercialized products. Although we are not currently a party to product liability litigation, if we are sued, we may be held liable if any product or product candidate we develop causes injury or is found otherwise unsuitable during product testing, manufacturing, marketing or sale. Regardless of merit or eventual outcome, liability claims may result in decreased demand for any product candidates or products that we may develop, injury to our reputation, discontinuation of clinical trials, costs to defend litigation, substantial monetary awards to clinical trial participants or patients, loss of revenue and the inability to commercialize any products that we develop. We have product liability insurance that covers our clinical trials up to a $5.0 million annual limit. We intend to expand product liability insurance coverage to include the sale of commercial products if we obtain marketing approval for any products that we may develop. However, this insurance may be prohibitively expensive, or may not fully cover our potential liabilities. Inability to obtain sufficient insurance coverage at an acceptable cost or otherwise to protect against potential product liability claims could prevent or delay the commercialization of our product candidates. If we are sued for any injury caused by our product candidates or any future products, our liability could exceed our total assets.

In addition, we agreed to indemnify Eisai and King under certain circumstances pursuant to the asset purchase agreements we entered into with Eisai and King in connection with the sale of our prior commercial product lines. Some of our indemnification obligations still remain and our potential liability in certain circumstances is not limited to specific dollar amounts. We cannot predict the liabilities that may arise as a result of these matters. Any claims related to our indemnification obligations to King or Eisai could materially and adversely affect our financial condition.

In addition, King assumed our obligation to make payments to Organon based on net sales of Avinza (the fair value of which was $12.5 million as of December 31, 2012). We remain liable to Organon in the event King defaults on this obligation. Any requirement to pay a material amount to Organon, could adversely affect our business and the price of our securities.

The sale of our prior commercial product lines does not relieve us of exposure to product liability risks on products we sold prior to divesting these product lines. A successful product liability claim or series of claims brought against us may not be insured and could result in payment of significant amounts of money and divert management’s attention from running our business.

If our partners do not reach the market with our alliance products before our competitors offer products for the same or similar uses, or if our partners are not effective in marketing our alliance products, our revenues from product sales, if any, will be reduced.

We face intense competition in our development activities. Our competitors might succeed in obtaining regulatory approval for competitive products more rapidly than our partners can for our products. In addition, competitors might develop technologies and products that are less expensive and perceived to be safer or more effective than those being developed by us or our partners, which could impair our product development and render our technology obsolete.

We may not be able to hire and/or retain key employees.

If we are unable to hire and/or retain key employees, we may not have sufficient resources to successfully manage our assets or our business, and we may not be able to perform our obligations under various contracts and commitments. Furthermore, there can be no assurance that we will be able to retain all of our key management and scientific personnel. If we fail to retain such key employees, we may not realize the anticipated benefits of our mergers. Either of these could have substantial negative impacts on our business and our stock price.

We use hazardous materials, which may expose us to significant liability.

In connection with our research and development activities, we handle hazardous materials, chemicals and various radioactive compounds. To properly dispose of these hazardous materials in compliance with environmental regulations, we are required to contract with third parties. We believe that we carry reasonably adequate insurance for toxic tort claims. However, we cannot eliminate the risk or predict the exposure of accidental contamination or injury from the handling and disposing of hazardous materials, whether by us or our third-party contractors. Any accident in the handling and disposing of hazardous materials may expose us to significant liability.

Our shareholder rights plan and charter documents may hinder or prevent change of control transactions.

Our shareholder rights plan and provisions contained in our certificate of incorporation and bylaws may discourage transactions involving an actual or potential change in our ownership. In addition, our Board of Directors may issue shares of preferred stock without any further action by the stockholders. Such restrictions and issuances may have the effect of delaying or preventing a change in our ownership. If changes in our ownership are discouraged, delayed or prevented, it would be more difficult for our current Board of Directors to be removed and replaced, even if you or our other stockholders believe that such actions are in the best interests of us and our stockholders.

We may lose some or all of the value of some of our short-term investments.

The investments are intended to maintain safety of principal while providing liquidity adequate to meet projected cash requirements. Risks of principal loss are to be minimized through diversified short and medium term investments of high quality, but the investments are not in every case guaranteed or fully insured. From time to time we may suffer other losses on our short-term investment portfolio.

Funding of our drug development programs will make those funds unavailable for other uses.

Our drug development programs may require substantial additional capital to successfully complete them, arising from costs to: conduct research, preclinical testing and human studies; establish pilot scale and commercial scale manufacturing processes and facilities; and establish and develop quality control, regulatory, marketing, sales and administrative capabilities to support these programs. While we expect to fund our research and development activities from cash generated from royalties and milestones from our partners in various past and future collaborations to the extent possible, if we are unable to do so, we may need to complete additional equity or debt financings or seek other external means of financing. These financings could depress our stock price. If additional funds are required to support our operations and we are unable to obtain them on terms favorable to us, we may be required to cease or reduce further development or commercialization of our products, to sell some or all of our technology or assets or to merge with another entity.

Our results of operations and liquidity needs could be materially negatively affected by market fluctuations and economic downturn.

Our results of operations could be materially negatively affected by economic conditions generally, both in the U.S. and elsewhere around the world. Continuing concerns over inflation, energy costs, geopolitical issues, the availability and cost of credit, and the U.S. financial markets have contributed to increased volatility and diminished expectations for the economy and the markets going forward. These factors, combined with volatile oil prices, declining business and consumer confidence and increased unemployment, have precipitated an economic recession and fears of a possible depression. Domestic and international equity markets continue to experience heightened volatility and turmoil. These events and the continuing market upheavals may have an adverse effect on us. In the event of a continuing market downturn, our results of operations could be adversely affected by those factors in many ways, including making it more difficult for us to raise funds if necessary, and our stock price may further decline.

Our investment securities consist primarily of money market funds, corporate debt obligations and U.S. government agency securities. We do not have any auction rate securities. Recently, there has been concern in the credit markets regarding the value of a variety of mortgage-backed securities and the resultant effects on various securities markets. We cannot provide assurance that our investments are not subject to adverse changes in market value. If our investments experience adverse changes in market value, we may have less capital to fund our operations.

Our stock price has been volatile and could experience a sudden decline in value.

Our common stock has experienced significant price and volume fluctuations and may continue to experience volatility in the future. As a result, you may not be able to sell your shares quickly or at the latest market price if trading in our stock is not active or the volume is low. Many factors may have a significant impact on the market price of our common stock, including, but not limited to, the following factors: results of or delays in our preclinical studies and clinical trials; the success of our collaboration agreements; publicity regarding actual or potential medical results relating to products under development by us or others; announcements of technological innovations or new commercial products by us or others; developments in patent or other proprietary rights by us or others; comments or opinions by securities analysts or major stockholders; future sales of our common stock by existing stockholders; regulatory developments or changes in regulatory guidance; litigation or threats of litigation; economic and other external factors or other disaster or crises; the departure of any of our officers, directors or key employees; period-to-period fluctuations in financial results; and limited daily trading volume.

Impairment charges pertaining to goodwill, identifiable intangible assets or other long-lived assets from our mergers and acquisitions could have an adverse impact on our results of operations and the market value of our common stock.

The total purchase price pertaining to our acquisitions of Pharmacopeia, Neurogen, Metabasis and CyDex have been allocated to net tangible assets, identifiable intangible assets, in process research and development and goodwill. To the extent the value of goodwill or identifiable intangible assets or other long-lived assets become impaired, we will be required to incur material charges relating to the impairment. Any impairment charges could have a material adverse impact on our results of operations and the market value of our common stock.

The occurrence of a catastrophic disaster could damage our facilities beyond insurance limits or we could lose key data which could cause us to curtail or cease operations.

We are vulnerable to damage and/or loss of vital data from natural disasters, such as earthquakes, tornadoes, power loss, fire, floods and similar events. If any disaster were to occur, our ability to operate our business could be seriously impaired. We have property, liability, and business interruption insurance which may not be adequate to cover our losses resulting from disasters or other similar significant business interruptions, and we do not plan to purchase additional insurance to cover such losses due to the cost of obtaining such coverage. Any significant losses that are not recoverable under our insurance policies could seriously impair our business, financial condition and prospects.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We currently occupy premises consisting of approximately 16,500 square feet of office and laboratory space in San Diego through June 2019 to serve as our corporate headquarters. We believe this facility is adequate to meet our space requirements for the foreseeable future.

We lease approximately 1,500 square feet of laboratory space located at the Bioscience and Technology Business Center in Lawrence, Kansas leased through December 2014.

We lease approximately 99,000 square feet in three facilities in Cranbury, New Jersey under leases that expire in 2016. We also sublease approximately 16,700 square feet of these facilities with subleases expiring in 2014 through 2016. We fully vacated these facilities in September 2010.

We also lease a 52,800 square foot facility in San Diego that is leased through July 2015. In January 2008, we began subleasing the 52,800 square foot facility under a sublease agreement through July 2015. We fully vacated this facility in February 2008.

Item 3. Legal Proceedings

From time to time we are subject to various lawsuits and claims with respect to matters arising out of the normal course of our business. Due to the uncertainty of the ultimate outcome of these matters, the impact on future financial results is not subject to reasonable estimates.

Securities Litigation

On June 8, 2012, a federal securities class action and shareholder derivative lawsuit was filed in the Eastern District of Pennsylvania against Genaera Corporation and its officers, directors, major shareholders and trustee ("Genaera Defendants") for allegedly breaching their fiduciary duties to Genaera shareholders. The lawsuit also names the Company and its CEO John Higgins as additional defendants for allegedly aiding and abetting the Genaera Defendants' various breaches of fiduciary duties based on the Company's purchase of a licensing interest in a development-stage pharmaceutical drug program from the Genaera Liquidating Trust in May 2010 and its subsequent sale of half of its interest in the transaction to Biotechnology Value Fund, Inc. On December 19, 2012, plaintiff filed an amended complaint asserting substantially similar claims against the Company and Mr. Higgins. The amended complaint seeks unspecified damages, disgorgement, punitive damages, attorneys' fees and costs. The Company intends to vigorously defend against the claims against it and Mr. Higgins in the lawsuit. Due to the complex nature of the legal and factual issues involved, however, the outcome of this matter is not presently determinable.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities

Market Information

Our common stock is traded on the NASDAQ Global Market (formerly NASDAQ National Market) under the symbol "LGND".

The following table sets forth the high and low intraday sales prices for our common stock on the NASDAQ Global Market for the periods indicated:

	Price Range	
	High	Low
Year Ended December 31, 2012:		
1st Quarter	$ 18.74	$ 11.44
2nd Quarter	17.27	11.21
3rd Quarter	19.85	15.80
4th Quarter	21.75	14.75
Year Ended December 31, 2011:		
1st Quarter	$ 11.10	$ 8.64
2nd Quarter	12.06	9.39
3rd Quarter	16.24	10.16
4th Quarter	15.91	10.50

As of February 14, 2013, the closing price of our common stock on the NASDAQ Global Market was $22.07.

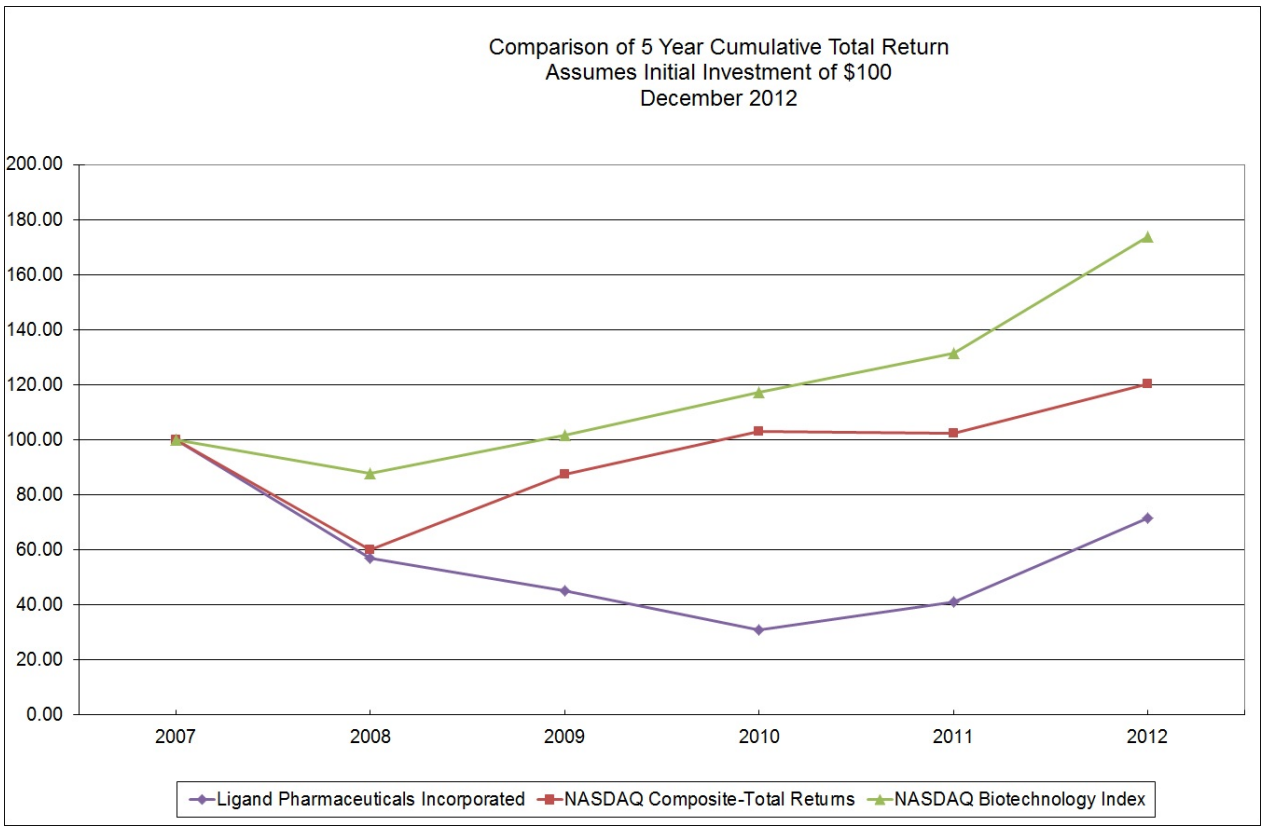
Holders

As of February 14, 2013, there were approximately 709 holders of record of the common stock.

Performance Graph

The graph below shows the five-year cumulative total stockholder return assuming the investment of $100 and is based on the returns of the component companies weighted monthly according to their market capitalizations. The graph compares total stockholder returns of our common stock, of all companies traded on the NASDAQ Stock market, as represented by the NASDAQ Composite® Index, and of the NASDAQ Biotechnology Stock Index, as prepared by The NASDAQ Stock Market Inc. The NASDAQ Biotechnology Stock Index tracks approximately 168 domestic biotechnology stocks.

The stockholder return shown on the graph below is not necessarily indicative of future performance and we will not make or endorse any predictions as to future stockholder returns.



	12/31/2007	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012
Ligand	100%	57%	45%	31%	41%	72%
NASDAQ Market (U.S. Companies) Index	100%	60%	87%	103%	102%	120%
NASDAQ Biotechnology Stocks	100%	88%	102%	117%	131%	174%

Item 6. Selected Consolidated Financial Data

The following selected historical consolidated financial and other data are qualified by reference to, and should be read in conjunction with, our consolidated financial statements and the related notes thereto appearing elsewhere herein and "Management's Discussion and Analysis of Financial Condition and Results of Operations." Our selected statement of operations data set forth below for each of the years ended December 31, 2012, 2011, 2010, 2009 and 2008, and the balance sheet data as of December 31, 2012, 2011, 2010, 2009 and 2008, are derived from our consolidated financial statements.

	Year Ended December 31, (in thousands, except share data)				
	2012	2011	2010	2009	2008
Consolidated Statement of Operations Data:					
Royalties	$ 14,073	$ 9,213	$ 7,279	$ 8,334	$ 20,305
Material sales	9,432	12,123	—	—	—
Collaborative research and development and other revenues	7,883	8,701	16,259	30,606	7,000
Total revenues	31,388	30,037	23,538	38,940	27,305
Cost of material sales	3,601	4,909	—	—	—
Research and development expenses	10,790	10,291	22,067	39,870	30,770
General and administrative expenses	16,108	14,977	12,829	15,211	23,785
Lease exit and termination costs	315	(22)	16,894	15,235	—
Write-off of acquired in-process research and development	—	2,282	2,754	442	72,000
Total operating costs and expenses	30,814	32,437	54,544	70,758	126,555
Accretion of deferred gain on sale leaseback	—	1,702	1,702	21,851	1,964
Income (loss) from operations	574	(698)	(29,304)	(9,967)	(97,286)
(Loss) income from continuing operations	(2,674)	9,712	(12,786)	(8,337)	(97,460)
Discontinued operations (1)	2,147	3	2,413	6,389	(654)
Net (loss) income	(527)	9,715	(10,373)	(1,948)	(98,114)
Basic per share amounts:					
(Loss) income from continuing operations	$ (0.13)	$ 0.49	$ (0.65)	$ (0.44)	$ (6.12)
Discontinued operations (1)	0.11	—	0.12	0.34	(0.04)
Net (loss) income	$ (0.03)	$ 0.49	$ (0.53)	$ (0.10)	$ (6.16)
Weighted average number of common shares	19,853,095	19,655,632	19,613,201	18,862,751	15,917,570
Diluted per share amounts:					
(Loss) income from continuing operations	$ (0.13)	$ 0.49	$ (0.65)	$ (0.44)	$ (6.12)
Discontinued operations (1)	0.11	—	0.12	0.34	(0.04)
Net (loss) income	$ (0.03)	$ 0.49	$ (0.53)	$ (0.10)	$ (6.16)
Weighted average number of common shares	19,853,095	19,713,320	19,613,201	18,862,751	15,917,570

	December 31,				
	2012	2011	2010	2009	2008
	(in thousands)				
Consolidated Balance Sheet Data:					
Cash, cash equivalents, short-term investments and restricted cash and investments	$ 15,148	$ 18,382	$ 24,038	$ 54,694	$ 82,012
Working capital	(11,616)	(11,413)	3,531	15,994	23,315
Total assets	104,260	120,583	75,559	141,807	171,448
Current portion of deferred revenue, net	486	1,240	—	4,989	10,301
Current portion of deferred gain	—	—	1,702	1,702	1,964
Long-term obligations (excludes long-term portions of deferred revenue, net and deferred gain)	39,967	56,945	36,030	72,350	58,743
Long-term portion of deferred revenue, net	2,369	3,466	2,546	3,495	16,819
Long-term portion of deferred gain	—	—	—	1,702	23,292
Common stock subject to conditional redemption	—	8,344	8,344	8,344	12,345
Accumulated deficit	(682,759)	(682,232)	(691,947)	(681,574)	(679,626)
Total stockholders' equity (deficit)	26,485	8,185	(4,849)	3,744	(10,365)

(1) We sold our Oncology Product Line ("Oncology") on October 25, 2006 and our Avinza Product Line ("Avinza") on February 26, 2007. The operating results for Oncology and Avinza have been presented in our consolidated statements of operations as "Discontinued Operations."

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Caution: This discussion and analysis may contain predictions, estimates and other forward-looking statements that involve a number of risks and uncertainties, including those discussed in Item 1A. "Risk Factors." This outlook represents our current judgment on the future direction of our business. These statements include those related to our Captisol related revenue, our Avinza, Promacta and other product royalty revenues, product returns, and product development. Actual events or results may differ materially from our expectations. For example, there can be no assurance that our revenues or expenses will meet any expectations or follow any trend(s), that we will be able to retain our key employees or that we will be able to enter into any strategic partnerships or other transactions. We cannot assure you that we will receive expected Avinza, Promacta, Captisol and other product revenues to support our ongoing business or that our internal or partnered pipeline products will progress in their development, gain marketing approval or achieve success in the market.In addition, ongoing or future arbitration, or litigation or disputes with third parties may have a material adverse effect on us. Such risks and uncertainties, and others, could cause actual results to differ materially from any future performance suggested. We undertake no obligation to release publicly the results of any revisions to these forward-looking statements to reflect events or circumstances arising after the date of this annual report. This caution is made under the safe harbor provisions of Section 21E of the Securities Exchange Act of 1934, as amended.

Our trademarks, trade names and service marks referenced herein include Ligand. Each other trademark, trade name or service mark appearing in this annual report belongs to its owner.

References to "Ligand Pharmaceuticals Incorporated", "Ligand", the "Company", "we" or "our" include our wholly owned subsidiaries—Ligand JVR, Allergan Ligand Retinoid Therapeutics, Seragen, Inc., or Seragen; Pharmacopeia, LLC; Neurogen Corporation, CyDex Pharmaceuticals, Inc., Metabasis Therapeutics, and Nexus Equity VI LLC, or Nexus.

We are a biotechnology company that operates with a business model focused on developing or acquiring revenue generating assets and coupling them to a lean corporate cost structure. Our goal is to create a sustainably profitable business and generate meaningful value for our stockholders. Since a portion of our business model is based on the goal of partnering with other pharmaceutical companies to commercialize and market our assets, a significant amount of our revenue is based largely on payments made to us by partners for royalties, milestones and license fees. We recognized the important role of the drug reformulation segment in the pharmaceutical industry and in 2011 added Captisol® to our technology portfolio. Captisol is a powerful formulation technology that has enabled six FDA approved products, including Onyx's Kyprolis® and Baxter International's Nexterone® and is currently being developed in a number of clinical-stage partner programs. In comparison to our peers, we believe we have assembled one of the largest and most diversified asset portfolios in the industry with the potential to generate significant revenue in the future. The therapies in our development portfolio address the unmet medical needs of patients for a broad spectrum of diseases including hepatitis, muscle wasting, multiple myeloma, Alzheimer's disease, dyslipidemia, diabetes, anemia, epilepsy, FSGS and osteoporosis. We have established multiple alliances with the world's leading pharmaceutical companies including GlaxoSmithKline, Onyx Pharmaceuticals, Merck, Pfizer, Baxter International, Bristol-Myers Squibb, Celgene, Lundbeck Inc., Eli Lilly and Co., Spectrum Pharmaceuticals and The Medicines Company.

In early 2012, we licensed the world-wide rights to RE-021 (formerly known as DARA-a Dual Acting Receptor Antagonist of Angiotension and Endothelin receptors) to Retrophin, Inc., or Retrophin. Retrophin intends to develop RE-021 for orphan indications of severe kidney diseases including Focal Segmental Glomerulosclerosis (FSGS) as well as conduct proof-of-concept studies in resistant hypertension and diabetic nephropathy. Certain patient groups with severely compromised renal function exhibit extreme proteinuria resulting in progression to dialysis and a high mortality rate. RE-021, with its unique dual blockade of angiotensin and endothelin receptors, is expected to provide meaningful clinical benefits in mitigating proteinuria in indications where there are no approved therapies. We received an upfront payment of $1 million, net of amounts owed to third parties.

In December 2012, we received a milestone payment of 620,000 shares of common stock in partner Retrophin, Inc. The milestone arose under the previously executed license agreement for the development and commercialization of Retrophin's lead clinical candidate RE-021 and was triggered by the completion of Retrophin's merger with Desert Gateway, Inc. and its transition to a publicly traded company. We recorded milestone revenue equal to the estimated fair value of the shares received, net of amounts owed to a third party, which was determined by an independent valuation firm. The shares issued to us represent approximately 7% of Retrophin's outstanding capital stock and are subject to a one year trading restriction.

In early 2013 we received a $1.4 million milestone payment from Retrophin, Inc.. Ligand will remit $0.2 million to former license holders under the terms of a previous license agreement for RE-021.

In July 2012, our licensee, Onyx Pharmaceuticals, Inc. ("Onyx"), received accelerated approval from the U.S. Food and Drug Administration, or FDA, for Kyprolis (Carfilzomib) for injection. We received a milestone of $0.6 million upon approval by the FDA. Kyprolis is formulated with Ligand's Captisol and is used for the treatment of patients with multiple myeloma who have received at least two prior therapies, including bortezomib and an immunomodulatory agent, and have demonstrated disease progression on or within 60 days of completion of the last therapy. Under our agreement with Onyx, we are entitled to receive milestones, tiered royalties ranging between 1.5% and 3%.

In September 2012, the Company filed a demand for arbitration against Chiva Pharmaceuticals, Inc. ("Chiva") with the American Arbitration Association. The demand asserted claims for damages resulting from Chiva's breach of the October 7, 2011 Fablyn License Agreement ("Fablyn License Agreement") for failure to tender a milestone payment and failure to pay certain patent prosecution expenses. In October 2012, the Company reached a settlement with Chiva, whereby the parties resolved all disputes that had arisen between them, including Ligand's primary claim in arbitration relating to payments due under the Fablyn License Agreement. As part of the settlement, the parties executed mutual releases and Ligand agreed to seek dismissal of all claims asserted in the arbitration. In return, Chiva agreed to pay Ligand $0.1 million, which has been received by the Company.

In October 2012, our licensee, Merck, initiated a Phase IIb/III adaptive clinical trial for Dinaciclib for the treatment of patients with refractory chronic lymphocytic leukemia (CLL). As a result, during the fourth quarter of 2012, we recognized a $2 million milestone payment upon initiation of the clinical study. Under our collaboration and license agreement with Merck, we are entitled to receive future milestones and royalties.

In November 2012, the FDA approved Promacta® for the treatment of thrombocytopenia (low blood platelet counts) in patients with chronic hepatitis C to allow them to initiate and maintain interferon-based therapy. Promacta is the first supportive care treatment available to patients who are ineligible or poor candidates for interferon-based therapy due to their low blood platelet counts. Promacta in combination with interferon-based therapy has been shown to improve a patient's chance of achieving a sustained virologic response (SVR) or viral cure.

As a result of the regulatory approvals of Promacta, pursuant to the terms of a license agreement with GSK, we are entitled to receive tiered royalties on annual net sales of Promacta. GSK has listed a patent in the FDA's Orange Book for Promacta with an expiration date in 2024.

In March 2013, we entered into a License Agreement with Spectrum Pharmaceuticals, Inc. ("Spectrum"). Under the License Agreement, we granted to Spectrum an exclusive, nontransferable, worldwide license to such intellectual property rights that will enable Spectrum to develop and potentially commercialize Captisol-enabled® propylene glycol-free melphalan. Contemporaneously with the entry into the license agreement, we entered into a supply agreement to provide Captisol to Spectrum. Under the Supply Agreement, Spectrum agreed to purchase its Captisol requirements for the development of the compound contemplated by the license agreement, as well as any Captisol required for any product that is successfully commercialized. We are entitled to receive a non-refundable license issuance fee of $3 million. Additionally, we are entitled to milestone payments and royalties on future net sales of the Captisol-enabled melphalan product. This program is currently enrolling patients in a pivotal clinical trial.

Metabasis Contingent Value Rights

In January 2010, we completed our acquisition of Metabasis. In addition to cash consideration, we issued four tradable Contingent Value Rights ("CVRs"), one CVR from each of four respective series of CVRs, for each Metabasis share. The CVRs will entitle the holder to cash payments as frequently as every six months as cash is received by us from the sale or partnering of any of the Metabasis drug development programs, among other triggering events. We have also committed to spend at least $7 million within 30 months and $8 million within 42 months, in new research and development funding on the Metabasis programs. Through December 31, 2012, we estimate that we have spent approximately $7.7 million of the committed amount.

In January 2011, we granted licenses to Chiva to begin immediate development in China of two clinical-stage HepDirect programs, Pradefovir for hepatitis B and MB01733 for hepatocellular carcinoma. Additionally, we granted Chiva a non-exclusive HepDirect technology license for the discovery, development and worldwide commercialization of new compounds in hepatitis B (HepB), hepatitis C (HepC) and hepatocellular carcinoma (HCC). Under the terms of the agreement, we are entitled to milestones and royalties on potential sales. In addition, we are entitled to receive a portion of any sublicensing revenue generated from sublicensing of collaboration compounds to third parties in a major world market. We received a $0.5 million license payment in March 2011, of which $0.1 million was remitted to CVR holders.

In August 2011, we entered into an amendment to the license agreement which required that a second $0.5 million licensing fee be paid in September 2011. In addition, the amendment increased royalty rates which we may receive under the license agreement to 6% of net sales of products (other than Pradefovir) and 9% of net sales for Pradefovir. In addition, the amendment removed from the license agreement a provision that afforded us the potential to earn a 10% equity position in Chiva as a milestone payment. In September 2011, Chiva paid us the $0.5 million licensing fee called for by the amendment, of which $0.1 million was remitted to CVR holders.

In September 2012, we entered into an option agreement with an undisclosed partner, which required our partner to pay a $50,000 upfront option opening fee, 50% of which is required to be remitted to the Metabasis CVR holders pursuant to the CVR agreement. In October 2012, we remitted $6,000 to the Metabasis CVR holders, equivalent to the option fee less costs and expenses incurred in connection with the option agreement.

Results of Operations

Total revenues for 2012 were $31.4 million compared to $30.0 million in 2011 and $23.5 million in 2010. Our loss from continuing operations for 2012 was $2.7 million or $0.13 per share, compared to income from continuing operations of $9.7 million in 2011, or $0.49 per share, and loss from continuing operations of $12.8 million, or $0.65 per share in 2010.

Royalty Revenue

Royalty revenues were $14.1 million in 2012, compared to $9.2 million in 2011 and $7.3 million in 2010. The increase in royalty revenue of $4.9 million and $1.9 million for the year ended December 31, 2012 and 2011, respectively is primarily due to an increase in Promacta sales.

Material Sales

We recorded material sales of $9.4 million in 2012 compared to $12.1 million in 2011. No material sales were recorded in 2010. The decrease in material sales for the year ended December 31, 2012 compared to 2011 is due to timing of customer purchases of Captisol.

Collaborative Research and Development and Other Revenue

We recorded collaborative research and development and other revenues of $7.9 million in 2012 compared to $8.7 million in 2011 and $16.3 million in 2010. The decrease of $0.8 million for the year ended December 31, 2012, compared to the same period in 2011 is due to the recognition of $1.3 million of deferred revenue related to the previous sale of royalty rights for the year ended December 31, 2011, partially offset by an increase in license fees and milestones of $0.5 million for the year ended December 31, 2012. The decrease in collaborative research and development and other revenue of $7.6 million for the year ended December 31, 2011, compared to 2010 is primarily due to the termination of the research funded stage of a majority of the Company's then-existing collaboration agreements.

Research and Development Expenses

Research and development expenses for 2012 were $10.8 million compared to $10.3 million in 2011 and $22.1 million in 2010.

The increase in research and development expenses of $0.5 million for the year ended December 31, 2012 is primarily due to an increase in costs associated with internal programs. The decrease of $11.8 million for the year ended December 31, 2011, compared with 2010 was primarily due to $8.7 million of costs associated with collaboration agreements that were terminated as well as $3.1 million of other costs associated with internal research programs.

As summarized in the table below, we are developing several proprietary products for a variety of indications. Our programs are not limited to the following, but are representative of a range of future licensing opportunities to expand our partnered asset portfolio.

Program	**Disease/Indication**	**Development Phase**
Selective Androgen Receptor Modulator	Various	Phase II-ready
Captisol-enabled Topiramate	Epilepsy	PhaseI/II
Glucagon Receptor Antagonist	Diabetes	Pre-IND
HepDirect	Liver Diseases	Preclinical
Oral Human Granulocyte Colony Stimulating Factor	Neutropenia	Preclinical
Oral Erythropoietin	Anemia	Preclinical

We do not provide forward-looking estimates of costs and time to complete our ongoing research and development projects as such estimates would involve a high degree of uncertainty. Uncertainties include our inability to predict the outcome of complex research, our inability to predict the results of clinical studies, regulatory requirements placed upon us by regulatory authorities such as the FDA and EMA, our inability to predict the decisions of our collaborative partners, our ability to fund research and development programs, competition from other entities of which we may become aware in future periods, predictions of market potential from products that may be derived from our research and development efforts, and our ability to recruit and retain personnel or third-party research organizations with the necessary knowledge and skills to perform certain research. Refer to “Item 1A. Risk Factors” for additional discussion of the uncertainties surrounding our research and development initiatives.

General and Administrative Expenses

General and administrative expenses were $16.1 million for the year ended December 31, 2012 compared to $15.0 million for 2011 and $12.8 million for 2010. The increase in general and administrative expenses of $1.1 million is primarily due to an increase in tax consulting projects and legal expenses in 2012. The increase in expenses for the year ended December 31, 2011 compared with 2010 is primarily due to costs to operate the CyDex business and an increase in non-cash stock based compensation expenses.

Lease Exit and Termination Costs

In September 2010, we ceased use of our facility located in Cranbury, New Jersey. As a result, during the quarter ended September 30, 2010, we recorded lease exit costs of $9.7 million for costs related to the difference between the remaining lease obligations of the abandoned operating leases, which run through August 2016, and management's estimate of potential future sublease income, discounted to present value. Actual future sublease income may differ materially from our estimate, which would result in us recording additional expense or reductions in expense. In addition, we wrote-off approximately $5.4 million of property and equipment related to the facility closure and recorded approximately $1.8 million of severance related costs. We recorded an increase of $0.3 million in lease exit and termination costs for the year ended December 31, 2012 due to changes in leasing assumptions. We recorded $22,000 as a decrease in lease exit and termination costs for the year ended December 31, 2011.

Write-off of in-process research and development

In 2011, we recorded a non-cash impairment charge of $1.1 million for the write-off of intellectual property and interests in future milestones and royalties for MEDI-528, an IL-9 antibody program by AstraZeneca's subsidiary, MedImmune. The asset was impaired upon receipt of notice from MedImmune that it was exercising its right to terminate the collaboration and license agreement. Additionally, in 2011, we recorded a non-cash impairment charge of $1.2 million for the write-off of interests in future milestones for TRPV1, a collaborative research and licensing program between us and Merck, related to the physiology, pharmacology, chemistry and potential therapeutic applications and potential clinical utilities related to Vanilloid Receptors, subtype 1. The asset was impaired upon receipt of notice from Merck in October 2011 that it was exercising its right to terminate the collaboration and license agreement. In 2010, Roche notified us that they were exercising their right to terminate the collaboration and license agreement with our subsidiary, Metabasis. As a result, we reviewed the carrying amount of the intangible asset related to this agreement. Based on our analysis of available information, we determined that the asset would not generate any future cash flow. Therefore, we wrote-off the $2.8 million of acquired in-process research and development associated with the agreement during the year ended December 31, 2010.

Accretion of Deferred Gain on Sale Leaseback

In 2006, we entered into an agreement for the sale of our real property located in San Diego, California for a purchase price of $47.6 million. This property, with a net book value of $14.5 million, included one building totaling approximately 82,500 square feet, the land on which the building is situated, and two adjacent vacant lots. As part of the sale transaction, we agreed to lease back the building for a period of 15 years. We recognized an immediate pre-tax gain on the sale transaction of $3.1 million in 2006 and deferred a gain of $29.5 million on the sale of the building. The deferred gain was being recognized as an offset to operating expense on a straight-line basis over the 15 year term of the lease at a rate of approximately $2.0 million per year. In 2009, we entered into a lease termination agreement for this building. As a result, we recognized an additional $20.4 million of accretion of deferred gain during the quarter ended September 30, 2009, and recognized the remaining balance of the deferred gain of $3.1 million through the term of our new building lease, which expired in December 2011. The amount of the deferred gain recognized for the years ended December 31, 2011 and 2010 was $1.7 million, respectively. The deferred gain was fully amortized as of December 31, 2011, thus no gain was recognized for the year ended December 31, 2012.

Interest income (expense), net

Interest expense was $3.3 million for the year ended December 31, 2012 compared to $2.5 million in 2011 and interest income of $0.4 million in 2010. The increase in interest expense of $0.8 million for the year ended December 31, 2012 compared with 2011 was due to the increase in the outstanding balance of notes payable at December 31, 2012 compared to December 31, 2011. Additionally, the $20 million loan obtained to acquire CyDex in January 2011 was outstanding for a partial period for the year ended December 31, 2011. The interest income in 2010 of $0.4 million is the result of interest earned on investments which were liquidated in January 2011 and used to acquire CyDex.

