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SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

FORM 10-K

Mark One

[X] ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the Fiscal Year Ended December 31, 1999

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. 0-20720

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

<TABLE>

<S>	<C>
Delaware	77-0160744
(State or other jurisdiction of Incorporation or organization)	(IRS Employer Identification No.)
10275 Science Center Drive San Diego, CA	92121-1117 (Zip Code)
(Address of Principal Executive Offices)	

</TABLE>

Registrant's telephone number, including area code: (858) 550-7500

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

Securities registered pursuant to Section 12(g) of the Act:
Common Stock, $.001 par value

Warrants to purchase one share of Common Stock, $.001 par value

Preferred Share Purchase Rights
(Title of Class)

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 [X] 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. [ ]

The aggregate market value of the Registrant's voting stock held by non-affiliates as of February 29, 2000 was $1,034,768,582. For purposes of this calculation, shares of Common Stock held by directors, officers and 5% 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 February 29, 2000 the registrant had 53,249,143 shares of Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's Proxy Statement to be filed not later than 120 days after December 31, 1999, in connection with the Registrant's 2000 Annual Meeting of Stockholders, referred to herein as the "Proxy Statement," are incorporated by reference into Part III of this Form 10-K. Certain exhibits filed with the Registrant's prior registration statements and period reports under the Securities Exchange Act of 1934 are incorporated herein by reference into Part IV of this Report.

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GLOSSARY

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PRODUCTS AND INDICATIONS

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ONTAK(R)(denileukin diftitox) Approved in February 1999 in the U.S. for the treatment of patients with persistent or

recurrent cutaneous T-cell lymphoma whose malignant cells express the CD25 component of the Interleukin-2 receptor.

Panretin(R) (alitretinoin) gel 0.1% Approved in February 1999 in the U.S. for the topical treatment of cutaneous lesions of patients with AIDS-related Kaposi's sarcoma.

Targretin(R)(bexarotene) capsules Approved in December 1999 in the U.S. for once daily oral administration for the treatment of cutaneous manifestations of cutaneous T-cell lymphoma in patients who are refractory to at least one prior systemic therapy.

CTCL	Cutaneous T-cell lymphoma
HIV	Human immunodeficiency virus
HRT	Hormone replacement therapy
KS	Kaposi's sarcoma
NHL	Non-Hodgkin's lymphoma

SCIENTIFIC TERMS

AR	Androgen Receptor
ER	Estrogen Receptor
IR	Intracellular Receptor
JAK	Janus Kinase family of tyrosine protein kinases
PPAR	Peroxisome Proliferation Activated Receptor
PR	Progesterone Receptor
RAR	Retinoic Acid Receptor
RR	Retinoid Responsive Intracellular Receptor
RXR	Retinoid X Receptor
SARM	Selective Androgen Receptor Modulator
SERM	Selective Estrogen Receptor Modulator
STAT	Signal Transducer and Activator of Transcription

REGULATORY TERMS

CHPB	Canadian Health Protection Branch
EMEA	European Agency for the Evaluation of Medicinal Products
FDA	United States Food and Drug Administration
IND	Investigational New Drug Application (United States)
MAA	Marketing Authorization Application (Europe)
NDA	New Drug Application (United States)
NDS	New Drug Submission (Canada)

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PART I

ITEM 1. BUSINESS

The discussion of our business contained in this annual report on form 10-K may contain certain projections, estimates and other forward-looking statements that involve a number of risks and uncertainties, including those discussed below at "Risks and Uncertainties." While this outlook represents management's current judgment on the future direction of the business, such risks and uncertainties could cause actual results to differ materially from any future performance suggested below. 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.

Our trademarks, trade names and service marks referenced in this annual report include ONTAK(R), Panretin(R) and Targretin(R). Each other trademark, trade name or service mark appearing in this annual report belongs to its holder.

References to Ligand Pharmaceuticals Incorporated ("Ligand", the "Company", "we" or "our") include its wholly owned subsidiaries - Glycomed Incorporated; Ligand Pharmaceuticals (Canada) Incorporated; Ligand Pharmaceuticals International, Inc.; Marathon Biopharmaceuticals, Inc.; and Seragen, Inc.

OVERVIEW

Our goal is to build a profitable pharmaceutical company which discovers, develops and markets new drugs that address critical unmet medical needs of patients in the areas of cancer, men's and women's health and skin diseases, as well as osteoporosis, metabolic, cardiovascular and inflammatory diseases. We strive to develop drugs that are more effective and/or safer than existing therapies and that are more convenient (taken orally or topically administered) and cost effective. We plan to build a profitable pharmaceutical company by generating income from two diversified profit centers: sales revenues from specialty oncology products developed and marketed by Ligand, and research, milestone and royalty revenues resulting from collaborations where large pharmaceutical partners develop and market products in large markets beyond Ligand's strategic focus or resources.

We currently market three oncology products in the United States ("U.S."), all of which were approved by the U.S. Food and Drug Administration ("FDA") in 1999 -- Panretin(R) gel, ONTAK(R) and Targretin(R) capsules. The FDA is currently reviewing an NDA for a fourth product, Targretin(R) gel, which review is expected to be completed in June 2000. In Europe, Marketing Authorization Applications ("MAA") for Targretin(R) capsules and Panretin(R) gel are under review by the European Agency for the Evaluation of Medicinal Products ("EMEA"). We also continue efforts to in-license and acquire products, such as ONTAK(R) (acquired in the 1998 Seragen acquisition) and Morphelan(TM) (licensed from Elan), which have near-term prospects of FDA approval and which can be marketed by our specialty cancer and HIV-center sales force in the U.S. Additional products are being developed through our internal development programs. Currently, Ligand has seven products in clinical development, including marketed products in clinical development for larger market indications such as non-Hodgkin's lymphoma ("NHL"), psoriasis and various cancers.

We have established research and development collaborations with numerous global pharmaceutical companies, including Abbott Laboratories, Allergan, American Home Products, Glaxo Wellcome, Eli Lilly, Parke-Davis (Warner-Lambert), Pfizer, SmithKline Beecham and, early in 2000, Organon (Akzo-Nobel). During 1999, our corporate partners had seven compounds on human development track, including two products scheduled to enter Phase III clinical trials in 2000, and numerous compounds in research and pre-clinical stages. These corporate partner products are being studied for the treatment of large market indications such as breast cancer, osteoporosis, diabetes and cardiovascular disease.

Internal and collaborative research and development programs utilize our proprietary science technology based on our leadership position in gene transcription technology. Our proprietary technologies involve two natural mechanisms that regulate gene activity: (1) non-peptide hormone activated Intracellular Receptors ("IRs") and (2) cytokine and growth factor activated Signal Transducers and Activators of Transcription ("STATs"). Panretin(R) gel, Targretin(R) capsules and all of our corporate partner products currently on human development track are IR modulators, discovered using our IR technology.

In late 1998, we assembled a specialty oncology and HIV-center sales and marketing team to market in the U.S. products developed, acquired or licensed by us. In late 1999, we expanded our U.S. sales force from 20 to 40 sales representatives to support the launch of Targretin(R) capsules and increase market penetration of ONTAK(R) and Panretin(R) gel. Internationally, through marketing and distribution agreements with Ferrer and Alfa Wassermann, we have established a European and Latin American marketing and distribution capability in anticipation of potential product approvals in Europe and Latin America for Panretin(R) gel and Targretin(R) capsules.

BUSINESS STRATEGY

Our goal is to become a profitable pharmaceutical research, development and marketing company that generates significant cash flow. Building primarily on our proprietary IR and STATs technologies, our strategy is to generate cash flow primarily from (1) the sale in the U.S. and Europe of specialty oncology products developed, acquired or in-licensed by us and (2) research, milestone and royalty revenues from the development and sale of products developed and marketed by our collaborative partners.

Building a Specialty Oncology Franchise in the U.S. and Europe

Our strategy is to develop a specialty cancer product pipeline based on our IR and STATs technologies and acquired and in-licensed products and to market

these products initially with a specialized sales force in the U.S. and directly or through marketing partners in selected international markets. Focusing initially on niche oncology indications with the possibility of expedited regulatory approval has allowed us to bring products to market quickly. This strategy also allows us to market these products with a specialty oncology sales force, spreading the cost of our sales and marketing infrastructure among multiple products. Our goal is to expand the markets for our products through additional indication approvals, approvals in international markets and marketing and distribution agreements in select international markets where we will not market directly. To further leverage our sales force, we intend to selectively license-in or acquire complementary technology and/or products in advanced stages of development.

Building a Collaborative-Based Business in Large Product Markets

Our strategy in our collaborative research and development business is to share the risks and benefits of discovering and developing drugs to treat diseases that are beyond Ligand's strategic focus or resources. These diseases typically affect large populations often treated by primary care physicians and drugs to treat these diseases may be more costly to develop and/or to market effectively with a small specialty sales force. Despite these risks, drugs approved for these indications may have large market potential - often in excess of $1.0 billion in sales.

Since our inception, we have entered into 11 significant collaborations with major pharmaceutical companies focusing on a broad range of disease targets. In 1999, our corporate partners advanced four compounds into human development track and two additional compounds were scheduled to enter Phase III trials in 2000.