Change in Contingent Liabilities

We recorded an increase in contingent liabilities of $1.7 million for the year ended December 31, 2012 compared to $1.0 million for 2011, and a decrease of $9.1 million for 2010. The change relates to our liability for amounts potentially due to holders of CVRs and other former license holders associated with our CyDex, Metabasis, and Neurogen acquisitions. The Metabasis CVR liability is marked-to-market at each reporting period based upon the quoted market prices of the underlying CVR. The fair value of the CyDex and Neurogen contingent liabilities were determined based upon the income approach for the years ended December 31, 2012 and 2011. The carrying amount of the liability may fluctuate significantly based upon quoted market prices and actual amounts paid under the agreements may be materially different than the carrying amount of the liability.

Other, net

We recorded other income of $0.5 million for the year ended December 31, 2012, compared to $0.6 million for 2011 and $4.4 million for 2010. Other income for 2012 is primarily due to decreases in liabilities assumed in acquisitions. Other income for 2011 primarily relates to income related to the gain on the sale of property and equipment and decreases in liabilities assumed in acquisitions. Other income for 2010 primarily relates to grants totaling $2.0 million in response to applications submitted for qualified investments in a qualifying therapeutic discovery project under section 48D of the Internal Revenue Code, $1.5 million in realized gains on investments, $0.5 million reduction in warrant liability and $0.4 million of gain on the sale of property and equipment.

Income Taxes

We recorded an income tax benefit from continuing operations of $1.2 million for the year ended December 31, 2012 compared to a income tax benefit of $13.3 million in 2011. The income tax benefit in 2011 was principally the result of net deferred tax liabilities recorded in connection with our acquisition of Cydex. The net deferred tax liabilities assumed in the Cydex acquisition became a future source of income to support the realization of deferred tax assets and resulted in the release of a portion of our valuation allowance against deferred tax assets. The income tax benefit in 2012 is principally due to a requirement under ASC740-20-45-7 that a Company to consider all sources of income in order to determine the tax benefit resulting from a loss from continuing operations. As a result of the requirement under ASC740-20-45-7, the pretax income which we generated from discontinued operations was a source of income which resulted in the partial realization of the current year loss from continuing operations. Thus, we recorded an approximate $1.5 million tax benefit to continuing operations and an offsetting $1.5 million charge to discontinued operations. In addition, the Company realized a tax benefit as a result of California voters approving legislation in November 2012 which required a single sales factor income apportionment methodology beginning in 2013 and resulted in a decrease in our future California deferred income tax obligations.

During 2010, we recorded an income tax benefit of $2.6 million related to the reversal of estimated interest for a proposed substantial underpayment of tax in fiscal 2007. During 2009, the IRS issued to us a Notice of Proposed Adjustment, or NOPA, seeking an increase to our taxable income for the 2007 fiscal year of $71.5 million and a $4.1 million penalty for substantial underpayment of tax in fiscal 2007. We recorded a liability for uncertain tax positions of $25.1 million related to the income tax effect of the NOPA and $3.0 million related to estimated interest due on the proposed underpayment of tax. We also recorded deferred income tax assets of $25.1 million associated with the ability to carry back losses from 2008 and 2009 to offset the NOPA. In addition, we recorded an income tax receivable of $4.5 million associated with changes in income tax law in relation to prior AMT taxes paid on carry back periods. In November 2010, the IRS granted us an extension of time to make a closing-of-the-books election with respect to an ownership change, within the meaning of section 382 of the Internal Revenue Code, for the 2007 tax year. We filed an amended 2007 federal tax return in the fourth quarter of 2010. In addition, in January 2011, we were notified by the IRS that they had completed their examination resulting in no changes to the taxes for our 2007 tax year.

Discontinued Operations, net

Oncology Product Line

In 2006, we sold our Oncology product line to Eisai, including, among other things, all related inventory, equipment, records and intellectual property, and assumed certain liabilities. For the year ended December 31, 2010, we recognized a pretax gain of $0.2 million, due to subsequent changes in certain estimates of assets and liabilities recorded as of the sale date.

Avinza Product Line

In 2007, we sold our Avinza product line to King, including, among other things, all Avinza inventory, records and related intellectual property, and the transfer of certain liabilities. For the years ended December 31, 2012, 2011, and 2010, we recognized pre-tax gains of $3.7 million, $0, and $2.2 million, respectively, due to subsequent changes in certain estimates of assets and liabilities recorded as of the sale date.

Income tax expense on discontinued operations

In 2012, we recorded income tax expense on discontinued operations of $1.5 million. See discussion on income taxes above. There was no income tax expense on discontinued operations for the years ended December 31, 2011 and 2010.

Liquidity and Capital Resources

We have financed our operations through offerings of our equity securities, borrowings from long-term debt, issuance of convertible notes, product sales and the subsequent sales of our commercial assets, royalties, collaborative research and development and other revenues, capital and operating lease transactions.

We have incurred significant losses since inception. At December 31, 2012, our accumulated deficit was $682.8 million and we had negative working capital of $11.6 million. We believe that cash flows from operations will improve due to consistent Captisol sales, an increase in royalty revenues driven primarily from continued increases in Promacta sales, recent product approvals and regulatory developments, as well as anticipated new license and milestone revenues. In the event revenues and operating cash flows do not meet expectations, management plans to reduce discretionary expenses. However, it is possible that we may be required to seek additional financing. There can be no assurance that additional financing will be available on terms acceptable to management, or at all. We believe our available cash, cash equivalents, and short-term investments as well as our current and future royalty, license and milestone revenues will be sufficient to satisfy our anticipated operating and capital requirements, through at least the next twelve months. Our future operating and capital requirements will depend on many factors, including, but not limited to: the pace of scientific progress in our research and development programs; the potential success of these programs; the scope and results of preclinical testing and clinical trials; the time and costs involved in obtaining regulatory approvals; the costs involved in preparing, filing, prosecuting, maintaining and enforcing patent claims; competing technological and market developments; the amount of royalties on sales of the commercial products of our partners; the efforts of our collaborative partners; obligations under our operating lease agreements; and the capital requirements of any companies we acquire, including Pharmacopeia, Inc. (“Pharmacopeia”), Neurogen Corporation (“Neurogen”), Metabasis Therapeutics, Inc. (“Metabasis”) and CyDex Pharmaceuticals, Inc. (“CyDex”). Our ability to achieve our operational targets is dependent upon our ability to further implement our business plan and generate sufficient operating cash flow.

In January 2010, we completed our acquisition of Metabasis. In addition to cash consideration, we issued four tradable Contingent Value Rights (“CVRs”), one CVR from each of four respective series of CVRs, for each Metabasis share. The CVRs will entitle the holder to cash payments as frequently as every six months as cash is received by us from the sale or partnering of any of the Metabasis drug development programs, among other triggering events. We have also committed to spend at least $7 million within 30 months and $8 million within 42 months, in new research and development funding on the Metabasis programs. Through December 31, 2012, we estimate that we have spent approximately $7.7 million of the committed amount.

In January 2011, we entered into a $20 million secured term loan credit facility (“secured debt”) with Oxford Financial Group (“Oxford”). The loan was amended in January 2012 to increase the secured credit facility to $27.5 million. The original $20 million borrowed under the facility bears interest at a fixed rate of 8.6%. The additional $7.5 million bears interest at a fixed rate of 8.9%. Under the terms of the secured debt, we will make interest only payments through February 2013. Subsequent to the interest only payments, the note will amortize with principal and interest payments through the

remaining term of the loan. Additionally, we must also make an additional final payment equal to 6% of the total amount borrowed which is due at maturity and is being accreted over the life of the loan. The maturity date of the term loan is August 1, 2014.

We also have a cash-collateralized revolving credit facility under which we may elect to borrow up to $10 million. Amounts borrowed under the revolving credit facility bear interest at a floating rate equal to 200 basis points above the prime rate. All outstanding amounts under the credit facility may become due and payable if we fail to maintain a cash balance equal to the amount outstanding under the credit facility. The maturity date of the revolving credit facility is March 28, 2013.

In October 2011, we filed a Registration Statement on Form S-3 with the Securities and Exchange Commission ("SEC") for the issuance and sale of up to $30 million of equity or other securities, proceeds from which will be used for general corporate purposes. The Form S-3 provides additional financial flexibility for us to sell shares or other securities as needed at any time. As of December 31, 2012, 302,750 common shares have been issued under this registration statement for total net proceeds of approximately $5.5 million.

In connection with the acquisition of CyDex Pharmaceuticals, Inc. on January 24, 2011, we issued a series of Contingent Value Rights ("CVR") and assumed certain contractual obligations. We paid the CVR holders $4.3 million in January 2012 and may be required to pay up to an additional $8.0 million upon achievement of certain clinical and regulatory milestones to the CyDex CVR holders and former license holders. In 2011, $0.9 million was paid to the CyDex Shareholders upon completion of a licensing agreement with The Medicines Company for the Captisol enabled Intravenous formulation of Clopidogrel. An additional $2 million was paid to the CyDex Shareholders upon acceptance by the FDA of the New Drug Application submitted by Onyx and an additional $3.5 million was paid upon approval by the FDA of Kyprolis for the potential treatment of patients with relapsed and refractory multiple myeloma. In addition, we will pay CyDex shareholders, for each respective year from 2011 through 2016, 20% of all CyDex-related revenue, but only to the extent that and beginning only when CyDex-related revenue for such year exceeds $15.0 million; plus an additional 10% of all CyDex-related revenue recognized during such year, but only to the extent that and beginning only when aggregate CyDex-related revenue for such year exceeds $35.0 million. We paid $0.3 million to the CyDex shareholders in March 2012 for 20% of all 2011 CyDex-related revenue in excess of $15 million. For the year ended December 31, 2012, CyDex related revenue did not exceed $15 million. Pursuant to the CVR Agreement, the shareholders' representative on behalf of the former CyDex shareholders filed a notice of objection with us regarding the calculation of payments due to the CyDex former shareholders for the first and second quarters of 2011. In addition, the shareholders' representative claimed that we exceeded the $35 million financial indebtedness limitation contained in the CVR Agreement. In August 2012, we executed a settlement agreement with the shareholders' representative releasing us from all claims.

We are also required by the CyDex CVR Agreement to dedicate at least five experienced full-time employee equivalents per year to the acquired business and to invest at least $1.5 million per year, inclusive of such employee expenses, in the acquired business, through 2015. As of December 31, 2012, we have exceeded our commitment for the year ending December 31, 2012.

Based on management's plans, including projected increases in Captisol sales and royalty revenues, as well as anticipated new license revenue and expense reductions, if necessary, we believe our currently available cash, cash equivalents, and short-term investments as well as our current and future royalty, license and milestone revenues will be sufficient to satisfy our anticipated operating and capital requirements, through at least the next twelve months. Our future operating and capital requirements will depend on many factors, including, but not limited to: the pace of scientific progress in our research and development programs; the magnitude of these programs; the scope and results of preclinical testing and clinical trials; the time and costs involved in obtaining regulatory approvals; the costs involved in preparing, filing, prosecuting, maintaining and enforcing patent claims; competing technological and market developments; the amount of royalties on sales of our partners' commercial products; the efforts of our collaborative partners; obligations under our operating lease agreements; and the capital requirements of any companies we may acquire, including Neurogen, Metabasis and CyDex. We believe that the actions presently being taken to generate sufficient operating cash flow provide the opportunity for us to continue as a going concern. While we believe in the viability of our strategy to generate sufficient operating cash flow and in our ability to raise additional funds, there can be no assurances to that effect. Our ability to achieve our operational targets is dependent upon our ability to further implement our business plan and generate sufficient operating cash flow.

Operating Activities

Operating activities provided cash of $1.1 million in 2012 and used cash of $1.2 million in 2011 and $27.1 million in 2010.

The cash provided in 2012 reflects a net loss of $0.5 million, adjusted by $2.1 million of gain from discontinued operations and $6.5 million of non-cash items to reconcile the net income to net cash used in operations. These reconciling items primarily reflect a non-cash change in estimated value of contingent liabilities of $1.7 million, depreciation and amortization of $2.7 million, stock-based compensation of $4.1 million and other changes of $0.5 million, partially offset by an increase in net deferred tax assets and liabilities of $1.2 million, and receipt of a non-cash milestone of $1.2 million. The cash provided by operations in 2012 is further impacted by changes in operating assets and liabilities due primarily to a decrease in accounts receivable of $1.5 million, decrease in inventory of $1.0 million, decrease in other current assets of $0.5 million, decrease in other long term assets of $0.3 million, and increase in other liabilities of $0.5 million. Partially offsetting, accounts payable and accrued liabilities decreased $4.8 million and deferred revenue decreased $1.9 million. Net cash used in operating activities of discontinued operations was $0.9 million in 2012.

The use of cash in 2011 reflects net income of $9.7 million, adjusted by $5.0 million of non-cash items to reconcile the net income to net cash used in operations. These reconciling items primarily reflect deferred income taxes of $13.4 million, accretion of deferred gain on sale leaseback transaction of $1.7 million and gain on asset write-offs of $0.5 million, partially offset by a non-cash change in estimated value of contingent liabilities of $1.9 million, write off of acquired in-process research and development of $2.3 million, depreciation and amortization of $2.8 million, and stock-based compensation of $3.4 million. The use of cash in 2011 is further impacted by changes in operating assets and liabilities due primarily to an increase in accounts receivable of $3.9 million and a decrease in accounts payable and accrued liabilities of $11.6 million, partially offset by an increase in other current assets of $5.5 million, an increase in inventory of $1.1 million, a decrease in deferred revenue of $2.2 million, and a decrease in other liabilities of $0.9 million. None of the cash used in operating activities for 2011 related to discontinued operations.

The use of cash in 2010 reflects a net loss of $10.4 million, adjusted by $2.4 million of gain from discontinued operations and $10.2 million of non-cash items to reconcile the net loss to net cash used in operations. These reconciling items primarily reflect noncash lease costs of $9.0 million, a write-off of acquired in-process research and development of $2.8 million, the recognition of $2.3 million of stock-based compensation expense, depreciation of assets of $2.2 million and the write-off of assets of $5.3 million, partially offset by the change in estimated fair value of contingent value rights of $9.1 million, accretion of deferred gain on the sale leaseback of the building of $1.7 million and gain on investments of $0.6 million. The use of cash in 2010 is further impacted by changes in operating assets and liabilities due primarily to decreases in accounts payable and accrued liabilities of $13.4 million, a decrease in deferred revenue of $5.9 million, an increase in other current assets of $3.9 million, a decrease in other liabilities of $0.7 million and an increase in accounts receivable, net of $0.4 million. Net cash provided by operating activities of discontinued operations was $0.2 million in 2010.

Investing Activities

Investing activities used cash of $1.3 million in 2012, $25.2 million in 2011, and $14.5 million in 2010.

Cash used by investing activities in 2012 primarily reflects payments to CyDex CVR holders of $8.0 million and purchases of property, building and equipment of $0.6 million, partially offset by proceeds from the sale of short-term investments of $10.0 million. None of the cash provided by investing activities for 2012 related to discontinued operations.

Cash used by investing activities in 2011 primarily reflects cash used for the acquisition of CyDex of $32.0 million, payments made to CyDex CVR holders of $2.9 million, and purchases of short term investments of $10.0 million, partially offset by proceeds from the sale of short-term investments of $19.3 million and proceeds from the sale of property and equipment of $0.5 million. None of the cash provided by investing activities for 2011 related to discontinued operations.

Cash provided by investing activities in 2010 primarily reflects the net sales of short-term investments of $18.5 million and $0.6 million of proceeds from sale of property and equipment, partially offset by $4.1 million of cash paid for acquisitions. None of the cash provided by investing activities for 2010 related to discontinued operations.

Financing Activities

Financing activities provided cash of $3.9 million in 2012 and $30.1 million in 2011, and used cash of $0.2 million in 2010. None of the cash used in financing activities for 2010 related to discontinued operations.

Cash provided by financing activities in 2012 primarily reflects proceeds from issuance of debt of $7.5 million and proceeds from issuance of shares of $6.4 million, partially offset by repayment of debt of $10 million. None of the cash used in financing activities for 2012 related to discontinued operations.

Cash provided by financing activities in 2011 primarily reflects $30.0 million of proceeds from the issuance of debt, partially offset by share repurchases of $0.1 million. None of the cash used in financing activities for 2011 related to discontinued operations.

Cash used in financing activities in 2010 primarily reflects payments under equipment financing obligations of $0.1 million and repurchases of common stock of $0.1 million. None of the cash used in financing activities for 2010 related to discontinued operations.

Other

In July 2007, we purchased $5.0 million of commercial paper issued by Golden Key Ltd. The investment was highly-rated and within our investment policy at the time of purchase, but during the third quarter of 2007, large credit rating agencies downgraded the quality of this security. In addition, as a result of not meeting certain liquidity covenants, the assets of Golden Key Ltd. were assigned to a trustee who established a committee of the largest senior credit holders to determine the next steps, at which point the investment was written down. Subsequently, Golden Key Ltd. defaulted on its obligation to settle the security on the stated maturity date of October 10, 2007. During 2010, the assets of Golden Key Ltd. were sold through an auction process and, as a result, the Company received a final cash distribution of approximately $2.9 million, of which $1.4 million was recognized as a gain.

In connection with the acquisition of Pharmacopeia in December 2008, Pharmacopeia security holders received a CVR that entitled them to an aggregate cash payment of $15.0 million under certain circumstances. The CVR expired on December 31, 2011.

In connection with the acquisition of Neurogen in December 2009, Neurogen security holders received CVRs under four CVR agreements. The CVRs entitle Neurogen shareholders to cash payments upon the sale or licensing of certain assets and upon the achievement of a specified clinical milestone. The fair value of the Neurogen CVR's at December 31, 2011 was $0.7 million and related to programs for H3 and VR1. In 2012, we received a notice from a collaboration partner that it was terminating its agreement related to VR1 for convenience and the Company recorded a decrease in the fair value of the liability for the related contingent value right of $0.2 million. Additionally, per the CVR agreement, no payment event date related to the H3 asset can occur after December 23, 2012 and we recorded a decrease in the fair value of the liability for the related contingent value right of $0.5 million. There are no remaining CVR obligations under the agreement with the former Neurogen shareholders.

In connection with the acquisition of Metabasis in January 2010, Metabasis security holders received CVRs under four CVR agreements. The CVRs entitle the holders to cash payments upon the sale or licensing of certain assets and upon the achievement of specified milestones. The fair value of the liability at December 31, 2012 and 2011 was $0 and $1.1 million, respectively.

In connection with the acquisition of CyDex in January 2011, we issued a series of CVR's and assumed certain contingent liabilities for payments due to former license holders. We paid the CVR holders $4.3 million in January 2012 and may be required to pay up to an additional $8.0 million upon achievement of certain regulatory milestones to the CVR holders and former license holders. In 2011, $0.9 million was paid to the CyDex shareholders upon completion of a licensing agreement with The Medicines Company for the Captisol enabled Intravenous formulation of Clopidogrel. In 2012, an additional $2 million was paid to the CyDex Shareholders upon acceptance by the FDA of Onyx's NDA and $3.5 million was paid upon approval by the FDA. In addition, we will pay CyDex shareholders, for each respective year from 2011 through 2016, 20% of all CyDex-related revenue, but only to the extent that and beginning only when CyDex-related revenue for such year exceed $15.0 million; plus an additional 10% of all CyDex-related revenue recognized during such year, but only to the extent that and beginning only when aggregate CyDex-related revenue for such year exceeds $35.0 million, of which $0.3 million was paid for 2011. For the year ended December 31, 2012, revenue did not exceed $15 million. The fair value of the liability at December 31, 2012 and 2011 was $10.9 million and $15.5 million, respectively.

Leases and Off-Balance Sheet Arrangements

We lease our office and research facilities under operating lease arrangements with varying terms through November 2019. The agreements provide for increases in annual rents based on changes in the Consumer Price Index or fixed percentage increases ranging from 3.0% to 3.5%. Commencing in January 2008, we also sublease a portion of our facilities through July 2015. The sublease agreement provides for a 3% increase in annual rents. We had no off-balance sheet arrangements at December 31, 2012 and 2011.

Contractual Obligations

As of December 31, 2012, future minimum payments due under our contractual obligations are as follows (in thousands):

	Payments Due by Period				
	Total	Less than 1 year	2-3 years	4-5 years	More than 5 years
Operating lease obligations (1)	$ 20,089	$ 5,372	$ 10,304	$ 3,273	$ 1,140

(1) We lease office and research facilities that we have fully vacated under operating lease arrangements expiring in July 2015 and August 2016. We sublet portions of these facilities through the end of our lease. As of December 31, 2012, we expect to receive aggregate future minimum lease payments totaling $3.2 million (nondiscounted) over the duration of the sublease agreement as follows and not included in the table above: less than one year, $1 million; two to three years, $2.0 million; four to five years, $0.2 million; and more than five years, $0.

We outsource the production of Captisol to Hovione, LLC. Under the terms of the supply agreement with Hovione, we have ongoing minimum annual purchase commitments and are required to purchase a total of $15 million of Captisol over the term of the supply agreement which expires in December 2019. Through December 31, 2012, we have exceeded that commitment. Either party may terminate the Agreement for the uncured material breach or bankruptcy of the other party or an extended force majeure event. We may also terminate the supply agreement for extended supply interruption, regulatory action related to Captisol or other specified events.

Under the terms of our merger with Metabasis, we are committed to spend at least $7 million within 30 months following the close of the transaction and $8.0 million within 42 months in new research and development funding on the Metabasis programs. Through December 31, 2012, we estimate that we have spent approximately $7.7 million of the committed amount. We are also required under our CyDex CVR Agreement to invest at least $1.5 million per year, inclusive of employee expenses, in the acquired business, through 2015. Through December 31, 2012, we have exceeded our committed amount.

Critical Accounting Policies

Certain of our policies require the application of management judgment in making estimates and assumptions that affect the amounts reported in the consolidated financial statements and disclosures made in the accompanying notes. Those estimates and assumptions are based on historical experience and various other factors deemed to be applicable and reasonable under the circumstances. The use of judgment in determining such estimates and assumptions is by nature, subject to a degree of uncertainty. Accordingly, actual results could differ materially from the estimates made. Our critical accounting policies are as follows:

Revenue Recognition

Material sales revenue is recognized upon transfer of title, which normally passes upon shipment to the customer.

Royalties on sales of products commercialized by our partners are recognized in the quarter reported by the respective partner.

Revenue from research funding under our collaboration agreements is earned and recognized on a percentage of completion basis as research hours are incurred in accordance with the provisions of each agreement.

Nonrefundable, up-front license fees and milestone payments with standalone value that are not dependent on any future performance by us under our collaboration agreements are recognized as revenue upon the earlier of when payments are received or collection is assured, but are deferred if we have continuing performance obligations. Amounts received under multiple-element arrangements requiring ongoing services or performance by us are recognized over the period of such services or performance. The Company occasionally has sub-license obligations related to arrangements for which it receives license fees, milestones and royalties. We evaluate the determination of gross versus net reporting based on each individual agreement.

We analyze our revenue arrangements and other agreements to determine whether there are multiple elements that should be separated and accounted for individually or as a single unit of accounting. For multiple element contracts, arrangement consideration is allocated at the inception of the arrangement to all deliverables on the basis of relative selling price, using a hierarchy to determine selling price. We first consider vendor-specific objective evidence (VSOE), then third-party evidence (TPE) and if neither VSOE nor TPE exist, we use our best estimate of selling price.

Many of our revenue arrangements involve the bundling of a license with the option to purchase manufactured product. Licenses are granted to pharmaceutical companies for the use of Captisol in the development of pharmaceutical compounds. The licenses may be granted for the use of the Captisol product for all phases of clinical trials and through commercial

availability of the host drug or may be limited to certain phases of the clinical trial process. We believe that our licenses have stand-alone value at the outset of an arrangement because the customer obtains the right to use Captisol in its formulations without any additional input by us, and in a hypothetical stand-alone transaction, the customer would be able to procure inventory from another manufacturer in the absence of contractual provisions for exclusive supply by us.

Revenue from milestones is recognized when earned, as evidenced by written acknowledgement from the collaborator, provided that (i) the milestone event is substantive, its achievability was not reasonably assured at the inception of the agreement, and we have no further performance obligations relating to that event, and (ii) collectability is reasonably assured. If these criteria are not met, the milestone payment is recognized over the remaining period of our performance obligations under the arrangement or when received.

Inventory

Inventory is stated at the lower of cost or market. We determine cost using the first-in, first-out method. We analyze our inventory levels periodically and writes down inventory to its net realizable value if it has become obsolete, has a cost basis in excess of its expected net realizable value or is in excess of expected requirements.

Co-Promote Termination Accounting

As part of the termination and return of co-promotion rights agreement that we entered into with Organon in January 2006, we agreed to make quarterly payments to Organon, effective for the fourth quarter of 2006, equal to 6.5% of Avinza net sales through December 31, 2012 and thereafter 6% through patent expiration, currently anticipated to be November 2017. The estimated fair value of the amounts to be paid to Organon after the termination, based on the future estimated net sales of the product, was recognized as a liability and expensed as a cost of the termination as of the effective date of the agreement.

In connection with the Avinza® sale transaction, King assumed our obligation to make payments to Organon based on net sales of Avinza (the fair value of which approximated $12.5 million as of December 31, 2012). As Organon has not consented to the legal assignment of the co-promote termination obligation from us to King, we remain liable to Organon in the event of King's default of this obligation. Therefore, we recorded an asset on February 26, 2007 to recognize King's assumption of the obligation, while continuing to carry the co-promote termination liability in our consolidated financial statements to recognize our legal obligation as primary obligor to Organon. This asset represents a non-interest bearing receivable for future payments to be made by King and is recorded at its fair value. As of December 31, 2012 and thereafter, the receivable and liability will remain equal and adjusted each quarter for changes in the fair value of the obligation. On a quarterly basis, management reviews the carrying value and assesses the co-promote termination receivable for impairment (e.g. in the event King defaults on the assumed obligation to pay Organon). Annually management also reviews the carrying value of the co-promote termination liability. Due to assumptions and judgments inherent in determining the estimates of future net Avinza sales through November 2017, the actual amount of net Avinza sales used to determine the amount of the asset and liability for a particular period may be materially different from current estimates. Any resulting changes to the co-promote termination liability will have a corresponding impact on the co-promote termination payments receivable. As of December 31, 2012 and 2011, the fair value of the co-promote termination liability (and the corresponding receivable) was determined using a discount rate of 15%.

Impairment of Long-Lived Assets

We review long-lived assets for impairment annually or whenever events or circumstances indicate that the carrying amount of the assets may not be recoverable. We measure the recoverability of assets to be held and used by comparing the carrying amount of an asset to future undiscounted net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured as the amount by which the carrying amount of the assets exceeds the fair value of the assets. Fair value of our long-lived assets is determined using the expected cash flows discounted at a rate commensurate with the risk involved. As of December 31, 2012, we believe that the future discounted cash flows to be received from our long-lived assets will exceed the assets' carrying value.

Income Taxes

Income taxes are accounted for under the liability method. This approach requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of differences between the tax basis of assets or liabilities and their carrying amounts in the consolidated financial statements. A valuation allowance is provided for deferred tax assets if it is more likely than not that these items will either expire before we are able to realize their benefit or if future deductibility is uncertain. As of December 31, 2012, we have provided a full valuation allowance against our deferred tax assets as recoverability was uncertain. Developing the provision for income taxes requires significant judgment and expertise in federal and state income tax laws, regulations and strategies, including the determination of deferred tax assets and liabilities and, if necessary, any

valuation allowances that may be required for deferred tax assets. Our judgments and tax strategies are subject to audit by various taxing authorities. While we believe we have provided adequately for our income tax liabilities in our consolidated financial statements, adverse determinations by these taxing authorities could have a material adverse effect on our consolidated financial condition and results of operations. Our ending deferred tax liability represents liabilities for which we cannot estimate the reversal period and therefore cannot be used as support for our deferred tax assets.

Share-Based Compensation

Share-based compensation cost for awards to employees and non-employee directors is recognized on a straight-line basis over the vesting period until the last tranche vests. Compensation cost for consultant awards is recognized over each separate tranche's vesting period. We recognized compensation expense of $4.1 million, $3.4 million, and $2.3 million for 2012, 2011, and 2010, respectively, associated with option awards, restricted stock and our employee stock purchase plan.

The fair-value for options that were awarded to employees and directors was estimated at the date of grant using the Black-Scholes option valuation model with the following weighted average assumptions:

	Year Ended December 31,		
	2012	2011	2010
Risk-free interest rate	1.1%	2.5%	2.7%
Dividend yield	—	—	—
Expected volatility	69%	69%	72%
Expected term	6 years	6 years	6 years

The expected term of the employee and non-employee director options is the estimated weighted-average period until exercise or cancellation of vested options (forfeited unvested options are not considered) based on historical experience. The expected term for consultant awards is the remaining period to contractual expiration.

Volatility is a measure of the expected amount of variability in the stock price over the expected life of an option expressed as a standard deviation. In selecting this assumption, we used the historical volatility of our stock price over a period equal to the expected term. Changes in the assumptions used to estimate the fair value of stock-based compensation would impact the amount of compensation expenses recognized during the period.

New Accounting Pronouncements

In May 2011, the FASB issued ASU 2011-04, *Fair Value Measurement (Topic 820) – Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs*." This ASU represents the converged guidance of the FASB and the IASB (the Boards) on fair value measurement. The collective efforts of the Boards and their staffs, reflected in ASU No. 2011-04, have resulted in common requirements for measuring fair value and for disclosing information about fair value measurements, including a consistent meaning of the term "fair value." ASU No. 2011-04 amends ASC 820, *Fair Value Measurements and Disclosures* to provide guidance on how fair value measurement should be applied where existing U.S. GAAP already requires or permits fair value measurements. This ASU does not extend the use of fair value, but rather provides guidance on application. In addition, ASU No. 2011-04 requires expanded disclosures regarding fair value measurements. Our adoption of this standard had no impact on our consolidated financial position, results of operations or cash flows.

In June 2011, the FASB issued ASU No. 2011-05, *Comprehensive Income (Topic 220) – Presentation of Comprehensive Income.* This ASU amends Topic 220, *Comprehensive Income*, to allow an entity the option to present the total of comprehensive income, the components of net income, and the components of other comprehensive income either in a single continuous statement of comprehensive income or in two separate but consecutive statements. In both choices, an entity is required to present each component of net income along with total net income, each component of other comprehensive income along with a total for other comprehensive income, and a total amount for comprehensive income. ASU No. 2011-05 eliminates the option to present the components of other comprehensive income as part of the statement of changes in shareholders' investment. The amendments to the Codification in the ASU do not change the items that must be reported in other comprehensive income or when an item of other comprehensive income must be reclassified to net income. Our adoption of this standard had no impact on our consolidated financial position, results of operations or cash flows.

In September 2011, the FASB issued ASU 2011-08, *Intangibles – Goodwill and other: testing for goodwill impairment*, which, among other things, amends *Accounting Standards Topic 350 Intangibles – Goodwill and Other*, to allow entities to use a qualitative approach to test goodwill for impairment. ASU 2011-08 permits an entity to first perform a qualitative assessment

to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. If it is concluded that this is the case, it is necessary to perform the currently prescribed two-step goodwill impairment test. Otherwise, the two-step goodwill impairment test is not required. Our adoption of this standard had no impact on our consolidated financial position, results of operations or cash flows.

In December 2011, the FASB issued ASU 2011-12, Deferral of the Effective Date for Amendments to the Presentation of Reclassifications of Items Out of Accumulated Other Comprehensive Income in ASU 2011-12. The amendments in ASU 2011-12 defer the changes in ASU 2011-05 that relate to the presentation of reclassification adjustments out of accumulated other comprehensive income. The amendments in this ASU are effective for us for fiscal years, and interim periods within those years, beginning after December 15, 2011. We adopted this standard for the year ended December 31, 2012. The adoption of ASU 2011-12 did not have a material impact on our financial position or results of operations.

In July 2012, the FASB issued ASU 2012-02, Intangibles – Goodwill and Other: Testing Indefinite-Lived Intangible Assets for Impairment in ASU 2012-02. ASU 2012-02 allows a company the option to first assess qualitative factors to determine whether it is necessary to perform a quantitative impairment test. Under that option, a company would no longer be required to calculate the fair value of an indefinite-lived intangible asset unless the company determines, based on that qualitative assessment, that it is more likely than not that the fair value of the indefinite-lived intangible asset is less than its carrying amount. The amendments in this ASU are effective for annual and interim indefinite-lived intangible asset impairment tests performed for periods beginning after September 15, 2012. We adopted this standard for the year ended December 31, 2012. The adoption of ASU 2012-02 did not have a material impact on our financial position or results of operations.

In February 2013, the FASB issued ASU No. 2013-02, Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income. Under ASU 2013-02, an entity is required to provide information about the amounts reclassified out of Accumulated Other Comprehensive Income ("AOCI") by component. In addition, an entity is required to present, either on the face of the financial statements or in the notes, significant amounts reclassified out of AOCI by the respective line items of net income, but only if the amount reclassified is required to be reclassified in its entirety in the same reporting period. For
amounts that are not required to be reclassified in their entirety to net income, an entity is required to cross-reference to other disclosures that provide additional details about those amounts. ASU 2013-02 does not change the current requirements for reporting net income or other comprehensive income in the financial statements. The amendments in this ASU are effective for us for fiscal years, and interim periods within those years, beginning after January 1, 2013.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

At December 31, 2012, our investment portfolio included investments in available for sale equity securities of $1.4 million. These securities are subject to market risk and may decline in value based on market conditions. Additionally, we are subject to a one year trading restriction on these investments.

We purchase Captisol from Hovione, located in Lisbon, Portugal. Payments to Hovione are denominated and paid in US dollars, however the unit price of CAPTISOL contains an adjustment factor which is based on the sharing of foreign currency risk between the two parties. The effect of an immediate 10% change in foreign exchange rates would have an immaterial impact on our financial condition, results of operations or cash flows.

We are exposed to market risk involving rising interest rates. To the extent interest rates rise, our interest costs could increase. An increase in interest costs of 10% would have no material impact on our financial condition, results of operations or cash flows.

Item 8. Consolidated Financial Statements and Supplementary Data

INDEX TO CONSOLIDATED FINANCIAL STATEMENTS

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders
Ligand Pharmaceuticals Incorporated

We have audited the accompanying consolidated balance sheets of Ligand Pharmaceuticals Incorporated (the "Company") as of December 31, 2012 and 2011, and the related consolidated statements of operations, changes in shareholders' equity, comprehensive income (loss), and cash flows for each of the three years in the period ended December 31, 2012. 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 consolidated financial statements referred to above present fairly, in all material respects, the financial position of Ligand Pharmaceuticals Incorporated as of December 31, 2012 and 2011, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2012 in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2012, based on criteria established in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated March 14, 2013 expressed an adverse opinion.

/s/ GRANT THORNTON LLP

San Diego, California
March 14, 2013

LIGAND PHARMACEUTICALS INCORPORATED

CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)

	December 31,	
	2012	2011
ASSETS		
Current assets:		
Cash and cash equivalents	$ 12,381	$ 7,041
Short-term investments	—	10,000
Accounts receivable, net	4,589	6,110
Inventory	1,697	1,301
Deferred income taxes	—	237
Other current assets	829	1,344
Current portion of co-promote termination payments receivable	4,327	6,197
Total current assets	23,823	32,230
Restricted cash and investments	2,767	1,341
Property and equipment, net	788	455
Deferred income taxes	8	—
Intangible assets, net	55,912	58,326
Goodwill	12,238	12,238
Long-term portion of co-promote termination payments receivable	8,207	15,255
Other assets	517	738
Total assets	$ 104,260	$ 120,583
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 5,854	$ 11,065
Accrued liabilities	4,961	5,054
Current portion of contingent liabilities	356	6,879
Current portion of deferred income taxes	1,581	—
Bank line of credit	—	10,000
Current portion of note payable	14,835	—
Current portion of co-promote termination liability	4,327	6,197
Current portion of lease exit obligations	3,039	3,208
Current portion of deferred revenue	486	1,240
Total current liabilities	35,439	43,643
Long-term portion of note payable	13,443	20,286
Long-term portion of co-promote termination liability	8,207	15,255
Long-term portion of deferred revenue, net	2,369	3,466
Long-term portion of lease exit obligations	5,963	8,367
Long-term portion of deferred income taxes	725	2,230
Long-term portion of contingent liabilities	10,543	10,419
Other long-term liabilities	1,086	388
Total liabilities	77,775	104,054
Commitments and contingencies-see note		
Common stock subject to conditional redemption; 0 and 112,371 shares issued and outstanding at December 31, 2012 and 2011, respectively	—	8,344
Stockholders' equity:		
Common stock, $0.001 par value; 33,333,333 shares authorized; 21,278,606 and 20,682,506 shares issued and outstanding at December 31, 2012 and 2011, respectively	21	21
Additional paid-in capital	751,503	732,676
Accumulated deficit	(682,759)	(682,232)
Treasury stock, at cost; 1,118,222 shares at December 31, 2012 and 2011	(42,280)	(42,280)
Total stockholders' equity	26,485	8,185
Total liabilities and stockholders' equity	$ 104,260	$ 120,583

See accompanying notes to these consolidated financial statements.

LIGAND PHARMACEUTICALS INCORPORATED

CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except share data)

	Year Ended December 31,		
	2012	2011	2010
Revenues:			
Royalties	$ 14,073	$ 9,213	$ 7,279
Material Sales	9,432	12,123	—
Collaborative research and development and other revenues	7,883	8,701	16,259
Total revenues	31,388	30,037	23,538
Operating costs and expenses:			
Cost of material sales	3,601	4,909	—
Research and development	10,790	10,291	22,067
General and administrative	16,108	14,977	12,829
Lease exit and termination costs	315	(22)	16,894
Write-off of acquired in-process research and development	—	2,282	2,754
Total operating costs and expenses	30,814	32,437	54,544
Accretion of deferred gain on sale leaseback	—	1,702	1,702
Gain (loss) from operations	574	(698)	(29,304)
Other income (expense):			
Interest (expense) income, net	(3,305)	(2,477)	382
(Increase) decrease in contingent liabilities	(1,650)	(1,013)	9,142
Other, net	516	630	4,377
Total other (expense) income, net	(4,439)	(2,860)	13,901
Loss from continuing operations before income tax benefit	(3,865)	(3,558)	(15,403)
Income tax benefit from continuing operations	1,191	13,270	2,617
(Loss) income from continuing operations	(2,674)	9,712	(12,786)
Discontinued operations:			
Gain on sale of Avinza Product Line, net	3,656	—	2,212
Gain on sale of Oncology Product Line, net	—	3	201
Income tax expense on discontinued operations	(1,509)	—	—
Income from discontinued operations	2,147	3	2,413
Net (loss) income	$ (527)	$ 9,715	$ (10,373)
Basic and diluted per share amounts:			
(Loss) income from continuing operations	$ (0.13)	$ 0.49	$ (0.65)
Income from discontinued operations	0.11	—	0.12
Net (loss) income	$ (0.03)	$ 0.49	$ (0.53)
Weighted average number of common shares-basic	19,853,095	19,655,632	19,613,201
Weighted average number of common shares-diluted	19,853,095	19,713,320	19,613,201

See accompanying notes to these consolidated financial statements.

LIGAND PHARMACEUTICALS INCORPORATED

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)
(in thousands, except share data)

	Common Stock		Additional paid-in capital	Accumulated other comprehensive income (loss)	Accumulated deficit	Treasury stock		Total stockholders' equity (deficit)
	Shares	Amount				Shares	Amount	
Balance at December 31, 2009	20,544,833	$21	$726,919	$513	$(681,574)	(1,101,317)	$(42,134)	$3,745
Issuance of common stock under employee stock compensation plans	76,084	—	27	—	—	—	—	27
Unrealized net loss on available-for-sale securities	—	—	—	(482)	—	—	—	(482)
Repurchase of common stock	—	—	—	—	—	(10,682)	(91)	(91)
Stock-based compensation	—	—	2,325	—	—	—	—	2,325
Net loss	—	—	—	—	(10,373)	—	—	(10,373)
Balance at December 31, 2010	20,620,917	21	729,271	31	(691,947)	(1,111,999)	(42,225)	(4,849)
Issuance of common stock under employee stock compensation plans, net	61,589	—	54	—	—	—	—	54
Unrealized net loss on available-for-sale securities	—	—	—	(31)	—	—	—	(31)
Repurchase of common stock	—	—	—	—	—	(6,223)	(55)	(55)
Stock-based compensation	—	—	3,351	—	—	—	—	3,351
Net income	—	—	—	—	9,715	—	—	9,715
Balance at December 31, 2011	20,682,506	21	732,676	—	(682,232)	(1,118,222)	(42,280)	8,185
Issuance of common stock under employee stock compensation plans, net	180,979	—	1,103	—	—	—	—	1,103
Issuance of common stock, net	302,750	—	5,313	—	—	—	—	5,313
Stock-based compensation	—	—	4,067	—	—	—	—	4,067
Shares released from restriction	112,371	—	8,344	—	—	—	—	8,344
Net loss	—	—	—	—	(527)	—	—	(527)
Balance at December 31, 2012	21,278,606	$21	$751,503	—	$(682,759)	(1,118,222)	$(42,280)	$26,485

See accompanying notes to these consolidated financial statements.

LIGAND PHARMACEUTICALS INCORPORATED
CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME (LOSS)
(in thousands)

	Year Ended December 31,		
	2012	2011	2010
Net (loss) income	$ (527)	$ 9,715	$ (10,373)
Unrealized net loss on available-for-sale securities, net of tax of $0	—	(31)	(482)
Comprehensive (loss) income	$ (527)	$ 9,684	$ (10,855)

See accompanying notes to these consolidated financial statements.

LIGAND PHARMACEUTICALS INCORPORATED

CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)

	Year Ended December 31,		
	2012	**2011**	**2010**
Operating activities			
Net (loss) income	$ (527)	$ 9,715	$ (10,373)
Less: gain from discontinued operations	2,147	3	2,413
(Loss) income from continuing operations	(2,674)	9,712	(12,786)
Adjustments to reconcile net income (loss) to net cash used in operating activities:			
Write-off of acquired in-process research and development	—	2,282	2,754
Non-cash change in estimated fair value of contingent liabilities	1,650	1,888	(9,142)
Accretion of deferred gain on sale leaseback	—	(1,702)	(1,702)
Depreciation and amortization	2,727	2,790	2,212
Non-cash lease costs	—	(51)	9,042
Non-cash milestone revenue	(1,212)	—	—
Gain (loss) on asset write-offs	(17)	(456)	5,303
Realized loss (gain) on investment	—	6	(607)
Stock-based compensation	4,067	3,351	2,325
Deferred income taxes	(1,204)	(13,402)	—
Other	492	285	32
Changes in operating assets and liabilities, net of acquisition:			
Accounts receivable, net	1,521	(3,915)	(375)
Inventory	1,030	1,114	—
Other current assets	515	4,864	(3,931)
Other long term assets	334	605	(332)
Accounts payable and accrued liabilities	(4,801)	(11,568)	(13,447)
Other liabilities	484	865	(715)
Deferred revenue	(1,851)	2,160	(5,938)
Net cash provided by (used in) operating activities of continuing operations	1,061	(1,172)	(27,307)
Net cash (used in) provided by operating activities of discontinued operations	(900)	—	240
Net cash provided by (used in) operating activities	161	(1,172)	(27,067)
Investing activities			
Acquisition of Metabasis, net of cash acquired	—	—	(2,834)
Acquisition of CyDex, net of cash acquired	—	(32,024)	—
Payments to CVR holders	(8,049)	(2,875)	—
Acquisition of intellectual property	—	—	(1,247)
Purchases of property, equipment and building	(595)	(78)	(70)
Proceeds from sale of property, and equipment and building	20	530	589
Purchases of short-term investments	—	(10,000)	(35,584)
Proceeds from sale of short-term investments	10,000	19,346	54,040
Other, net	(113)	(31)	(354)
Net cash provided by (used in) investing activities	1,263	(25,132)	14,540
Financing activities			
Principal payments on equipment financing obligations	—	—	(91)
Proceeds from issuance of debt	7,500	30,000	—
Repayment of debt	(10,000)	—	—
Proceeds from issuance of common stock, net	5,313	54	23
Net proceeds from stock option exercises	979	—	—
Net proceeds from employee stock purchase program	124	—	—
Share repurchases	—	(55)	(91)
Net cash provided by (used in) financing activities	3,916	29,999	(159)

Net increase (decrease) in cash and cash equivalents	5,340	3,695	(12,686)
Cash and cash equivalents at beginning of year	7,041	3,346	16,032
Cash and cash equivalents at end of year	$ 12,381	$ 7,041	$ 3,346
Supplemental disclosure of cash flow information			
Cash paid during the year:			
Interest paid	$ 2,452	$ 2,463	$ 58
Taxes paid	—	39	28
Proceeds received from sale of building and disbursed to Neurogen shareholders	—	—	3,170
Supplemental schedule of non-cash investing and financing activities			
Common stock released from restriction	8,344	—	—

See accompanying notes to these consolidated financial statements.

LIGAND PHARMACEUTICALS INCORPORATED AND SUBSIDIARIES
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Basis of Presentation

Ligand Pharmaceuticals Incorporated, a Delaware corporation (the "Company" or "Ligand") is a biopharmaceutical company with a business model that is based upon the concept of developing or acquiring royalty revenue generating assets and coupling them to a lean corporate cost structure. By diversifying the portfolio of assets across numerous technology types, therapeutic areas, drug targets, and industry partners, the Company offers investors an opportunity to invest in the increasingly complicated and unpredictable pharmaceutical industry. In comparison to its peers, the Company believes it has assembled one of the largest and most diversified asset portfolios in the industry with the potential to generate revenue in the future. These therapies address the unmet medical needs of patients for a broad spectrum of diseases including hepatitis, muscle wasting, Alzheimer's disease, dyslipidemia, diabetes, anemia, asthma, FSGS and osteoporosis. Ligand has established multiple alliances with the world's leading pharmaceutical companies including GlaxoSmithKline, Onyx Pharmaceuticals, Merck, Pfizer, Baxter International, Bristol-Myers Squibb, Celgene, Lundbeck Inc. and The Medicines Company. The Company's principle market is the United States. The Company sold its Oncology Product Line ("Oncology") and Avinza® Product Line ("Avinza") on October 25, 2006 and February 26, 2007, respectively. The operating results for Oncology and Avinza have been presented in the accompanying consolidated financial statements as "Discontinued Operations".

The Company has incurred significant losses since its inception. At December 31, 2012, the Company's accumulated deficit was $682.8 million and the Company had negative working capital of $11.6 million. Management believes that cash flows from operations will improve due to consistent Captisol® sales, an increase in royalty revenues driven primarily from continued increases in Promacta® and Kyprolis® sales, as well as anticipated new license and milestone revenues. In the event revenues and operating cash flows are not meeting expectations, management plans to reduce discretionary expenses. However, it is possible that the Company may be required to seek additional financing. There can be no assurance that additional financing will be available on terms acceptable to management, or at all. Management believes its currently available cash, cash equivalents, and short-term investments as well as its current and future royalty, license and milestone revenues will be sufficient to satisfy its anticipated operating and capital requirements, through at least the next twelve months. The Company's future operating and capital requirements will depend on many factors, including, but not limited to: the pace of scientific progress in its research and development programs; the potential success of these programs; the scope and results of preclinical testing and clinical trials; the time and costs involved in obtaining regulatory approvals; the costs involved in preparing, filing, prosecuting, maintaining and enforcing patent claims; competing technological and market developments; the amount of royalties on sales of the commercial products of its partners; the efforts of its collaborative partners; obligations under its operating lease agreements; and the capital requirements of any companies the Company acquires, including Pharmacopeia, Inc. ("Pharmacopeia"), Neurogen Corporation ("Neurogen"), Metabasis Therapeutics, Inc. ("Metabasis") and CyDex Pharmaceuticals, Inc. ("CyDex"). The ability of the Company to achieve its operational targets is dependent upon the Company's ability to further implement its business plan and generate sufficient operating cash flow.

Principles of Consolidation

The accompanying consolidated financial statements include Ligand and its wholly owned subsidiaries, Ligand JVR, Allergan Ligand Retinoid Therapeutics, Seragen, Pharmacopeia, LLC, Neurogen Corporation, CyDex Pharmaceuticals, Inc., Metabasis Therapeutics, and Nexus. All significant intercompany accounts and transactions have been eliminated in consolidation.

Use of Estimates

The preparation of consolidated financial statements in conformity with generally accepted accounting principles requires the use of estimates and assumptions that affect the reported amounts of assets and liabilities, including disclosure of contingent assets and contingent liabilities, at the date of the consolidated financial statements and the reported amounts of revenues and expenses, definite and indefinite lived intangible assets, goodwill, co-promote termination payments receivable and co-promote termination liabilities, uncertain tax positions, deferred revenue and income tax net operating losses during the reporting period. The Company's critical accounting policies are those that are both most important to the Company's consolidated financial condition and results of operations and require the most difficult, subjective or complex judgments on the part of management in their application, often as a result of the need to make estimates about the effect of matters that are inherently uncertain. Because of the uncertainty of factors surrounding the estimates or judgments used in the preparation of the consolidated financial statements, actual results may materially vary from these estimates.

Income (Loss) Per Share

Basic earnings (loss) per share is calculated by dividing net income or loss by the weighted average number of common shares and vested restricted stock units outstanding. Diluted earnings (loss) per share is computed by dividing net income or loss by the weighted average number of common shares and vested restricted stock units outstanding and the weighted average number of dilutive common stock equivalents, including stock options and non-vested restricted stock units. Common stock equivalents are only included in the diluted earnings per share calculation when their effect is dilutive. Potential common shares, the shares that would be issued upon the exercise of outstanding stock options and warrants and the vesting of restricted shares that are excluded from the computation of diluted net income (loss) per share, were 1.9 million, 1.6 million and 1.0 million for the years ended December 31, 2012, 2011, and 2010 respectively.

The following table sets forth the computation of basic and diluted net income (loss) per share for the periods indicated (in thousands, except per share amounts):

	Year Ended December 31,		
	2012	2011	2010
Net (loss) income from continuing operations	$ (2,674)	$ 9,712	$ (12,786)
Discontinued operations	2,147	3	2,413
Net (loss) income	$ (527)	$ 9,715	$ (10,373)
Shares used to compute basic (loss) income per share	19,853,095	19,655,632	19,613,201
Dilutive potential common shares:			
Restricted stock	—	57,688	—
Shares used to compute diluted (loss) income per share	19,853,095	19,713,320	19,613,201
Basic and diluted per share amounts:			
(Loss) income from continuing operations	$ (0.13)	$ 0.49	$ (0.65)
Discontinued operations	0.11	—	0.12
Net (loss) income	$ (0.03)	$ 0.49	$ (0.53)

Cash, Cash Equivalents and Short-term Investments

Cash and cash equivalents consist of cash and highly liquid securities with original maturities of three months or less. Non-restricted equity and debt security investments with a maturity of more than three months are considered short-term investments and have been classified by management as available-for-sale. Such investments are carried at fair value, with unrealized gains and losses included as a separate component of stockholders' equity. The Company determines the cost of investments based on the specific identification method.

Restricted Cash and Investments

Restricted cash and investments consist of certificates of deposit held with a financial institution as collateral under a facility lease and third-party service provider arrangements and available-for-sale equity investments received by the Company as a result of milestone payments from a licensee. The fair value of the Company's long-term equity investments are determined using quoted market prices in active markets and are discounted based on trading restrictions.

Concentrations of Credit Risk

Financial instruments that potentially subject the Company to significant concentrations of credit risk consist primarily of cash equivalents and investments.

The Company invests its excess cash principally in United States government debt securities, investment grade corporate debt securities and certificates of deposit. The Company has established guidelines relative to diversification and maturities that maintain safety and liquidity. These guidelines are periodically reviewed and modified to take advantage of trends in yields and interest rates. During 2012 the Company did not experience any significant losses on its cash equivalents, short-term investments or restricted investments. As of December 31, 2012, cash deposits held at financial institutions in excess of FDIC insured amounts of $250,000 were approximately $11.9 million.

Accounts receivable from two customers were 87% of total accounts receivable at December 31, 2012. Accounts receivable from one customer was 67% of total accounts receivable at December 31, 2011.

The Company obtains Captisol® from a sole-source supplier. If this supplier were not able to supply the requested amounts of Captisol, the Company would be unable to continue to derive revenues from the sale of Captisol until it obtained an alternative source, which might take a considerable length of time.

Inventory

Inventory is stated at the lower of cost or market. The Company determines cost using the first-in, first-out method. The Company analyzes its inventory levels periodically and writes down inventory to its net realizable value if it has become obsolete, has a cost basis in excess of its expected net realizable value or is in excess of expected requirements. There was no reserve for obsolete inventory recorded as of December 31, 2012 and 2011.

Allowance for Doubtful Accounts

The Company maintains an allowance for doubtful accounts based on the best estimate of the amount of probable losses in the Company's existing accounts receivable. Accounts receivable that are outstanding longer than their contractual payment terms, ranging from 30 to 90 days, are considered past due. When determining the allowance for doubtful accounts, several factors are taken into consideration, including historical write-off experience and review of specific customer accounts for collectability. Account balances are charged off against the allowance after collection efforts have been exhausted and the potential for recovery is considered remote. There was no allowance for doubtful accounts recorded as of December 31, 2012 and 2011.

Property and Equipment

Property and equipment is stated at cost and consists of the following (in thousands):

	December 31,	
	2012	2011
Lab and office equipment	$ 4,374	$ 4,110
Leasehold improvements	145	62
Computer equipment and software	1,150	1,054
	5,669	5,226
Less accumulated depreciation and amortization	(4,881)	(4,771)
	$ 788	$ 455

Depreciation of equipment is computed using the straight-line method over the estimated useful lives of the assets which range from three to ten years. Leasehold improvements are amortized using the straight-line method over their estimated useful lives or their related lease term, whichever is shorter. Depreciation expense of $0.3 million, $0.5 million and $2.1 million was recognized in 2012, 2011, and 2010, respectively,

In September 2010, the Company ceased use of its facility located in New Jersey. As a result, during the quarter ended September 30, 2010, the Company recorded lease exit costs of $9.7 million for costs related to the difference between the remaining lease obligations of the abandoned operating leases, which run through August 2016, and management's estimate of potential future sublease income, discounted to present value. Actual future sublease income may differ materially from the Company's estimate, which would result in us recording additional expense or reductions in expense. In addition, the Company wrote-off approximately $5.4 million of property and equipment related to the facility closure and recorded approximately $1.8 million of severance related costs.

Goodwill and Other Identifiable Intangible Assets

Goodwill and other identifiable intangible assets consist of the following (in thousands):

	December 31, 2012	December 31, 2011
Indefinite lived intangible assets		
Acquired in-process research and development	$ 13,036	$ 13,036
Goodwill	12,238	12,238
Definite lived intangible assets		
Complete technology	15,227	15,227
Trade name	2,642	2,642
Customer relationships	29,600	29,600
	47,469	47,469
Accumulated amortization	(4,593)	(2,179)
Total goodwill and other identifiable intangible assets, net	$ 68,150	$ 70,564

The Company accounts for goodwill in accordance with Accounting Standards Codification ("ASC 350") which, among other things, establishes standards for goodwill acquired in a business combination, eliminates the amortization of goodwill and requires the carrying value of goodwill and certain non-amortizing intangibles to be evaluated for impairment on an annual basis. The Company considers its market capitalization and the carrying value of its assets and liabilities, including goodwill, when performing its goodwill impairment test. If the carrying value of the assets and liabilities, including goodwill, were to exceed the Company's estimation of the fair value, the Company would record an impairment charge in an amount equal to the excess of the carrying value of goodwill over the implied fair value of the goodwill. The Company performs an evaluation of goodwill as of December 31 of each year, absent any indicators of earlier impairment, to ensure that impairment charges, if applicable, are reflected in our financial results before December 31 of each year. When it is determined that impairment has occurred, a charge to operations is recorded. Goodwill and other intangible asset balances are included in the identifiable assets of the business segment to which they have been assigned. Any goodwill impairment, as well as the amortization of other purchased intangible assets, is charged against the respective business segments' operating income. As of December 31 2012 and 2011, there have been no impairment of goodwill for continuing operations.

Amortization of definite lived intangible assets is computed using the straight-line method over the estimated useful life of the asset of 20 years. Amortization expense of $2.4 million, $2.3 million and $0.1 million was recognized in 2012, 2011, and 2010, respectively. Estimated amortization expense for the years ending December 31, 2013 through 2017 is $2.4 million per year.

In January 2011, the Company completed its acquisition of CyDex. As a result of the transaction, the Company recorded $47.5 million of intangible assets with definite lives. The weighted-average amortization period for the identified intangible assets with definite lives is 20 years. In addition, the Company recorded $3.2 million of acquired In-Process Research and Development (IPR&D) and $11.5 million of goodwill.

In May 2010, the Company purchased from the Genaera Liquidating Trust, certain intellectual property and interests in future milestones and royalties for MEDI-528, an IL-9 antibody program under development by AstraZeneca's subsidiary, MedImmune. MEDI-528 is currently in a 320-patient Phase II study for moderate-to-severe asthma. The Company paid $2.8 million to the Genaera Liquidating Trust in connection with the purchase. As part of the transaction, the Company also entered into a separate agreement with a shareholder of Ligand, whereby the shareholder and Ligand agreed to share the purchase price and any proceeds from the deal equally. Accordingly, the Company was reimbursed for $1.4 million of the purchase price. The Company recorded the net purchase price of $1.4 million as IPR&D. As discussed below, the asset was subsequently impaired upon receipt of notice from MedImmune that it was exercising its right to terminate the collaboration and license agreement.

In January 2010, the Company completed its acquisition of Metabasis. As a result, the Company recorded $12.0 million of the purchase price of Metabasis as IPR&D.

Acquired in-process research and development

Intangible assets related to IPR&D are considered to be indefinite-lived until the completion or abandonment of the associated research and development efforts. During the period the assets are considered to be indefinite-lived, they will not be amortized but will be tested for impairment on an annual basis and between annual tests if the Company becomes aware of any

events occurring or changes in circumstances that would indicate a reduction in the fair value of the IPR&D projects below their respective carrying amounts. If and when development is complete, which generally occurs if and when regulatory approval to market a product is obtained, the associated assets would be deemed finite-lived and would then be amortized based on their respective estimated useful lives at that point in time.

Impairment of Long-Lived Assets

Management reviews long-lived assets for impairment annually or whenever events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to future undiscounted net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured as the amount by which the carrying amount of the assets exceeds the fair value of the assets. Fair value for the Company's long-lived assets is determined using the expected cash flows discounted at a rate commensurate with the risk involved.

During 2011, the impairment analysis performed by management resulted in the write-off of certain acquired in process research and development assets. The Company recorded a non-cash impairment charge of $1.1 million for the write-off of the net book value of the IPR&D and interests in future milestones and royalties for MEDI-528, an IL-9 antibody program by AstraZeneca's subsidiary, MedImmune. The asset was impaired upon receipt of notice from MedImmune in September that it was exercising its right to terminate the collaboration and license agreement.

Additionally, in 2011, the Company recorded a non-cash impairment charge of $1.2 million for the write-off of IPR&D and interests in future milestones for TRPV1, a collaborative research and licensing program between the Company and Merck, related to the physiology, pharmacology, chemistry and potential therapeutic applications and potential clinical utilities related to Vanilloid Receptors, subtype 1. The asset was impaired upon receipt of notice from Merck that it was exercising its right to terminate the collaboration and license agreement. Subsequent to the termination of the agreement, the Company will receive an exclusive, perpetual, irrevocable, royalty-free (but subject to any third party royalty obligations), fully-paid world-wide license, with the right to sub-license, under specified patents and technology for the research, development, or commercialization of specified compounds and products in a limited field of use.

In November 2010, Roche notified the Company that it was exercising its right to terminate the collaboration and license agreement with the Company's subsidiary, Metabasis Therapeutics, Inc. As a result, the Company's management reviewed the carrying amount of the intangible asset related to this agreement. Based on an analysis of available information, management determined that the asset would not generate future cash flows. Therefore, the Company wrote-off the $2.8 million of acquired in-process research and development associated with the agreement during the year ended December 31, 2010.

As of December 31, 2012, management does not believe there have been any other events or circumstances indicating that the carrying amount of its remaining long-lived assets may not be recoverable.

Contingent Liabilities

In connection with the Company's acquisition of CyDex in January 2011, the Company recorded a $17.6 million contingent liability, inclusive of the $4.3 million payment made in January 2012, for amounts potentially due to holders of the CyDex contingent value rights ("CVR's) and former license holders. The initial fair value of the liability was determined using the income approach incorporating the estimated future cash flows from potential milestones and revenue sharing. These cash flows were then discounted to present value using a discount rate of 21.6%. The liability will be periodically assessed based on events and circumstances related to the underlying milestones, and the change in fair value will be recorded in the Company's consolidated statements of operations. The carrying amount of the liability may fluctuate significantly and actual amounts paid under the CVR agreements may be materially different than the carrying amount of the liability. The fair value of the liability at December 31, 2012 and 2011 was $10.9 million and $15.5 million, respectively. The Company recorded a fair value adjustment to increase the liability for CyDex related contingent liabilities of $3.4 million for the year ended December 31, 2012. Additionally, contingent liabilities decreased $8.0 million for cash payments to CVR holders for the year ended December 31, 2012. The Company recorded fair value adjustments to decrease the liability for contingent liabilities of $2.1 million for the year ended December 31, 2011.

In connection with the Company's acquisition of Metabasis in January 2010, the Company issued Metabasis stockholders four tradable CVRs, one CVR from each of four respective series of CVR, for each Metabasis share. The CVR will entitle Metabasis stockholders to cash payments as frequently as every six months as cash is received by the Company from proceeds from Metabasis' partnership with Roche (which has been terminated) or the sale or partnering of any of the Metabasis drug development programs, among other triggering events. The acquisition-date fair value of the CVRs of $9.1 million was determined using quoted market prices of Metabasis common stock in active markets. The fair values of the CVRs are

remeasured at each reporting date through the term of the related agreement. Changes in the fair values are reported in the statement of operations as income (decreases) or expense (increases). The carrying amount of the liability may fluctuate significantly based upon quoted market prices and actual amounts paid under the agreements may be materially different than the carrying amount of the liability. The fair value of the liability was $0 million and $1.1 million as of December 31, 2012 and 2011, respectively. The Company recorded a decrease in the liability for CVRs of $1.1 million during the year ended December 31, 2012, an increase of $1.1 million during the year ended December 31, 2011, and a decrease of $9.1 million during the year ended December 31, 2010.

In connection with the Company's acquisition of Neurogen in December 2009, the Company issued to Neurogen stockholders four CVRs; real estate, Aplindore, VR1 and H3, that entitle them to cash and/or shares of third-party stock under certain circumstances. The Company recorded the acquisition-date fair value of the CVRs as part of the purchase price. The acquisition-date fair value of the real estate CVR of $3.2 million was estimated using the net proceeds from a pending sale transaction and recorded as a payable to stockholders at December 31, 2009. In February 2010, the Company completed the sale of the real estate and subsequently distributed the proceeds to the holders of the real estate CVR. As a result and after final settlement of all related expenses, the real estate CVR was terminated in August 2010. In 2012, the Company received a notice from a collaboration partner that it was terminating its agreement related to VR1 for convenience and subsequently the Company recorded a decrease in the fair value of the liability for the related CVR of $0.2 million. Additionally, per the CVR agreement, no payment event date for the H3 program can occur after December 23, 2012 and the Company recorded a decrease in the fair value of the liability for the related CVR of $0.5 million. There are no remaining CVR obligations under the agreement with the former Neurogen shareholders.

Fair Value of Financial Instruments

Fair value is defined as the exit price that would be received to sell an asset or paid to transfer a liability. Fair value is a market-based measurement that should be determined using assumptions that market participants would use in pricing an asset or liability. The Company establishes a three-level hierarchy to prioritize the inputs used in measuring fair value. The levels are described in the below with Level 1 having the highest priority and Level 3 having the lowest:

Level 1 - Observable inputs such as quoted prices in active markets

Level 2 - Inputs other than the quoted prices in active markets that are observable either directly or indirectly

Level 3 - Unobservable inputs in which there is little or no market data, which require us to develop our own assumptions

The Company's long-term investments include investments in equity securities which are subject to trading restrictions. The fair value of the investments is determined using quoted market prices in active markets and discounted for the restrictive effect. The Metabasis CVR liability is marked-to-market at each reporting period based upon the quoted market prices of the underlying CVR. The fair value of the CyDex contingent liabilities are determined at each reporting period based upon an income valuation model.

Treasury Stock

The Company may on occasion repurchase our common stock on the open market or in a private transaction. When such stock is repurchased it is not constructively or formally retired and may be reissued if certain regulatory requirements are met. The purchase price of the common stock repurchased is charged to treasury stock.

Revenue Recognition

Royalties on sales of products commercialized by the Company's partners are recognized in the quarter reported by the respective partner.

Revenue from material sales is recognized upon transfer of title, which normally passes upon shipment to the customer. The Company's credit and exchange policy includes provisions for the return of product between 30 to 90 days, depending on the specific terms of the individual agreement, when that product (1) does not meet specifications, (2) is damaged in shipment (in limited circumstances where title does not transfer until delivery), or (3) is exchanged for an alternative grade of Captisol.

Revenue from research funding under the Company's collaboration agreements is earned and recognized on a percentage-of-completion basis as research hours are incurred in accordance with the provisions of each agreement.

Nonrefundable, up-front license fees and milestone payments with standalone value that are not dependent on any future performance by us under our collaboration agreements are recognized as revenue upon the earlier of when payments are received or collection is assured, but are deferred if the Company has continuing performance obligations. Amounts received

under multiple-element arrangements requiring ongoing services or performance by the Company are recognized over the period of such services or performance. The Company occasionally has sub-license obligations related to arrangements for which it receives license fees, milestones and royalties. The Company evaluates the determination of gross versus net reporting based on each individual agreement.

The Company analyzes its revenue arrangements and other agreements to determine whether there are multiple elements that should be separated and accounted for individually or as a single unit of accounting. For multiple element contracts, arrangement consideration is allocated at the inception of the arrangement to all deliverables on the basis of relative selling price, using a hierarchy to determine selling price. Management first considers vendor-specific objective evidence (VSOE), then third-party evidence (TPE) and if neither VSOE nor TPE exist, the Company uses its best estimate of selling price.

Many of the Company's revenue arrangements involve the bundling of a license with the option to purchase manufactured product. Licenses are granted to pharmaceutical companies for the use of Captisol in the development of pharmaceutical compounds. The licenses may be granted for the use of the Captisol product for all phases of clinical trials and through commercial availability of the host drug or may be limited to certain phases of the clinical trial process. The Company believes that its licenses have stand-alone value at the outset of an arrangement because the customer obtains the right to use Captisol in its formulations without any additional input by the Company, and in a hypothetical stand-alone transaction, the customer would be able to procure inventory from another manufacturer in the absence of contractual provisions for exclusive supply by the Company.

Revenue from milestones is recognized when earned, as evidenced by written acknowledgement from the collaborator, provided that (i) the milestone event is substantive, its achievability was not reasonably assured at the inception of the agreement, and the Company has no further performance obligations relating to that event, and (ii) collectability is reasonably assured. If these criteria are not met, the milestone payment is recognized over the remaining period of the Company’s performance obligations under the arrangement.

Preclinical Study and Clinical Trial Accruals

Substantial portions of the Company’s preclinical studies and all of the Company’s clinical trials have been performed by third-party laboratories, contract research organizations, or other vendors (collectively CROs). Some CROs bill monthly for services performed, while others bill based upon milestone achievement. The Company accrues for each of the significant agreements it has with CROs on a monthly basis. For preclinical studies, accruals are estimated based upon the percentage of work completed and the contract milestones achieved. For clinical studies, accruals are estimated based upon a percentage of work completed, the number of patients enrolled and the duration of the study. The Company monitors patient enrollment, the progress of clinical studies and related activities to the extent possible through internal reviews of data reported to it by the CROs, correspondence with the CROs and clinical site visits. The Company’s estimates are dependent upon the timelines and accuracy of the data provided by its CROs regarding the status of each program and total program spending. The Company periodically evaluates its estimates to determine if adjustments are necessary or appropriate based on information it receives concerning changing circumstances, and conditions or events that may affect such estimates. No material adjustments to preclinical study and clinical trial accrued expenses have been recognized to date.

Sale of Royalty Rights

The Company previously sold to third parties the rights to future royalties of certain of its products. As part of the underlying royalty agreements, the partners have the right to offset a portion of any future royalty payments owed to the Company to the extent of previous milestone payments. Accordingly, the Company deferred a portion of the revenue associated with each tranche of royalty right sold, equal to the pro-rata share of the potential royalty offset. Such amounts associated with the offset rights against future royalty payments will reduce this balance upon receipt of future royalties from the respective partners. As of December 31, 2012 and 2011, the Company had deferred $0.8 million and $1.3 million of revenue, respectively, which is included in long-term portion of deferred revenue.

Product Returns

In connection with the sale of the Avinza and Oncology product lines, the Company retained the obligation for returns of product that were shipped to wholesalers prior to the close of the transactions. The accruals for product returns, which were recorded as part of the accounting for the sales transactions, are based on historical experience. Any subsequent changes to the Company’s estimate of product returns are accounted for as a component of discontinued operations.

Costs and Expenses

Collaborative research and development expense consists of labor, material, equipment and allocated facilities cost of the Company's scientific staff who are working pursuant to the Company's collaborative agreements. From time to time, collaborative research and development expense includes costs related to research efforts in excess of those required under certain collaborative agreements. Management has the discretion to set the scope of such excess efforts and may increase or decrease the level of such efforts depending on the Company's strategic priorities.

Proprietary research and development expense consists of intellectual property in-licensing costs, labor, materials, contracted services, and allocated facility costs that are incurred in connection with internally funded drug discovery and development programs.

Research and development costs are expensed as incurred. Research and development expenses from continuing operations were $10.8 million, $10.3 million and $22.1 million in 2012, 2011, and 2010, respectively, of which 100%, 99% and 61%, respectively, were sponsored by Ligand, and the remainder of which was funded pursuant to collaborative research and development arrangements.

Income Taxes

The Company recognizes liabilities or assets for the deferred tax consequences of temporary differences between the tax basis of assets or liabilities and their reported amounts in the financial statements. These temporary differences will result in taxable or deductible amounts in future years when the reported amounts of the assets or liabilities are recovered or settled. A valuation allowance is established when management determines that it is more likely than not that all or a portion of a deferred tax asset will not be realized. Management evaluates the realizability of its net deferred tax assets on a quarterly basis and valuation allowances are provided, as necessary. During this evaluation, management reviews its forecasts of income in conjunction with other positive and negative evidence surrounding the realizability of its deferred tax assets to determine if a valuation allowance is required. Adjustments to the valuation allowance will increase or decrease the Company's income tax provision or benefit. Management also applies the relevant guidance to determine the amount of income tax expense or benefit to be allocated among continuing operations, discontinued operations, and items charged or credited directly to stockholders' equity (deficit).

A tax position must meet a minimum probability threshold before a financial statement benefit is recognized. The minimum threshold is a tax position that is more likely than not to be sustained upon examination by the applicable taxing authority, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The Company recognizes interest and penalties related to uncertain tax positions in income tax expense.

Accounting for Stock-Based Compensation

Stock-based compensation expense for awards to employees and non-employee directors is recognized on a straight-line basis over the vesting period until the last tranche vests. The Company grants options and awards to employees, non-employee consultants, and non-employee directors. Only new shares of common stock are issued upon the exercise of stock options. Non-employee directors are accounted for as employees. Options and restricted stock granted to certain directors vest in equal monthly installments over one year from the date of grant. Options granted to employees vest 1/8 on the six month anniversary of the date of grant, and 1/48 each month thereafter for forty-two months. All option awards generally expire ten years from the date of grant.

The fair-value for options that were awarded to employees and directors was estimated at the date of grant using the Black-Scholes option valuation model with the following weighted average assumptions:

	Year Ended December 31,		
	2012	2011	2010
Risk-free interest rate	1.1%	2.5%	2.7%
Dividend yield	—	—	—
Expected volatility	69%	69%	72%
Expected term	6 years	6 years	6 years

The expected term of the employee and non-employee director options is the estimated weighted-average period until exercise or cancellation of vested options (forfeited unvested options are not considered) based on historical experience. The expected term for consultant awards is the remaining period to contractual expiration.