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Corporate Collaborator (1)	Initiation of Collaboration	Focus
<S>	<C>	<C>
Pfizer Inc.	May 1991	Osteoporosis, breast cancer
Allergan, Inc.	June 1992	Skin disorders, type II diabetes
Glaxo-Wellcome plc	September 1992	Cardiovascular diseases
Abbott Laboratories	July 1994	Inflammatory diseases
Wyeth-Ayerst, the pharmaceutical division of American Home Products	September 1994	Women's and men's health, oncology
SmithKline Beecham	February 1995	Oncology, anemia
Eli Lilly	November 1997	Type II diabetes, metabolic and cardiovascular diseases
SmithKline Beecham	April 1998	Obesity
Parke-Davis Pharmaceutical Research and Development of Warner-Lambert Company	September 1999	Women's health
Organon	February 2000	Women's health

</TABLE>

(1) A collaboration initiated in 1994 with Sankyo Company, Ltd. has been completed.

We have entered into research and development collaborations with the goal of generating research, milestone and royalty revenues in market opportunities resulting from Ligand's technologies that are beyond Ligand's strategic focus or resources. Our collaborative programs focus on discovering drugs for certain cardiovascular, inflammatory, metabolic and other diseases, as well as broad applications for women's and men's health. We believe that our collaborators have the resources, including clinical and regulatory experience, manufacturing capabilities and marketing infrastructure, needed to develop and commercialize drugs for these markets. The arrangements generally provide for collaborative

discovery programs funded largely by the corporate partners aimed at discovering new therapies for diseases treated by primary care physicians. In general, drugs resulting from these collaborations will be developed, manufactured and marketed by the corporate partners. Our collaborative agreements provide for Ligand to receive: (1) research revenue during the drug discovery stage; (2) milestone revenue for compounds successfully moving through clinical development; and (3) royalty revenue from the sale of drugs developed through collaborative efforts.

LIGAND MARKETED PRODUCTS

We currently market three oncology products in the U.S.

Marketed Product(1)	Approved Indication	U.S. Status	European Status	Indications in Development (2)
ONTAK(R)	CTCL	Marketed	--	NHL, psoriasis
Panretin(R) gel	KS	Marketed	MAA filed	Skin cancers
Targretin(R) capsules	CTCL	Marketed	MAA filed	Psoriasis, advanced breast cancer, various other cancers

(1) We also market two oncology products in-licensed for marketing exclusively in Canada -- PHOTOFRIN(R) and Proleukin(R). Product sales from PHOTOFRIN(R) and Proleukin(R) in 1999 were not significant compared to total product sales and are not expected to be in the future.

(2) For a discussion of other indications in development, see "Ligand Clinical Development and Research Programs".

U.S. SPECIALTY ONCOLOGY FRANCHISE. We have developed a cancer product pipeline that includes three products marketed in the U.S. and several late-stage products nearing NDA submission or approval. The FDA has approved Panretin(R) gel, ONTAK(R) and Targretin(R) capsules and is currently reviewing the NDA for Targretin(R) gel, which review is expected to be completed in June 2000. The five retinoid products in our cancer pipeline, Panretin(R) gel, Panretin(R) capsules, Targretin(R) gel, Targretin(R) capsules and LGD1550, were developed using IR technology. Retinoids may offer important clinical advantages over currently available cancer therapies by triggering natural mechanisms to halt or reverse the progress of various forms of cancer. In 1999, we doubled our sales force to 40 representatives and put in place additional resources and infrastructure to support our sales and marketing efforts. Our sales and marketing organization now includes more than 85 people. Our targeted physician market consists of 3,500 oncologists and 3,500 dermatologists in the U.S. We believe that a 40-person sales force can efficiently cover the 3,200 offices or centers these physicians represent and is adequate to market our products until the launch of another product following regulatory approval or expansion of indications for our existing products.

EUROPEAN AND LATIN AMERICAN SPECIALTY ONCOLOGY FRANCHISE. In early 1999, we laid the groundwork for global commercialization with the initiation of European operations through our subsidiary, Ligand Pharmaceuticals International, Inc., with headquarters in London to support our business development efforts in Europe. In 1999, we submitted two MAAs via the EMEA seeking marketing clearance in Europe for Targretin(R) capsules and for Panretin(R) gel. Also in 1999, we entered into marketing and distribution agreements with Ferrer International S.p.A. for territories in Spain, Portugal, Greece, and Latin America and Alfa Wassermann in Italy for the marketing and distribution of ONTAK(R) and Panretin(R) in all indications and Targretin(R) in cancer and dermatological indications. We expect to enter into additional marketing and distribution agreements during 2000 for select European markets where we will not market our products directly.

CTCL MARKET. CTCL is a type of NHL that appears initially in the skin, but over time may involve other organs. CTCL is a cancer of T-lymphocytes, white blood cells that play a central role in the body's immune system. The disease can be extremely disfiguring and debilitating and median survival for late-stage patients is less than three years. The prognosis for CTCL is based in part on the stage of the disease when diagnosed. CTCL is most commonly a slowly progressing cancer, and many patients live with the complications of CTCL for 10 or more years after diagnosis. However, some patients have a much more

aggressive form of this disease. CTCL affects an estimated 16,000 people in the U.S. With ONTAK(R) and Targretin(R) capsules currently approved in the U.S. for the treatment of CTCL, and Targretin(R) gel granted priority review status by the FDA, our current strategy is to have multiple products available for treating CTCL.

ONTAK(R). ONTAK(R), approved for marketing in February 1999 by the FDA for the treatment of patients with persistent or recurrent cutaneous T-cell lymphoma ("CTCL") whose malignant cells express the CD25 component of the interleukin-2 ("IL-2") receptor, was developed using Seragen's fusion protein technology. ONTAK(R) is the first product commercialized by us for the treatment of CTCL and the first treatment to be approved for CTCL in nearly 10 years. The FDA acted under the accelerated approval regulations in its approval of ONTAK(R) and requested that we conduct certain post-approval clinical and research studies to further document the safety, efficacy and pharmacokinetic profile of this drug. ONTAK(R) is currently in two Phase II clinical trials for the treatment of patients with NHL. Clinical trials using ONTAK(R) for the treatment of psoriasis have also been conducted. These indications provide significantly larger market opportunities than CTCL.

TARGRETIN(R) CAPSULES. In late December 1999, the FDA granted marketing approval for Targretin(R) capsules with once daily oral administration for the treatment of cutaneous manifestations of CTCL in patients who are refractory to at least one prior systemic therapy. We launched sales and marketing of Targretin(R) capsules in January 2000. Targretin(R) capsules offer the convenience of a daily oral dose administered by the patient at home. At the request of the FDA, we agreed to conduct certain post-approval Phase IV clinical and pharmacokinetic studies. We are developing Targretin(R) capsules in a variety of larger market opportunities, including moderate to severe plaque psoriasis and advanced breast cancer. We are also pursuing approval of Targretin(R) capsules for the treatment of CTCL in Europe, where we submitted an MAA with the EMEA in November 1999.

PANRETIN(R) GEL. Panretin(R) gel, a topical retinoid developed utilizing IR technology, was approved for marketing by the FDA in February 1999 for the topical treatment of cutaneous lesions of patients with AIDS-related Kaposi's sarcoma ("KS"). Panretin(R) gel was approved in June 1999 by Canada's Health Protection Branch ("CHPB") for the same indication. As the first patient-applied treatment for AIDS-related KS, Panretin gel represents a new non-invasive option to the traditional management of this disease. Most approved therapies require the time and expense of periodic visits to a healthcare facility and administration of the treatment by a doctor or nurse. AIDS-related KS adversely affects the quality of life for thousands of people in the U.S. We are also pursuing approval of Panretin(R) gel for the treatment of cutaneous lesions of patients with AIDS-related KS in Europe; we submitted an MAA with the EMEA in February 1999. Panretin(R) gel is currently in clinical development for certain skin cancers.

PRODUCT DEVELOPMENT PROCESS

The development phase for a compound refers to the current stage of development for a particular indication. There are three phases in product development -- the research phase, the preclinical phase and the clinical trials phase. (See "Government Regulation" for a more complete description of the regulatory process.) Research activities include research related to specific IR and STATs targets and the identification of lead compounds. Lead compounds are chemicals that have been identified that meet pre-selected criteria in cell culture models for activity and potency against IR or STATs targets. More extensive evaluation is then undertaken to determine if the compound should be selected to enter into preclinical development. Once a lead compound is selected, chemical modification of the compound is then undertaken to create the best drug candidate.

The preclinical phase includes pharmacology and toxicology testing in preclinical models (in vitro and in vivo), formulation work and manufacturing scale-up to gather necessary data to comply with applicable regulations prior to commencement of human clinical trials. Development candidates are lead compounds that have successfully undergone in vitro and in vivo evaluation to demonstrate that they have an acceptable profile, which justifies taking them through preclinical development with the intention of filing an Investigational New Drug application ("IND") and initiating human clinical testing.