Volatility is a measure of the expected amount of variability in the stock price over the expected life of an option expressed as a standard deviation. In selecting this assumption, the Company used the historical volatility of the Company's stock price over a period equal to the expected term.

The following table summarizes share-based compensation expense recorded as components of research and development expenses and general and administrative expenses for the periods indicated (in thousands):

	2012	2011	2010
Share-based compensation expense as a component of:			
Research and development expenses	$ 1,448	$ 1,072	$ 1,253
General and administrative expenses	2,619	2,279	1,072
	$ 4,067	$ 3,351	$ 2,325

Segment reporting

Under Accounting Standards Codification No. 280, "Segment Reporting", or ASC 280, operating segments are defined as components of an enterprise about which separate financial information is available that is regularly evaluated by the entity's chief operating decision maker, in deciding how to allocate resources and in assessing performance. The Company has evaluated this Codification and has identified two reportable segments: the development and commercialization of drugs using Captisol technology by CyDex Pharmaceuticals, Inc. and the biopharmaceutical company with a business model that is based upon the concept of developing or acquiring royalty revenue generating assets and coupling them to a lean corporate cost structure of Ligand Pharmaceuticals, Inc.

Comprehensive Income (Loss)

Comprehensive income (loss) represents net income (loss) adjusted for the change during the periods presented in unrealized gains and losses on available-for-sale securities less reclassification adjustments for realized gains or losses included in net income (loss). The unrealized gains or losses are reported on the Consolidated Statements of Comprehensive Income.

New Accounting Pronouncements

In May 2011, the FASB issued ASU 2011-04, *Fair Value Measurement (Topic 820) – Amendments to Achieve Common Fair Value Measurement and Disclosure Requirements in U.S. GAAP and IFRSs*." This ASU represents the converged guidance of the FASB and the IASB (the Boards) on fair value measurement. The collective efforts of the Boards and their staffs, reflected in ASU No. 2011-04, have resulted in common requirements for measuring fair value and for disclosing information about fair value measurements, including a consistent meaning of the term "fair value." ASU No. 2011-04 amends ASC 820, *Fair Value Measurements and Disclosures* to provide guidance on how fair value measurement should be applied where existing U.S. GAAP already requires or permits fair value measurements. This ASU does not extend the use of fair value, but rather provides guidance on application. In addition, ASU No. 2011-04 requires expanded disclosures regarding fair value measurements. The adoption of this standard had no impact on the Company's consolidated financial position, results of operations or cash flows.

In June 2011, the FASB issued ASU No. 2011-05, *Comprehensive Income (Topic 220) – Presentation of Comprehensive Income.* This ASU amends Topic 220, *Comprehensive Income*, to allow an entity the option to present the total of comprehensive income, the components of net income, and the components of other comprehensive income either in a single continuous statement of comprehensive income or in two separate but consecutive statements. In both choices, an entity is required to present each component of net income along with total net income, each component of other comprehensive income along with a total for other comprehensive income, and a total amount for comprehensive income. ASU No. 2011-05 eliminates the option to present the components of other comprehensive income as part of the statement of changes in shareholders' investment. The amendments to the Codification in the ASU do not change the items that must be reported in other comprehensive income or when an item of other comprehensive income must be reclassified to net income. The provisions of ASU No. 2011-05 should be applied retrospectively and are effective for fiscal years, and interim periods within those years, beginning after December 15, 2011. The adoption of this standard had no impact on the Company's consolidated financial position, results of operations or cash flows.

In September 2011, the FASB issued ASU 2011-08, *Intangibles – Goodwill and other: testing for goodwill impairment*, which, among other things, amends *Accounting Standards Topic 350 Intangibles – Goodwill and Other*, to allow entities to use a qualitative approach to test goodwill for impairment. ASU 2011-08 permits an entity to first perform a qualitative assessment

to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying value. If it is concluded that this is the case, it is necessary to perform the currently prescribed two-step goodwill impairment test. Otherwise, the two-step goodwill impairment test is not required. The adoption of this standard had no impact on the Company's consolidated financial position, results of operations or cash flows.

In December 2011, the FASB issued ASU 2011-12, *Deferral of the Effective Date for Amendments to the Presentation of Reclassifications of Items Out of Accumulated Other Comprehensive Income* in ASU 2011-12. The amendments in ASU 2011-12 defer the changes in ASU 2011-05 that relate to the presentation of reclassification adjustments out of accumulated other comprehensive income. The amendments in this ASU are effective for us for fiscal years, and interim periods within those years, beginning after December 15, 2011. We adopted this standard for the year ended December 31, 2012. The adoption of ASU 2011-12 did not have a material impact on the Company's financial position or results of operations.

In July 2012, the FASB issued ASU 2012-02, *Intangibles – Goodwill and Other: Testing Indefinite-Lived Intangible Assets for Impairment* in ASU 2012-02. ASU 2012-02 allows a company the option to first assess qualitative factors to determine whether it is necessary to perform a quantitative impairment test. Under that option, a company would no longer be required to calculate the fair value of an indefinite-lived intangible asset unless the company determines, based on that qualitative assessment, that it is more likely than not that the fair value of the indefinite-lived intangible asset is less than its carrying amount. The amendments in this ASU are effective for annual and interim indefinite-lived intangible asset impairment tests performed for periods beginning after September 15, 2012. We adopted this standard for the year ended December 31, 2012. The adoption of ASU 2012-02 did not have a material impact on the Company's financial position or results of operations.

In February 2013, the FASB issued ASU No. 2013-02, *Reporting of Amounts Reclassified Out of Accumulated Other Comprehensive Income*. Under ASU 2013-02, an entity is required to provide information about the amounts reclassified out of Accumulated Other Comprehensive Income ("AOCI") by component. In addition, an entity is required to present, either on the face of the financial statements or in the notes, significant amounts reclassified out of AOCI by the respective line items of net income, but only if the amount reclassified is required to be reclassified in its entirety in the same reporting period. For amounts that are not required to be reclassified in their entirety to net income, an entity is required to cross-reference to other disclosures that provide additional details about those amounts. ASU 2013-02 does not change the current requirements for reporting net income or other comprehensive income in the financial statements. The amendments in this ASU are effective for us for fiscal years, and interim periods within those years, beginning after January 1, 2013.

2. Business Combinations

In January 2011, the Company acquired CyDex Pharmaceuticals, Inc. (“CyDex”), a specialty pharmaceutical company developing products and licensing its Captisol technology. Captisol is currently incorporated in five FDA-approved medications and marketed by three of CyDex’s licensees: Pfizer, Bristol-Myers Squibb and Baxter (formerly Prism Pharmaceuticals). In addition, CyDex is supporting drug development efforts with more than 40 companies worldwide.

Under the terms of the agreement, the Company paid $31.6 million to the CyDex shareholders and issued a series of Contingent Value Rights (CVR's). Additionally, the Company assumed certain contractual obligations for potential milestone payments to license holders. In addition, the Company will pay CyDex shareholders, for each respective year from 2011 through 2016, 20% of all CyDex-related revenue, but only to the extent that and beginning only when CyDex-related revenue for such year exceeds $15 million; plus an additional 10% of all CyDex-related revenue recognized during such year, but only to the extent that and beginning only when aggregate CyDex-related revenue for such year exceeds $35 million. The initial fair value of the liability was determined using an income approach, incorporating the estimated future cash flows from potential milestones and revenue sharing. These cash flows were then discounted to present value using a discount rate of 21.5%. For the year ended December 31, 2012, the fair value of the acquisition related contingent liabilities was determined using the income approach. The liability is evaluated each reporting period based on events and circumstances related to the underlying milestones, and the change in fair value is recorded in the Company's consolidated statements of operations. The carrying amount of the liability may fluctuate significantly and actual amounts paid may be materially different than the carrying amount of the liability.

The Company is required by the CyDex CVR Agreement to dedicate at least five experienced full-time employee equivalents per year to the acquired business and to invest at least $1.5 million per year, inclusive of such employee expenses, in the acquired business, through 2015.

The components of the purchase price allocation for CyDex are as follows (in thousands):

Purchase Consideration (in thousands):		
Cash paid to CyDex shareholders	$	31,572
Estimated fair value of contingent consideration		17,585
Total purchase consideration	$	49,157

Allocation of Purchase Price (in thousands):		
Cash	$	85
Accounts receivable		1,202
Inventory		2,414
In-process research and development		3,200
Intangible assets with definite lives		47,469
Goodwill		11,538
Other assets		1,311
Liabilities assumed		(18,062)
	$	49,157

The acquired identified intangible assets with definite lives from the acquisition with CyDex are as follows:

Acquired Intangible Assets (in thousands)		
Complete technology	$	15,227
Trademark and trade name		2,642
Customer relationships		29,600
	$	47,469

The weighted-average amortization period for the identified intangible assets with definite lives is 20 years.

The Company has allocated $3.2 million of the purchase price of CyDex to IPR&D. This amount represents the estimated fair value of CyDex's two main proprietary products that have not yet reached technological feasibility and do not have future alternative use as of the date of the merger. The valuation was based on a probability-weighted present value of the expected upfront and milestone payments. The probability of success takes into account the stages of completion and the risks surrounding successful development and commercialization of the underlying product candidates. These cash flows were then discounted to present value using a discount rate of 21.5%. Management does not believe that any events have occurred that would impair the IPR&D at December 31, 2012.

The valuation of the Captisol technology was based on a derivative of the discounted cash flow method that estimated the present value of a hypothetical royalty stream derived via the licensing of similar technology. These projected cash flows were then discounted to present value using a discount rate of 20.5%. The valuation of the trademark and trade name was based on the Relief from Royalty method using royalty rates paid in third-party licensing agreements involving similar trade names. These projected cash flows were then discounted to present value using a discount rate of 20.5%. The valuation of the customer relationships was based on a discounted cash flow analysis incorporating the estimated future cash flows from these relationships during their assumed life of 20 years. These cash flows were then discounted to present value using a discount rate of 21.5%.

Had the merger with CyDex been completed as of the beginning of 2010, the Company's pro forma results for the years ended December 31, 2011 and 2010 would have been as follows (unaudited):

(in thousands, except per share data)	2011	2010
Revenue	$ 30,226	$ 23,727
Operating loss	(1,591)	(32,403)
Net income (loss)	8,687	(15,480)
Basic and diluted earnings per share:		
Income (loss) from continuing operations	$ 0.44	$ (0.91)
Discontinued operations	$ —	$ 0.12
Net income (loss)	$ 0.44	$ (0.79)
Basic and diluted weighted average shares	19,656	19,613

The primary adjustments relate to interest expense on long-term debt, the loss of interest income due to the timing of transaction related payments and amortization of intangible assets. The above pro forma information was determined based on historical results adjusted for the purchase price allocation and estimated related changes in income associated with the acquisition of CyDex.

3. Financial Instruments

The Company measures certain financial assets and liabilities at fair value on a recurring basis, including available-for-sale fixed income, equity securities, and contingent liabilities. The following table provides a summary of the assets and liabilities that are measured at fair value on a recurring basis as of December 31, 2012 (in thousands):

	Fair Value Measurements at Reporting Date Using			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Current portion of co-promote termination payments receivable	$ 4,327	$ —	$ —	$ 4,327
Equity investments	1,426	—	1,426	—
Long-term portion of co-promote termination payments receivable	8,207	—	—	8,207
Total Assets	$ 13,960	$ —	$ 1,426	$ 12,534
Liabilities:				
Current portion of contingent liabilities - CyDex	$ 356	$ —	$ —	$ 356
Current portion of co-promote termination liability	4,327	—	—	4,327
Long-term portion of contingent liabilities - CyDex	10,543	—	—	10,543
Liability for restricted investments owed to former licensees	214	—	214	—
Long-term portion of co-promote termination liability	8,207	—	—	8,207
Total liabilities	$ 23,647	$ —	$ 214	$ 23,433

The following table provides a summary of the assets and liabilities that are measured at fair value on a recurring basis as of December 31, 2011 (in thousands):

	Fair Value Measurements at Reporting Date Using			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:				
Certificates of deposit	$ 10,000	$ 10,000	$ —	$ —
Current portion of co-promote termination payments receivable	6,197	—	—	6,197
Long-term portion of co-promote termination payments receivable	15,255	—	—	15,255
Total assets	$ 31,452	$ 10,000	$ —	$ 21,452
Liabilities:				
Current portion of contingent liabilities - CyDex	$ 6,879	$ —	$ —	$ 6,879
Current portion of co-promote termination liability	6,197	—	—	6,197
Liability for contingent value rights - Metabasis	1,068	1,068	—	—
Liability for contingent value rights – Neurogen	700	—	—	700
Long-term portion of contingent liabilities - CyDex	8,651	—	—	8,651
Long-term portion of co-promote termination liability	15,255	—	—	15,255
Total liabilities	$ 38,750	$ 1,068	$ —	$ 37,682

The Company's short-term investments are fixed income available-for-sale securities and are made up of certificates of deposit. The fair value of the Company's long-term investments are determined using quoted market prices in active markets and are discounted based on trading restrictions. The liability for contingent value rights for Metabasis are determined using quoted market prices in active markets. The fair value of the liabilities for the Neurogen and CyDex contingent liabilities were determined based on the income approach for the year ended December 31, 2012. There are no remaining contingent value right obligations under the agreement with the former Neurogen shareholders. The co-promote termination payments receivable represents a non-interest bearing receivable for future payments to be made by King and is recorded at its fair value. The receivable and liability will remain equal and adjusted each quarter for changes in the fair value of the obligation including any changes in the estimate of future net Avinza product sales.

A reconciliation of the level 3 financial instruments as of December 31, 2012 and 2011 is as follows (in thousands):

Assets:		
Fair value of level 3 financial instruments as of December 31, 2010	$	30,885
Assumed payments made by King or assignee		(4,155)
Fair value adjustments		(5,278)
Fair value of level 3 financial instrument assets as of December 31, 2011		21,452
Assumed payments made by King or assignee		(3,479)
Fair value adjustments		(5,439)
Fair value of level 3 financial instruments as of December 31, 2012	$	12,534

Liabilities		
Fair value of level 3 financial instruments as of December 31, 2010	$	31,585
Initial fair value of level 3 financial instruments related to the CyDex acquisition		17,585
Kyprolis NDA acceptance milestone payment to CyDex shareholders		(2,000)
Assumed payments made by King or assignee		(4,155)
Fair value adjustments		(5,333)
Fair value of level 3 financial instruments as of December 31, 2011		37,682
2011 revenue sharing payment to CyDex shareholders		(249)
Guaranteed payment to CyDex shareholders		(4,300)
Kyprolis FDA approval milestone payment to CyDex shareholders		(3,500)
Assumed payments made by King or assignee		(3,479)
Fair value adjustments		(2,721)
Fair value of level 3 financial instruments as of December 31, 2012	$	23,433

4. Avinza Co-Promotion

In 2003, the Company and Organon Pharmaceuticals USA Inc. (Organon) entered into an agreement for the co-promotion of Avinza. Subsequently in 2006, the Company signed an agreement with Organon that terminated the Avinza co-promotion agreement between the two companies and returned Avinza co-promotion rights to the Company. In consideration of the early termination, the Company agreed to make quarterly royalty payments to Organon equal to 6.5% of Avinza net sales through December 31, 2012 and thereafter 6% through patent expiration, currently anticipated to be November 2017.

In 2007, the Company and King executed an agreement pursuant to which King acquired all of the Company's rights in and to Avinza. King also assumed the Company's co-promote termination obligation to make royalty payments to Organon.

In connection with King's assumption of this obligation, Organon did not consent to the legal assignment of the co-promote termination obligation to King. Accordingly, the Company remains liable to Organon in the event of King's default of the obligation. Therefore, the Company recorded an asset as of 2007 to recognize King's assumption of the obligation, while continuing to carry the co-promote termination liability in the Company's consolidated financial statements to recognize its legal obligation as primary obligor to Organon. This asset represents a non-interest bearing receivable for future payments to be

made by King and is recorded at its fair value. The receivable and liability will remain equal and adjusted each quarter for changes in the fair value of the obligation including any changes in the estimate of future net Avinza product sales. This receivable will be assessed on a quarterly basis for impairment (e.g. in the event King defaults on the assumed obligation to pay Organon).

At each reporting period, management reviews the carrying value of the co-promote termination liability. Due to assumptions and judgments inherent in determining the estimates of future net Avinza sales through November 2017, the actual amount of net Avinza sales used to determine the current fair value of the Company's co-promote termination asset and liability may be materially different from current estimates.

A summary of the co-promote termination liability as of December 31, 2012 and 2011 is as follows (in thousands):

Net present value of payments based on estimated future net Avinza product sales as of December 31, 2010	$ 30,885
Assumed payments made by King or assignee	(4,155)
Fair value adjustments due to passage of time	(5,278)
Total co-promote termination liability as of December 31, 2011	21,452
Assumed payments made by King or assignee	(3,479)
Fair value adjustments due to passage of time	(5,439)
Total co-promote termination liability as of December 31, 2012	12,534
Less: current portion of co-promote termination liability as of December 31, 2012	4,327
Long-term portion of co-promote termination liability as of December 31, 2012	$ 8,207

5. Lease Obligations

The Company leases office and laboratory facilities in California, Kansas and New Jersey. These leases expire between 2014 and 2019 and are subject to annual increases which range from 3.0% to 3.5%. The Company currently subleases office and laboratory space in California and New Jersey. The following table provides a summary of operating lease obligations and payments expected to be received from sublease agreements as of December 31, 2012 (in thousands):

Operating lease obligations:	Lease Termination Date	Less than 1 year	2-3 years	4-5 years	More than 5 years	Total
Corporate headquarters-San Diego, CA	July 2019	$ 545	$ 1,364	$ 1,447	$ 1,140	$ 4,496
Bioscience and Technology Business Center-Lawrence, KS	December 2014	57	57	—	—	114
Vacated office and research facility-San Diego, CA	July 2015	2,174	3,572	—	—	5,746
Vacated office and research facility-Cranbury, NJ	August 2016	2,596	5,311	1,826	—	9,733
Total operating lease obligations		$ 5,372	$ 10,304	$ 3,273	$ 1,140	$ 20,089

Sublease payments expected to be received:		Less than 1 year	2-3 years	4-5 years	More than 5 years	Total
Office and research facility-San Diego, CA	July 2015	$ 881	$ 1,451	$ —	$ —	$ 2,332
Office and research facility-Cranbury, NJ	August 2016	147	519	163	—	829
Net operating lease obligations		$ 4,344	$ 8,334	$ 3,110	$ 1,140	$ 16,928

In August 2009, the Company entered into a lease termination agreement for its office and laboratory facility in San Diego, California, which had a lease term through November 2021. Under the terms of the termination agreement, the Company paid a termination fee of $14.3 million as follows: $4.5 million was paid upon signing, $4.5 million was paid in July 2010 and $5.3 million was paid in April 2011. Additionally, in 2010, the Company ceased use of its facility located in New

Jersey. As a result, the Company recorded lease exit costs of $9.7 million for costs related to the difference between the remaining lease obligations of the abandoned operating leases, which run through August 2016, and management's estimate of potential future sublease income, discounted to present value. In addition, the Company wrote-off property and equipment with a net book value of approximately $5.4 million related to the facility closure.

For the years ended December 31, 2012 and 2011, the Company had lease exit obligations of $9.0 million and $11.6 million, respectively. For the year ended December 31, 2012, the Company made cash payments, net of sublease payments received of $3.6 million. The Company recognized adjustments for accretion and changes in leasing assumptions of $1.0 million for the year ended December 31, 2012.

As part of the lease for the corporate headquarters, the Company received a tenant improvement allowance of $3.2 million. The tenant improvements were used to build out the suite for general lab and office purposes. For the year ended December 31, 2012, the Company recorded a sale leaseback transaction whereby it removed all property from its balance sheet. There was no gain on the sale-leaseback.

Total rent expense under all office leases for 2012, 2011 and 2010 was $1.1 million, $1.2 million, and $2.8 million, respectively. The Company recognizes rent expense on a straight-line basis. Deferred rent at December 31, 2012 and 2011 was $0.3 million and $0 million, respectively, and is included in other long-term liabilities.

6. Segment Reporting

The Company evaluates performance based on the operating profit (loss) of the respective business segments. The segment results may not represent actual results that would be expected if they were independent, stand-alone businesses. Segment information is as follows:

Balance Sheet Data:

	As of December 31, 2012		
	Ligand	**CyDex**	**Total**
Total Assets	$ 28,731	$ 75,529	$ 104,260

	As of December 31, 2011		
	Ligand	**CyDex**	**Total**
Total Assets	$ 49,462	$ 71,121	$ 120,583

	For the year ended December 31, 2012		
	Ligand	CyDex	Total
Net revenues from external customers	$ 19,582	$ 11,806	$ 31,388
Operating income (loss)	(538)	1,112	574
Depreciation and amortization expense	222	2,505	2,727
Income tax benefit from continuing operations	1,096	95	1,191
Income tax expense from discontinuing operations	(1,509)	—	(1,509)
Interest expense, net	3,305	—	3,305

	For the year ended December 31, 2011		
	Ligand	CyDex	Total
Net revenues from external customers	$ 13,790	$ 16,247	$ 30,037
Operating income (loss)	(5,733)	5,035	(698)
Depreciation and amortization expense	486	2,304	2,790
Income tax benefit from continuing operations	13,270	—	13,270
Interest expense, net	2,508	—	2,508
Write off of in process R&D	2,282		2,282

7. Financing Arrangements

The Company has a secured term loan credit facility ("secured debt"). Under the terms of the secured debt, the Company will make interest only payments through February 2013. Subsequent to the interest only payments, the note will amortize with principal and interest payments through the remaining term of the loan. Additionally, the Company must also make an additional final payment equal to 6% of the total amount borrowed which is due at maturity and is being accreted over the life of the loan. To secure the Company's repayment obligations under the secured debt agreement, the lender obtained a first priority security interest in all of the Company's assets, excluding intellectual property.

The Company also has a cash-collateralized revolving credit facility under which the Company may elect to borrow up to $10 million. All outstanding amounts under the credit facility may become due and payable if the Company fails to maintain a cash balance equal to the amount outstanding under the credit facility.

The carrying values and the fixed contractual coupon rates of our financing arrangements are as follows (dollars in millions):

	December 31, 2012	December 31, 2011
Bank line of credit, Prime + 2.0%, due March 29, 2013	$ —	$ 10,000
Current portion notes payable, 8.64%, due August 1, 2014	$ 10,792	$ —
Current portion notes payable, 8.9012%, due August 1, 2014	4,043	—
Total current portion of notes payable	$ 14,835	$ 10,000
Long-term portion notes payable, 8.64%, due August 1, 2014	$ 9,837	$ 20,286
Long-term portion notes payable, 8.9012%, due August 1, 2014	3,606	—
Total long-term portion of notes payable	$ 13,443	$ 20,286

Principal payments on long-term debt obligations subsequent to December 31, 2012 are as follows:

Year ending December 31,	Amount
2013	$ 14,835
2014	12,665
2015	—
	$ 27,500

The fair value of the Company's debt instruments approximates their carrying values as the interest is tied to or approximates market rates.

8. Discontinued Operations

Oncology Product Line

In September 2006, the Company and Eisai Inc., a Delaware corporation, and Eisai Co., Ltd., a Japanese company (which we collectively refer to as Eisai), entered into a purchase agreement, or the Oncology Purchase Agreement, pursuant to which Eisai agreed to acquire all of our worldwide rights in and to our oncology products, including, among other things, all related inventory, equipment, records and intellectual property, and assume certain liabilities as set forth in the Oncology Purchase Agreement. The Oncology product line included the Company's four marketed oncology drugs: Ontak, Targretin capsules,Targretin gel and Panretin gel. For the years ended December 31, 2010, the Company recognized a pre-tax gain of $0.2 million, due to subsequent changes in certain estimates of assets and liabilities recorded as of the sale date.

Avinza Product Line

On September 6, 2006, the Company and King entered into a purchase agreement, or the Avinza Purchase Agreement, pursuant to which King agreed to acquire all of the Company's rights in and to Avinza in the United States, its territories and Canada, including, among other things, all Avinza inventory, records and related intellectual property, and assume certain liabilities as set forth in the Avinza Purchase Agreement, which is collectively referred to as the Transaction. Pursuant to the terms of the Avinza Purchase Agreement, the Company retained the liability for returns of product from wholesalers that had been sold by the Company prior to the close of the Transaction. Accordingly, as part of the accounting for the gain on the sale of Avinza, the Company recorded a reserve for Avinza product returns. For the years ended December 31, 2012, 2011, and 2010, the Company recognized pre-tax gains of $3.7 million, $0, and $2.2 million, respectively, due to subsequent changes in certain estimates of assets and liabilities recorded as of the sale date.

9. Other Balance Sheet Details

Other current assets consist of the following (in thousands):

	December 31,	
	2012	2011
Prepaid expenses	$ 801	$ 905
Advanced manufacturing payments	2	312
Other receivables	26	127
	$ 829	$ 1,344

Accrued liabilities consist of the following (in thousands):

	December 31,	
	2012	2011
Compensation	$ 1,807	$ 1,806
Legal	199	355
Other	2,955	2,893
	$ 4,961	$ 5,054

Other Long-Term Liabilities

Other long-term liabilities consist of the following (in thousands):

	December 31,	
	2012	2011
Deferred rent	$ 334	$ —
Deposits	538	388
Other	214	—
	$ 1,086	$ 388

10. Stockholders' Equity

Stock Plans

In May 2009, the Company's stockholders approved the amendment and restatement of the Company's 2002 Stock Incentive Plan (the "Amended 2002 Plan"). The Company's 2002 Stock Incentive Plan was amended to (i) increase the number of shares available for issuance under the Amended 2002 Plan by 1.3 million shares, (ii) revise the list of performance criteria that may be used by the compensation committee for purposes of granting awards under the Amended 2002 Plan that are intended to qualify as performance-based compensation under Section 162(m) of the Internal Revenue Code, as amended, and (iii) eliminate the automatic option grant program for non-employee directors, the director fee stock issuance program and the director fee option grant program, which programs have been superseded by the Company's amended and restated Director Compensation Policy. Additionally, in May 2012, the Company's stockholders approved an amendment and restatement of the Company's 2002 Stock Incentive Plan to increase the number of shares available for issuance by 1.8 million shares. As of December 31, 2012, there were 1.9 million shares available for future option grants or direct issuance under the Amended 2002 Plan.

The Company grants options and awards to employees, non-employee consultants, and non-employee directors. Only new shares of common stock are issued upon the exercise of stock options. Non-employee directors are accounted for as employees. Options and restricted stock granted to certain directors vest in equal monthly installments over one year from the date of grant. Options granted to employees vest 1/8 on the six month anniversary of the date of grant, and 1/48 each month thereafter for forty-two months. All option awards generally expire ten years from the date of grant.

Following is a summary of the Company's stock option plan activity and related information:

	Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Term in Years	Aggregate Intrinsic Value (In thousands)
Balance at December 31, 2009	668,447	$ 30.10	6.88	$ 31
Granted	248,202	9.87		
Forfeited	(130,183)	14.31		
Cancelled	(145,205)	48.26		
Balance at December 31, 2010	641,261	21.36	7.00	9
Granted	636,580	9.98		
Exercised	(6,072)	9.51		
Forfeited	(50,782)	11.95		
Cancelled	(74,941)	34.55		
Balance at December 31, 2011	1,146,046	14.61	7.96	1,489
Granted	714,345	14.72		
Exercised	(86,588)	11.31		
Forfeited	(118,026)	11.39		
Cancelled	(29,171)	24.16		
Balance at December 31, 2012	1,626,606	14.90	7.83	11,358
Exercisable at December 31, 2012	816,904	16.41	6.85	5,397
Options vested and expected to vest as of December 31, 2012	1,626,606	14.90	7.83	11,358

The weighted-average grant-date fair value of all stock options granted during 2012, 2011, and 2010 was $14.72, $6.34, and $6.31 per share, respectively. The total intrinsic value of all options exercised during 2012, 2011 and 2010 was approximately $0.5 million, $10,000, and $0, respectively. As of December 31, 2012, there was $5.6 million of total unrecognized compensation cost related to nonvested stock options. That cost is expected to be recognized over a weighted average period of 2.7 years.

Cash received from options exercised in 2012, 2011 and 2010 was $1.0 million, $58,000, and $41,000, respectively. There is no current tax benefit related to options exercised because of Net Operating Losses (NOLs) for which a full valuation allowance has been established.

Following is a further breakdown of the options outstanding as of December 31, 2012:

Range of exercise prices	Options outstanding	Weighted average remaining life in years	Weighted average exercise price	Options exercisable	Weighted average exercise price
$6.82 – $ 10.05	541,121	7.87	$ 9.92	305,581	$ 9.90
10.12 – 13.53	135,190	8.81	11.27	71,919	10.25
14.47 – 14.47	552,125	9.06	14.47	113,888	14.47
14.86 – 21.00	332,460	6.24	18.55	259,806	18.50
32.76 – 87.96	65,710	3.27	48.51	65,710	48.51
6.82 – 87.96	1,626,606	7.83	14.90	816,904	16.41

Restricted Stock Activity

The following is a summary of the Company's restricted stock activity and related information:

	Shares	Weighted-Average Grant Date Fair Value
Nonvested at December 31, 2009	95,715	$ 17.93
Granted	60,349	9.60
Vested	(65,375)	16.70
Forfeited	(28,543)	12.56
Nonvested at December 31, 2010	62,146	13.60
Granted	119,826	10.07
Vested	(59,936)	12.47
Forfeited	(6,530)	11.71
Nonvested at December 31, 2011	115,506	10.63
Granted	109,261	13.76
Vested	(72,194)	11.47
Forfeited	(11,012)	11.84
Nonvested at December 31, 2012	141,561	12.52

Restricted stock awards generally vest over three years. As of December 31, 2012, unrecognized compensation cost related to non-vested stock awards amounted to $0.9 million. That cost is expected to be recognized over a weighted average period of 1.5 years.

Employee Stock Purchase Plan

The Company's Employee Stock Purchase Plan, as amended and restated (the "Amended ESPP") allows participants to purchase up to 1,250 shares of Ligand common stock during each offering period, but in no event may a participant purchase more than 1,250 shares of common stock during any calendar year. The length of each offering period is six months, and employees are eligible to participate in the first offering period beginning after their hire date.

The Amended ESPP allows employees to purchase a limited amount of common stock at the end of each six month period at a price equal to 85% of the lesser of fair market value on either the start date of the period or the last trading day of the period (the "Lookback Provision"). The 15% discount and the Lookback Provision make the Amended ESPP compensatory. There were 10,763, 7,611, and 14,888 shares of common stock issued under the Amended ESPP in 2012, 2011 and 2010, respectively, resulting in an expense of $38,000, $13,000, and $0.1 million, respectively. For shares purchased under the Company's Amended ESPP, a weighted-average expected volatility of 34%, 18%, and 34% was used for 2012, 2011 and 2010, respectively. The expected term for shares issued under the ESPP is 6 months. As of December 31, 2012, 128,457 shares of common stock had been issued under the Amended ESPP to employees and 89,917 shares are available for future issuance.

Preferred Stock

The Company has authorized 5,000,000 shares of preferred stock, of which 1,600,000 are designated Series A Participating Preferred Stock (the "Preferred Stock"). The Board of Directors of Ligand has the authority to issue the Preferred Stock in one or more series and to fix the designation, powers, preferences, rights, qualifications, limitations and restrictions of the shares of each such series, including the dividend rights, dividend rate, conversion rights, voting rights, rights and terms of redemption (including sinking fund provisions), liquidation preferences and the number of shares constituting any such series, without any further vote or action by the stockholders. The rights and preferences of Preferred Stock may in all respects be superior and prior to the rights of the common stock. The issuance of the Preferred Stock could decrease the amount of earnings and assets available for distribution to holders of common stock or adversely affect the rights and powers, including voting rights, of the holders of the common stock and could have the effect of delaying, deferring or preventing a change in control of Ligand. As of December 31, 2012 and 2011, there are no preferred shares issued or outstanding.

Shareholder Rights Plan

In October 2006, the Company's Board of Directors renewed the Company's stockholder rights plan, which was originally adopted and has been in place since September 2002, and which expired on September 13, 2006, through the adoption of a new 2006 Stockholder Rights Plan (the "2006 Rights Plan"). The 2006 Rights Plan provides for a dividend distribution of one preferred share purchase right (a "Right") on each outstanding share of the Company's common stock. Each Right entitles stockholders to buy 1/1000th of a share of Ligand Series A Participating Preferred Stock at an exercise price of $100. The Rights will become exercisable if a person or group announces an acquisition of 20% or more of the Company's common stock, or announces commencement of a tender offer for 20% or more of the common stock. In that event, the Rights permit stockholders, other than the acquiring person, to purchase the Company's common stock having a market value of twice

the exercise price of the Rights, in lieu of the Preferred stock. In addition, in the event of certain business combinations, the Rights permit the purchase of the common stock of an acquiring person at a 50% discount. Rights held by the acquiring person become null and void in each case. The 2006 Rights Plan expires in 2016.

Warrants

As of December 31, 2012, 163,568 warrants with an exercise price of $179.40 per warrant and an expiration date of April 2013 were outstanding to purchase an aggregate of 129,360 shares of the Company's common stock. If exercised, these warrants are also entitled to receive $0.1 million in cash. The series of warrants was assumed in the acquisition of Neurogen Corporation.

Reverse Stock Split

On November 19, 2010, following approval from the Company's stockholders at a special meeting of stockholders on September 9, 2010, the Company announced a 1-for-6 reverse stock split of its common stock. Accordingly, all share, warrant, option and per share information for all periods presented has been restated to account for the effect of the reverse stock split.

Public Offering

During the year ended December 31, 2012, the Company issued, pursuant to an at-the-market registered public offering, 302,750 common shares at a weighted average price of $18.87 per share. Total net proceeds to the Company after underwriting discounts and expenses were approximately $5.5 million.

11. Litigation

We record our estimate of a loss when the loss is considered probable and estimable. Where a liability is probable and there is a range of estimated loss and no amount in the range is more likely than any other number in the range, we record the minimum estimated liability related to the claim in accordance with *FASB ASC Topic 450 Contingencies.* As additional information becomes available, we assess the potential liability related to our pending litigation and revise our estimates. Revisions in our estimates of potential liability could materially impact our results of operations.

12. Common Stock Subject to Conditional Redemption—Pfizer Settlement Agreement

In 1996, the Company and Pfizer entered into a settlement agreement with respect to a lawsuit filed in 1994 by the Company against Pfizer. In connection with a collaborative research agreement the Company entered into with Pfizer in 1991, Pfizer purchased shares of the Company's common stock. Under the terms of the settlement agreement, at the option of either the Company or Pfizer, milestone and royalty payments owed to the Company can be satisfied by Pfizer by transferring to the Company shares of the Company's common stock at an exchange ratio of $74.25 per share, for revenue related to lasofoxifene and drolofoxifene. The remaining common stock issued and outstanding to Pfizer following the settlement was reclassified as common stock subject to conditional redemption (between liabilities and equity) since Pfizer has the option to settle milestone and royalties payments owed to the Company with the Company's shares, and such option is not within the Company's control. The remaining shares of the Company's common stock that could be redeemed totaled 112,371 and are reflected at the exchange ratio price of $74.25. Pfizer has notified Ligand that the development of the two compounds covered under the 1996 settlement agreement have been terminated and thus the Company reclassified the shares and the current carrying amount of $8.3 million to permanent equity in the first quarter of 2012.

13. Income Taxes

At December 31, 2012, the Company had federal net operating loss carryforwards set to expire through 2031 of $554.9 million and $185.1 million of state net operating loss carryforwards. The Company also has $17.2 million of federal research and development credit carryforwards, $0.7 million of which expired at the end of 2012, with the remainder expiring through 2027, leaving $16.5 million remaining going into 2013. The Company has $12.4 million of California and New Jersey research and development credit carryforwards that have no expiration date.

Sections 382 and 383 of the U.S. tax code imposes limitations ("382 and 383 limitations") on the annual utilization of operating loss and credit carryforwards whenever a greater than fifty percent change in the ownership of a company occurs within a three year period. In addition to the annual limitations on operating loss and credit carryforwards, Section 382 can also restrict the utilization of certain post change losses if the tax basis in assets exceeds the fair value of assets ("net unrealized built in loss") at the date of an ownership change. Companies with operating loss and credit carryforwards are required to test the cumulative three year change whenever there is an equity transaction that impacts the ownership of holders of more than

five percent of the Company's stock. During 2012, the Company completed an analysis through December 31, 2011 of both its prior ownership changes as well as the ownerships changes that occurred with respect to the majority of its acquired subsidiaries. As a result of the analysis, it was determined that the Company had larger available net operating losses and credit carryforwards than previously estimated and that no net unrealized built in losses existed at any of the ownership change dates. Based upon these findings, the Company was able to recognize additional operating loss carryforwards and other deferred tax assets that previously were thought to be limited. The additional deferred tax assets were recognized up to the extent of allowable 382 and 383 limitations prior to being subject to valuation allowance considerations. Any deferred tax assets which would have expired solely as a result of the 382 and 383 limitations were removed from the Company's deferred tax assets. Future changes in the ownership of the Company could place additional restrictions on the Company's ability to utilize operating loss and credit carryforwards arising through December 31, 2012.

The components of the income tax benefit for continuing operations are as follows (in thousands):

	Year Ended December 31,		
	2012	2011	2010
Current Benefit:			
Federal	$ 3	520	$ (27,685)
State	16	139	—
	19	659	(27,685)
Deferred Benefit:			
Federal	(913)	(10,803)	25,068
State	(297)	(3,126)	—
	(1,191)	(13,270)	$ (2,617)

Significant components of the Company's deferred tax assets and liabilities as of December 31, 2012 and 2011 are shown below. A valuation allowance has been recognized to offset the net deferred tax assets as management believes realization of such assets is uncertain as of December 31, 2012, 2011, and 2010. The change in valuation allowance increased $41.8 million in 2012, decreased $15.4 million for 2011 and increased $30.6 million for 2010.

	December 31,	
	2012	2011
	(in thousands)	
Deferred assets:		
Net operating loss carryforwards	$ 198,445	$ 164,049
Research and AMT credit carryforwards	27,169	22,163
Fixed assets and intangibles	23,763	21,674
Accrued expenses	1,366	1,467
Contingent liabilities	1,779	529
Deferred revenue	1,013	—
Present value of AVINZA royalties	10,836	13,259
Organon termination asset	(4,503)	(11,012)
Organon termination liability	4,503	11,012
Organon royalty obligation	861	582
Deferred rent	2,635	3,770
Lease termination costs	—	369
Capital loss carryforwards	298	501
Other	1,844	2,620
	270,009	230,983
Valuation allowance for deferred tax assets	(254,870)	(213,102)
Net deferred tax assets	$ 15,139	$ 17,881
Deferred tax liabilities:		
Identified intangibles	$ (15,139)	$ (17,881)
Identified indefinite lived intangibles	(2,298)	(1,993)
Total	$ (2,298)	$ (1,993)

For 2012 and 2011, stock option deductions did not impact the valuation allowance through paid-in capital.

A reconciliation of income taxes from continuing operations to the amount computed by applying the statutory federal income tax rate to the net loss from continuing operations is summarized as follows:

	Years Ended December 31,		
	2012	2011	2010
Amounts computed at statutory federal rate	$ 1,317	$ 1,204	$ 5,236
State taxes net of federal benefit	196	(2)	(2)
Meals & entertainment	(8)	(9)	(6)
Acquisition related transaction costs	—	(37)	—
In process R&D	—	—	(451)
Therapeutic grant	—	—	665
Imputed interest	(259)	(255)	(321)
Roche collaboration	—	—	(1,437)
Contingent value rights	695	(601)	3,108
Stock-based compensation	(312)	(597)	(510)
Expired NOLs	(6,847)	(678)	(678)
Expired research and development credits	(1,984)	(1,200)	(543)
Change in uncertain tax positions	830	—	28,108
Rate change for changes in state law	(3,388)	—	—
Increase in deferred tax assets from completion of 382 analysis	53,257	—	—
Change in valuation allowance	(41,768)	15,486	(30,557)
Other	(538)	(41)	5
	$ 1,191	$ 13,270	$ 2,617

The Company accounts for income taxes by evaluating a probability threshold that a tax position must meet before a financial statement benefit is recognized. The minimum threshold is a tax position that is more likely than not to be sustained upon examination by the applicable taxing authority, including resolution of any related appeals or litigation processes, based on the technical merits of the position. The Company's remaining liabilities for uncertain tax positions are presented net of the deferred tax asset balances on the accompanying consolidated balance sheet.

A reconciliation of the amount of unrecognized tax benefits at December 31, 2012 and 2011 is as follows (in thousands):

Balance at December 31, 2010	$ 8,821
Additions based on tax positions related to the current year	296
Reductions for tax positions of prior years	(211)
Balance at December 31, 2011	8,906
Additions based on tax positions related to the current year	38
Reductions for tax positions of prior years	(877)
Balance at December 31, 2012	$ 8,067

Included in the balance of unrecognized tax benefits at December 31, 2012 is $8.1 million of tax benefits that, if recognized would result in adjustments to the related deferred tax assets and valuation allowance and not affect the Company's effective tax.

The Company recognizes interest and penalties related to uncertain tax positions in income tax expense. As of December 31, 2012, there was no accrued interest related to uncertain tax positions. The Company files income tax returns in the United States and in various state jurisdictions with varying statutes of limitations. The federal statute of limitation remains open for the 2009 tax year to present. The state income tax returns generally remain open for the 2008 tax years through present.

14. Summary of Unaudited Quarterly Financial Information

The following is a summary of the unaudited quarterly results of operations for the years ended December 31, 2012 and 2011 (in thousands).

	Quarter ended			
	March 31	June 30	September 30	December 31
2012				
Total revenues	$ 5,636	$ 5,742	$ 6,375	$ 13,635
Total operating costs and expenses	6,401	7,472	7,697	9,244
Income tax benefit (expense)	35	(338)	(142)	1,636
Income (loss) from continuing operations	(738)	(4,328)	(194)	2,586
Discontinued operations	1,871	1,799	—	(1,523)
Net income (loss)	$ 1,133	$ (2,529)	$ (194)	$ 1,063
Basic and diluted per share amounts:				
Income (loss) from continuing operations	(0.04)	(0.22)	(0.01)	0.13
Discontinued operations	0.10	0.09	—	(0.08)
Net income (loss)	$ 0.06	$ (0.13)	$ (0.01)	$ 0.05
Weighted average shares—basic	19,709	19,749	19,918	20,035
Weighted average shares—diluted	19,739	19,749	19,918	20,124
2011				
Total revenues	$ 3,896	$ 7,463	$ 5,741	$ 12,937
Total operating costs and expenses	5,805	8,699	9,416	8,517
Income tax benefit (expense)	13,730	(141)	(22)	(297)
Income (loss) from continuing operations	9,621	(422)	(4,178)	4,690
Discontinued operations	4	—	—	—
Net income (loss)	$ 9,625	$ (422)	$ (4,178)	$ 4,690
Basic and diluted per share amounts:				
Income (loss) from continuing operations	0.49	(0.02)	(0.21)	0.24
Discontinued operations	—	—	—	—
Net income (loss)	$ 0.49	$ (0.02)	$ (0.21)	$ 0.24
Weighted average shares—basic	19,623	19,650	19,673	19,675
Weighted average shares—diluted	19,623	19,650	19,673	19,738

15. Subsequent Events

In February 2013, the Company received a $1.4 million milestone payment from Retrophin, Inc. The Company will remit $0.2 million to former license holders under the terms of a previous license agreement for RE-021.

In March 2013, the Company entered into a License Agreement with Spectrum Pharmaceuticals, Inc. (“Spectrum”). Under the License Agreement, the Company granted to Spectrum an exclusive, nontransferable, worldwide license to such intellectual property rights that will enable Spectrum to develop and potentially commercialize Captisol-enabled® propylene glycol-free melphalan. Contemporaneously with the entry into the license agreement, the Company entered into a supply agreement to provide Captisol to Spectrum. Under the Supply Agreement, Spectrum agreed to purchase its Captisol requirements for the development of the compound contemplated by the license agreement, as well as any Captisol required for any product that is successfully commercialized. Additionally, the Company is entitled to receive a non-refundable license issuance fee of $3 million and is eligible to receive over $50 million in potential milestones. The Company is also eligible to receive significant double-digit royalties on worldwide net sales of any products that are successfully commercialized. Under the terms of the agreement, Spectrum will immediately assume responsibility for the ongoing pivotal clinical trial, which is currently enrolling patients.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

(a) Disclosure Controls and Procedures

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 the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, or the Exchange Act, as of the end of the period covered by this report, December 31, 2012, which we refer to as the Evaluation Date.

As a result of material weaknesses in our internal control over financial reporting relating to the accounting for non-routine transactions and the controls over the determination of fair value of contingent liabilities, management has reassessed the effectiveness of our disclosure controls and procedures and have determined that our disclosure controls and procedures were not effective as of December 31, 2012. Despite the material weaknesses in our internal control, management believes no material inaccuracies or omissions of fact exist in this annual report.

Remediation Plan. As a result of the material weaknesses associated with non-routine transactions, we have added a corporate controller to our finance and accounting staff. While we had processes to identify and intelligently apply accounting standards to complex transactions, we did not have adequate numbers of highly skilled accountants to provide for a detail analysis, documentation and review of such transactions. Additionally, we plan to enhance our controls over the determination of the fair value of contingent liabilities by including a formal review of mathematical calculations and completeness of such calculations. These material weaknesses prevented us from properly reporting the financial information for previous interim and annual periods, and we have filed restated 10-Q and 10-K reports for the applicable periods. Management will continue to review and make necessary changes to the overall design of its internal control environment, as well as to policies and procedures to improve the overall effectiveness of internal control over financial reporting.

The material weaknesses will not be remediated until the applicable remedial procedures are tested and management has concluded that the procedures and controls are operating effectively.

Changes in Internal Controls. Except as described above, there have been no changes during the last fiscal quarter in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

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

Management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. Internal control over financial reporting is a process to provide reasonable assurance regarding the reliability of our financial reporting for external purposes in accordance with accounting principles generally accepted in the United States of America. Internal control over financial reporting includes maintaining records that in reasonable detail accurately and fairly reflect our transactions; providing reasonable assurance that transactions are recorded as necessary for preparation of our financial statements in accordance with generally accepted accounting principles; providing reasonable assurance that receipts and expenditures are made in accordance with our management and directors; and providing reasonable assurance that
unauthorized acquisition, use or disposition of company assets that could have a material effect on our financial statements would be prevented or detected on a timely basis. Because of its inherent limitations, internal control over financial reporting is not intended to provide absolute assurance that a misstatement of our financial statements would be prevented or detected.

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework established by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) as set forth in Internal Control-Integrated Framework. Based on our evaluation under the framework in Internal Control - Integrated Framework, the Audit Committee, after consultation with our management concluded that our internal controls over financial reporting were ineffective as of December 31, 2012. Material weaknesses were identified relating to the accounting for non-routine transactions and the controls over the determination of the fair value of contingent liabilities which led to a

misstatement of acquisition-related costs and contingent liabilities related to the acquisition of CyDex in our interim and annual financial statements. We enhanced our processes with the addition of a corporate controller during the third quarter of 2011 with the ability to research and properly apply complex accounting standards. Additionally, we also plan to enhance our controls over the determination of the fair value of contingent liabilities by including a formal review of mathematical calculations and completeness of such calculations. We will continue to review the updated control structure to ensure our plan is effective in remediating the material weaknesses identified.

Grant Thornton LLP, the Company's independent registered public accountants, has audited the effectiveness of the Company's internal control over financial reporting as of December 31, 2012, based on the COSO criteria; their report is included in Item 9A.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders
Ligand Pharmaceuticals Incorporated

We have audited the internal control over financial report of Ligand Pharmaceuticals Incorporated (the "Company") as of December 31, 2012, based on criteria established in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company'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 ("Management's Report"). 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.

A material weakness is a deficiency, or combination of control deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis. The following material weakness has been identified and included in management's assessment. The Company identified material weaknesses in accounting for significant non-routine transactions and the controls over the determination of the fair value of contingent liabilities.

In our opinion, because of the material weaknesses described above on the achievement of the objectives of the control criteria, Ligand Pharmaceuticals Incorporated has not maintained effective internal control over financial reporting as of December 31, 2012, based on criteria established in *Internal Control-Integrated Framework* issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements of the Company as of and for the year ended December 31, 2012. The material weakness identified above was considered in determining the nature, timing, and extent of audit tests applied in our audit of the 2012 consolidated financial statements, and this report does not affect our report dated March 14, 2013, which expressed an unqualified opinion on those financial statements.

/s/ GRANT THORNTON LLP

San Diego, California
March 14, 2013

Part III

Item 10. Directors, Executive Officers and Corporate Governance

Code of Conduct

The Board of Directors has adopted a Code of Conduct and Ethics Policy ("Code of Conduct") that applies to all officers, directors and employees. The Company will promptly disclose any material amendment or waiver to the Code of Conduct which affects any corporate officer. The Code of Conduct was filed with the SEC as an exhibit to our report on Form 10-K for the year ended December 31, 2003, and can be accessed via our website (http://www.ligand.com), Corporate Overview page. You may also request a free copy by writing to: Investor Relations, Ligand Pharmaceuticals Incorporated, 11119 North Torrey Pines Road, Suite 200, La Jolla, CA 92037.

The other information under Item 10 is hereby incorporated by reference from Ligand's Definitive Proxy Statement to be filed with the Securities and Exchange Commission on or prior to April 30, 2013.

Item 11. Executive Compensation

Item 11 is hereby incorporated by reference from Ligand's Definitive Proxy Statement to be filed with the Securities and Exchange Commission on or prior to April 30, 2013.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Item 12 is hereby incorporated by reference from Ligand's Definitive Proxy Statement to be filed with the Securities and Exchange Commission on or prior to April 30, 2013.

Item 13. Certain Relationships and Related Transactions, and Director Independence

Item 13 is hereby incorporated by reference from Ligand's Definitive Proxy Statement to be filed with the Securities and Exchange Commission on or prior to April 30, 2013.

Item 14. Principal Accountant Fees and Services

Item 14 is hereby incorporated by reference from Ligand's Definitive Proxy Statement to be filed with the Securities and Exchange Commission on or prior to April 30, 2013.

PART IV

Item 15. Exhibits and Financial Statement Schedule

(a) The following documents are included as part of this Annual Report on Form 10-K.

(1) Financial statements

(2) Schedules not included herein have been omitted because they are not applicable or the required information is in the consolidated financial statements or notes thereto.

(3) The following exhibits are filed as part of this Form 10-K and this list includes the Exhibit Index.

Exhibit Number	Description
2.1(36)	Agreement and Plan of Merger, dated as of September 24, 2008, by and among Ligand Pharmaceuticals Incorporated, Pharmacopeia, Inc., Margaux Acquisition Corp. and Latour Acquisition, LLC. (Exhibit 2.1).
2.2(52)	Agreement and Plan of Merger, by and among the Company, Neurogen Corporation and Neon Signal, LLC, dated as of August 23, 2009 (Filed as Exhibit 10.1).
2.3(56)	Amendment to Agreement and Plan of Merger, by and among the Company, Neurogen Corporation, and Neon Signal, LLC, dated September 18, 2009 (Filed as Exhibit 10.1).
2.4(56)	Amendment No. 2 to Agreement and Plan of Merger, by and among the Company, Neurogen Corporation, and Neon Signal, LLC, dated November 2, 2009 (Filed as Exhibit 10.2).
2.5(54)	Amendment No. 3 to Agreement and Plan of Merger, by and among the Company, Neurogen Corporation, and Neon Signal, LLC, dated November 2, 2009 (Filed as Exhibit 10.2).
2.6(53)	Certificate of Merger for acquisition of Neurogen Corporation (Filed as Exhibit 2.1).
2.7(57)	Agreement and Plan of Merger, dated as of October 26, 2009, by and among the Company, Metabasis Therapeutics, Inc., and Moonstone Acquisition, Inc. (Filed as Exhibit 10.1).
2.8(55)	Amendment to Agreement and Plan of Merger, by and among the Company, Metabasis Therapeutics, Inc., Moonstone Acquisition, Inc., and David F. Hale as Stockholders' Representative, dated November 25, 2009
2.9(63)	Certificate of Merger for acquisition of Metabasis Therapeutics, Inc. dated January 27, 2010 (Filed as Exhibit 2.1).
2.10(68)	Certificate of Merger, dated and filed January 24, 2011 (Filed as Exhibit 2.1).
2.11(68)	Agreement and Plan of Merger, by and among the Company, CyDex Pharmaceuticals, Inc., and Caymus Acquisition, Inc., dated January 14, 2011 (Filed as Exhibit 10.1).
3.1(1)	Amended and Restated Certificate of Incorporation of the Company. (Filed as Exhibit 3.2).
3.2(1)	Bylaws of the Company, as amended. (Filed as Exhibit 3.3).
3.3(2)	Amended Certificate of Designation of Rights, Preferences and Privileges of Series A Participating Preferred Stock of the Company.
3.4(12)	Certificate of Amendment of the Amended and Restated Certificate of Incorporation of the Company dated June 14, 2000.

Exhibit Number	Description
3.5(3)	Certificate of Amendment of the Amended and Restated Certificate of Incorporation of the Company dated September 30, 2004.
3.6(20)	Amendment to the Bylaws of the Company dated November 13, 2005. (Filed as Exhibit 3.1).
3.7(34)	Amendment of Bylaws of the Company dated December 4, 2007. (Filed as Exhibit 3.1).
3.8(67)	Certificate of Amendment of the Amended and Restated Certificate of Incorporation of the Company dated November 17, 2010 (Filed as Exhibit 3.1).
4.1(4)	Specimen stock certificate for shares of Common Stock of the Company.
4.2(27)	2006 Preferred Shares Rights Agreement, by and between Ligand Pharmaceuticals Incorporated and Mellon Investor Services LLC, dated as of October 13, 2006. (Filed as Exhibit 4.1)
10.1(4)	Agreement, dated May 1, 1991, between the Company and Pfizer Inc (with certain confidential portions omitted).
10.2(4)	License Agreement, dated January 5, 1990, between the Company and the University of North Carolina at Chapel Hill (with certain confidential portions omitted).
10.3(4)	Form of Indemnification Agreement between the Company and each of its directors.
10.4(4)	Form of Indemnification Agreement between the Company and each of its officers.
10.5(4)	Stock Purchase Agreement, dated September 9, 1992, between the Company and Glaxo, Inc.
10.6(4)	Research and Development Agreement, dated September 9, 1992, between the Company and Glaxo, Inc. (with certain confidential portions omitted).
10.7(8)	Supplementary Agreement, dated October 1, 1993, between the Company and Pfizer, Inc. to Agreement, dated May 1, 1991.
10.8(9)	Option Agreement, dated September 2, 1994, between the Company and American Home Products Corporation, as represented by its Wyeth-Ayerst Research Division (with certain confidential portions omitted). (Filed as Exhibit 10.80).
10.9(5)	Research, Development and License Agreement, dated December 29, 1994, between SmithKline Beecham Corporation and the Company (with certain confidential portions omitted).
10.10(10)	Lease, dated July 6, 1994, between the Company and Chevron/Nexus partnership, First Amendment to lease dated July 6, 1994.
10.11(11)	Settlement Agreement and Mutual Release of all Claims, signed April 20, 1996, between the Company and Pfizer, Inc. (with certain confidential portions omitted).
10.12(6)	Letter of Agreement dated September 28, 1998 among the Company, Elan Corporation, plc and Elan International Services, Ltd. (with certain confidential portions omitted), (Filed as Exhibit 10.5).
10.13(7)	Stock Purchase Agreement by and between the Company and Warner-Lambert Company dated September 1, 1999 (with certain confidential portions omitted). (Filed as Exhibit 10.2).
10.14(7)	License Agreement effective June 30, 1999 by and between the Company and X-Ceptor Therapeutics, Inc. (with certain confidential portions omitted). (Filed as Exhibit 10.7).
10.15(13)	Purchase Agreement, dated March 6, 2002, between the Company and Pharmaceutical Royalties International (Cayman) Ltd.
10.16(14)	Amendment Number 1 to Purchase Agreement, dated July 29, 2002, between the Company and Pharmaceutical Royalties International (Cayman) Ltd.
10.17(15)	Amended and Restated License and Supply Agreement, dated December 6, 2002, between the Company, Elan Corporation, plc and Elan Management Limited (with certain confidential portions omitted).
10.18(15)	Amendment Number 1 to Amended and Restated Registration Rights Agreement, dated November 12, 2002, between the Company and Elan Corporation plc and Elan International Services, Ltd.
10.19(15)	Second Amendment to Purchase Agreement, dated December 19, 2002, between the Company and Pharmaceuticals Royalties International (Cayman) Ltd.

Exhibit Number	Description
10.20(15)	Amendment Number 3 to Purchase Agreement, dated December 30, 2002, between the Company and Pharmaceuticals Royalties International (Cayman) Ltd. (with certain confidential portions omitted).
10.21(15)	Purchase Agreement, dated December 30, 2002, between the Company and Pharmaceuticals Royalties International (Cayman) Ltd. (with certain confidential portions omitted).
10.22(16)	Co-Promotion Agreement, dated January 1, 2003, by and between the Company and Organon Pharmaceuticals USA Inc. (with certain confidential portions omitted).
10.23(17)	Amendment No. 2 to Amended and Restated Registration Rights Agreement, dated June 25, 2003.
10.24(18)	Option Agreement Between Investors Trust & Custodial Services (Ireland) Ltd., as Trustee for Royalty Pharma, Royalty Pharma Finance Trust and the Company, dated October 1, 2003 (with certain confidential portions omitted).
10.25(18)	Amendment to Purchase Agreement Between Royalty Pharma Finance Trust and the Company, dated October 1, 2003 (with certain confidential portions omitted).
10.26(22)	2002 Stock Incentive Plan (as amended and restated through March 9, 2006).
10.27(18)	2002 Employee Stock Purchase Plan, dated July 1, 2002 (as amended through June 30, 2003).
10.28(18)	Form of Stock Option Agreement.
10.29(18)	Form of Employee Stock Purchase Plan Stock Purchase Agreement.
10.30(18)	Form of Automatic Stock Option Agreement.
10.31(18)	Form of Director Fee Stock Option Agreement.
10.32(19)	Manufacturing and Packaging Agreement, dated February 13, 2004 between Cardinal Health PTS, LLC and the Company (with certain confidential portions omitted).
10.33(21)	Form of Distribution, Storage, Data and Inventory Management Services Agreement.
10.34(21)	Amendment Number 1 to the Option Agreement between Investors Trust & Custodial Services (Ireland) Ltd., solely in its capacity as Trustee for Royalty Pharma, Royalty Pharma Finance Trust and Ligand Pharmaceuticals Incorporated dated November 5, 2004.
10.35(21)	Amendment to Purchase Agreement between Royalty Pharma Finance Trust, Ligand Pharmaceuticals Incorporated & Investors Trust and Custodial Services (Ireland) Ltd., solely in its capacity as Trustee of Royalty Pharma dated November 5, 2004.
10.36(22)	Amended and Restated Research, Development and License Agreement dated as of December 1, 2005 between the Company and Wyeth (formerly American Home Products Corporation) (with certain confidential portions omitted).
10.37(22)	Form of Stock Issuance Agreement for non-employee directors.
10.38(22)	Form of Amended and Restated Director Fee Stock Option Agreement for 2005 award to Henry Blissenbach, John Groom, Irving Johnson, John Kozarich, Daniel Loeb, Carl Peck, Jeffrey Perry, Brigette Roberts and Michael Rocca.
10.39(23)	Termination and Return of Rights Agreement between Ligand Pharmaceuticals Incorporated and Organon USA Inc. dated as of January 1, 2006
10.40(24)	First Amendment to the Manufacturing and Packaging Agreement between Cardinal Health PTS, LLC and Ligand Pharmaceuticals Incorporated (with certain confidential portions omitted).
10.41(25)	Purchase Agreement, by and between Ligand Pharmaceuticals Incorporated, King Pharmaceuticals, Inc. and King Pharmaceuticals Research and Development, Inc., dated as of September 6, 2006.
10.42(26)	Contract Sales Force Agreement, by and between Ligand Pharmaceuticals Incorporated and King Pharmaceuticals, Inc. dated as of September 6, 2006.
10.43(25)	Purchase Agreement, by and among Ligand Pharmaceuticals Incorporated, Seragen, Inc., Eisai Inc. and Eisai Co., Ltd., dated as of September 7, 2006.

Exhibit Number	Description
10.44(31)	Stipulation of Settlement by and among Plaintiffs and Ligand Pharmaceuticals, Inc. et al., In re Ligand Pharmaceuticals Inc. Securities Litigation, United States District Court, District of Southern California, dated as of June 28, 2006, approved by Order dated October 16, 2006.
10.45(31)	Stipulation of Settlement by and among Plaintiffs and Ligand Pharmaceuticals, Inc. et al., In re Ligand Pharmaceuticals Inc. Derivative Litigation, Superior Court of California, County of San Diego, dated as of September 19, 2006, approved by Order dated October 12, 2006.
10.46(31)	Loan Agreement by and between Ligand Pharmaceuticals Incorporated and King Pharmaceuticals, 303 Inc. dated as of October 12, 2006.
10.47(29)	Letter Agreement by and between Ligand and King Pharmaceuticals, Inc. effective as of December 29, 2006.
10.48(29)	Amendment Number 1 to Purchase Agreement, Contract Sales Force Agreement and Confidentiality Agreement by and between Ligand and King Pharmaceuticals, Inc. effective as of November 30, 2006.
10.49(28)	Purchase Agreement and Escrow Instructions by and between Nexus Equity VI, LLC, a California Limited Liability Company, and Ligand Pharmaceuticals Incorporated, a Delaware Corporation and Slough Estates USA Inc., a Delaware corporation dated October 25, 2006.
10.50(31)	2006 Employee Severance Plan dated as of October 4, 2006.
10.51(31)	Form of Letter Agreement regarding Change of Control Severance Benefits between the Company and its officers.
10.52(29)	Letter Agreement by and between the Company and John L. Higgins dated as of January 10, 2007.
10.53(30)	Amendment Number 2 to Purchase Agreement, by and between the Company and King Pharmaceuticals, Inc. effective as of February 26, 2007.
10.54(32)	Letter Agreement by and between the Company and John P. Sharp dated as of March 30, 2007. (Filed as Exhibit 10.1).
10.55(33)	Form of Executive Officer Change in Control Severance Agreement. (Filed as Exhibit 10.1).
10.56(35)	Sublease Agreement between the Company and eBIOSCIENCE, INC., effective as of December 13, 2007. (Filed as Exhibit 10.1).
10.57(37)	Form of Restricted Stock Unit Grant Notice and Restricted Stock Unit Agreement under the Company's 2002 Stock Incentive Plan. (Filed as Exhibit 10.318).
10.58(37)	Form of Amendment to Restricted Stock Agreement for executive officers other than Chief Executive Officer. (Filed as Exhibit 10.319).
10.59(37)	Amendment to Restricted Stock Agreement between the Company and John L. Higgins. (Filed as Exhibit 10.320).
10.60(47)	Collaboration and License Agreement, dated as of July 9, 2003 and effective August 8, 2003, between Pharmacopeia, Inc. and Schering-Plough Ltd. (with certain confidential portions omitted).
10.61(47)	Collaboration and License Agreement, dated as of July 9, 2003 and effective August 8, 2003, between Pharmacopeia, Inc. and Schering Corporation (with certain confidential portions omitted).
10.62(39)	Amendment No. 1, dated July 27, 2006, to the Collaboration and License Agreements, effective as of July 9, 2003, between (i) Pharmacopeia, Inc. and Schering Corporation and (ii) Pharmacopeia, Inc. and Schering-Plough Ltd. (Filed as Exhibit 10.1).
10.63(47)	Lease, dated August 20, 2003, between Pharmacopeia, Inc. and Eastpark at 8A (Building 1000).
10.64(40)	Amendment to Lease, dated September 10, 2007, between Eastpark at 8A and Pharmacopeia, Inc. (Building 1000). (Filed as Exhibit 10.1).
10.65(47)	Lease, dated August 20, 2003, between Pharmacopeia, Inc. and Eastpark at 8A (Building 3000).
10.66(40)	Amendment to Lease, dated April 18, 2007, between Eastpark at 8A and Pharmacopeia, Inc. (Building 3000). (Filed as Exhibit 10.2).
10.67(41)	License Agreement, dated as of March 27, 2006, between Pharmacopeia, Inc. and Bristol-Myers Squibb Company (Filed as Exhibit 10.2).

Exhibit Number	Description
10.68(42)	Collaboration and License Agreement between Pharmacopeia, Inc. and Cephalon, Inc., dated May 18, 2006. (Filed as Exhibit 10.1).
10.69(43)	License Agreement, amended and restated as of July 1, 2003, among The Trustees of Columbia University in the City of New York, Cold Spring Harbor Laboratory and Pharmacopeia, Inc. (Filed as Exhibit 10.2).
10.70(44)	Collaboration and License Agreement, amended and restated effective as of February 8, 2007, between Pharmacopeia, Inc. and N.V. Organon. (Filed as Exhibit 10.1).
10.71(45)	License Agreement, dated October 11, 2007, between Bristol-Myers Squibb Company and Pharmacopeia, Inc. (Filed as Exhibit 10.45).
10.72(38)	Contingent Value Rights Agreement, dated December 23, 2008, among the Company, Pharmacopeia, Inc. and Mellon Investor Services LLC. (Filed as Exhibit 10.1).
10.73(37)	Amended and Restated Severance Plan, dated December 20, 2008, of the Company. (Filed as Exhibit 10.2).
10.74(46)	Settlement Agreement and Mutual Release of all Claims, by and between the Company and The Salk Institute for Biological Studies, dated as of September 2, 2008 (Filed as Exhibit 10.316).
10.75(47)	License Agreement, dated of December 17, 2008, between the Company and SmithKline Beecham Corporation, doing business as GlaxoSmithKline (with certain confidential portions omitted) (Filed as Exhibit 10.346).
10.76(48)	Settlement Agreement and Mutual Release, by and between the Company and The Rockefeller University, dated as of February 11, 2009 (Filed as Exhibit 10.318).
10.77(49)	Exclusive Patent License Agreement, by and between Glycomed, Inc., a wholly owned subsidiary of the Company and ParinGenix Inc, dated as of June 18, 2009 (Filed as Exhibit 10.321).
10.78(49)	Amended and Restated Director Compensation and Stock Ownership Policy, effective as of April 16, 2009 (Filed as Exhibit 10.322).
10.79(50)	Research Collaboration Termination Agreement, between the Company and N.V. Organon, dated as of July 29, 2009 (Filed as Exhibit 10.323).
10.80(51)	Lease, between the Company and HCP TPSP, LLC, dated August 7, 2009 (Filed as Exhibit 10.321).
10.81(51)	Lease Termination Agreement, between the Company and TPSC IX, LLC, dated August 7, 2009 (Filed as Exhibit 10.322).
10.82(53)	H3 Contingent Value Rights Agreement (Filed as Exhibit 10.3).
10.83(53)	Merck Contingent Value Rights Agreement (Filed as Exhibit 10.4).
10.84(58)	Collaborative Research Agreement and License and Royalty Agreement between Neurogen Corporation and Pfizer Inc, dated as of January 1, 1992 (Filed as Exhibit 10.35) (File No. 000-18311).
10.85(59)	Collaborative Research Agreement and License and Royalty Agreement between Neurogen Corporation and Pfizer Inc, dated as of July 1, 1994 (Filed as Exhibit 10.1) (File No. 000-18311).
10.86(60)	Collaboration and License Agreement and Screening Agreement between Neurogen Corporation and Schering-Plough Corporation (Filed as Exhibit 10.1) (File No. 000-18311).
10.87(61)	Collaborative Research Agreement between Neurogen Corporation and Pfizer dated as of November 1, 1995 (Filed as Exhibit 10.1) (File No. 000-18311).
10.88(61)	Development and Commercialization Agreement between Neurogen Corporation and Pfizer dated as of November 1, 1995 (Filed as Exhibit 10.2) (File No. 000-18311).
10.89(62)	Collaboration and License Agreement dated as of November 24, 2003 between Neurogen Corporation and Merck Sharp & Dohme Limited (Filed as Exhibit 10.43) (File No. 000-18311).
10.90(62)	Stock Purchase Agreement dated as of November 24, 2003 between Neurogen Corporation and Merck Sharp & Dohme Limited (Filed as Exhibit 10.43) (File No. 000-18311).
10.91(63)	TR Beta Contingent Value Rights Agreement, dated January 27, 2010, among the Company, Metabasis Therapeutics, Inc., David F. Hale and Mellon Investor Services LLC. (Filed as Exhibit 10.2).