Clinical trials are typically conducted in three sequential phases that may

overlap. In Phase I, the initial introduction of the pharmaceutical into humans, the emphasis is on testing for adverse effects, dosage tolerance, absorption, metabolism, distribution, excretion and clinical pharmacology. Phase II involves studies in a representative patient population to determine the efficacy of the pharmaceutical for specific targeted indications, to determine dosage tolerance and optimal dosage and to identify related adverse side effects and safety risks. Once a compound is found to be effective and to have an acceptable safety profile in Phase II evaluations, Phase III trials are undertaken to evaluate clinical efficacy further and to further test for safety. Sometimes Phase I and II trials or Phase II and III trials are combined. In the U.S., the FDA reviews both the clinical plans and the results of the trials and may discontinue the trials at any time if there are significant safety issues.

LIGAND CLINICAL DEVELOPMENT AND RESEARCH PROGRAMS

We are developing several proprietary products for which we have worldwide rights for a variety of cancers and skin diseases, as summarized in the table below. Many of the indications being pursued are related to larger market opportunities for our currently marketed products. Our product development programs are primarily based on products discovered through our IR technology, with the exception of ONTAK(R) which was developed using Seragen's fusion protein technology and Morphelan(TM) which was developed by Elan. Our research programs are based on both our IR and STAT technologies. Seven products are in advanced stages of development. Five of the products in our proprietary product development programs are retinoids, discovered and developed using our proprietary IR technology. (See "Technology" for a discussion of our IR and STAT technologies and retinoids.)

Program (1)	Disease/Indication	Development Phase
ONTAK(R)	CTCL	Marketed
	Non-Hodgkin's lymphoma	Phase II
	Psoriasis	Phase II
Targretin(R) capsules	CTCL	Marketed
	Advanced breast cancer	Phase II
	Moderate-to-severe psoriasis	Phase II
Targretin(R) gel	CTCL	NDA filed
	Actinic keratoses	Phase II
	Skin cancers	Phase II (Under development)
Panretin(R) gel	Kaposi's sarcoma	Marketed
	Basal cell cancer of the skin	Phase II (Under development)
Panretin(R) capsules	Kaposi's sarcoma	Phase II
	Bronchial metaplasia	Phase II
LGD1550 capsules	Head and neck cancer	Phase II (Under development)
	Cervical cancer	Phase II (Under development)
Morphelan(TM) (2)	Chronic pain	Phase III
SARMs		
o LGD2226 (Androgen agonists)	Hypogonadism, osteoporosis, male/female sexual dysfunction, cachexia, AIDS-wasting	Preclinical Development/IND track
o LGD1331 (Androgen antagonists)	Prostate cancer, hirsutism, acne, benign prostatic hyperplasia, androgenetic alopecia	Preclinical
STATs	Cancer, Immunology, Growth	Research
Glucocorticoid agonist	Cancer	Preclinical

(1) This table is not intended to be a comprehensive list of Ligand's internal research and development programs.

(2) Morphelan(TM) was licensed from Elan. (See "Morphelan Development Program" below.)

ONTAK(R) Development Programs

ONTAK(R) is the first of a new class of targeted cytotoxic biologic agents called fusion proteins that was acquired in the acquisition of Seragen. ONTAK(R) is marketed in the U.S. for CTCL. In addition to ongoing CTCL trials, we are conducting clinical trials with ONTAK(R) in NHL and psoriasis, indications that represent significantly larger market opportunities than CTCL. While CTCL affects approximately 20,000 people in the U.S., NHL affects approximately 300,000 people in the U.S. and moderate to severe psoriasis affects an estimated 1.4 to 1.9 million people in the U.S.

In early 1999, ONTAK(R) entered Phase II trials for the treatment of patients with NHL. One study, being conducted by the Eastern Cooperative Oncology Group, assesses ONTAK(R) in patients with certain types of low- and intermediate-grade NHL who have previously been treated with at least one systemic anti-cancer treatment. A second multi-center trial for ONTAK(R) is being conducted by us in patients with low-grade NHL who have been previously treated with at least one chemotherapy regimen and at least one monoclonal antibody therapy. Interim results of these trials are expected in 2000.

Clinical trials with ONTAK(R) have demonstrated benefits in patients with long-standing, previously treated severe psoriasis. In the most recent Phase I/II study, 35 patients received one of three dose levels of ONTAK(R), with improvement seen at all levels. Eight of the patients had a 50% or greater improvement as measured by the Mean Psoriasis Area and Severity Index, and 18 showed improvement relative to the Physician's Global Assessment of the patients' psoriasis. Based on these positive preliminary results, additional investigation is being considered.

Targretin(R) Capsules Development Programs

Targretin(R) capsules are approved and marketed in the U.S. for CTCL. Ligand is also investigating the use of Targretin(R) capsules in several cancer and skin disease markets which represent significantly larger market opportunities in comparison to the CTCL market. When our collaborative partner Lilly opted not to proceed with the development of Targretin(R) capsules in diabetes, all of Lilly's rights to the oral form of Targretin(R) reverted to Ligand.

In November 1998, we initiated a Phase II trial with Targretin(R) capsules for the treatment of patients with advanced breast cancer. The open-label study will assess the efficacy, safety and tolerability of Targretin(R) capsules at two dose levels in up to 180 patients at approximately 30 sites at leading cancer centers throughout the U.S. This year, experts predict that more than 180,000 cases of breast cancer will be diagnosed, making it the most common non-skin malignancy in the U.S. among women. The prevalence of breast cancer in the U.S. is estimated to have reached more than 2 million.

We are also conducting a Phase II trial with Targretin(R) capsules for the treatment of patients with moderate to severe psoriasis, a condition that is estimated to affect between 1.4 and 1.9 million people in the U.S. A phase II study in patients with head and neck cancers and a Phase II study in KS have been completed, as well as Phase II/III trial in lung cancer and a Phase II multicenter trial in type II diabetes in Europe. The diabetes trial demonstrated the insulin sensitizing effects of this RXR-selective drug in humans.

Targretin(R) Gel Development Programs

In December 1999, we submitted to the FDA an NDA for Targretin(R) (bexarotene) gel 1%, a novel topical therapy for the treatment of cutaneous lesions in patients with Stage IA, IB or IIA CTCL who have not tolerated other therapies or who have refractory or persistent disease. The FDA has granted Targretin(R) gel orphan drug designation for the treatment of patients with CTCL, and has granted priority review status of the NDA filing. We have completed Phase IIA trials with Targretin(R) gel for the treatment of patients with actinic keratoses, a condition that is estimated to affect up to 5 million people in the U.S. A Phase II trial with Targretin(R) gel for the treatment of patients with non-melanoma skin cancer is under development. Non-melanoma skin cancers affect approximately 500,000 people in the U.S. An MAA filing in Europe for Targretin(R) gel in CTCL is targeted for 2000.

Panretin(R) Gel Development Program

A Phase II trial is under development for use of Panretin(R) gel in patients with basal cell carcinoma, a disease with an estimated 600,000 new cases diagnosed in the U.S. each year.

Panretin(R) Capsules Development Programs

Panretin(R) capsules have demonstrated clinical promise for the systemic treatment of cutaneous AIDS-related KS, other cancers and skin disorders. In completed Phase I/II human clinical trials, Panretin(R) capsules were tolerated at doses up to 140 milligrams per square meter of body surface area per day. At the maximum tolerated dose, side effects, including headaches, elevated triglyceride levels, hypercalcemia and mucocutaneous irritation, were dose limiting toxicities. We have reported favorable results in two Phase II trials with Panretin(R) capsules in patients with KS and are currently evaluating whether to proceed with development in KS. Phase II trials with Panretin(R) capsules are ongoing in bronchial metaplasia. We have completed Phase II trials in myelodysplastic syndrome, severe plaque psoriasis, and breast and pediatric cancers, and the NCI-Canada has evaluated the results of a Phase I/II trial using Panretin(R) capsules in combination with interferon alpha for renal cell carcinoma.

LGD1550 Capsules Development Program

LGD1550 is a potent RAR agonist that strongly inhibits growth of several human cancer cell lines. Phase I/ IIA clinical trials in advanced cancer have shown that LGD1550 capsules were well tolerated. Investigators observed dose-limiting skin toxicities, diarrhea and abdominal cramps. Dose-limiting toxicities, such as headache and lipid abnormalities, frequently observed with other retinoids, have not been observed with LGD1550. Unlike all-trans retinoic acid, a retinoid approved for the treatment of acute promyelocytic leukemia, LGD1550 does not appear to induce its own metabolism over the dose range tested since blood levels are maintained with continued therapy. Phase II studies with LGD1550 in combination with chemotherapy for the treatment of patients with cervical and head and neck cancers are under development. The prevalence of cervical cancer cases in the U.S. is estimated at 205,000 cases, while the prevalence of head and neck cancer in the U.S. is estimated at more than 210,000 cases.

Morphelan(TM) Development Program

As part of a broader strategic alliance formed in 1998 with Elan, Elan licensed to Ligand exclusive rights to market Elan's proprietary product Morphelan(TM) in the U.S. and Canada for pain management in cancer and HIV patients. We also have an option to co-promote Morphelan(TM) in continental Europe for the same indications. Morphelan(TM), a once-daily, oral capsule form of morphine, may provide sustained pain management for HIV and cancer patients as compared to current therapies requiring frequent doses. Enrollment in Phase III clinical trials in the U.S. has recently been completed by Elan. We anticipate submission of an NDA in the U.S. by Elan in the first half of 2000. If approved, we will market and sell Morphelan(TM) through our existing specialty cancer and HIV-center sales force.