Exhibit Number	Description
10.92(63)	Glucagon Contingent Value Rights Agreement, dated January 27, 2010, among the Company, Metabasis Therapeutics, Inc., David F. Hale and Mellon Investor Services LLC. (Filed as Exhibit 10.3).
10.93(63)	General Contingent Value Rights Agreement, dated January 27, 2010, among the Company, Metabasis Therapeutics, Inc., David F. Hale and Mellon Investor Services LLC. (Filed as Exhibit 10.4).
10.94(69)	Amendment of "General" Contingent Value Rights Agreement, dated January 26, 2011 [original agreement was dated January 27, 2010] (filed as Exhibit 10.1).
10.95(64)	Purchase and Sale Agreement, dated May 18, 2010, between the Company and The Genaera Liquidating Trust (Filed as Exhibit 10.1).
10.96(65)	Purchase Agreement, dated May 20, 2010, between the Company and Biotechnology Value Fund, L.P., on its own behalf and on behalf of Biotechnology Valude Fund II, L.P. and Investment 10, L.L.C. (Filed as Exhibit 10.1).
10.97(66)	Asset Purchase Agreement, dated as of July 30, 2010, between Wyeth LLC, Pharmacopeia, Inc. and the Company (Filed as Exhibit 10.1).
10.98(68)	Contingent Value Rights Agreement, by and among the Company, CyDex Pharmaceuticals, Inc., and Allen K. Roberson and David Poltack, acting jointly as Shareholders' Representative, dated January 14, 2011 (Filed as Exhibit 10.2).
10.99(68)	Loan and Security Agreement, by and among the Company, its subsidiaries and Oxford Finance Corporation, dated January 24, 2011 (Filed as Exhibit 10.3).
10.100(71)	Supply Agreement, dated December 20, 2002, between CyDex and Hovione LLC, Hovione FarmaCiencia S.A., Hovione Pharmascience Limited, and Hovione International Limited (with certain confidential portions omitted)
10.101(71)	First Amendment to the Supply Agreement, dated July 29, 2005, between CyDex and Hovione LLC, Hovione FarmaCiencia S.A., Hovione Pharmascience Limited, and Hovione International Limited (with certain confidential portions omitted)
10.102(71)	2nd Amendment to the Supply Agreement of December 20, 2002 and amended July 29, 2005, dated March 1, 2007, between CyDex and Hovione LLC, Hovione FarmaCiencia S.A., Hovione Pharmascience Limited, and Hovione International Limited
10.103(71)	3rd Amendment to the Supply Agreement of December 20, 2002 and amended July 29, 2005 and March 1, 2007, dated January 25, 2008, between CyDex and Hovione LLC, Hovione FarmaCiencia S.A., Hovione Pharmascience Limited, and Hovione International Limited (with certain confidential portions omitted)
10.104(71)	4th Amendment to the Supply Agreement of December 20, 2002 and amended July 29, 2005, March 1, 2007, and January 25, 2008, amended September 28, 2009 between CyDex and Hovione LLC, Hovione FarmaCiencia S.A., Hovione Pharmascience Limited, and Hovione International Limited (with certain confidential portions omitted)
10.105(71)	License Agreement, dated September 3, 1993, between CyDex and The University of Kansas (with certain confidential portions omitted)
10.106(71)	Second Amendment to the License Agreement of September 3, 1993, dated August 4, 2004, between CyDex and The University of Kansas (with certain confidential portions omitted)
10.107(71)	Exclusive License Agreement, dated June 4, 1996, between Pfizer, Inc. and CyDex (with certain confidential portions omitted)
10.108(71)	Nonexclusive License Agreement, dated June 4, 1996, between Pfizer, Inc. and CyDex (with certain confidential portions omitted)
10.109(71)	Addendum to Nonexclusive License Agreement of June 4, 1996, dated December 11, 2001, between CyDex and Pfizer, Inc. (with certain confidential portions omitted)
10.110(71)	Acknowledgement agreement, dated March 3, 2008, between CyDex and The University of Kansas (with certain confidential portions omitted)
10.111(71)	License Agreement, dated January 4, 2006, between CyDex and Prism Pharmaceuticals (with certain confidential portions omitted)

Exhibit Number	Description
10.112(71)	Amendment to License Agreement, dated May 12, 2006 between CyDex and Prism Pharmaceuticals (with certain confidential portions omitted)
10.113(71)	Supply Agreement, dated March 5, 2007, between CyDex and Prism Pharmaceuticals (with certain confidential portions omitted)
10.114(71)	License and Supply Agreement, dated October 12, 2005 between CyDex and Proteolix, Inc. (with certain confidential portions omitted)(Filed as Exhibit 10.22)(File No. 000-28298)
10.115(72)	Amendment to General Contingent Value Rights Agreement of January 27, 2010, dated January 27, 2011 among the Company, Metabasis Therapeutics, Inc., David F. Hale and Mellon Investor Services LLC. (Filed as Exhibit 10.1)
10.116(73)	License Agreement, dated March 24, 2011 by and between the Company and Chiva Pharmaceuticals, Inc. (Filed as Exhibit 10.23)
10.117(74)	Loan and Security Agreement, by and between Ligand Pharmaceuticals Incorporated and Square 1 Bank, dated March 31, 2011 (Filed as Exhibit 10.23)
10.118(75)	First Amendment to Loan and Security Agreement, by and between Ligand Pharmaceuticals Incorporated and Square 1 Bank, dated April 29, 2011 (Filed as Exhibit 10.1)
10.119(75)	First Amendment to Loan and Security Agreement, by and between Ligand Pharmaceuticals Incorporated and Oxford Finance LLC, dated April 29, 2011 (Filed as Exhibit 10.2)
10.120(76)	License Agreement, by and between CyDex and the Medicines Company, dated June 1, 2011 (with certain confidential portions omitted) (Filed as Exhibit 10.25)
10.121(76)	Supply Agreement, by and between CyDex and the Medicines Company, dated June 1, 2011 (with certain confidential portions omitted) (Filed as Exhibit 10.26)
10.122(76)	Supply Agreement dated June 13, 2011 by and between CyDex and Merck (with certain confidential portions omitted) (Filed as Exhibit 10.27)
10.123(77)	First Amendment to License Agreement between the Company and Chiva Pharmaceuticals, Inc. dated as of August 31, 2011 (Filed as Exhibit 10.1)
10.124(78)	Lease Agreement, dated September 5, 2011 between the Company and ARE-SD Region No. 24, LLC. (Filed as Exhibit 10.1)
10.125(78)	License Agreement, dated September 5, 2011 between the Company and ARE-3535/3565 General Atomics Court, LLC (Filed as Exhibit 10.2)
10.126(77)	Amendment to Lease Agreement dated November 1, 2011 between the Company and HCP TPSP, LLC (Filed as Exhibit 10.4)
10.127(79)	Letter Agreement, dated September 29, 2011, between the Company and Biotechnology Value Fund, L.P. (Filed as Exhibit 10.1)
10.128(77)	License Agreement, dated October 7, 2011, between the Company and Chiva Pharmaceuticals, Inc. (with certain confidential portions omitted) (Filed as Exhibit 10.6)
10.129(77)	License Agreement, dated October 13, 2011, between CyDex and SAGE Therapeutics, Inc. (with certain confidential portions omitted) (Filed as Exhibit 10.7)
10.130 (80)	Joinder and Second Amendment, dated October 28, 2011, by and among the Company, its subsidiaries and Oxford Finance LLC
10.131† (80)	License Agreement, dated December 16, 2011, between CyDex and Eli Lilly and Company (with certain confidential portions omitted)
10.132† (80)	Supply Agreement, dated December 16, 2011, between CyDex and Eli Lilly and Company (with certain confidential portions omitted)
10.133†(80)	License and Supply Agreement, dated December 22, 2011 between CyDex and Hospira, Inc. (with certain confidential portions omitted)
10.134(80)	Fourth Amendment to Loan and Security Agreement, by and among the Company, its subsidiaries and Oxford Finance LLC

Exhibit Number	Description
10.135†	Amended and Restated License Agreement, dated October 31, 2012, between the Company and Chiva Pharmaceuticals, Inc. (with certain confidential portions omitted)
10.136†	Settlement Agreement and Mutual Release, dated October 31, 2012, between the Company and Chiva Pharmaceuticals, Inc. (with certain confidential portions omitted)
14.1(18)	Code of Business Conduct and Ethics.
21.1 (80)	Subsidiaries of Registrant.
23.1	Consent of independent registered public accounting firm-Grant Thornton LLP
24.1	Power of Attorney (See page 86).
31.1	Certification by Principal Executive Officer, Pursuant to Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification by Principal Financial Officer, Pursuant to Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1*	Certification by Principal Executive Officer, Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2*	Certification by Principal Financial Officer, Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.1**	The following financial information from the Company's Quarterly Report on Form 10-K for the period ended December 2012, formatted in XBRL (eXtensible Business Reporting Language): (i) Condensed Consolidated Balance Sheets, (ii) Condensed Consolidated Statements of Operations, (iii) Condensed Consolidated Statements of Cash Flows, and (iv) the Notes to Condensed Consolidated Financial Statements, tagged as detailed footnotes

† Confidential treatment has been requested for portions of this exhibit. These portions have been omitted and submitted separately to the Securities and Exchange Commission.

* These certifications are being furnished solely to accompany this annual report pursuant to 18 U.S.C. Section 1350, and are not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and are not to be incorporated by reference into any filing of Ligand Pharmaceuticals, Incorporated, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

** Pursuant to Rule 406T of Regulation S-T, these interactive data files are deemed not filed or part of a registration statement or prospectus for purposes of Section 11 or 12 of the Securities Act of 1933, as amended, are deemed not filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and otherwise are not subject to liability under these sections.

(1) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Registration Statement on Form S-4 (No. 333-58823) filed on July 9, 1998.

(2) This exhibit was previously filed as part of and is hereby incorporated by reference to same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended March 31, 1999.

(3) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended September 30, 2004.

(4) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Registration Statement on Form S-1 (No. 33-47257) filed on April 16, 1992 as amended.

(5) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Registration Statement on Form S-1/S-3 (No. 33-87598 and 33-87600) filed on December 20, 1994, as amended.

(6) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended September 30, 1998.

(7) This exhibit was previously filed as part of and is hereby incorporated by reference to the numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended September 30, 1999.

(8) This exhibit was previously filed as part of, and are hereby incorporated by reference to the same numbered exhibit filed with the Company's Annual Report on Form 10-K for the year ended December 31, 1993.

(9) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended September 30, 1994.

(10) This exhibit was previously filed, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Annual Report on Form 10-K for the year ended December 31, 1995.

(11) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly report on Form 10-Q for the period ended June 30, 1996.

(12) This exhibit was previously filed as part of, and are hereby incorporated by reference to the same numbered exhibit filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2000.

(13) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended March 31, 2002.

(14) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended June 30, 2002.

(15) This exhibit was previously filed as part of, and are hereby incorporated by reference to the same numbered exhibit filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2002.

(16) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended March 31, 2003.

(17) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended September 30, 2003.

(18) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2003.

(19) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended March 31, 2004.

(20) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on November 14, 2005.

(21) This exhibit was previously filed as part of, and are hereby incorporated by reference to the same numbered exhibit filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2004.

(22) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Registration Statement on Form S-1 (no. 333-131029) filed on January 13, 2006 as amended.

(23) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with an Amendment to the Company's Registration Statement on Form S-1 (No. 333-1031029) filed on February 10, 2006.

(24) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended June 30, 2006.

(25) This exhibit was previously filed as part of, and is being incorporated by reference to the numbered exhibit filed with the Company's Current Report Form 8-K filed on September 11, 2006.

(26) This exhibit was previously filed as part of, and is being incorporated by reference to the numbered exhibit filed with the Company's Current Report Form 8-K filed on September 12, 2006.

(27) This exhibit was previously filed as part of, and is being incorporated by reference to the numbered exhibit filed with the Company's Current Report Form 8-K filed on October 17, 2006.

(28) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on October 31, 2006.

(29) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on January 5, 2007.

(30) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on February 28, 2007.

(31) This exhibit was previously filed as part of, and are hereby incorporated by reference to the same numbered exhibit filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2006.

(32) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on May 4, 2007.

(33) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on August 22, 2007.

(34) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on December 6, 2007.

(35) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on December 19, 2007.

(36) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on September 26, 2008.

(37) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Annual Report on Form 10-K for the period ended December 31, 2007.

(38) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Pharmacopeia, Inc.'s Current Report on Form 8-K filed on May 3, 2004.

(39) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Pharmacopeia, Inc.'s Current Report on Form 8-K filed on August 2, 2006.

(40) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Pharmacopeia, Inc.'s Quarterly Report on Form 10-Q for the period ended September 30, 2007.

(41) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Pharmacopeia, Inc.'s Quarterly Report on Form 10-Q for the period ended March 31, 2006.

(42) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Pharmacopeia, Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2006.

(43) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Pharmacopeia, Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2005.

(44) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Pharmacopeia, Inc.'s Quarterly Report on Form 10-Q for the period ended March 31, 2007.

(45) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Pharmacopeia, Inc.'s Annual Report on Form 10-K for the year ended December 31, 2007.

(46) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Pharmacopeia, Inc.'s Quarterly Report on Form 10-Q for the period ended September 30, 2008.

(47) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Annual Report on Form 10-K for the period ended December 31, 2008.

(48) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended March 31, 2009.

(49) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended June 30, 2009.

(50) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended September 30, 2009.

(51) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on August 11, 2009.

(52) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on August 24, 2009.

(53) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on December 24, 2009.

(54) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on December 17, 2009.

(55) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on December 1, 2009.

(56) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on November 6, 2009.

(57) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on October 28, 2009.

(58) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with Neurogen Corporation's Annual Report on Form 10-K for the period ended December 31, 1991.

(59) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with Neurogen Corporation's Quarterly Report on Form 10-Q for the period ended June 30, 1994.

(60) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with Neurogen Corporation's Current Report on Form 8-K filed on July 28, 1995.

(61) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with Neurogen Corporation's Current Report on Form 8-K filed on November 1, 1995.

(62) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with Neurogen Corporation's Annual Report on Form 10-K for the period ended December 31, 2003.

(63) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on January 28, 2010.

(64) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on May 24, 2010.

(65) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended June 30, 2010.

(66) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended September 30, 2010.

(67) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on November 19, 2010.

(68) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on January 26, 2011.

(69) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on January 31, 2011.

(70) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with Onyx Pharmaceuticals, Inc.'s Annual Report on Form 10-K for the period ended December 31, 2009.

(71) This exhibit was previously filed as part of, and are hereby incorporated by reference to the same numbered exhibit filed with the Company's Annual Report on Form 10-K for the year ended December 31, 2011.

(72) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on January 31, 2011.

(73) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended March 31 30, 2011.

(74) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on April 4, 2011.

(75) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on April 29, 2011.

(76) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended June 30, 2011.

(77) This exhibit was previously filed as part of, and is hereby incorporated by reference to the same numbered exhibit filed with the Company's Quarterly Report on Form 10-Q for the period ended September 30, 2011.

(78) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on September 9, 2011.

(79) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on September 30, 2011.

(80) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Company's Current Report on Form 8-K filed on February 23, 2012

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.

LIGAND PHARMACEUTICALS INCORPORATED

By: /S/ JOHN L. HIGGINS

John L. Higgins,

President and Chief Executive Officer

Date: March 14, 2013

POWER OF ATTORNEY

Know all men by these presents, that each person whose signature appears below constitutes and appoints John L. Higgins or John P. Sharp, his or her attorney-in-fact, with power of substitution in any and all capacities, to sign any 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 the attorney-in-fact or his or her substitute or substitutes may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, as amended, 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 L. HIGGINS **John L. Higgins**	President, Chief Executive Officer and Director (Principal Executive Officer)	March 14, 2013
/s/ JOHN P. SHARP **John P. Sharp**	Vice President, Finance and Chief Financial Officer (Principal Financial and Accounting Officer)	March 14, 2013
/s/ JASON M. ARYEH **Jason M. Aryeh**	Director	March 14, 2013
/s/ TODD C. DAVIS **Todd C. Davis**	Director	March 14, 2013
/s/ DAVID M. KNOTT **David M. Knott**	Director	March 14, 2013
/s/ JOHN W. KOZARICH **John W. Kozarich**	Director	March 14, 2013
/s/ JOHN L. LAMATTINA **John L. LaMattina**	Director	March 14, 2013
/s/ SUNIL PATEL **Sunil Patel**	Director	March 14, 2013
/s/ STEPHEN L. SABBA **Stephen L. Sabba**	Director	March 14, 2013

AMENDED AND RESTATED LICENSE AGREEMENT

This AMENDED AND RESTATED LICENSE AGREEMENT (the "**Agreement**") is executed as of October 31, 2012 (the **"Amendment Execution Date"**), with an effective date of January 6, 2011 (the " **Effective Date**") by and between **Ligand Pharmaceuticals Incorporated**, a corporation organized under the laws of Delaware and having a place of business at 11119 North Torrey Pines Road, Suite 200, La Jolla, CA 92037 (" **Ligand**") and **Chiva Pharmaceuticals, Inc.** (formerly known as Elite Mind Investments Limited), a corporation organized under the laws of the Cayman Islands whose registered office is situated at Scotia Centre, 4th Floor, P.O. Box 2804, George Town, Grand Cayman KY1-1112, Cayman Islands (" **Chiva**"). Ligand and Chiva are each referred to herein by name or, individually, as a "**Party**" or, collectively, as " **Parties**."

BACKGROUND

WHEREAS, Ligand and Chiva previously entered into that certain License Agreement effective as of January 6, 2011, as amended pursuant to that certain First Amendment to License Agreement dated August 31, 2011, as further amended pursuant to that certain Second Amendment to License Agreement dated December 23, 2011 (collectively, the "**Prior Agreement**");

WHEREAS, Ligand and Chiva desire to further amend certain terms of the Prior Agreement and amend and restate the Prior Agreement, as set forth herein;

WHEREAS, Ligand owns or has rights under certain patent rights and know-how which relate to Pradefovir, MB07133 and HepDirect Technology (each as defined below);

WHEREAS, Chiva desires to obtain certain exclusive and non-exclusive licenses under such patent rights and know-how for the development and commercialization of Pradefovir and MB07133 in the Field in China, and other novel compounds in the Field in the Territory as set forth herein; and

WHEREAS, Ligand desires to grant such licenses to Chiva, all in accordance with the terms and conditions herein.

NOW, THEREFORE, in consideration of the mutual covenants and agreements provided herein below and other consideration, the receipt and sufficiency of which is hereby acknowledged, Ligand and Chiva hereby agree as follows:

ARTICLE 1

DEFINITIONS

As used in this Agreement, capitalized terms shall have the meanings indicated in this Article 1 or as specified elsewhere in this Agreement:

1.1 "Affiliate" means, with respect to a Person, any Person that is controlled by, controls, or is under common control with such first Person, as the case may be. For purposes of this **Section 1.1**, the term "control" means (a) direct or indirect ownership of [***] or more of the voting interest in the entity in question, or [***] or more interest in the income of the entity in question; *provided*, *however*, that if local Law requires a minimum percentage of local ownership of greater than [***], control will be established by direct or indirect beneficial ownership of [***] of the maximum ownership percentage that may, under such local Law, be owned by foreign interests, or (b) possession, directly or indirectly, of the power to direct or cause the direction of management or policies of the entity in question (whether through ownership of securities or other ownership interests, by contract or otherwise).

1.2 "China" means the People's Republic of China as in existence as of the Effective Date (including Hong Kong, Taiwan and Macau).

1.3 "China Business Opportunity" has the meaning set forth in **Section 2.7(a)**.

1.4 "China Negotiation Period" has the meaning set forth in **Section 2.7(a)**.

1.5 "Chiva Indemnitees" has the meaning set forth in **Section 9.2**.

1.6 "Chiva Territory" means [***].

1.7 "Claim Notice" has the meaning set forth in **Section 9.3**.

1.8 "Clinical Trial" means an investigation in human subjects and/or patients intended to discover or verify the clinical, pharmacological and/or other pharmacodynamic effects of a Licensed Product, and/or to identify any adverse reactions to a Licensed Product, and/or to study absorption, distribution, metabolism, and/or excretion of a Licensed Product with the objective of ascertaining its safety, activity and/or efficacy.

1.9 "Confidential Information" means any information of a confidential and proprietary nature, including know-how, information, invention disclosures, patent applications, proprietary materials and/or technologies, economic information, business or research strategies, trade secrets, and material embodiments thereof, disclosed by a Party to the other Party and characterized to the receiving Party as confidential.

1.10 "Control" or "Controlled" means, with respect to any information, material or intellectual property right, that a Party owns or has a license to such information, material or intellectual property right, as applicable, and has the ability to grant to the other Party access to, or a license or sublicense under, such information, material or intellectual property right as provided under the terms of this Agreement.

1.11 "Develop" or "Development" means pre-clinical and clinical research and development activities, including toxicology and other pre-clinical development efforts, stability testing, process development, formulation development, delivery system development, quality assurance and quality control development, statistical analysis, clinical pharmacology, clinical

studies (including Clinical Trials), regulatory affairs, and Regulatory Approval and clinical study regulatory activities.

1.12 "Dispute" has the meaning set forth in **Section 12.11**.

1.13 "Europe" means [***].

1.14 "Executive" shall mean for Ligand, the Chief Executive Officer of Ligand (or such individual's designee), and, for Chiva, the Chief Executive Officer of Chiva (or such individual's designee). If either position is vacant or either position does not exist, then the person having the most nearly equivalent position (or such individual's designee) shall be deemed to be the Executive of the relevant Party.

1.15 "FDA" means the U.S. Food and Drug Administration, or any successor agency thereto.

1.16 "FD&C Act" means the U.S. Federal Food, Drug, and Cosmetic Act (21 U.S.C. §301, et seq.), including any amendments or supplements thereto.

1.17 "Field" means the HCC Field and the HepB Field.

1.18 "First Commercial Sale" means, with respect to each Licensed Product, the first sale of such Licensed Product by Chiva or its Affiliates or sublicensees to a Third Party for which payment has been received in any country in the Territory.

1.19 "Governmental Entity" means any regional, central, federal, state, provincial or local court, commission or governmental, regulatory or administrative body, board, bureau, agency, instrumentality, authority or tribunal or any subdivision thereof.

1.20 "HCC Compound" means any Licensed Compound other than MB07133 developed using or incorporating HepDirect Technology, which is selected by Chiva for Development and/or commercialization by Chiva in the HCC Field pursuant to Section 3.1.

1.21 "HCC Field" means the treatment or prevention of hepatocellular carcinoma in humans.

1.22 "HCC Product" means any product intended for use in the HCC Field that contains a HCC Compound, whether alone or in combination with another active pharmaceutical ingredient, the manufacture, use, sale, offer for sale, import or export of which would, but for the rights granted pursuant to Section 2.3, infringe a Valid Claim.

1.23 "HepB Compound" means any Licensed Compound other than Pradefovir developed using or incorporating HepDirect Technology, which is selected by Chiva for use in the HepB Field pursuant to Section 3.1.

1.24 "HepB Field" means the treatment or prevention of hepatitis B virus infection in humans.

1.25 "HepB Product" means any product intended for use in the HepB Field that contains a HepB Compound, whether alone or in combination with another active pharmaceutical ingredient, the manufacture, use, sale, offer for sale, import, or export of which would, but for the rights granted pursuant to **Section 2.3**, infringe a Valid Claim.

1.26 "HepDirect" means the proprietary prodrug technology that targets delivery of drugs to the liver by using compositions, and methods of making and using the same, of any and all [***].

1.27 "HepDirect Business Opportunity" has the meaning set forth in **Section 2.7(a)**.

1.28 "HepDirect Know-How" means all Know-How Controlled by Ligand or any of its Affiliates as of the Effective Date that is (a) necessary in connection with the use of HepDirect in the Field, each in the Territory and (b) not included in the HepDirect Patents.

1.29 "HepDirect Negotiation Period" has the meaning set forth in **Section 2.7(a)**.

1.30 "HepDirect Patents" means those Patents Controlled by Ligand or any of its Affiliates listed in **Schedule 1.30** attached hereto. For clarity, the HepDirect Patents do not include any of the Pradefovir Patents or the MB07133 Patents.

1.31 "HepDirect Technology" means the HepDirect Know-How and the HepDirect Patents.

1.32 "Improvement" means any discovery, invention, contribution, method, finding, or improvement, whether or not patentable, and all intellectual property therein, that is conceived, reduced to practice, or otherwise developed by or on behalf of a Party, during the Term, that is a modification, improvement or enhancement to the Licensed Patents and is dominated by the claims of one or more of the patent rights described in **Section 1.39**.

1.33 "IND" means an Investigational New Drug application, Clinical Study Application, Clinical Trial Exemption, or similar application or submission for approval to conduct human clinical investigations filed with or submitted to a Regulatory Authority in the Territory in conformance with the requirements of such Regulatory Authority.

1.34 "Intellectual Property Rights" means Patents, copyrights, trade secrets, database rights, proprietary know-how and similar rights of any type (excluding trademarks) under the laws of any Governmental Entity, including all applications, registrations, extensions and renewals relating to any of the foregoing.

1.35 "Know-How" means all technical information and other technical subject matter, proprietary methods, ideas, concepts, formulations, discoveries, inventions, devices, technology, trade secrets, compositions, designs, formulae, know-how, show-how, specifications, drawings, techniques, results, data, processes, methods, procedures and/or designs, whether or not patentable.

1.36 "Law" means, individually and collectively, any and all laws, ordinances, orders, rules, rulings, directives and regulations of any kind whatsoever of any Governmental Entity or Regulatory Authority within the applicable jurisdiction.

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

1.37 "Licensed Compound" means any compound developed by or on behalf of Chiva, its Affiliates or its sublicensees, including any complexes, chelates, clathrates, acids, bases, esters, salts, isomers, stereoisomers, enantiomers, pro drug form, metabolite, hydrate, solvate, polymorph, and crystalline forms thereof, the manufacture, use, sale, offer for sale, import, or export of which would, but for the rights granted pursuant to Section 2.3, infringe a Valid Claim under the Licensed Patents.

1.38 "Licensed Know-How" means the HepDirect Know-How, the MB07133 Know-How and the Pradefovir Know-How.

1.39 "Licensed Patents" means the HepDirect Patents, the MB07133 Patents and the Pradefovir Patents; *provided, however,* an Abandoned Patent (as defined in **Section 6.1(a)**) shall not be a Licensed Patent for purposes of determining the royalty term pursuant to **Section 4.4(d)**.

1.40 "Licensed Product" means each of Pradefovir, MB07133, a HCC Product and a HepB Product.

1.41 "Licensed Technology" means the HepDirect Technology, the MB07133 Technology and the Pradefovir Technology.

1.42 "Ligand Indemnitees" has the meaning set forth in **Section 9.1**.

1.43 "Major European Market" means the European Union as a whole or any one of the following countries: the United Kingdom, France, Germany, Italy, Spain (or, for patent purposes, the European Patent Office).

1.44 "Major Market" means each of the United States, Japan and Major European Market.

1.45 "MB07133" means all forms of [***] developed using or incorporating HepDirect Technology and as identified in **Exhibit B**, including any complexes, chelates, clathrates, acids, bases, esters, salts, isomers, stereoisomers, enantiomers, pro-drug form, metabolite, hydrate, solvate, polymorphy, and crystalline forms thereof.

1.46 "MB07133 Know-How" means all Know-How Controlled by Ligand or any of its Affiliates as of the Effective Date that is (a) necessary in connection with the making, using, selling, offering to sell, exporting and importing MB07133 in the HCC Field in the Territory and (b) not included in the MB07133 Patents.

1.47 "MB07133 Patents" means those Patents Controlled by Ligand or any of its Affiliates listed in **Schedule 1.47** attached hereto. For clarity, the MB01775 Patents do not include any of the Pradefovir Patents or the HepDirect Patents.

1.48 "MB07133 Technology" means the MB07133 Know-How and the MB07133 Patents.

1.49 "NDA" means a "New Drug Application," as defined in the FD&C Act and applicable regulations promulgated thereunder by the FDA and all amendments and supplements thereto filed with the FDA, or the equivalent application filed with any Regulatory Authority, including all

documents, data, and other information concerning a Licensed Product which are necessary for gaining Regulatory Approval to market and sell such Licensed Product in the relevant jurisdiction.

1.50 "Net Sales" means gross amounts invoiced by or on behalf of Chiva and any of its Affiliates or sublicensees for Licensed Product sold to Third Parties who are not Affiliates or sublicensees of Chiva, unless such Affiliate or sublicensee is the end user of Licensed Product, in which case the amount billed therefore shall be deemed to be the amount that would be billed to a Third Party end user in bona fide, arms-length transactions, less the following deductions, as determined in accordance with Chiva's usual and customary accounting methods, which are in accordance with United States GAAP (as generally and consistently applied throughout Chiva's organization) to the extent included in the gross invoiced sales price of Licensed Product or otherwise directly paid or incurred by Chiva, its Affiliates or sublicensees with respect to the sale of Licensed Product: [***]; and [***] to the extent such amounts are [***] listed above and are [***]. Each of the deductions set forth above shall be determined on an accrual basis in accordance with GAAP.

In the event that a product sold by Chiva or any of its Affiliates or sublicensees is comprised in part of a Licensed Product and in part of one or more other active components (a **"**Combination Product**"**), Net Sales shall be determined by [***].

1.51 "Patents" means all: (a) United States and foreign patents, re-examinations, reissues, renewals, extensions and term restorations, inventors' certificates and counterparts thereof; and (b) pending applications for United States and foreign patents, including, without limitation, provisional applications, continuations, continued prosecution, divisional and substitute applications, and counterparts thereof.

1.52 "Person" means any individual, corporation, partnership, association, joint-stock company, trust, unincorporated organization or government or political subdivision thereof.

1.53 "Phase I Clinical Trial" means, as to a Licensed Product, a Clinical Trial which meets the definition of a Phase 1 trial as set forth in 21 C.F.R. 312.21(a), as amended from time to time, or, if conducted for the purpose of seeking Regulatory Approval in a jurisdiction in the Territory other than the U.S., a Clinical Trial that meets the definition of a Phase 1 trial in the corresponding regulation in such jurisdiction. "Initiation" of a Phase I Clinical Trial means the first dosing of a subject in such Phase I Clinical Trial.

1.54 "Phase III Clinical Trial" means, as to a Licensed Product, a Clinical Trial which meets the definition of a Phase 3 trial as set forth in 21 C.F.R. 312.21(c), as amended from time to time, or, if conducted for the purpose of seeking Regulatory Approval in a jurisdiction in the Territory other than the U.S., a Clinical Trial that meets the definition of a Phase 3 trial in the corresponding regulation in such jurisdiction. "Initiation" of a Phase III Clinical Trial means the first dosing of a patient in such Phase III Clinical Trial.

1.55 "Pradefovir" means all forms of the [***] developed using or incorporating HepDirect Technology and as identified in **Exhibit A**, including any complexes, chelates, clathrates, acids, bases, esters, salts, isomers, stereoisomers, enantiomers, pro-drug form, metabolite, hydrate, solvate, polymorphy, and crystalline forms thereof.

1.56 "Pradefovir Know-How" means all Know-How Controlled by Ligand or any of its Affiliates as of the Effective Date that is (a) necessary in connection with the making, using, selling, offering to sell, exporting and importing of Pradefovir in the HepB Field and in the Territory and (b) not included in the Pradefovir Patents.

1.57 "Pradefovir Patents" means those Patents Controlled by Ligand or any of its Affiliates listed in **Schedule 1.57** attached hereto. For clarity, the Pradefovir Patents do not include any of the HepDirect Patents or the MB07133 Patents.

1.58 "Pradefovir Technology" means the Pradefovir Know-How and the Pradefovir Patents.

1.59 "Prosecute" or "Prosecution" means, with respect to Patents, the filing for, prosecuting, responding to oppositions, nullity actions, re-examinations, revocation actions and similar proceedings (including without limitation conducting or participating in interference and oppositions) filed by Third Parties against, and maintaining, Patents.

1.60 "Regulatory Authority" means any national (e.g., the FDA), supranational (e.g., the EMEA), regional, state or local regulatory agency, department bureau, commission, council or other Governmental Entity in any jurisdiction of the world involved in the granting of Regulatory Approval for pharmaceutical products.

1.61 "Regulatory Approval" means, with respect to a country or jurisdiction within the Territory, (i) any approvals, licenses, registrations or authorizations necessary for the manufacture, marketing and sale of a Licensed Product in such country or jurisdiction, and (ii) where relevant, pricing approvals necessary to obtain reimbursement from a Governmental Entity with respect to a Licensed Product in such country or jurisdiction.

1.62 "Regulatory Documentation" means all submissions to Regulatory Authorities and other Governmental Entities, including for Clinical Trials, preclinical trials, tests, and biostudies, relating to the Licensed Products, including all INDs, NDAs and Regulatory Approvals, as well as all correspondence with Governmental Entities (registration and licenses, pricing and reimbursement correspondence, regulatory drug lists, advertising and promotion documents), adverse event files, complaint files, manufacturing records and inspection reports.

1.63 "Research Plan" has the meaning set forth in **Section 5.2(a)**.

1.64 "Sublicense Agreement" has the meaning set forth in **Section 2.5**.

1.65 "Term" has the meaning set forth in **Section 11.1.**

1.66 "Territory" means [***].

1.67 "Third Party" means any Person other than Ligand, Chiva or any Affiliate of either Ligand or Chiva.

1.68 "United States" means the United States and its territories and possessions.

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

1.69 "Valeant" means Valeant Pharmaceuticals North America, a Delaware corporation and successor in interest to Valeant Research & Development, or any successor in interest.

1.70 "Valeant Agreement" means that certain Assignment and Assumption Agreement by and among Metabasis Therapeutics, Inc., Schering Corporation and Valeant, effective as of January 9, 2007, and that certain Termination Agreement, by and among Metabasis Therapeutics, Inc., Schering Corporation and Valeant, effective as of September 19, 2007, each as amended by that certain Amendment Agreement on September 24, 2008.

1.71 "Valid Claim" means (a) any claim of an issued and unexpired patent within the Licensed Patents that has not been held unenforceable or invalid by a court or other governmental agency of competent jurisdiction in a decision that is not appealed or is unappealable, and which patent has not been disclaimed or admitted to be invalid or unenforceable through reissue or otherwise, or (b) a pending claim in a pending patent application within the Licensed Patents that has not been abandoned, finally rejected, or expired without the possibility of appeal or refiling; *provided, however,* that if a claim of a pending patent application shall not have issued within [***] after the earliest filing date from which such claim takes priority, such claim shall not constitute a Valid Claim for purposes of this Agreement unless and until a patent issues with such claim.

1.72 Unless the context of this Agreement otherwise requires: (a) words of any gender include each other gender; (b) words using the singular or plural number also include the plural or singular number, respectively; (c) the terms "hereof," "herein," "hereby" and derivative or similar words refer to this entire Agreement; (d) the terms "Article," "Section" or "Exhibit" refer to the specified Article, Section or Exhibit of this Agreement; (e) the term "or" has, except where otherwise indicated, the inclusive meaning represented by the phrase, "and/or"; and (f) the term "including" means "including without limitation." Whenever this Agreement refers to a number of days, such number shall refer to calendar days.

ARTICLE 2

LICENSES AND TECHNOLOGY TRANSFER

2.1 Exclusive License for HepB Compounds/Products. During the Term, subject to the terms and conditions of this Agreement, Ligand hereby grants to Chiva and its Affiliates an exclusive, royalty-bearing right and license under the Pradefovir Technology to make, have made, use, sell, have sold, import and export Pradefovir in the HepB Field in China and under the HepDirect Technology to make, have made, use, sell, have sold, import and export other HepB Compounds and HepB Products in the HepB Field in China.

2.2 Exclusive License for HCC Compounds/Products. During the Term, subject to the terms and conditions of this Agreement, Ligand hereby grants to Chiva and its Affiliates an exclusive, royalty-bearing right and license under the MB07133 Technology to make, have made, use, sell, have sold, import and export MB07133 in the HCC Field in China and under the HepDirect Technology to make, have made, use, sell, have sold, import and export other HCC Compounds and HCC Products in the HCC Field in China.

2.3 Non-Exclusive HepDirect Technology Licenses. During the Term, subject to the terms and conditions of this Agreement, including **Section 3.1**, Ligand hereby grants to Chiva and its Affiliates a non-exclusive, royalty-bearing right and license under the HepDirect Technology to Develop, make, have made, use, sell, have sold, import and export HepB Compounds and HepB Products in the HepB Field and HCC Compounds and HCC Products in the HCC Field, each in the Territory. For the sake of clarity, this **Section 2.3** shall not alter or negate the exclusive nature of the rights and licenses granted under **Sections 2.1** and **2.2** herein.

2.4 Rights to Improvements.

(a) Chiva shall have a right to make Improvements to the Licensed Technology, and to utilize such Improvements to make, have made, use, sell, have sold and import Licensed Products in the Territory. Chiva hereby grants to Ligand a non-exclusive, perpetual right and license in the Territory, without the right to grant sublicenses, to make, have made, use, sell, have sold, import and export Improvements made by or on behalf of Chiva during the Term.

(b) Subject to the license granted to Ligand pursuant to **Section 2.4(a)**, Improvements made by or on behalf of Chiva shall be owned and/or controlled exclusively by Chiva. For purposes of this **Section 2.4(b)**, ownership of an Improvement shall be based on inventorship as determined in accordance with the patent law of the country in which the Improvement is reduced to practice.

2.5 Sublicenses. The rights and licenses granted pursuant to **Sections 2.1**, **2.2**, and **2.3** include the right to grant sublicenses pursuant to a written sublicense agreement (each a "Sublicense Agreement"); *provided*, *however*, that (i) any such Sublicense Agreement shall be consistent with and subject to the terms and conditions of this Agreement; (ii) Chiva shall remain fully responsible to Ligand for the performance of its sublicensee(s); (iii) Chiva shall reserve the right under each Sublicense Agreement to conduct an audit of its sublicensee in a comparable manner to **Section 4.11** of this Agreement; (v) Chiva shall provide a complete, executed copy of any Sublicense Agreement within [***] of execution thereof; and (v) each sublicense granted by Chiva shall terminate no later than termination of this Agreement, unless otherwise agreed by the Parties. Chiva shall remain obligated to make all payments due to Ligand under the terms of this Agreement with respect to the activities of its sublicensees.

2.6 Right of First Negotiation for Exclusive License.

(a) In the event that Ligand, at any time during the Term, desires to grant exclusive rights to a Third Party, under the HepDirect Patents, to Develop, make, have made, use, sell, have sold, import and export HepB Compounds and HepB Products in the HepB Field, or HCC Compounds and HCC Products in the HCC Field, in the Territory (any such potential grant referred to as a "HepDirect Business Opportunity"), Ligand agrees to notify Chiva of such HepDirect Business Opportunity, and provide Chiva with information available to Ligand that is reasonably necessary for Chiva to evaluate the HepDirect Business Opportunity. The Parties shall negotiate in good faith the terms pursuant to which Chiva may obtain such HepDirect Business Opportunity for a period of [***] days following the date of such notice (such period referred to as a "HepDirect Negotiation Period"). For the sake of clarity, Ligand acknowledges that pursuant to **Sections 2.1**

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

and **2.2** above, it may not grant exclusive rights to a Third Party, under the HepDirect Technology, to make, have made, use, sell, have sold, import and export HepB Compounds and HepB Products in the HepB Field in China, or HCC Compounds and HCC Products in the HCC Field in China.

(b) Unless otherwise agreed between the Parties, Ligand will not negotiate or discuss the HepDirect Business Opportunity with any Third Party, or disclose to any Third Party any of the information regarding the HepDirect Business Opportunity, until the expiry of the HepDirect Negotiation Period. In the event that Ligand and Chiva have not agreed upon the terms and conditions pursuant to which Ligand would grant such rights to Chiva within the HepDirect Negotiation Period, Ligand shall be free to discuss the HepDirect Business Opportunity with and disclose information regarding the same to any Third Party.

2.7 Right of First Negotiation for China.

(a) In the event that Ligand, at any time during the Term, desires to grant exclusive rights to a Third Party, under any Ligand technology other than the Licensed Technology, to make, have made, use, sell, have sold, import and export any other Ligand product in China (any such potential grant referred to as an "China Business Opportunity"), Ligand agrees to notify Chiva of such China Business Opportunity, and provide Chiva with information available to Ligand that is reasonably necessary for Chiva to evaluate the China Business Opportunity. The Parties shall negotiate in good faith the terms pursuant to which Chiva may obtain such China Business Opportunity for a period of [***] following the date of such notice (such period referred to as a "China Negotiation Period"). For the avoidance of doubt, this right of first negotiation shall not apply to any worldwide or other opportunities that involve any countries or regions beyond China.

(b) Unless otherwise agreed between the Parties, Ligand will not negotiate or discuss the China Business Opportunity with any Third Party, or disclose to any Third Party any of the information regarding the China Business Opportunity, until the expiry of the China Negotiation Period. In the event that Ligand and Chiva have not agreed upon the terms and conditions pursuant to which Ligand would grant such rights to Chiva within the China Negotiation Period, Ligand shall be free to discuss the China Business Opportunity with and disclose information regarding same to any Third Party.

2.8 Technology Transfer. On or before the Amendment Execution Date, Ligand has provided to Chiva the information set forth on Schedule 5.3, as well as such other information provided to Chiva on or before the Effective Date and through the Amendment Execution Date, which Chiva acknowledges and agrees satisfies Ligand's requirements related to technology transfer related to key Licensed Technology and Regulatory Documentation critical to Licensed Products in existence as of the Effective Date.

2.9 No Other Rights. Ligand and Chiva each acknowledges and agrees that, except as expressly granted under this Agreement, no right, title, or interest of any nature whatsoever is granted whether by implication, estoppel, reliance, or otherwise, by either Party to the other Party. All rights with respect to technology, Patents or other intellectual property rights that are not specifically granted herein are reserved.

2.10 Bankruptcy. All rights and licenses granted under or pursuant to this Agreement, including amendments hereto, are, for all purposes of 11 U.S.C. § 365(n), licenses of rights to intellectual property as defined in the United States Bankruptcy Code, and any comparable Law of a relevant jurisdiction. Each Party may elect to retain and may fully exercise all of its rights and elections under 11 U.S.C. § 365(n).

ARTICLE 3

NOTICE REGARDING ADDITIONAL LICENSED COMPOUNDS

3.1 Notice Regarding Additional Licensed Compounds. Chiva shall have the right to Develop multiple Licensed Compounds concurrently, and shall provide written notice to Ligand of each Licensed Compound (including the structure) it selects for Development as a Licensed Product within [***] of such selection, but in all events prior [***]. The Parties acknowledge and agree that once Chiva notifies in writing Ligand of its selection of a Licensed Compound for Development as a Licensed Product and Ligand does not object to Chiva's designation of such Licensed Compound within [***] after the date of such notice, then the license grant pursuant to Section 2.3 with respect to such Licensed Compound and the corresponding Licensed Product shall be exclusive, regardless of any provisions contained herein to the contrary or the definitions of the terms "Licensed Compound," "Licensed Product," "HepB Compound," "HepB Product," "HCC Compound" and "HCC Product."

ARTICLE 4

COMPENSATION

4.1 License Issuance Fee. In partial consideration of the rights and licenses granted by Ligand hereunder, Chiva shall pay a one-time, non-refundable and non-creditable license issuance fee of one hundred fifty thousand US Dollars (US$150,000) for Pradefovir and three hundred fifty thousand US Dollars (US$350,000) for MB07133 to Ligand on or before March 31, 2011.

4.2 [Section Intentionally Omitted]

4.3 Milestone Payments.

(a) In partial consideration of the rights and licenses granted by Ligand hereunder, Chiva shall pay a one-time, non-refundable and non-creditable milestone fee of one hundred fifty thousand US Dollars (US$150,000) for Pradefovir and three hundred fifty thousand US Dollars (US$350,000) for MB07133 to Ligand by September 1, 2011.

(b) In further consideration of the rights and licenses granted by Ligand hereunder, Chiva shall pay to Ligand the non-refundable and non-creditable milestone payments within [***] of the achievement by Chiva or its Affiliates or sublicensees of each of the corresponding events:

(1) for Pradefovir and for each other HepB Product with its composition of matter claimed in a Licensed Patent as of the Effective Date, as set forth under the column "Pradefovir and Certain Other HepB Products";

(2) for MB07133 and for each other HCC Product with its composition of matter claimed in a Licensed Patent as of the Effective Date, as set forth under the column "MB07133 and Certain Other HCC Products"; and

(3) for each HepB Product other than a HepB Product with its composition of matter claimed in a Licensed Patent as of the Effective Date (i.e, HepB Products with no claim related to its composition of matter in a Licensed Patent as of the Effective Date, or with respect to which only a method of treatment is disclosed as of the Effective Date), for each HCC Product other than a HCC Product with its composition of matter claimed in a Licensed Patent as of the Effective Date (i.e, HCC Products with no claim related to its composition of matter in a Licensed Patent as of the Effective Date, or with respect to which only a method of treatment is disclosed as of the Effective Date), as set forth under the applicable column "All Other HepB Products and HCC Products" below.

	Pradefovir and Certain Other HepB Products	**MB07133 and Certain Other HCC Products**	**All Other HepB Products and HCC Products**
Initiation of Phase I Clinical Trial	None	None	Five Hundred Thousand U.S. Dollars (US$500,000)
Initiation of Phase III Clinical Trial	None	None	One Million U.S. Dollars (US$1,000,000)
NDA filing in China	None	None	None
Receipt of Regulatory Approval in China	Four Million U.S. Dollars (US$4,000,000)	Four Million U.S. Dollars (US$4,000,000)	Six Million U.S. Dollars (US$6,000,000)
NDA filing in First Major Market	Not Applicable	None	None
Receipt of Regulatory Approval in first Major Market	Not Applicable	None	Seventeen Million U.S. Dollars (US$17,000,000)
Achievement of $500M in total cumulative Net Sales	Twenty Million U.S. Dollars (US$20,000,000)	Fifteen Million U.S. Dollars (US$15,000,000)	Fifteen Million U.S. Dollars (US$15,000,000)

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

For clarity, it is expressly agreed that the milestone payments set forth in each column above will be payable once only for each Licensed Product to achieve the event. If, however, Chiva is developing two Licensed Products, even if both are a HepB Product or HCC Product, as applicable, each of the milestone payments under the column "All Other HepB Products and HCC Products" shall be paid for each such Licensed Product.

4.4 Payment of Royalties

(c) Royalty Rates. In further consideration of the rights and licenses granted by Ligand hereunder, Chiva shall pay to Ligand six percent (6%) of aggregate Net Sales of Licensed Products, except for Pradefovir which shall be paid at the percentage of nine percent (9%) of aggregate Net Sales. If a generic version of a Licensed Product enters the market, then the royalty rate will be reduced by [***] for that Licensed Product from [***].

(d) Sublicensing. In the event Chiva grants a sublicense under **Section 2.5** to a sublicensee to make, use, import, sell, offer to sell, import or export a Licensed Product, such Sublicense Agreement shall require the sublicensee to account for and report its Net Sales of the Licensed Product on the same basis as if such sales were Net Sales of the Licensed Product by Chiva, and Chiva shall pay royalties on such sales as if the Net Sales of the sublicensees were Net Sales of Chiva.

(e) Payment of Royalties. Chiva shall pay on a calendar quarterly basis all royalties due and payable on Net Sales in each calendar quarter pursuant to this **Section 4.4** within [***] after the last day of each calendar quarter in which the applicable Net Sales underlying such royalties were billed or invoiced by Chiva.

(f) Royalty Term. The obligation of Chiva to pay royalties to Ligand under this **Section 4.4** shall commence on the date of the First Commercial Sale of a Licensed Product and continue, on a country-by-country basis and on a Licensed Product-by-Licensed Product basis, until the later of (i) expiration or other termination of all Licensed Patents containing one or more Valid Claims that would be infringed by the manufacture, sale, offer for sale, use or importation of such Licensed Product in such country, or (ii) ten (10) years from the First Commercial Sale of such Licensed Product in such country. Thereafter, Chiva shall have a paid up, royalty-free license with respect to such Licensed Product in the applicable country.

4.5 License Maintenance Fee. Chiva shall pay to Ligand an annual license maintenance fee of Twenty Five Thousand U.S. Dollars (US$25,000.00), due within thirty (30) days after the start of each calendar year.

4.6 Sublicense Fees. In partial consideration of the rights and licenses granted by Ligand hereunder, if Chiva sublicenses any of its rights under this Agreement pursuant to **Section 2.5** above to a Third Party to make, have made, use, sell, have sold, import and export a Licensed Product in a Major Market, Chiva shall pay to Ligand an amount (the "Sublicense Fee") equal to five percent (5%) of all up-front payments, option fees, license fees, milestone payments or other non-royalty payments received as the consideration for the sublicense granted by Chiva to such Third Party under the applicable Sublicense Agreement. If Chiva receives any non-cash consideration as the

consideration for the sublicense granted by Chiva to such Third Party under the applicable Sublicense Agreement (including, for example, options, stock, property or intellectual property rights), then it shall calculate the fair market value of such consideration in U.S. Dollars for the purposes of determining the Sublicense Fee and Ligand shall be entitled to engage an independent accountant to confirm Chiva's determination of such fair market value within [***] of receipt of notice of Chiva's determination; *provided* that Sublicense Fee [***]. Sublicense Fee payments shall be due and payable to Ligand within [***] of receipt by Chiva of any payments from its sublicensee(s). For the avoidance of doubt, the payments due to Ligand under this **Section 4.6** are in addition to the payments owed by Chiva to Ligand under **Sections 4.1, 4.2, 4.3, 4.4(a)** and **4.4(b)** above.

4.7 Payment Method. All payments made by Chiva under this Agreement shall be made in U.S. Dollars, and such payments shall be made by check or wire transfer to one or more bank accounts to be designated in writing by Ligand.

4.8 Currency Conversion. In the event that Licensed Products are sold in currencies other than U.S. Dollars, Net Sales shall be calculated by Chiva in accordance with U.S. generally accepted accounting principles, consistently applied. Net Sales in currencies other than U.S. Dollars shall be converted into U.S. Dollars using the average official rate of exchange for such currencies published in *The Wall Street Journal*, Eastern Edition, [***]. If an exchange rate for any particular currency is not published in *The Wall Street Journal*, the rate of exchange to be used for such currency shall be determined using average conversion rates published by the Bank of China or such conversion rates that generally are accepted in the industry [***]. Sublicense Fee payments due to Ligand pursuant to **Section 4.6** shall be calculated in U.S. Dollars as set forth above.

4.9 Late Payment Interest. Any payment due and payable to Ligand under the terms and conditions of this Agreement, including any royalty payment, made by Chiva after the date such payment is due and payable shall bear interest as of the day after the date such payment was due and payable and shall continue to accrue such interest until such payment is made at a rate equal to the lesser of either (a) [***], as of the date such payment was due and payable, or (b) the maximum rate permitted by applicable Law; *provided*, *however*, that the total interest accrued shall be no greater than [***] of the payment due and payable.

4.10 Records and Reports. All payments made to Ligand hereunder shall be accompanied by a written statement setting forth in reasonable detail the calculation thereof, including, for example, in the case of royalty payments, the gross amount billed or invoiced by Chiva, Affiliate or sublicensee for sale or other disposition of Licensed Products on a country-by-country basis in the local currency, itemized deductions against such gross amount in accordance with **Section 1.50**, Net Sales on a country-by-country basis, and, if applicable, the exchange rate utilized to convert a local currency to U.S. Dollars. Chiva shall maintain complete and accurate records sufficient to enable accurate calculation of royalties and other payments due Ligand hereunder. Such records and books of account shall be preserved by Chiva for a period of [***] after the end of the period covered by such records and books of account, which obligation shall survive expiration or termination of this Agreement. Chiva must ensure that its sublicensees provide reports and keep records in a manner consistent with this **Section 4.10**. Chiva shall provide reports received from sublicensees to Ligand with the applicable payment.

4.11 Audit Rights. Chiva shall permit an independent public accountant designated by Ligand and reasonably acceptable to Chiva, to have access, no more than [***] in each [***] during the Term and no more than [***] during the [***] following the expiration or termination of this Agreement, during regular business hours and upon at least [***] written notice, to Chiva's records and books to the extent necessary to determine the accuracy of Net Sales reported, and payments made, by Chiva to Ligand within the [***] immediately preceding such an audit. The independent public accountant shall be under a confidentiality obligation to Chiva to disclose to Ligand only (a) the accuracy of Net Sales reported and the basis for royalty and other payments made to Ligand under this Agreement and (b) the difference, if any, such reported and paid amounts vary from amounts determined as a result of the audit. If such examination results in a determination that Net Sales or payments have been misstated, over or under paid amounts due shall be paid promptly to the appropriate Party. If Net Sales are understated by greater than [***], the fees and expenses of such accountant shall be paid by Chiva; otherwise the fees and expenses of such accountant shall be paid by Ligand. All matters reviewed by such independent public accountant shall be deemed Confidential Information of Chiva and shall subject to **ARTICLE 7**.

ARTICLE 5

PRODUCT ACTIVITIES

5.1 Diligence. Chiva shall diligently Develop Licensed Compounds and Develop, manufacture and sell Licensed Products, and shall use commercially reasonable efforts to develop markets for Licensed Products, in both cases either directly or through a sublicensee. In addition, Chiva, either directly or through a sublicensee, shall achieve the events described in **Schedule 5.1** within the time periods set forth in **Schedule 5.1**. Chiva, either directly or through a sublicensee, shall obtain all necessary Regulatory Approvals in each country where Licensed Products are made, used, sold, imported, or offered for sale. Ligand may terminate this Agreement in accordance with **Section 11.2(b)** if Chiva (i) fails to achieve a milestone by the milestone achievement date as set out in **Schedule 5.1** (or such later date as may be agreed by the Parties in writing) or (ii) has not sold Licensed Product for any [***] period after Chiva's First Commercial Sale of a Licensed Product.

5.2 Research Plan; Progress Reports.

(c) Chiva shall develop a research plan detailing the work it will perform and associated timelines to Develop Licensed Products and to obtain Regulatory Approval and sell Licensed Products (the "Research Plan"). Chiva will provide a copy of the Research Plan to Ligand within [***] of the Effective Date and any updates as these become available from time to time.

(d) By [***], and [***] of each year, Chiva shall submit a written report to Ligand covering the preceding [***] period. Each report will describe: Chiva's progress in accordance with the Research Plan and towards commercialization of Licensed Products, including work completed, key scientific discoveries, summary of work-in-progress, current schedules or anticipated events or milestones, market plans for introduction of Licensed Products, and significant corporate transaction(s) involving Licensed Products. Chiva shall also provide to Ligand copies

of any reports received from its sublicensees, within [***] of receipt. In addition, upon the reasonable request of Ligand but no more frequently than [***] in each year, Chiva and Ligand shall meet in-person (or by teleconference if mutually agreed) at a mutually agreeable location to discuss the topics described in the progress reports, and such other topics related to Licensed Products as Ligand may reasonably request.

5.3 Regulatory Responsibilities.

(g) The Parties shall meet periodically as needed to discuss the regulatory plans and strategies for Licensed Compounds/Products in the Territory. Chiva shall, at Chiva's expense, promptly deliver to Ligand copies of Regulatory Documentation and significant correspondence to and from all Regulatory Authorities Controlled by Chiva related to any Licensed Compound/Product in the Territory, and shall keep Ligand informed of material regulatory developments related to any Licensed Compound/Product in the Territory. Ligand shall keep Chiva informed of material regulatory developments related to Pradefovir or MB07133 in territories outside of China. Each Party shall provide the other Party with reasonable cooperation and assistance in connection with regulatory activities for Licensed Compounds/Products in the Field in the other Party's territory, including responding to reasonable requests by the other Party for additional Regulatory Documentation (and information and clinical data contained therein) related to such Licensed Compounds/Products. In particular, the Parties acknowledge and agree that Ligand has provided to Chiva the information set forth in Schedule 5.3(a) on or prior to the Amendment Execution Date.

(h) To the extent permitted by the applicable Regulatory Authority, Chiva shall allow representatives of Ligand to participate in any material scheduled conference calls and meetings between Chiva and the Regulatory Authority. If Ligand elects not to participate in such calls or meetings, Chiva shall keep Ligand reasonably apprised of the discussions between Chiva and the Regulatory Authority that take place during such calls or meetings.

(i) Chiva shall permit Ligand to access, and shall provide Ligand with rights to reference and/or use in association with Licensed Compounds/Products, all of its, its Affiliates', and its licensees' or sublicensees' (to the extent permitted by its licensee or sublicensee) Regulatory Documentation (and information and clinical data contained therein) related to any such Licensed Compound/Product. Ligand shall permit Chiva to access, and shall provide Chiva with rights to reference and/or use in association with Pradefovir or MB07133, all of its, its Affiliates', and its licensees' or sublicensees' (to which it has access) Regulatory Documentation (and information and clinical data contained therein) related to Pradefovir or MB07133.

(j) Chiva shall be responsible for ensuring, at its sole expense, that the Development and commercialization of all Licensed Products in its applicable territory are in compliance with applicable Laws in all material respects, including all rules and regulations promulgated by applicable Regulatory Authorities. Specifically and without limiting the foregoing, Chiva shall file all compliance filings, certificates and safety reporting for the Licensed Products at its sole expense in its applicable territory.

ARTICLE 6

INTELLECTUAL PROPERTY

6.1 Patent Maintenance and Prosecution.

(e) Ligand shall, at [***], and [***], Prosecute the Licensed Patents that are Controlled by Ligand; *provided, however,* Ligand shall make available to Chiva copies of material correspondence with any patent office regarding the Licensed Patents to the extent they relate to Licensed Products. [***]. In the event that Ligand decides to cease activities relating to Prosecuting any Licensed Patent, Ligand shall provide written notice thereof to Chiva at least [***] prior to the date when government rights would be lost as a consequence of abandonment of such Patent. [***].

(f) Chiva shall, at Chiva's sole cost and expense, and in its sole discretion, Prosecute any Patents covering Improvements. In the event that Chiva decides to cease activities relating to Prosecuting any such Patents, Chiva shall provide written notice thereof to Ligand and, prior to taking action that would result in the abandonment of any Patent covering such Improvement, Chiva shall engage in good faith discussions with Ligand, such discussions to occur at least [***] prior to the date when government rights would be lost as a consequence of abandonment of such Patent.

6.2 Patent Enforcement and Defense.

(k) Notification. Each Party shall notify the other Party of any infringement of any of the Licensed Patents by a Third Party in the HepB Field and HCC Field, as the case may be, which becomes known to such Party, and of any claim of infringement by a Third Party that the activities of a Party infringe patent rights of such Third Party.

(l) Licensed Patents. As between the Parties, Ligand shall have the first right, but not an obligation, to initiate, maintain and control, at Ligand's expense, legal action against any infringement of the Licensed Patents by a Third Party in the HepB Field or HCC Field, as the case may be. In the event that Ligand initiates legal action against infringement of the Licensed Patents by a Third Party in the HepB Field or HCC Field, as the case may be, Ligand shall notify Chiva in writing. Thereafter, Chiva shall have a right, in Chiva's sole discretion and, notwithstanding **Section 6.3**, at Chiva's expense, to join or otherwise participate or not to join or otherwise participate in such legal action with legal counsel selected by Chiva. Any recovery received by Ligand from legal action initiated pursuant to this **Section 6.2(b),** whether by judgment, award, decree or settlement, shall be used first to reimburse Ligand for Ligand's out-of-pocket costs and expenses actually incurred in pursuing such legal action, and second to reimburse Chiva for Chiva's costs and expenses actually incurred in connection with such legal action. The remainder of any recovery or distribution received by Ligand under this **Section 6.2(b)**, after reimbursement of costs and expenses of Ligand and Chiva, shall be [***].

6.3 Cooperation. In any suit, proceeding or dispute involving the infringement of any of the Licensed Patents in the HepB Field or HCC Field, as the case may be, the Parties shall provide each other with reasonable cooperation, and, upon the request and at the expense of the Party bringing

suit, the other Party shall make available to the Party bringing suit, at reasonable times and under appropriate conditions, all relevant personnel, records, papers, information, samples, specimens, and the like in its possession. Notwithstanding any other provision of this **ARTICLE 6**, [***].

ARTICLE 7

CONFIDENTIALITY

7.1 Confidentiality Obligations. Each Party agrees that, during the Term and for [***] thereafter, all Confidential Information of the other Party shall be maintained in strict confidence, and shall not be used for any purpose other than the purposes expressly permitted by this Agreement, and shall not be disclosed to any Third Party. The foregoing obligations will not apply to any portion of Confidential Information to the extent that it can be established by competent proof that such portion:

(m) was already known to the recipient as evidenced by its written records, other than under an obligation of confidentiality, at the time of disclosure;

(n) was generally available to the public or was otherwise part of the public domain at the time of its disclosure to the recipient;

(o) became generally available to the public or otherwise becomes part of the public domain after its disclosure and other than through any act or omission of the recipient in breach of this Agreement; or

(p) was subsequently lawfully disclosed to the recipient by a Third Party other than in contravention of a confidentiality obligation of such Third Party to the disclosing party.

7.2 Permitted Usage. Each Party may use and disclose Confidential Information of the other Party as follows: (a) under appropriate confidentiality provisions no less restrictive than those in this Agreement, in connection with the performance of its obligations or exercise of rights granted to or retained by such Party in this Agreement; (b) in connection with the Prosecution or enforcement of Licensed Patents or Improvements, in accordance with this Agreement; or (c) in connection with prosecuting or defending litigation, complying with applicable governmental regulations, filing for, obtaining and maintaining Regulatory Approvals, or as otherwise required by Law, but provided that if a Party is required by Law to make any disclosure of the other Party's Confidential Information, it will give reasonable advance notice to the other Party of such disclosure requirement, it will disclose only for the sole purpose of and solely to the extent required by such Law, and it will use its reasonable efforts to secure confidential treatment of such Confidential Information required to be disclosed.

7.3 Terms of Agreement. The terms of this Agreement shall be Confidential Information of both Parties, and subject to the terms of this **ARTICLE 7**. Notwithstanding the foregoing, either Party may make a disclosure of terms of this Agreement (i) to any financial advisors, accountants, potential sublicensees, investors, or potential acquirers, (ii) if required by applicable Law, or (iii) as otherwise permitted pursuant to **Section 7.4**. Except as otherwise permitted for disclosures

pursuant to **Section 7.4**, the disclosing Party shall use all commercially reasonable efforts to preserve the confidentiality of this Agreement and the terms thereof notwithstanding any required disclosure. A Party will give the other Party written notice of any required disclosure under (ii) above, which notice shall, to the extent reasonably practicable, be given a reasonable period of time in advance of such required disclosure. In the event either Party is required to file this Agreement with the U.S. Securities and Exchange Commission or any comparable Chinese or other non-U.S. Governmental Entity, such Party shall apply for confidential treatment of this Agreement to the fullest extent permitted by applicable Law, shall provide the other Party a copy of the confidential treatment request far enough in advance of its filing to give the other Party a meaningful opportunity to comment thereon, and shall incorporate in such confidential treatment request any reasonable comments of the other Party.

7.4 Public Announcements. The Parties will mutually agree on a press release to be issued upon execution of this Agreement or reasonably soon thereafter. Neither Party shall make any subsequent public announcement concerning this Agreement or the terms hereof not previously made public without the prior written approval of the other Party with regard to the form, content, and precise timing of such announcement, except as may be required to be made by either Party in order to comply with applicable Law, regulations, court orders, or tax, securities filings, financing arrangements, acquisitions, or sublicenses. Such consent shall not be unreasonably withheld or delayed by such other Party. Prior to any such public announcement, the Party wishing to make the announcement will submit a draft of the proposed announcement to the other Party in sufficient time to enable such other Party to consider and comment thereon.

7.5 Cooperation. In any suit, proceeding or dispute involving the infringement of any of the Licensed Patents in the HepB Field or HCC Field, as the case may be, the Parties shall provide each other with reasonable cooperation, and, upon the request and at the expense of the Party bringing suit, the other Party shall make available to the Party bringing suit, at reasonable times and under appropriate conditions, all relevant personnel, records, papers, information, samples, specimens, and the like in its possession. Notwithstanding any other provision of this **ARTICLE 6**, [***].

ARTICLE 8

REPRESENTATIONS, WARRANTIES AND COVENANTS

8.1 General. Each Party represents and warrants to the other that:

(c) it is duly organized and validly existing under the Law of the jurisdiction of its incorporation, and has full corporate power and authority to enter into this Agreement and to carry out the provisions hereof;

(d) it is qualified to do business and is in good standing in each jurisdiction in which it conducts business;

(e) it is duly authorized to execute and deliver this Agreement and to perform its obligations hereunder, and the individual executing this Agreement on its behalf has been duly authorized to do so by all requisite corporate action;

(f) this Agreement is legally binding upon it and enforceable in accordance with its terms and the execution, delivery and performance of this Agreement by it does not conflict with any agreement, instrument or understanding, oral or written, to which it is a party or by which it may be bound, nor violate any material Law; and

(g) it is not aware of any action, suit or inquiry or investigation instituted by any Person which questions or threatens the validity of this Agreement.

8.2 Representations of Ligand.

(a) Ligand owns the Licensed Compounds/Products/Technology as of the Effective Date. There are no adverse actions, suits, or claims pending or to the knowledge of Ligand, threatened against Ligand in any court or by or before any governmental body or agency with respect to the Licensed Compounds/Products/Technology and, to the actual knowledge of Ligand, there are no Third Party patents which would reasonably be expected to give rise to such actions, suits or claims.

(b) Ligand has not initiated or been involved in any proceedings or claims in which it alleges that any Third Party is or was infringing or misappropriating the Licensed Technology, nor have any proceedings been threatened by Ligand, nor to the knowledge of Ligand is there any valid basis for any such proceeding.

(c) Ligand has not granted a license for HepB Compounds/Products pursuant to Section 2.1 or HCC Compounds/Products pursuant to Section 2.2 to any Third Party or Affiliate in China that would prevent Chiva from exercising its rights under this Agreement.

(d) As of the Effective Date, to Ligand's best knowledge, none of the Licensed Technology is developed involving the use of any governmental funding.

(e) Ligand and its Affiliates and, to Ligand's best knowledge, [***] have complied with all applicable laws, permits, governmental licenses, registrations, approvals, concessions, franchises, authorizations, orders, injunctions and decrees [***], and neither Ligand nor any of its Affiliates or, to Ligand's best knowledge, [***] has received any written notice from any governmental authority claiming that any such activities as conducted by them are not in such compliance.

(f) No governmental authority (including the FDA) has commenced or, to Ligand's knowledge, threatened to initiate any action to enjoin production of Pradefovir or MB07133 at any facility, nor has Ligand or any of its Affiliates or, to the best knowledge of Ligand, Metabasis or any of Ligand's Contractors, received any notice to such effect.

(g) To Ligand's best knowledge, all development activities relating to Pradefovir or MB07133 have been conducted in compliance with all applicable laws, including without limitation all GCPs, GLPs and GMPs.

(h) To Ligand's best knowledge, no employee or agent of Ligand or any of its Affiliates or Contractors has made an untrue statement of a material fact to any governmental authority with respect to Pradefovir or MB07133 (whether in any Regulatory Filings or otherwise), or failed to disclose a material fact required to be disclosed with respect to Pradefovir or MB07133.

(i) Ligand has made available to Chiva true, correct and complete copies of (i) all IND and NDA submissions associated with Pradefovir and MB07133, (ii) all clinical studies associated with the IND and NDA submissions, (iii) all correspondence with regulatory authorities regarding the IND or NDA submissions, and (iv) all minutes of meetings and telephone conferences with regulatory authorities with respect to the IND or NDA, Pradefovir or MB07133, in each case, to the extent in the possession of Ligand or its Affiliates or to which Ligand or its Affiliates have access or right to access. To Ligand's best knowledge, Ligand has disclosed or otherwise provided Chiva with all information that would have, or would be reasonably likely to have, a material effect on the ability of Chiva to develop or commercialize Pradefovir or MB07133 under the terms and conditions of this Agreement and that relates to (i) the Licensed Technology, (ii) any Third Party intellectual property rights or claims that relate to the commercialization or development of Pradefovir or MB07133, (iii) the safety or efficacy of Pradefovir or MB07133, and (iv) Chiva' ability to manufacture Pradefovir or MB07133.

(j) To Ligand's best knowledge, no person who is debarred has been employed or used to provide services in connection with the Development, manufacture or commercialization of Licensed Products, Pradefovir or MB07133 prior to the Effective Date.

8.3 Covenants of Ligand. Ligand covenants that it will not, during the Term, undertake any obligation, or grant any right, license, interest or lien, that conflicts with its obligations, or the rights and licenses granted to Chiva, under the terms of this Agreement, or impairs the rights granted by Ligand to Chiva under the terms of this Agreement.

8.4 Disclaimer. EXCEPT AS PROVIDED IN THIS **ARTICLE 8**, NEITHER PARTY MAKES ANY REPRESENTATION OR WARRANTY (EXPRESS, IMPLIED, STATUTORY OR OTHERWISE) WITH RESPECT TO THE SUBJECT MATTER OF THIS AGREEMENT, AND EACH PARTY SPECIFICALLY DISCLAIMS ANY AND ALL IMPLIED WARRANTIES OR CONDITIONS OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, AND ALL WARRANTIES AND CONDITIONS OF THE VALIDITY OF THE LICENSED PATENTS OR NONINFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS. THIS **SECTION 8.4** SHALL NOT BE CONSTRUED TO LIMIT EITHER PARTY'S OBLIGATIONS UNDER **ARTICLE 9**.

8.5 Representations and Covenants of Chiva.

(a) Anti-Corruption Provisions. Chiva has not, directly or indirectly, offered, promised, paid, authorized or given, and will not in the future, offer, promise, pay, authorize or give, money or anything of value, directly or indirectly, to any Government Official (as defined below) or Other Covered Party (as defined below) for the purpose, pertaining to this Agreement, of: (i) influencing any act or decision of the Government Official or Other Covered Party; (ii) inducing the Government Official or Other Covered Party to do or omit to do an act in violation of a lawful duty; (iii) securing any improper advantage; or (iv) inducing the Government Official or Other Covered Party to influence the act or decision of a government or government instrumentality, in order to obtain or retain business, or direct business to, any person or entity, in any way related to this Agreement.

For purposes of this Agreement: (i) " Government Official" means any official, officer, employee or representative of: (A) any federal, state, provincial, county or municipal government or any department or agency thereof; (B) any public international organization or any department or agency thereof; or (C) any company or other entity owned or controlled by any government; and (ii) "Other Covered Party" means any political party or party official, or any candidate for political office.

(b) Anti-Corruption Compliance.

(i) In performing under this Agreement, Chiva and its Affiliates agree to comply with all applicable anti-corruption laws, including, without limitation: Foreign Corrupt Practices Act of 1977, as amended ("FCPA"); the anti-corruption laws of China; and all laws enacted to implement the OECD Convention on Combating Bribery of Foreign Officials in International Business Transactions.

(ii) Chiva is not aware of any Government Official or Other Covered Party having any financial interest in the subject matter of this Agreement or in any way personally benefiting, directly or indirectly, from this Agreement.

(iii) No political contributions or charitable donations shall be given, offered, promised or paid at the request of any Government Official or Other Covered Party that is in any way related to this Agreement or any related activity, without Ligand's prior written approval.

(iv) In the event that Chiva violates the FCPA, the anti-corruption laws of China or any applicable anti-corruption law or breaches any provision in this Section, Ligand shall have the right to unilaterally terminate this Agreement.

ARTICLE 9

INDEMNIFICATION

9.1 Indemnification by Chiva. Chiva shall indemnify, defend and hold Ligand and its Affiliates, agents, employees, officers, and directors (the "Ligand Indemnitees") harmless from and against any and all liability, damage, loss, cost, or expense (including without limitation reasonable attorneys' fees) arising out of Third Party claims or suits related to: (a) breach by Chiva of any of its representations, warranties, or covenants under this Agreement; (b) the negligence or willful misconduct of Chiva or its Affiliates, and its or their directors, officers, agents, employees, or consultants; and (c) any exploitation by, or under the authority of, Chiva of the licenses granted under **Sections 2.1**, **2.2**, and **2.3** (including by any Affiliate or sublicensee); *provided*, *however*, that Chiva's obligations pursuant to this **Section 9.1** will not apply to the extent such claims or suits result from the negligence or willful misconduct of any of the Ligand Indemnitees or breach by Ligand of its representations, warranties, or covenants set forth in this Agreement, or to the extent that Ligand has indemnification obligations with respect to such claims or suits under **Section 9.2**.

9.2 Indemnification by Ligand. Ligand shall indemnify, defend, and hold Chiva and its Affiliates, sublicensees, agents, employees, officers, and directors (the "Chiva Indemnitees") harmless from and against any and all liability, damage, loss, cost, or expense (including without limitation reasonable attorneys' fees) arising out of Third Party claims or suits related to (a) breach by Ligand of any of its representations, warranties, or covenants under this Agreement or (b) activities conducted by or on behalf of Ligand or its Affiliates or sublicensees with respect to the Licensed Products outside the applicable Field or applicable Territory or prior to the Effective Date; *provided*, *however*, that Ligand's obligations pursuant to this **Section 9.2** will not apply to the extent that Chiva has indemnification obligations with respect to such claims or suits under **Section 9.1**.

9.3 Procedure. As a condition to a Party's right to receive indemnification under **Section 9.1** or **Section 9.2**, it shall: (a) promptly deliver notice in writing (a "Claim Notice") to the other Party as soon as it becomes aware of a claim or suit for which indemnification may be sought pursuant to **Section 9.1** or **Section 9.2** (provided that the failure to give a Claim Notice promptly shall not prejudice the rights of an indemnified Party except to the extent that the failure to give prompt notice materially adversely affects the ability of the indemnifying Party to defend the claim or suit); (b) cooperate with the indemnifying Party in the defense of such claim or suit, at the expense of the indemnifying Party; and (c) if the indemnifying Party confirms in writing to the indemnified Party its intention to defend such claim or suit within [***] after receipt of the Claim Notice, permit the indemnifying Party to control the defense of such claim or suit, including without limitation the right to select defense counsel; *provided* that, if the indemnifying Party fails to (i) provide such confirmation in writing within such [***] period or (ii) after providing such confirmation, diligently and reasonably defend such suit or claim at any time, the indemnifying Party's right to defend the claim or suit shall terminate immediately in the case of (i) and otherwise upon [***] written notice by the indemnified Party to the indemnifying Party, and the indemnified Party may assume the defense of such claim or suit at the sole expense of the indemnifying Party but may not settle or compromise such claim or suit without the consent of the indemnifying Party, not to be unreasonably withheld or delayed. In no event, however, may the indemnifying Party compromise or settle any claim or suit in a manner which admits fault or negligence on the part of any indemnified Party or

that otherwise materially affects such indemnified Party's rights under this Agreement or requires any payment by an indemnified Party without the prior written consent of such indemnified Party. Except as expressly provided above, the indemnifying Party will have no liability under this **ARTICLE 9** with respect to claims or suits settled or compromised without its prior written consent.

ARTICLE 10

LIMITATION OF LIABILITY

10.1 EXCEPT FOR ANY LIABILITY THAT IS THE CONSEQUENCE OF WILLFUL MISCONDUCT OF A PARTY, IN NO EVENT SHALL EITHER PARTY BE LIABLE TO THE OTHER PARTY FOR ANY SPECIAL, CONSEQUENTIAL, EXEMPLARY OR INCIDENTAL DAMAGES (INCLUDING LOST OR ANTICIPATED REVENUES OR PROFITS RELATING TO THE SAME), HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY ARISING OUT OF THIS AGREEMENT, WHETHER SUCH CLAIM IS BASED ON CONTRACT, TORT (INCLUDING NEGLIGENCE) OR OTHERWISE, AND WHETHER OR NOT SUCH PARTY HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGE. THESE LIMITATIONS SHALL APPLY NOTWITHSTANDING ANY FAILURE OF ESSENTIAL PURPOSE OF ANY LIMITED REMEDY PROVIDED HEREIN. THIS **ARTICLE 10** SHALL NOT BE CONSTRUED TO LIMIT EITHER PARTY'S OBLIGATIONS UNDER **ARTICLE 9**.