SARMs Programs

We are pioneering the development of tissue selective androgen receptor modulators ("SARMs"), a novel class of non-steroidal, orally active molecules that selectively modulate the activity of the androgen receptor ("AR") in different tissues, providing a wide range of opportunities for the treatment of many diseases and disorders in both men and women. Tissue-selective AR agonists or antagonists may provide utility in male hormone replacement therapy and the treatment of skin disorders, osteoporosis, sexual dysfunction in men and women, prostate cancer, benign prostatic hyperplasia ("BPH") and other diseases. The use of androgen antagonists has shown efficacy in the treatment of prostate cancer, with three androgen antagonists currently approved by the FDA for use in the treatment of prostate cancer. However, we believe that there is a substantial medical need for improved androgen modulators for use in the treatment of prostate cancer due to significant side effects seen with currently available drugs that may be eliminated or reduced by SARMs.

Our SARMs programs have been our largest internally funded programs over

the past five years. We believe that our intellectual property in the SARM area is strong. We have assembled an extensive SARM compound library and one of the largest and most experienced AR drug discovery teams in the pharmaceutical industry. We intend to pursue the specialty applications emerging from SARMs internally, but may seek collaborations with major pharmaceutical companies to exploit broader clinical applications.

We have two first generation SARMs in preclinical development: (1) LGD1331, an androgen antagonist for acne, prostate cancer, BPH and hirsutism, and (2) LGD2226, an androgen agonist for male hypogonadism, male and female sexual dysfunction and osteoporosis. Preclinical studies of LGD1331 indicate that it may have utility for treating acne and hirsutism disorders that affect a significant number of women. In vivo studies of LGD1331 have revealed favorable characteristics, including indirect evidence of diminished effects on the central nervous system, compared with currently marketed drugs of this type for the treatment of these conditions.

STATs Research Programs

In contrast to our IR program, our STATs programs focus on receptors found on the surface of the cell. STATs play a modulating role in the biology of cytokines and growth factors. Many diseases, such as inflammatory conditions, may result from excessive cytokine activity, and others may result from insufficient cytokine activity. (See "Technology -- STATs Technology" for a more complete discussion of our STATs technology.) In our STATs programs, we seek to develop drug candidates that mimic or block the activity of relevant cytokines for use in a variety of conditions including cancer, inflammation and disorders of blood cell formation.

Our program to discover and develop small molecule, orally available drugs to act as interferon agonists for potential application in various cancers and viral diseases is ongoing. We are also continuing an internal preclinical program aimed at discovering novel immunomodulatory drugs. Clinically, it is well established that a variety of immune disorders are characterized by unbalanced helper T-cell responses. Helper T-cells are white blood cells critical to immune response.

Several cytokines play a key role in regulating the proper balance of helper T-cell responses, including Interleukin-4 ("IL-4") and Interleukin-12 ("IL-12"). Regulating helper T-cell responses through modulation of IL-4 or IL-12 signaling pathways may have application in allergy and asthma in the case of IL-4, and transplant rejection and autoimmune diseases in the case of IL-12. Compelling in vivo evidence suggests that pharmacological intervention in the Janus Kinase family of tyrosine protein kinases ("JAK")/STAT signaling pathways activated by IL-4 or IL-12 could result in drugs with novel mechanisms of action that may not only complement, but also greatly improve on current therapies.

X-Ceptor Research Programs

Extensive work in the area of IRs has resulted in the identification and discovery of more than 50 members of the IR superfamily that do not interact with the known non-peptide hormones. We believe that among these orphan IRs there may be receptors for uncharacterized small molecule hormones and that the physiological roles of the various orphan receptors are likely to be diverse and important to human biology and disease. In 1999, we invested in a new private corporation, X-Ceptor Therapeutics, Inc., to fund research to identify therapeutic products from orphan nuclear receptors. X-Ceptor, funded with $25.0 million primarily from outside investors, will enable accelerated development of this early stage technology in a manner that offers upside reward while minimizing the risk and burden of direct management, financing or full profit and loss responsibility. Taking the position of minority equity investor, we contributed cash, warrants and enabling technology to X-Ceptor and have the right to reacquire all of the capital stock of X-Ceptor for a predetermined purchase price in 2002 or 2003. (See Note 12 to the consolidated financial statements.)

COLLABORATIVE RESEARCH AND DEVELOPMENT PROGRAMS

We are pursuing several major collaborative drug discovery programs to

further develop the research and development of compounds based on our IR and STAT technologies. These collaborations focus on several large market indications as shown in the table below.

Indication	U.S. Prevalence
Osteoporosis	10 million
Breast Cancer	2 million
Hormone Replacement Therapy	7 million
Cardiovascular Disease	58 million
Contraception	35 million
Type II Diabetes	15 million
Obesity	48 million

During 1999, there were seven collaborative products on a human development track -- droloxifene, lasofoxifene, TSE424, ERA923, WAY160910, GW544 and GWXXX. (See Note 10 to the consolidated financial statements for a description of the financial terms of our key ongoing collaboration agreements.)

Program (1)	Disease/Indication	Development Phase	Marketing Rights
SEX HORMONE MODULATORS			
SERMs			
o Droloxifene (2)	Osteoporosis	Discontinued	Pfizer
o Lasofoxifene (CP336,156)	Osteoporosis, breast cancer	Phase II/III	Pfizer
o TSE424	Post-menopausal osteoporosis	Phase II/III	AHP
o ERA923	Breast cancer	Phase I	AHP
o ER Modulators	HRT, osteoporosis, cardiovascular disease, breast cancer, mood and cognitive disorders	Research	Parke-Davis
PR Modulators			
o PR Modulators	HRT, contraception, reproductive disorders	Research	Organon
o WAY160910 (PR Antagonists)	HRT, contraception	Preclinical/ IND track	AHP
o PR Agonists (LGD1447 series)	Contraception, reproductive disorders	Preclinical	AHP/Ligand(3)
CARDIOVASCULAR/METABOLIC DISEASE			
GW544 (PPAR Modulators)	Type II diabetes, cardiovascular disease	Phase I	Glaxo
GWXXX (PPAR Modulators)	Cardiovascular disease	Preclinical/ IND track	Glaxo
PPAR Modulators	Diabetes, metabolic diseases	Preclinical	Lilly
RXR Modulators	Diabetes, metabolic diseases	Preclinical	Lilly
ob-gene Pathway	Metabolic diseases	Research	Lilly
ob-Leptin	Metabolic diseases	Research	SmithKline Beecham
AGN4204 and AGN4326	Type II diabetes	Preclinical	Allergan
INFLAMMATORY DISEASE			
Glucocorticoid Agonists	Inflammation	Preclinical	Abbott/Ligand(3)
AGN4310	Psoriasis, mucocutaneous toxicity	Preclinical/ IND track	Allergan
STATs			
Hematopoietic Growth Factors	Oncology, anemia	Preclinical	SmithKline Beecham/ Ligand(3)

(1) This table is not intended to be a comprehensive list of Ligand's collaborative research and development programs.

(2) In December 1999, Pfizer chose not to continue development of droloxifene.

(3) We have retained certain compound rights in our collaborations with AHP, Abbott, and SmithKline Beecham.

Sex Hormone Modulators Collaborative Programs

The primary objective of our sex hormone modulators collaborative programs

is to develop drugs for hormonally responsive cancers of men and women, hormone replacement therapies and the treatment and prevention of diseases affecting women's health, as well as hormonal disorders prevalent in men. Our programs, both collaborative and internal, in the sex hormone modulators area target development of tissue-selective modulators of the progesterone receptor ("PR"), the estrogen receptor ("ER") and the androgen receptor ("AR"). Through our collaborations with Pfizer and AHP, three selective ER modulators ("SERMs") are in development in osteoporosis and advanced breast cancer. In collaboration with Parke-Davis, we are seeking SERMs for the treatment of osteoporosis, breast cancer, cardiovascular disease, and mood and cognitive disorders. In addition, we are developing two SARMS in our internal programs and seek to enter into collaborations with large global pharmaceutical companies for the development of SARMs in large markets beyond our strategic focus or resources.

SERMS. Over the past eight years of collaboration with corporate partners on the discovery, development and enhancement of SERMs, four SERMs (including droloxifene) have emerged covering three generations of advancements in efficacy. Today, Ligand is the principal company to have three generations of SERMs in its collaborative pipeline, and we believe the clinical trials being conducted by our collaborative partners on second-generation SERMs are furthest advanced among all clinical trials for SERMs. Our partners Pfizer and AHP each have second-generation SERMs moving into Phase III trials in 2000, and Parke-Davis's goal is to declare one or more third-generation SERMs as clinical development candidates.

PR MODULATORS. We are also developing novel non-steroidal PR antagonists, partial agonists and agonists internally and in collaboration with AHP and Organon, for use in hormone replacement therapy, contraception, reproductive disorders and other applications in women's health. Exploratory clinical research indicates that PR antagonists may have utility in contraception and in a variety of chronic diseases, including endometriosis and cancer. We believe that more selective PR antagonists may be useful in the treatment of many hormone responsive diseases, including gynecological and malignant disorders, such as breast and uterine cancer, uterine fibroids (benign smooth muscle tumors) and endometriosis. Although current PR antagonists are used clinically for acute contraceptive indications, their use in chronic diseases is likely to be limited by their cross-reaction with the glucocorticoid receptor, which is anticipated to produce adverse side effects with long-term administration. We have discovered specific PR antagonists that do not cross-react with the IR for glucocorticoids. We have also discovered several additional non-steroidal lead compounds that are PR modulators. In addition, we have discovered closely related compounds that are full agonists of the PR, which may be useful in contraception, reproductive disorders, and hormone replacement therapy.

AHP COLLABORATION. In 1994, we entered into a collaborative research agreement with Wyeth-Ayerst Laboratories, the pharmaceutical division of AHP, to discover and develop drugs that interact with estrogen or progesterone receptors for use in hormone replacement therapy, anti-cancer therapy, gynecological diseases, central nervous system disorders associated with menopause and fertility control. We granted AHP exclusive worldwide rights to all products discovered in the collaboration that are agonists or antagonists to the PR and ER for application in the fields of women's health and cancer therapy.

As part of this collaboration, we tested AHP's extensive chemical library for activity against a selected set of targets of our internal programs. We may select for internal development up to 24 lead compounds to which we will have worldwide rights. In 1996, AHP exercised its option to include compounds we discovered that modulate PRs and to expand the collaboration to encompass the treatment or prevention of osteoporosis through the ER. AHP also added four advanced chemical compound series from its internal ER-osteoporosis program to the collaboration. The research phase of the collaboration ended in August 1998.

AHP has ongoing clinical studies with two SERMs. AHP is developing TSE424 for the treatment of post-menopausal osteoporosis, with Phase II trials ongoing, and has announced their intention to initiate Phase III trials in 2000. ERA923 is being developed for the treatment of breast and reproductive cancers. AHP filed an IND for ERA923 for the treatment of women with breast cancer in December 1998 and Phase I trials in breast cancer are nearing completion. AHP has also elected to proceed with IND track development of WAY160910, a non-steroidal PR antagonist that may be useful in the creation of the first estrogen-free oral contraceptive.

PFIZER COLLABORATION. In 1991, we entered into a five-year collaborative research and development and license agreement with Pfizer to develop better alternative therapies for osteoporosis. In November 1993, we jointly announced

the successful completion of the research phase of our alliance with the identification of a development candidate and backups for the prevention and treatment of osteoporosis. In preclinical studies, the candidates from the program mimic the beneficial effects of estrogen on bone and have an impact on blood serum lipids often associated with cardiac benefits without increasing uterine or breast tissue proliferation.

We have milestone and royalty rights to two SERMs, lasofoxifene and droloxifene, which over the past year have been under development by Pfizer for osteoporosis and breast cancer. Lasofoxifene, previously known as CP336,156, is a second generation estrogen partial agonist discovered through our collaborative relationship with Pfizer to which Pfizer has retained marketing rights. Droloxifene, a first generation estrogen antagonist, is a Pfizer compound for which we performed work at Pfizer's request. These SERMs have been shown to reduce bone loss and decrease low-density lipoprotein levels ("LDL", or "bad" cholesterol). In late 1999, Pfizer announced that it planned to move lasofoxifene forward into Phase III studies in 2000 for the treatment of breast cancer and osteoporosis and that it would discontinue development of droloxifene. Our royalty rights on sales of lasofoxifene are double that for droloxifene.

PARKE-DAVIS COLLABORATION. In September 1999, we entered into a research, development and license agreement with the Parke-Davis Pharmaceutical Research and Development ("Parke-Davis") of Warner-Lambert Company. The research and development collaboration will focus on the discovery, characterization, design and development of third-generation small molecule compounds with beneficial effects for the treatment and prevention of diseases mediated through the ER. Some of the diseases affected by drugs that act upon the ER are osteoporosis, cardiovascular disease, breast cancer, and mood and cognitive disorders. Parke-Davis's goal is to declare one or more third-generation SERMs as clinical development candidates.

ORGANON COLLABORATION. In February 2000, we entered into a collaboration with Organon to focus on small molecule compounds with potential effects for the treatment and prevention of gynecological diseases mediated through the progesterone receptor. The objective of the collaboration is the discovery of new non-steroidal compounds that are tissue-selective in nature and may have fewer side effects. Such compounds may provide utility in hormone replacement therapy, oral contraception, reproductive diseases, and other hormone-related disorders.

Cardiovascular/Metabolic Disease Collaborative Programs

We are exploring the role of certain IRs, including the peroxisome proliferation activated receptors ("PPARs"), in cardiovascular and metabolic disorders. PPARs, a subfamily of orphan IRs, have been implicated in processes that regulate plasma levels of very low density lipoproteins and triglycerides. (See "Technology -- Intracellular Receptor Technology" for a discussion of PPARs and orphan IRs.) Data implicate PPARs in the mechanism of action of lipid lowering drugs such as Lopid(R). There are three subtypes of the PPAR subfamily with defined novel aspects of their action -- alpha, beta and gamma. The subtype PPAR alpha appears to regulate the metabolism of certain lipids and is useful in treating hyperlipidemia. PPAR gamma plays a role in fat cell differentiation and cellular responses to insulin. Modulators of PPAR gamma activity (e.g., the glitazone class of insulin sensitizers) have utility in the management of type II diabetes. PPARs are believed to function in cells in partnership with RXRs. In addition to compounds that act directly on PPARs and that may have utility in various cardiovascular and metabolic disorders, certain retinoids are able to activate this RXR:PPAR complex (e.g., Targretin(R) capsules) and they may also have utility in these disorders. We have three collaborative partners, Glaxo, Lilly and SmithKline Beecham, in the areas of cardiovascular and metabolic diseases, with two compounds on a clinical development tract. (See "STATs Collaborative Program" below for a discussion of the SmithKline Beecham collaboration.)

GLAXO COLLABORATION. In 1992, we entered into a five-year collaboration with Glaxo to discover and develop drugs for the prevention or treatment of atherosclerosis and other disorders affecting the cardiovascular system. The collaboration focuses on discovering drugs which produce beneficial alterations in lipid and lipoprotein metabolism in three project areas: (1) regulation of cholesterol biosynthesis and expression of a receptor which removes cholesterol from the blood stream, (2) the IRs influencing circulating HDL levels, and (3) PPARs, the subfamily of IRs activated by lipid lowering drugs, such as Lopid(R)

and Atromid-S. The collaborative research program was successfully completed in 1997 with the identification of a novel lead structure that activates selected PPAR subfamily members and the identification of a different lead compound that shows activity in preclinical models for lowering LDL cholesterol by up-regulating LDL receptor gene expression in liver cells. We retained the right to develop and commercialize products arising from the collaboration in markets not exploited by Glaxo or where Glaxo is not developing a product for the same indication.

In 1999, Glaxo advanced two compounds to exploratory development: (1) GW544, a PPAR agonist in Phase I trials for diabetes, that is also under investigation as a potential therapy for cardiovascular disease; and (2) a second candidate that is in preclinical development for cardiovascular disease. Cardiovascular disease affects more than 58 million Americans and is estimated to be responsible for 30% of all deaths worldwide each year.

LILLY COLLABORATION. In 1997, we entered into a strategic alliance with Lilly for the discovery and development of products based upon our IR technology with broad applications in the fields of metabolic diseases, including diabetes, obesity, dyslipidemia, insulin resistance and cardiovascular diseases associated with insulin resistance and obesity. Under the alliance, Lilly received: (1) worldwide, exclusive rights to our compounds and technology associated with the RXR receptor in the

field; (2) rights to use our technology to develop an RXR compound in combination with a SERM in cancer; (3) worldwide, exclusive rights in certain areas to our PPAR technology, along with rights to use PPAR research technology with the RXR technology; and (4) exclusive rights to our HNF4 receptor and the obesity gene promoter technology. Lilly has the right to terminate the development of compounds under the agreements. We would receive rights to certain of such compounds in return for a royalty to Lilly, the rate of which is dependent on the stage at which the development is terminated.

Under the alliance, we retained or received: (1) exclusive rights to independently research, develop and commercialize Targretin(R) and other RXR compounds in the fields of cancer and dermatology; (2) an option to obtain selected rights to one of Lilly's specialty pharmaceutical products; and (3) rights to receive milestones, royalties and options to obtain certain co-development and co-promotion rights for the Lilly-selected RXR compound in combination with a SERM.

Our rights under the initial agreements have changed. In connection with the acquisition of Seragen in 1998, we obtained from Lilly its rights to ONTAK(R) in satisfaction of our option to obtain selected rights to one of Lilly's specialty pharmaceutical products. In 1999, we agreed to focus our collaborative efforts on the RXR modulator second-generation program, which has compounds with improved therapeutic indices relative to the three first-generation compounds, and on co-agonists of the PPAR receptor program. In early 1999, Lilly opted not to proceed with the development of certain first-generation compounds, including Targretin(R), in the RXR program for diabetes. As a result of this decision, all rights to the oral form of Targretin(R) reverted to us and LGD1268 and LGD1324 returned to the pool of eligible RXR modulators for possible use in oncology in combination with a SERM under the collaboration agreement between Ligand and Lilly.