ARTICLE 11

TERM AND TERMINATION

11.1 Term. Unless terminated earlier pursuant to **Section 11.2** , the term of this Agreement shall commence on the Effective Date and continue in full force and effect until, and terminate upon, the expiration, lapse or invalidation of the last to expire of the Licensed Patents (the "**Term**").

11.2 Termination.

(c) For Convenience. Any provision herein notwithstanding, Chiva shall have the right to terminate this Agreement in its entirety at will upon ninety (90) days prior written notice to Ligand.

(d) For Material Breach. If either Party shall at any time breach any material term, condition or agreement herein, and shall fail to have initiated and actively pursued remedy of any such default or breach within sixty (60) days after receipt of written notice thereof by the other Party, that other Party may, at its option, terminate this Agreement and revoke any rights and licenses herein. Any termination of this Agreement under this **Section 11.2(b)** shall not, however, prejudice the right of the Party who terminates this Agreement to recover any payment due at the time of such cancellation, and it being understood that if within sixty (60) days after receipt of any such notice the breaching Party shall have initiated and actively pursued remedy of its default, then the rights and licenses herein granted shall remain in force as if no breach or default had occurred

on the part of the breaching Party, unless such breach or default is not in fact remedied within sixty (60) days of such notice.

11.3 Effect of Termination/Expiration.

(a) Rights and Obligations Upon Expiration. Upon expiration (but not earlier termination) of this Agreement, all rights and licenses granted by Ligand to Chiva hereunder that were in effect immediately prior to the effective date of such expiration shall become irrevocable, perpetual and fully-paid.

(b) Rights and Obligations Upon Termination. As of the effective date of a termination (but not expiration) of this Agreement for any reason, this Agreement and all rights and licenses granted to Chiva under **Sections 2.1, 2.2**, and **2.3** shall terminate and all rights in the Licensed Technology shall revert to Ligand; (ii) Chiva shall return to Ligand the Licensed Know-How and shall transfer to Ligand all then-existing Regulatory Documentation; and (iii) each Party shall return to the other Party and cease using all Confidential Information of the other; *provided* that each Party may retain one (1) copy of such Confidential Information for archival purposes.

(c) Accrued Rights. Termination or expiration of this Agreement for any reason will be without prejudice to any rights that will have accrued to the benefit of a Party prior to such termination or expiration. Such termination or expiration will not relieve a Party from accrued payment obligations or from obligations which are expressly indicated to survive termination or expiration of this Agreement.

(d) Survival. Articles 1, 7, 9, 10 and 12, and **Sections 4.11** and **11.3** shall survive the expiration and any termination of this Agreement. Except as otherwise provided in this **Section 11.3**, all other provisions of this Agreement shall terminate upon the expiration or termination of this Agreement.

ARTICLE 12

GENERAL PROVISIONS

12.1 Entire Agreement. The Parties acknowledge that this Agreement, together with the exhibits attached hereto, sets forth the entire agreement and understanding of the Parties as to the subject matter hereof, and supersedes all prior and contemporaneous discussions, agreements and writings in respect hereto. No waiver, modification, amendment or alteration of any provision of this Agreement will be valid or effective unless made in writing and signed by each of the Parties.

12.2 Modification; Waiver. This Agreement may not be altered, amended or modified in any way except by a writing signed by both Parties. The failure of a Party to enforce any rights or provisions of the Agreement shall not be construed to be a waiver of such rights or provisions, or a waiver by such Party to thereafter enforce such rights or provision or any other rights or provisions hereunder. No waiver shall be effective unless made in writing and signed by the waiving Party.

12.3 Further Assurances. Each Party agrees to execute, acknowledge, and deliver such further instruments and to do all such other acts as may be necessary or appropriate in order to carry out the express provisions of this Agreement.

12.4 Force Majeure. Neither Party shall be held responsible for any delay or failure in performance hereunder caused by strikes, embargoes, unexpected government requirements, civil or military authorities, acts of God, earthquake, or by the public enemy or other causes reasonably beyond such Party's control and without such Party's fault or negligence; *provided* that the affected Party notifies the unaffected Party as soon as reasonably possible, and resumes performance hereunder as soon as reasonably possible following cessation of such force majeure event; and provided further that no such delay or failure in performance shall continue for more than [***]. In the event that a delay or failure in performance by Chiva under this **Section 12.4** continues longer than [***], then Ligand may terminate this Agreement in accordance with the terms and conditions of **Section 11.2(b)**.

12.5 Assignments. Neither this Agreement nor any interest hereunder may be assigned, nor any other obligation delegated, by a Party without the prior written consent of the other Party; *provided*, *however*, that a Party shall have the right to assign this Agreement without consent of the other Party to an Affiliate of the assigning Party or to any successor in interest to the assigning Party by operation of law, merger, consolidation, or other business reorganization or the sale of all or substantially all of its assets relating to the subject matter of this Agreement in a manner such that the assigning Party will remain liable and responsible for the performance and observance of all of its duties and obligations hereunder. This Agreement shall be binding upon successors and permitted assigns of the Parties. Any assignment not in accordance with this **Section 12.5** will be null and void.

12.6 Performance by Affiliates. The Parties recognize that each may perform some or all of its obligations under this Agreement through Affiliates or may exercise some or all of its rights under this Agreement through Affiliates, *provided*, *however*, that each Party shall remain responsible and be guarantor of the performance by its Affiliates and shall cause its Affiliates to comply with the provisions of this Agreement in connection with such performance. In particular and without limitation, all Affiliates of a Party that receive Confidential Information of the other Party pursuant to this Agreement shall be governed and bound by all obligations set forth in **ARTICLE 7**. Each Party will prohibit all of its Affiliates from taking any action that such Party is prohibited from taking under this Agreement as if such Affiliates were parties to this Agreement.

12.7 Relationship of the Parties. The Parties shall perform their obligations under this Agreement as independent contractors and nothing in this Agreement is intended or will be deemed to constitute a partnership, agency or employer-employee relationship between the Parties. Neither Party will have any right, power or authority to assume, create, or incur any expense, liability, or obligation, express or implied, on behalf of the other.

12.8 No Use of Names. Except as otherwise required under applicable Law, or as otherwise permitted under **Section 7.4**, neither Party will use the name of the other Party in its advertising, press releases or promotional materials without the prior written consent of such other Party.

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

12.9 Notices. Any notice, request, delivery, approval or consent required or permitted to be given under this Agreement will be in writing and will be deemed to have been sufficiently given if delivered in person, transmitted by facsimile (receipt verified) or by express courier service (signature required) or five (5) days after it was sent by registered letter, return receipt requested (or its equivalent); *provided* that no postal strike or other disruption is then in effect or comes into effect within two (2) days after such mailing, to the Party to which it is directed at its address or facsimile number shown below or such other address or facsimile number as such Party will have last given by notice to the other Party.

If to Ligand: Ligand Pharmaceuticals Incorporated
11119 North Torrey Pines Road, Suite 200
La Jolla, CA 92037
Attention: General Counsel
Fax: (858) 550-7272

With a copy to (which shall not constitute notice hereunder):

: Latham & Watkins LLP
12626 High Bluff Drive, Suite 400
San Diego, CA, 92130
Attention: Faye H. Russell, Esq.
Fax: (858) 523-5450

If to Chiva: Chiva Pharmaceuticals, Inc.
c/o 22nd Floor, Hang Lung Centre,
2-20 Paterson Street, Causeway Bay,
Hong Kong
Attention: Legal Counsel
Fax: (852) 2577 3509

With a copy to (which shall not constitute notice hereunder):

Joseph P. Meara, Esq.
Mark A. Kassel, Esq.
Counsel for Chiva Pharmaceuticals Limited
Foley & Lardner LLP
150 East Gilman St.
Madison, WI 53703
Facsimile: (608) 258-4258

∗∗∗ Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

12.10 Governing Law. The rights and obligations of the Parties under this Agreement shall be governed, and shall be interpreted, construed, and enforced, in all respects by the Law of the State of California, without giving effect to any conflict of Law rule that would result in the application of the Law of any jurisdiction other than the internal Law of the State of California to the rights and duties of the Parties.

12.11 Dispute Resolution. The procedures set forth in this **Section 12.11** shall be the exclusive mechanism for resolving any bona fide disputes, controversies or claims (collectively, "**Disputes**") between the Parties that arise from time to time pursuant to this Agreement relating to any Party's rights and/or obligations hereunder that cannot be resolved through good faith negotiation between the Parties.

(a) Executive Mediation. Any Dispute shall first be referred to an Executive from each Party, by written notice, for attempted resolution by good faith negotiations. Any such Dispute shall be submitted to such Executives no later than [***] following such request by either Party. Such Executives shall attempt in good faith to resolve any such Dispute [***] after submission of the Dispute. In the event the Executives are unable to resolve the Dispute, the Parties shall otherwise negotiate in good faith and use reasonable efforts to settle.

(b) Arbitration. If the Parties are not able to fully settle a Dispute pursuant to Section **12.11(a)** above, and a Party wishes to pursue the matter, each such Dispute that is not an Excluded Claim shall be finally resolved by binding arbitration in accordance with the Commercial Arbitration Rules and Supplementary Procedures for Large Complex Disputes of the American Arbitration Association (" **AAA**"), and judgment on the arbitration award may be entered in any court having jurisdiction thereof.

(1) Any arbitration shall be conducted by a panel of three persons experienced in the pharmaceutical business: within [***] after initiation of arbitration, each Party shall select one person to act as arbitrator and the two Party-selected arbitrators shall select a third arbitrator within [***] of their appointment. If the arbitrators selected by the Parties are unable or fail to agree upon the third arbitrator, the third arbitrator shall be appointed by the AAA. The place of arbitration shall be [***] if the Dispute is submitted by Chiva and [***] if a Dispute is submitted by Ligand, and all proceedings and communications shall be in English.

(2) Either Party may apply to the arbitrators for interim injunctive relief until the arbitration award is rendered or the controversy is otherwise resolved. Either Party also may, without waiving any remedy under this Agreement, seek from any court having jurisdiction any injunctive or provisional relief necessary to protect the rights or property of that Party pending the arbitration award. The arbitrators shall have no authority to award punitive or any other type of damages not measured by a Party's compensatory damages. Each Party shall bear its own costs and expenses and attorneys' fees and [***].

(3) Except to the extent necessary to confirm an award or as may be required by law, neither a Party nor an arbitrator may disclose the existence, content, or results of an arbitration without the prior written consent of both Parties. In no event shall an arbitration be initiated after

the date when commencement of a legal or equitable proceeding based on the dispute, controversy or claim would be barred by the applicable California statute of limitations.

(c) As used in this Section, the term " **Excluded Claim**" shall mean a Dispute that concerns (a) the validity or infringement of a patent, trademark or copyright; or (b) any antitrust, anti-monopoly or competition law or regulation, whether or not statutory. For all Excluded Claims, the Parties hereby submit to the exclusive jurisdiction of the courts of the State of California, in and for the County of San Diego, or of the United States of America for the Southern District of California.

12.12 Headings. The article, section and subsection headings contained herein are for the purposes of convenience only and are not intended to define or limit the contents of the articles, sections or subsections to which such headings apply.

12.13 Severability. When possible, each provision of this Agreement will be interpreted in such manner as to be effective and valid under Law, but, if any provision of this Agreement is held to be prohibited by or invalid under Law, such provision will be ineffective but only to the extent of such prohibition or invalidity, without invalidating the remainder of such provision or of this Agreement. The Parties will make a good faith effort to replace the invalid or unenforceable provision with a valid one which in its economic effect is most consistent with the invalid or unenforceable provision.

12.14 Counterparts. This Agreement may be executed in counterparts (including by facsimile or electronic signature), each of which shall be deemed an original and all of which together shall constitute one instrument.

[*Signature Page Follows*]

∗∗∗ Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

IN WITNESS WHEREOF, the Parties have executed this Agreement in duplicate originals by their duly authorized representatives as of the date set forth above, effective as of the Effective Date.

LIGAND PHARMACEUTICALS INCORPORATED

("Ligand")

By: /s/ Charles Berkman

Name: Charles Berkman

Title: VP, General Counsel & Secretary

CHIVA PHARMACEUTICALS, INC.
INCORPORATED (formerly known as, Elite Mind Investments, Ltd.)

("Chiva")

By: /s/ Carolyn Jin

Name: Carolyn Jin

Title: Acting Chief Executive Officer

[Signature Page of Amended and Restated License Agreement]

EXHIBIT A

[***]

∗∗∗ Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

EXHIBIT B

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Schedule 1.30

HepDirect Patents

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Schedule 1.47

MB07133 Patents

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Schedule 1.57

Pradefovir Patents

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Schedule 5.1

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Schedule 5.3(a)

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∗∗∗ Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

SETTLEMENT AGREEMENT AND MUTUAL RELEASE

THIS SETTLEMENT AGREEMENT AND MUTUAL RELEASE ("**Agreement**") is entered into and effective as of this 31st day of October, 2012 (the " **Effective Date**") by and between **Ligand Pharmaceuticals Incorporated**, for and on behalf of itself and for and on behalf of its shareholders, officers, employees, agents and attorneys, and each of them (**"Ligand"**) and **Chiva Pharmaceuticals, Inc.**, for and on behalf of itself and for and on behalf of its shareholders, officers, employees, agents and attorneys, and each of them (**"Chiva"**) (collectively, the **"Parties"** and individually, **"Party"**).

RECITALS

WHEREAS

A **Ligand** is a pharmaceutical corporation organized under the laws of Delaware and having a place of business at 11119 North Torrey Pines Road, Suite 200, La Jolla, CA 92037.

B. **Chiva** is a pharmaceutical corporation organized under the laws of the Cayman Islands whose registered office is situated at Scotia Centre, 4th Floor, P.O. Box, 2804, George Town, Grand Cayman KY1-1112, Cayman Islands.

C. **Ligand** and **Chiva** entered into that certain License Agreement dated October 7, 2011, as amended pursuant to the First Amendment to License Agreement dated December 23, 2011, pursuant to which Ligand licensed to Chiva certain of Ligand's patents and know-how ("**Fablyn License Agreement**").

D . **Ligand** and **Chiva** entered into that certain License Agreement effective as of January 6, 2011, as amended pursuant to the First Amendment to License Agreement dated August 31, 2011, as further amended pursuant to the Second Amendment to License Agreement dated December 23, 2011 (the **"HepDirect License Agreement"**)

E. A dispute arose between the **Parties** regarding [***] under the terms of the **Fablyn License Agreement**, and [***] under the terms of the **HepDirect License Agreement**.

F . **Ligand** initiated an arbitration against **Chiva** with the American Arbitration Association titled Ligand Pharmaceuticals Incorporated v. Chiva Pharmaceuticals, Inc., Case No. 50 122 T 00644 12 (the " **Arbitration**").

G. The **Parties** to this **Agreement**, without acknowledging the validity of any claims, causes of action or allegations in the **Arbitration**, or any fault, liability or wrongdoing of any kind, wish to compromise, settle and discharge all claims, controversies, demands, actions or causes of action that each **Party** has or may have against the other **Party** in connection with the **Fablyn License Agreement** and the **HepDirect License Agreement**, including, but not limited to, the disputes that are the subject matter of the **Arbitration**.

NOW, THEREFORE, in consideration of the mutual promises, covenants, and conditions herein contained, and intending to be legally bound, the **Parties** hereby agree to the following terms and agree to perform any and all acts necessary, including signing necessary documents, to implement the following agreement:

AGREEMENT

1. Payment to **Ligand**

Upon execution of this **Agreement** by the **Parties**, **Chiva** shall pay to **Ligand** the amount of ninety-six thousand, one hundred eleven U.S. dollars and eighty cents ($96,111.80) as a full and final settlement of all monies due to or claimed by **Ligand** under the **Fablyn License Agreement** (the "**Settlement Amount**"). The **Settlement Amount** shall be paid by **Chiva** to **Ligand** in the form of a wire transfer to **Ligand** payable to such bank account as Ligand has previously communicated to **Chiva**. The **Settlement Amount** shall be paid to Ligand within three (3) business days of the execution of this Agreement by both **Parties**. If Chiva fails to pay the **Settlement Amount** within three (3) business days of the execution of this Agreement, then this Agreement and the **Amended and Restated License Agreement** (as defined in Section 3 of this Agreement) shall automatically terminate without ever having taken effect..

2. Termination of the **Fablyn License Agreement** and Return of Product Assets

(a) As used in this Section 2, "Product" means that pharmaceutical product known as "Fablyn" (lasofoxifene tartrate as identified in Exhibit A).

(b) Upon **Ligand's** receipt from Chiva of: (1) the **Settlement Amount**; (2) both this Agreement and the **Amended and Restated License Agreement** in both cases validly executed by **Chiva**; and (3) the **Product Assets**, the **Fablyn License Agreement** (a copy of which is attached hereto as Exhibit B) shall terminate and have no further force and effect; *provided, however,* the provisions of Article 6 shall survive for a period of [***]. As of the **Effective Date**, **Ligand** acknowledges receipt of all material **Product Assets** known to it pursuant to Sections 2(d) and 2(e) herein.

(c) **Chiva** hereby assigns and transfers to **Ligand** all of **Chiva's** (and any of its Affiliates' (as defined in the **Fablyn License Agreement**)) right, title and interest in and to all " **Product Assets**." For purposes of this **Agreement**, **"Product Assets"** shall mean those tangible or intangible assets critical or necessary for the making, using, selling, offering to sell, exporting or importing of Product worldwide, including (i) Patents licensed to **Chiva** and its Affiliates under the **Fablyn License Agreement** ("**Fablyn Patents**") (a list of which is attached hereto as Exhibit C); (ii) **Regulatory Documentation** (as defined in the **Fablyn License Agreement**); (iii) **Regulatory Approvals** (as defined in the **Fablyn License Agreement**) that exist as of the **Effective Date** (a list of which is attached hereto as Exhibit D); (iv) **Know-How** (as defined in the **Fablyn License Agreement**) licensed to **Chiva** and its Affiliates as of the **Effective Date** that is (A) critical or necessary in connection with the making, using, selling, offering to sell, exporting and importing of Product worldwide and (B) not included in the Fablyn Patents ("**Fablyn Know-How**"); (v) commitments, contracts, purchase orders, leases or other agreements, whether written or oral, related to the Product (collectively, "**Product Agreements**"); (vi) inventory owned as of the **Effective Date** by **Chiva** of Product or works in progress or materials used in manufacture of Product, whether held at a location or facility of **Chiva** (or of any other person on behalf of **Chiva**) or in transit to or from **Chiva** (or any such other person), including active pharmaceutical ingredient (collectively, "**Materials**"); (vii) files, documents, instruments, papers, books and records owned by **Chiva** or any of its **Affiliates** relating to the Products or that are critical or necessary for the clinical development, use or manufacture of the Products, including all such files, documents, instruments, papers, books and records related to the Fablyn Patents and Fablyn Know-How ("**Books and**

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

Records"); (ix) toxicology, pre-clinical, clinical, regulatory and manufacturing information and data and technology, and all submissions and correspondence with or to any governmental or regulatory authority worldwide regarding Product and the manufacturing, packaging or release of Product, including all validation data and documentation supporting the process of manufacturing Product, in any form whatsoever including notebooks ("**Product Data**"); and (x) rights, privileges, claims and causes of action (regardless of whether or not such claims or causes of action have been asserted by **Chiva**) arising out of or relating to the ownership, performance or use of the Product Assets. For clarity, the **Product Assets** shall include any and all such materials, documents and other information transferred by **Ligand** to **Chiva** in connection with the execution and performance under the **Fablyn License Agreement** as well as any and all **Product Assets** developed or acquired by **Chiva** since the effective date of the **Fablyn License Agreement**.

(d) **Ligand** acknowledges that it has copies of all **Product Assets** it provided to **Chiva** and that **Chiva** previously provided to it in connection with the execution and performance under the **Fablyn License Agreement**, that it did not provide any **Product**, intermediates or other inventory for making **Product** to **Chiva**, and that **Chiva** is not obligated to provide to **Ligand** copies of any **Product Assets** that are already in **Ligand's** possession. In particular, **Ligand** acknowledges receiving on or before the **Effective Date**, a copy of [***].

(e) **Chiva** represents and warrants to **Ligand** that, as of the Effective Date, there are [***]. **Chiva** acknowledges that [***].

(f) **Chiva** shall execute and cause to be delivered to **Ligand** such instruments and other documents, and shall take such other actions, as **Ligand** shall reasonably request (prior to, at or within 5 days after the execution of this Agreement) for the purpose of carrying out or evidencing any of the transactions contemplated by Section 2 of this Agreement. In furtherance of the foregoing, **Chiva** agrees that if, after the execution of this Agreement, **Chiva** holds assets, properties or rights which by the terms hereof were to be assigned and transferred to **Ligand**, **Chiva** shall, at its reasonable expense, promptly assign and transfer or cause to be assigned and transferred such assets, properties and rights to **Ligand**, and **Ligand** and **Chiva** agree that **Chiva** will hold such assets, properties and rights as trustee of **Ligand** and all income and risk of loss of the transferred assets, properties and rights shall be for the account of **Ligand**.

(g) The **Product Assets** collectively constitute all of the properties, rights, interests and other tangible and intangible assets owned or controlled by **Chiva** that are critical or necessary to reasonably enable **Ligand**, following the **Effective Date**, to continue the clinical development of **Products**. **Chiva** has good and marketable title to all of the **Product Assets.** To the Parties' knowledge, Exhibits C and D attached hereto are true, complete and correct as of the Effective Date.

(h) **Chiva** acknowledges and agrees that all amounts paid prior to the **Effective Date** by **Chiva** to **Ligand** pursuant to the terms of the **Fablyn License Agreement** were non-refundable and non-creditable and **Ligand** shall retain all such amounts.

(i) **Ligand** acknowledges and agrees that all amounts payable (past, present or future due) on the **Effective Date** by **Chiva** to **Ligand** pursuant to the terms of the **Fablyn License Agreement**, and all rights thereto and benefits thereof, shall be absolutely waived by **Ligand** and **Ligand** shall have no further claim or right to claim against **Chiva** for such amounts or any part thereof, except as provided in this **Agreement** with respect to the **Settlement Amount**.

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

3. Execution of the Amended and Restated HepDirect License Agreement

Simultaneous with the execution of this **Agreement**, the **Parties** shall execute and deliver the Amended and Restated License Agreement ("**Amended and Restated License Agreement** "), attached hereto as Exhibit E, which amends and restates the **HepDirect License Agreement**.

4. Dismissal of the **Arbitration**

Upon **Ligand's** receipt from Chiva of: (1) the **Settlement Amount**; (2) both this Agreement and the **Amended and Restated License Agreement** in both cases validly executed by **Chiva**; and (3) the **Product Assets**, **Ligand** [***], dismiss the **Arbitration** now pending before the American Arbitration Association initiated by **Ligand**. Said dismissal shall be on terms that require that each **Party** [***]. **Ligand** shall promptly provide to **Chiva** proof of the dismissal of the **Arbitration**.

5. Mutual Release of Claims

(a) As used in this Clause, "Related Persons and Entities" in connection with a **Party** means any and all past, present, and future parents, subsidiaries, affiliates, partners, owners, joint venturers, stockholders, predecessors, successors, officers, members, directors, administrators, employees, agents, representatives, consultants, attorneys, insurers, heirs, executors, assignors or assignees, retirement plans (and/or their trustees) of that **Party** and any other person, firm, or corporation with whom that **Party** is now or may hereinafter be affiliated, and any of them.

(b) Each **Party** and its Related Persons and Entities hereby fully and forever, knowingly, voluntarily, and irrevocably releases, acquits, discharges, and promises not to sue the other **Party** and its Related Persons and Entities, from, without limitation, any and all claims, demands, damages, obligations, losses, causes of action, costs, expenses, attorneys' fees, judgments, liabilities, duties, debts, liens, accounts, obligations, contracts/agreements, promises, representations, actions, and causes of action, other proceedings and indemnities of any nature whatsoever arising from or in any way related to the **Fablyn License Agreement** and the **HepDirect License Agreement** and any and all claims made by that **Party** in the **Arbitration** (including but not limited to any and all fees and costs related thereto), whether accrued or contingent, secured or unsecured, negligent or intentional, known or unknown, suspected or unsuspected, and whether based on law, equity, contract, tort, statute, or other legal or equitable theory of recovery, whether mature or to mature in the future, which from the beginning of time of the world to the **Effective Date** of this **Agreement**, each **Party** and its Related Persons and Entities had, now have, or claims to have against the other **Party** and its Related Persons and Entities, or any other person or entity described above.

(c) The **Parties** acknowledge that each of them may later discover material facts in addition to, or different from, those which they now know or believe to be true. The **Parties** further acknowledge that there may be future events, circumstances or occurrences materially different from those each knows or believes likely to occur. It is the intention of each of the **Parties** hereto to fully, finally and forever settle and generally release all claims, disputes and differences occurring prior to the **Effective Date** of this **Agreement**. The general releases provided in this **Agreement** shall remain in full effect notwithstanding the discovery or existence of any such additional or different facts or occurrence of any such future events, circumstances or conditions.

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6. No Admission of Liability

This **Agreement** and its terms, including, but not limited to, the Mutual Release above, and the execution of this **Agreement**, shall not be construed as an admission of liability or fault by either of the **Parties**.

7. Each **Party** to Bear Its Own Cost

Each of the **Parties** shall, at its own cost, execute all such documents and take such steps and do all such acts or things as may be required for the purpose of giving effect to the provisions of this **Agreement**. Each **Party** will bear its own respective legal and other costs, including the costs of **Arbitration**, negotiations and execution of this **Agreement**.

8. General Release: California Civil Code Section 1542 Waiver

Each **Party** and its Related Persons and Entities hereby expressly waives the benefit of any statute or rule of law that, if applied to this **Agreement** would otherwise exclude from its binding effect any claims not known by it to exist which arose prior to the signing of this **Agreement**. The **Parties** acknowledge that they have read and fully understand the provisions of California Civil Code section 1542, which provides as follows:

> A GENERAL RELEASE DOES NOT EXTEND TO CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN HIS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH, IF KNOWN BY HIM MUST HAVE MATERIALLY AFFECTED HIS SETTLEMENT WITH THE DEBTOR.

The **Parties**, being aware of said Code Section, hereby each expressly waive, on behalf of themselves and their affiliates, any rights and benefits that they may have under section 1542 of the Civil Code to the full extent that they may lawfully waive such rights and benefits, and shall waive any rights and benefits they may have under any other statutes or common law principles of similar effect.

9. Entire Agreement

All prior or contemporaneous understandings or agreements between the **Parties** as they relate to the **Arbitration** are merged into this **Agreement**, and this **Agreement**, including the Exhibits attached hereto, expresses the agreement of the **Parties**. This **Agreement** may be modified only in writing, signed by all the **Parties** hereto, or all the **Parties** affected by any such modification, and no term or provision may be waived except by such writing. The **Parties** have been represented by counsel in connection with the preparation of this **Agreement**.

10. Joint Efforts

This **Agreement** was drafted through the joint efforts of the **Parties** through counsel, and shall not be read for or against any **Party** to this **Agreement** on that account.

11. Benefit of Agreement

∗∗∗ Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

This **Agreement** shall be binding upon and inure to the benefit of the **Parties**, and each of them, their predecessors, successors, assigns, personal representatives, agents, directors, members, officers and employees.

12. Notices

All notices or demands of any kind that any **Party** is required to or desires to give in connection with this **Agreement** shall be in writing and shall be deemed to be delivered by facsimile or PDF and by mailing the notice or demand via courier, Federal Express or certified mail, postage prepaid, and addressed to the other **Parties** as follows:

A. If to Ligand:

Ligand Pharmaceuticals Incorporated
11119 North Torrey Pines Road, Suite 200
La Jolla, CA 92037
Attention: Charles Berkman, Esq., General Counsel
Facsimile: (858) 550-7272

With a copy to:

Faye H. Russell, Esq.
Jake Ryan, Esq.
Counsel for Ligand Pharmaceuticals Incorporated
Latham & Watkins LLP
12636 High Bluff Dr., Suite 400
San Diego, CA 92130
Facsimile: (858) 523-5450

B. If to Chiva:

Chiva Pharmaceuticals, Inc.
c/o 22nd Floor, Hang Lung Centre,
2-20 Paterson Street, Causeway Bay,
Hong Kong
Attention: Legal Counsel
Facsimile: (852) 2577 3509

With a copy to:

Joseph P. Meara, Esq.
Mark A. Kassel, Esq.
Counsel for Chiva Pharmaceuticals, Inc.
Foley & Lardner LLP
150 East Gilman St.
Madison, WI 53703
Facsimile: (608) 258-4258

∗∗∗ Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

13. Severability

If any portion, provision, or part of this **Agreement** is held, determined, or adjudicated to be invalid, unenforceable, or void for any reason whatsoever, each such portion, provision, or part of this **Agreement** shall be severed from the remaining portions, provisions, or parts of this **Agreement** and shall not affect the validity or enforceability of such remaining portions, provisions or parts.

14. Arbitration of Disputes

All disputes arising out of or in connection with this **Agreement** shall be settled by arbitration according to the Commercial Arbitration Rules and Supplementary Procedures for Large Complex Disputes of the American Arbitration Association ("Rules") by one arbitrator in accordance with said Rules. The seat of arbitration shall be San Diego, California. The procedural law of this place shall apply where the Rules are silent. The arbitration proceedings shall be conducted in English.

15. Choice of Law

This **Agreement** shall be construed according to the laws of the State of California, U.S.A., without regard to its conflict of laws principles.

16. Attorneys' Fees

If any arbitration, legal action or other proceeding is brought by any of the **Parties** hereto to enforce this **Agreement** or to recover damages or equitable relief for a breach or threatened breach thereof, the prevailing party shall recover its costs, expert witness fees, consulting fees and reasonable attorneys' fees incurred in such arbitration, action or proceeding, which amount shall be determined by the arbitration tribunal or court, as it may be.

17. Place of Contracting

In any arbitration, action or other proceeding relating to this **Agreement**, the **Agreement** shall be deemed to have been entered into in San Diego, California notwithstanding where the **Agreement** was executed.

18. Headings

The headings of the paragraphs of this **Agreement** are for convenience only and shall not affect the construction or interpretation of any of its provisions.

19. Warranties and Representations. **Ligand** and **Chiva** each represent and warrant to the other that, as of the **Effective Date**:

(a) it is a corporation or entity duly organized and validly existing under the laws of the jurisdiction in which it is incorporated;

(b) it has full corporate or institutional power and authority, and has obtained all approvals, permits and consents necessary, to enter into this Agreement and to perform its obligations hereunder;

(c) this Agreement is legally binding upon it and enforceable in accordance with its terms;

(d) the execution, delivery and performance of this Agreement does not conflict with any agreement, instrument or understanding, oral or written, to which it is a party or by which it may be bound, nor violate any material law or regulation of any governmental or regulatory authority having jurisdiction over it;

(e) it has not assigned or transferred to any person not a party hereto any claim or other released matter, or any part or portion thereof; and

(f) they have not relied upon any representations by any other **Party** or their respective directors, members, agents, employees, representatives, or attorneys, concerning the terms or effects of this **Agreement** other than those expressly contained in this **Agreement**.

20. Publicity.

(a) Characterization of Settlement. **Chiva** and **Ligand** each agree that in characterizing or describing the settlement and resolution of said legal action or the terms and conditions of this Agreement, neither **Party** will make any statements that it has been successful, attained a victory, or prevailed in the Arbitration.

(b) Press Release; SEC Filings. **Ligand** may, within [***], issue a press release in the form to be proposed by Ligand and subject to **Chiva**'s prior written approval, not to be unreasonably withheld. In the event **Chiva** does not provide its written approval within [***], **Ligand** may issue a press release in furtherance of its disclosure obligations as a publicly traded company. The parties acknowledge that **Ligand** is obligated to file a Current Report on Form 8-K in connection with the execution of this Agreement and will be obligated to file this **Agreement** with the Securities and Exchange Commission.

(c) Confidentiality. Save for the disclosure obligations under Section 20(b) above, the **Parties** agree not to disclose the terms and content of this **Agreement** to any third party.

*** Certain information on this page has been omitted and filed separately with the Commission. Confidential treatment has been requested with respect to the omitted portions.

IN WITNESS WHEREOF, the **Parties** hereto have duly executed this Settlement Agreement and Mutual Release in counterparts through their duly authorized representatives.

LIGAND PHARMACEUTICALS, INC.

("Ligand")

By: /s/ Charles Berkman

Name: Charles Berkman

Title: VP, General Counsel & Secretary

CHIVA PHARMACEUTICALS, INC.

("Chiva")

By: /s/ Carolyn Jin

Name: Carolyn Jin

Title: Acting Chief Executive Officer

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Exhibit A
Fablyn

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Exhibit B
Fablyn License Agreement

[See Exhibit 10.6 of Ligand's Quarterly Report on Form 10-Q
for the period ended September 30, 2011]

Exhibit C
Fablyn Patents

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Exhibit D
Regulatory Approvals

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Exhibit 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We have issued our reports dated March 14, 2013 with respect to the consolidated financial statements and internal control over financial reporting included in the Annual Report of Ligand Pharmaceuticals Incorporated on Form 10-K for the year ended December 31, 2012. We hereby consent to the incorporation by reference of said reports in the Registration Statements of Ligand Pharmaceuticals, Incorporated on Form S-3 (File No. 333-177338, effective October 26, 2011) and Forms S-8 (File No. 333-160132, effective June 22, 2009 and File No. 333-131029, effective June 18, 2007).

/s/ GRANT THORNTON LLP

San Diego, California

March 14, 2013

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, John L. Higgins, certify that:

1. I have reviewed this Annual Report on Form 10-K of Ligand Pharmaceuticals Incorporated;

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 officers 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 officers 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 14, 2013

/s/ John L. Higgins

John L. Higgins
President, Chief Executive Officer and Director
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, John P. Sharp, certify that:

1. I have reviewed this Annual Report on Form 10-K of Ligand Pharmaceuticals Incorporated;

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 officers 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 officers 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 14, 2013

/s/ John P. Sharp

John P. Sharp
Vice President, Finance and Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION BY PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

In connection with the accompanying Annual Report on Form 10-K of Ligand Pharmaceuticals Incorporated (the "Company") for the year ended December 31, 2012, I, John L. Higgins, President, Chief Executive Officer and Director of the Company, hereby certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to the best of my knowledge and belief, that:

(1) such Annual Report on Form 10-K for the year ended December 31, 2012, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) the information contained in such Annual Report on Form 10-K for the year ended December 31, 2012, fairly presents, in all material respects, the financial condition and results of operations of the Company.

The foregoing certification is being furnished solely to accompany such Annual Report on Form 10-K for the year ended December 31, 2012, pursuant to 18 U.S.C. Section 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

Date: March 14, 2013

/s/ John L. Higgins

John L. Higgins
President, Chief Executive Officer and Director
(Principal Executive Officer)

Exhibit 32.2

CERTIFICATION BY PRINCIPAL FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO SECTION 906
OF THE SARBANES-OXLEY ACT OF 2002

In connection with the accompanying Annual Report on Form 10-K of Ligand Pharmaceuticals Incorporated (the "Company") for the year ended December 31, 2012, I, John P. Sharp, Vice President, Finance and Chief Financial Officer of the Company, hereby certify pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, to the best of my knowledge and belief, that:

(1) such Annual Report on Form 10-K for the year ended December 31, 2012, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

(2) the information contained in such Annual Report on Form 10-K for the year ended December 31, 2012, fairly presents, in all material respects, the financial condition and results of operations of the Company.

The foregoing certification is being furnished solely to accompany such Annual Report on Form 10-K for the year ended December 31, 2012, pursuant to 18 U.S.C. Section 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing.

Date: March 14, 2013

/s/ John P. Sharp

John P. Sharp
Vice President, Finance and Chief Financial Officer
(Principal Financial Officer)