Inflammatory Disease Collaborative Program

Abbott Collaboration. In 1994, we entered into a collaborative research agreement with Abbott to discover and develop small molecule compounds for the prevention or treatment of inflammatory diseases. The collaborative program includes several molecular approaches to discovering modulators of glucocorticoid receptor activity that have significantly improved therapeutic profiles relative to currently known anti-inflammatory steroids such as prednisone and dexamethasone. The collaboration is focused on the development of novel non-steroidal glucocorticoids that maintain the efficacy of corticosteroids that are currently used to treat inflammatory diseases, but lack some or all of corticosteroids' dose-limiting side effects. Several compounds discovered during the collaboration have progressed to advanced preclinical testing in an effort to select a clinical candidate.

Abbott received exclusive worldwide rights for all products discovered in the collaboration for use in inflammation. We received exclusive worldwide rights for all anti-cancer products discovered in the collaboration. Abbott will

make milestone and royalty payments on products targeted at inflammation resulting from the collaboration, while we will make milestone and royalty payments on products targeted at anti-cancer resulting from the collaboration. Each party will be responsible for the development, registration and commercialization of the products in its respective field.

STATs Collaborative Program

Our proprietary STAT technology is distinct from our IR technology platform. STATs are activated through a receptor located on the surface of the cell rather than a receptor located within the cell. STAT technology provides us with a second broadly enabling drug discovery platform that has potential applications in cancer, inflammation, asthma, allergy, infectious disease, anemia, obesity, diabetes and growth disorders. (See "Technology" for a more complete discussion of our STAT technology.) We are pursuing product development opportunities based on our STAT technology through a collaboration with SmithKline Beecham and internally funded programs focusing on interferon agonists and other cytokine agonists and antagonists.

SMITHKLINE BEECHAM COLLABORATION. In 1995, we entered into a collaborative agreement with SmithKline Beecham to utilize our proprietary STATs technology to discover and characterize small molecule, orally bioavailable drugs to control hematopoiesis (the formation and development of blood cells) for the treatment of a variety of blood cell deficiencies. In 1998, we announced with SmithKline Beecham the discovery of the first non-peptide small molecule that mimics the activity of Granulocyte- Colony Stimulating Factor ("G-CSF"), a natural hormone that stimulates production of infection-fighting neutrophils (a type of white blood cell). This molecule could lead to the development of an orally active drug that could replace recombinant G-CSF (sold by Amgen as Neupogen(TM)), a drug that must be administered by injection. While this lead compound has only been shown to be active in mice, its discovery is a major scientific milestone and suggests that orally active, small molecule mimics can be developed not only for G-CSF, but for other cytokines as well. Ligand and SmithKline Beecham continue to pursue development of this compound series.

A number of lead series have been found that mimic the activity of natural growth factors for white cells and platelets. These are currently being optimized through medicinal chemistry. Based on the progress achieved to date, SmithKline

Beecham and Ligand have chosen to extend this collaboration for a year beyond the term of the original contract.

Under the collaboration, we have the right to select up to three compounds related to hematopoietic targets for development as anti-cancer products other than those compounds selected for development by SmithKline Beecham. SmithKline Beecham has the option to co-promote these products with us in North America and to develop and market them outside North America.

In April 1998, we formed a new collaboration with SmithKline Beecham to develop small molecule drugs that modulate the signaling pathway controlled by leptin as a means of discovering orally available drugs for treatment or prevention of obesity. Under the new agreement, SmithKline Beecham obtained exclusive worldwide rights to products resulting from the obesity collaboration and has agreed to make milestone payments to us as compounds progress through preclinical and clinical development, and royalty payments on sales, if products result from the research.

Allergan and ALRT Programs

In 1997, in conjunction with the buyback of Allergan Ligand Retinoid Therapeutics, Inc. ("ALRT"), we agreed with Allergan to restructure the terms and conditions relating to research, development, and commercialization and sublicense rights for the ALRT compounds. (See Note 11 to the consolidated financial statements.) Under the restructured arrangement, we received exclusive, worldwide development, commercialization and sublicense rights to Panretin(R) capsules and Panretin(R) gel, LGD1550, LGD268 and LGD324. Allergan received exclusive, worldwide development, commercialization and sublicense rights to LGD4310, an RAR antagonist. Allergan also received LGD4326 and LGD4204, two advanced preclinical RXR selective compounds. In addition, we participated in a lottery with Allergan for each of the approximately 2,000 retinoid compounds existing in the ALRT compound library as of the closing date, with each party acquiring exclusive, worldwide development, commercialization

and sublicense rights to the compounds which they selected. Ligand and Allergan will each pay the other a royalty based on net sales of products developed from the compounds selected by each in the lottery and the other ALRT compounds to which each acquires exclusive rights. We will also pay to Allergan royalties based on our net sales of Targretin(R) for uses other than oncology and dermatology indications. In the event that we license commercialization rights to Targretin(R) to a third party, we will pay to Allergan a percentage of royalties payable to us with respect to sales of Targretin(R) other than in oncology and dermatology indications. Allergan has two compounds (AGN4204 and AGN4326) in preclinical development for type II diabetes and one compound (AGN4310) in preclinical development for psoriasis and mucocutaneous toxicity.

TECHNOLOGY

In our successful efforts to discover new and important medicines, we and our exclusive academic collaborators have concentrated on two areas of research: advancing the understanding of the activities of hormones and hormone-related drugs and making scientific discoveries related to IR and STAT technologies. We believe that our expertise in these technologies will enable us to develop novel, small-molecule drugs acting through IRs or STATs with more target-specific properties than currently available drugs, resulting in either improved therapeutic and side effect profiles and new indications for IRs or novel mechanisms of action and oral activity for STATs. Both STATs and IRs are families of transcription factors that change cell function by selectively turning on or off particular genes in response to circulating signals that impinge on cells. In addition to our proprietary IR and STAT technologies, we acquired fusion protein technology, which was utilized by Seragen in the development of ONTAK(R).

Intracellular Receptor ("IR") Technology

Hormones occur naturally within the body and control processes such as reproduction, cell growth, and differentiation. Hormones generally fall into two general classes, the non-peptide hormones and the peptide hormones. The non-peptide hormones include the retinoids, sex steroids (estrogens, progestins and androgens), adrenal steroids (glucocorticoids and mineralocorticoids), vitamin D and thyroid hormone. These non-peptide hormones act by binding to their corresponding IRs to regulate the expression of genes in order to maintain and restore balanced cellular function within the body. Hormonal imbalances can lead to a variety of diseases. The hormones themselves and drugs that mimic or block hormone action may be useful in the treatment of these diseases. Furthermore, hormone mimics (agonists) or blockers (antagonists) can be used in the treatment of diseases in which the underlying cause is not hormonal imbalance. The effectiveness of the IRs as drug targets is clearly demonstrated by currently available drugs acting through IRs for several diseases. However, the use of most of these drugs has been limited by their often significant side effects. Examples of currently marketed hormone-related drugs acting on IRs are glucocorticoids (steroids used to treat inflammation), natural and synthetic estrogens and progesterones (used for hormone replacement therapy and contraception), tamoxifen (an estrogen antagonist used in the treatment of breast cancer), and various retinoids such as Accutane(R) and Retin-A(R) (used to treat acne and others to treat psoriasis).

We have built a strong proprietary position and accumulated substantial expertise in IRs applicable to drug discovery and development. Building on our scientific findings about the molecular basis of hormone action, we have created proprietary new tools to explore and manipulate non-peptide hormone action for potential therapeutic benefit. We employ a proprietary cell-culture based assay system for small molecules that can modulate IRs, referred to as the co-transfection assay. The co-transfection assay system simulates the actual cellular processes controlled by IRs and is able to detect whether a compound interacts with a particular human IR and whether this interaction mimics or blocks the effects of the natural regulatory molecules on target gene expression.

The understanding of non-peptide hormones and their actions has increased substantially in the last 15 years. Driving this rapid expansion of knowledge has been the discovery of the family of IRs through which all the known small-molecule, non-peptide hormones act. We and our academic collaborators and consultants have made major discoveries pertaining to IRs and small molecule hormones and compounds, which interact with these IRs. These discoveries include: (1) the identification of the IR superfamily, (2) the recognition of IR subtypes, (3) the heterodimer biology of RXR-selective compounds and (4) the

discovery of orphan IRs. We believe that each of these broad areas of knowledge provides important opportunities for drug discovery.

IR SUPERFAMILY. The receptors for all the non-peptide hormones are closely related members of a superfamily of proteins known as IRs. Human IRs for all of the known non-peptide hormones have now been cloned, in many cases by our scientists or our collaborators. The structure and underlying mechanism of action of the IRs have many common features, such that drug discovery insights about one IR can often be directly applied to other members of the IR superfamily, bringing synergy to our IR-focused drug discovery efforts. First generation drugs were developed and commercialized for their therapeutic benefits prior to the discovery of IRs and often cross-react with the IRs for hormones other than the intended target, which can result in significant side effects. The understanding that IRs are structurally similar has enabled us to determine the basis for the side effects of some first-generation drugs and to discover improved drug candidates.

IR SUBTYPES. For some of the non-peptide hormones, several closely related but non-identical IRs, known as IR subtypes, have been discovered. These include six subtypes of the IRs for retinoids, two subtypes of the IRs for thyroid hormone, two subtypes for the ER, and three subtypes for the PPARs. Patent applications covering many of these IR subtypes have been exclusively licensed by us. We believe that drugs capable of selective modulation of IR subtypes will allow more specific pharmacological intervention better matched to therapeutic need. Targretin(R), an RXR selective molecule, was discovered as a result of our understanding of retinoid receptor subtypes.

RETINOID RESPONSIVE IRS ("RRS.") Retinoic acid, a derivative of Vitamin A, is one of the body's natural regulatory hormones that has a broad range of biological actions, influencing cell growth, differentiation, programmed cell death and embryonic development. Many chemical analogues of retinoic acid, called retinoids, also have biological activity. Specific retinoids have been approved by the FDA for the treatment of psoriasis and certain severe forms of acne. Evidence also suggests that retinoids can be used to arrest and, to an extent, reverse the effects of skin damage arising from prolonged exposure to the sun. Other evidence suggests that retinoids are useful in the treatment of a variety of cancers, including kidney cancer and certain forms of leukemia. For example, all-trans-Retinoic-acid has been approved by the FDA for the treatment of acute promyelocytic leukemia. Retinoids have also shown an ability to reverse precancerous (premalignant) changes in tissues, reducing the risk of development of cancer, and may have potential as preventive agents for a variety of epithelial malignancies, including skin, head and neck, bladder and prostate cancer. Currently marketed retinoids, which were developed and commercialized prior to the discovery of retinoid-responsive IRs, cause significant side effects. These include severe birth defects if fetal exposure occurs, severe irritation of the skin and mucosal surfaces, elevation of plasma lipids, headache and skeletal abnormalities.

The six RRs that have been identified to date can be grouped in two subfamilies -- retinoic acid receptors ("RARs") and retinoid X receptors ("RXRs"). Patent applications covering members of both families of RRs have been licensed exclusively to us primarily from The Salk Institute. The RR subtypes appear to have different functions, based on their distribution in the various tissues within the body and data arising from in vitro and in vivo studies, including studies of transgenic mice. Several of the retinoids currently in commercial use are either non-selective in their pattern of RR subtype activation or are not ideal drugs for other reasons. We are developing chemically synthesized retinoids that, by selectively activating RR subtypes, may preserve desired therapeutic effects while reducing side effects.

We have two retinoid products approved by the FDA (Panretin(R) gel and Targretin(R) capsules) and five retinoid products in clinical trials (Panretin(R) gel, Panretin(R) capsules, Targretin(R) capsules, Targretin(R) gel and LGD1550 capsules). Panretin(R) gel and Panretin(R) capsules incorporate 9-cis retinoic acid, a retinoid isolated and characterized by us in 1991 in collaboration with scientists at The Salk Institute and Baylor. 9-cis retinoic acid is the first non-peptide hormone discovered in over 25 years and appears to be a natural ligand for the RAR and RXR subfamilies of retinoid receptors. Bexarotene, the active substance in Targretin(R), is a synthetic retinoid developed by us that shows selective retinoid receptor subtype activity that is

different from that of 9-cis retinoic acid, the active substance in Panretin(R). Targretin(R) selectively activates a subclass of retinoid receptors called RXRs.

RXRs play an important role in the control of a variety of cellular functions. LGD1550 is a potent RAR agonist that strongly inhibits growth of several human cancer cell lines.

RXRS. RXRs can form a dimer with numerous IRs, such as the retinoic acid receptor ("RAR"), thyroid hormone receptor and vitamin D receptor. While RXRs are widely expressed, their IR partners are more selectively expressed in different tissues, such as liver, fat or muscle. As a result, compounds that bind RXRs offer the unique potential to treat a variety of diseases, including cancer and metabolic diseases. In preclinical models of type II diabetes, RXR agonists appear to stimulate the physiological pathways responsive to RXR-PPAR receptor partners expressed in key target tissues that are involved in glucose metabolism. As a result, a discrete set of genes is activated in these tissues, resulting in a decrease in serum glucose levels and insulin.

ORPHAN RECEPTORS. Over 50 additional members of the IR superfamily, which do not interact with the known non-peptide hormones, have been discovered. These members of the IR superfamily have been designated orphan receptors. We believe that among the orphan IRs may be receptors for uncharacterized small molecule hormones and that the physiological roles of the various orphan IRs are likely to be diverse. We have devised strategies to isolate small molecules that interact with orphan IRs and this technology forms the basis of the newly formed company X-Ceptor. (See Note 12 to the consolidated financial statements.)

Signal Transducers and Activators of Transcription ("STAT") Technology

STATs are a family of proteins that are a key part of the signal transduction pathway for a variety of biologically important polypeptide hormones (e.g., interferons, interleukins, leptin and hematopoietic growth factors). STATs play a role in the biology of cytokines and growth factors functionally analogous to that played by IRs in the biology of the non-peptide hormones. When various cytokines or growth factors bind to their receptors on the cell surface, this triggers the activation of specific members of the Janus Kinase family of tyrosine protein kinases ("JAKs"), which in turn activate specific STATs. The activated STATs enter the cell nucleus and bind to the control regions of specific target genes and alter their expression, thereby modulating physiologic or pathophysiologic processes.

The discovery of STATs, the elucidation of their roles in interferon signal transduction, and the first cloning of genes encoding STATs were all accomplished by our exclusive collaborator, Dr. James Darnell, and were described initially in 1992. A total of seven members of the STAT family have been identified and a large number of peptide hormones have been shown to utilize STAT signaling pathways. These peptide hormones include the interferons (alpha, beta and gamma), the hematopoietic colony stimulating factors (interleukin-3, EPO, G-CSF, GM-CSF and thrombopoietin), growth hormone, prolactin, leptin and many of the interleukins.

Many diseases, such as certain inflammatory conditions, may be the result of excessive activity of certain cytokines. In these conditions it may prove beneficial to block the actions of specific cytokines. In other pathological states, there is insufficient activity of specific cytokines. For example, in patients with chronic renal failure, diminished erythropoietin ("EPO") release by the damaged kidneys results in the inadequate production of red blood cells, causing anemia. Recombinant human EPO protein (Epogen(R)) can be administered to correct this anemia effectively, but must be injected. Many other cytokines are useful as injected protein medicines, including interferons (Intron-A(R), Roferon(R), Betaseron(R)), interleukins (e.g., Proleukin(R), which we market in Canada), and hematopoietic growth factors (Epogen(R), Neupogen(R)). Each of these and many other cytokines appear to exert their actions through JAK/STAT signal transduction pathways.

We are utilizing JAK/STAT technologies to seek low molecular weight compounds able to mimic or block the actions of medically relevant cytokines for uses in various pathological conditions, including cancer, inflammation and disorders of blood cell formation. Because these compounds are small molecules, they have the potential to offer significant advantages over current recombinant cytokine-based therapies, including oral bioavailability, greater ease of manufacture and improved stability.

We are using our high throughput screening assays to discover small molecule drugs for potential application in various cancers and viral diseases and that act as cytokine agonists and antagonists in cancer and immunology. We have also established a collaboration with SmithKline Beecham to discover and characterize small molecule drugs to modulate specific JAK/STAT pathways to

control the formation of red and white blood cells for treating patients with cancer or anemia and a second collaboration in this area related to obesity. Proof of principle for this approach was achieved with SmithKline Beecham in the area of G-CSF mimics. We have additional assays under development to allow high throughput screening for and subsequent optimization of small molecule drugs that act through JAK/STAT signaling pathways to block or mimic other medically significant cytokines and growth factors.

Fusion Protein Technology

Our fusion protein technology was developed by Seragen, which we acquired in 1998. Seragen's fusion proteins consist of a fragment of diphtheria toxin genetically fused to a ligand that binds to specific receptors on the surface of target cells. Once bound to the cell, the fusion proteins are designed to enter the cell and destroy the ability of the cell to manufacture proteins, resulting in cell death. Using this platform, Seragen genetically engineered six fusion proteins, each of which consists of a fragment of diphtheria toxin fused to a different targeting ligand, such as a polypeptide hormone or growth factor. ONTAK(R), which is approved in the U.S. for the treatment of patients with persistent or recurrent CTCL, is a fusion protein consisting of a fragment of diphtheria toxin genetically fused to a part of interleukin-2. In addition to treatment of CTCL, fusion proteins may have utility in oncology, dermatology, infectious diseases and autoimmune diseases. Seragen has entered into exclusive license agreements with Harvard University and other parties for patents related to fusion protein technology and has been issued four U.S. patents for improvements in the technology licensed from Harvard University.

Academic Collaborations

To date, we have licensed technology from The Salk Institute, Baylor College of Medicine and Rockefeller University and developed relationships with key scientists to further the development of our core IR and STAT technologies.

THE SALK INSTITUTE OF BIOLOGICAL STUDIES. In 1988, we established an exclusive relationship with The Salk Institute, which is one of the research centers in the area of IR technology. Under the agreement, we have an exclusive, worldwide license to certain IR technology developed in the laboratory of Dr. Ronald Evans, a Salk professor and Howard Hughes Medical Institute Investigator. Dr. Evans cloned and characterized the first IR in 1985 and is an inventor of the co-transfection assay used by us to screen for IR modulators. Under the agreement, we are obligated to make certain royalty payments based on sales of certain products developed using the licensed technology, as well as certain minimum annual royalty payments.

In May 1998, we submitted an NDA to the FDA for Panretin(R) gel for the treatment of AIDS-related KS. In connection with the submission, we exercised an option to acquire a fully paid up license for the patent rights to Panretin(R) by paying a one-time license fee of approximately $4.1 million to The Salk Institute.

We have also entered into exclusive consulting agreements with Dr. Evans that continue through July 2001. Dr. Evans serves as Chairman of Ligand's Scientific Advisory Board.

BAYLOR COLLEGE OF MEDICINE. In 1990, we established an exclusive relationship with Baylor, which is a center of IR technology. We entered into a series of agreements with Baylor under which we have an exclusive, worldwide license to IR technology developed at Baylor and to future improvements made in the laboratory of Dr. Bert W. O'Malley through September 2000. Dr. O'Malley is a professor and the Chairman of the Department of Cell Biology at the Baylor College of Medicine and the Director of the Center for Reproductive Biology who leads IR research at that institution.

We work closely with Dr. O'Malley and Baylor in scientific IR research, particularly in the area of sex steroids and orphan IRs. Under the agreement, we are obligated to make payments to Baylor College of Medicine in support of research done in Dr. O'Malley's laboratory through September 2000. We are also obligated to make certain royalty payments based on the sales of products developed using the licensed technology. We have entered into an exclusive consulting agreement with Dr. O'Malley through September 2002. Dr. O'Malley is a member of Ligand's Scientific Advisory Board.

ROCKEFELLER UNIVERSITY. In September 1992, we entered into a worldwide,

exclusive license agreement with Rockefeller University and exclusive consulting agreements with Dr. James Darnell of Rockefeller University and Dr. David Levy of NYU to develop and commercialize certain technology involving STATs to control gene expression. Dr. Darnell is one of the leading investigators of the control of gene expression by STATs. Rockefeller University will receive a royalty on any commercialized products developed using the technology. Related technology was assigned by NYU to Rockefeller University and is covered by the license agreement with us.

In addition to the collaborations discussed above, we also have a number of other consulting, licensing, development and academic agreements by which we strive to advance our technology.

MANUFACTURING

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

Certain raw materials necessary for the commercial manufacturing of our products are custom and must be obtained from a specific sole source. In addition, our finished products are produced by sole source manufacturers. We currently attempt to manage the risk associated with such sole source raw materials and production by actively managing our inventories and supply and production arrangements. We attempt to remain appraised of the financial condition of our suppliers and their ability to continue to supply our raw materials and finished products in an uninterrupted and timely manner. Unavailability of certain materials or the loss of current sources of production could cause an interruption in production and a reduced supply of finished product pending establishment of new sources, or in some cases, implementation of alternative processes. For a discussion of the risks associated with manufacturing see "Risks and Uncertainties."

QUALITY ASSURANCE

Our success depends in great measure upon customer confidence in the quality of our products and in the integrity of the data that support their safety and effectiveness. The quality of our products arises from our total commitment to quality in all aspects of our business, including research and development, purchasing, manufacturing, and distribution. Quality-assurance procedures have been developed relating to the quality and integrity of our scientific information and production processes.

Control of production processes involves rigid specifications for ingredients, equipment, and facilities, manufacturing methods, packaging materials, and labeling. Control tests are made at various stages of production processes and on the final product to assure that the product meets all regulatory requirements and our standards. These tests may involve chemical and physical microbiological testing, preclinical testing, human clinical trials, or a combination of these trials.

RESEARCH AND DEVELOPMENT EXPENSES

Research and development expenses were $59.4 million, $70.3 million and $71.9 million in fiscal 1999, 1998 and 1997, respectively, of which approximately 73%, 75%, and 29% we sponsored, and the remainder of which was funded pursuant to collaborative research and development arrangements.

COMPETITION

Some of the drugs we are developing will compete with existing therapies. In addition, a number of companies are pursuing the development of novel pharmaceuticals, which target the same diseases that we are targeting. A number of pharmaceutical and biotechnology companies are pursuing IR-related or STAT-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.

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 "Risks and Uncertainties."

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, which 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 a NDA to the FDA and (5) the FDA approval of the NDA prior to any commercial sale or shipment of the drug. A company must pay a one-time user fee for NDA submissions, and annually pay user fees for each approved product and manufacturing establishment. 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 and 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 to us.

For marketing outside the United States before FDA approval to market, we must submit an export permit application to the FDA. We also will be subject to foreign regulatory requirements governing human clinical trials and marketing approval for drugs. The requirements relating to the conduct of clinical trials, product licensing, pricing and reimbursement vary widely from country to country and there can be no assurance that we or any of our partners will meet and sustain any such requirements. For a discussion of the risks associated with government regulations see "Risks and Uncertainties."

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.

To date, we have filed or participated as licensee in the filing of approximately 108 currently pending patent applications in the United States relating to our technology, as well as foreign counterparts of certain of these applications in many countries. In addition, we own or are the exclusive licensee to rights covered by approximately 190 patents issued, granted or allowed worldwide. Subject to compliance with the terms of the respective agreements, our rights 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 "Risks and Uncertainties."

HUMAN RESOURCES

As of February 29, 2000, we had 385 full-time employees, of whom 229 were involved directly in scientific research and development activities. Of these employees, approximately 69 hold Ph.D. or M.D. degrees.

RISKS AND UNCERTAINTIES

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.

OUR PRODUCT DEVELOPMENT AND COMMERCIALIZATION INVOLVES A NUMBER OF UNCERTAINTIES AND WE MAY NEVER GENERATE SUFFICIENT REVENUES FROM THE SALE OF PRODUCTS TO BECOME PROFITABLE.

We were founded in 1987. We have incurred significant losses since our inception. At December 31, 1999, our accumulated deficit was $470.3 million. To date, we have received the majority of our revenues from our collaborative arrangements and have recently begun receiving revenues from the sale of pharmaceutical products. To become profitable, we must successfully develop, clinically test, market and sell our products. Even if we achieve profitability, we cannot predict the level of that profitability or whether we will be able to sustain profitability. We expect that our operating results will fluctuate from period to period as a result of differences in when we incur expenses and receive revenues from product sales, collaborative arrangements and other sources. Some of these fluctuations may be significant.

Most of our products will require extensive additional development, including preclinical testing and human studies, as well as regulatory approvals, before we can market them. We do not expect that any products resulting from our product development efforts or the efforts of our collaborative partners, other than those for which marketing approval has been received, will be available for sale until the first half of the 2000 calendar year at the earliest, if at all. There are many reasons that we may fail in our efforts to develop our other potential products, including the possibility that:

- we may discover during preclinical testing or human studies 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,

- we may fail to produce the products, if approved, in commercial quantities or at reasonable costs, or

- the proprietary rights of other parties may prevent us from marketing the products.

WE NEED TO BUILD MARKETING AND SALES FORCES IN THE UNITED STATES AND EUROPE WHICH WILL BE AN EXPENSIVE AND TIME-CONSUMING PROCESS.

Developing the sales force to market and sell products is a difficult, expensive and time-consuming process. We recently developed a sales force for the U.S. market and currently rely on another company to distribute our products. The distributor is responsible for providing many marketing support services, including customer service, order entry, shipping and billing, and customer reimbursement assistance. In addition, in Canada we are the sole marketer of two cancer products other companies have developed. In Europe, we will rely initially on other companies to distribute and market our products. In 1999, we entered into agreements for the marketing and distribution of our products in Spain, Portugal, Greece, Italy, and Central and South America and we established a subsidiary, Ligand Pharmaceuticals International, Inc., with a branch in London, England to manage our European marketing and operations. We may not be able to continue to establish and maintain the sales and marketing capabilities necessary to successfully commercialize our products. To the extent we enter into co-promotion or other licensing arrangements, any revenues we receive will depend on the marketing efforts of others, which may or may not be successful.

SOME OF OUR KEY TECHNOLOGIES HAVE NOT BEEN USED TO PRODUCE MARKETED PRODUCTS AND MAY NOT BE CAPABLE OF PRODUCING SUCH PRODUCTS.

To date, we have dedicated most of our resources to the research and development of potential drugs based upon our expertise in our IR and STATs technologies. Even though there are marketed drugs that act through IRs, some aspects of our IR technologies have not been used to produce marketed products. In addition, we are not aware of any drugs that have been developed and successfully commercialized that interact directly with STATs. Much remains to be learned about the location and function of IRs and STATs. If we are unable to apply our IR and STAT technologies to the development of our potential products, we will not be successful in developing new products.

OUR DRUG DEVELOPMENT PROGRAMS WILL REQUIRE SUBSTANTIAL ADDITIONAL FUTURE CAPITAL.

Our drug development programs require substantial additional capital, 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.

Our future operating and capital needs will depend on many factors, including:

- the pace of scientific progress in our research and development programs and the magnitude of these programs,
- the scope and results of preclinical testing and human studies,
- the time and costs involved in obtaining regulatory approvals,
- the time and costs involved in preparing, filing, prosecuting, maintaining and enforcing patent claims, o competing technological and market developments,
- our ability to establish additional collaborations,
- changes in our existing collaborations,
- the cost of manufacturing scale-up, and
- the effectiveness of our commercialization activities.

If additional funds are required and we are unable to obtain them on terms favorable to us, we may be required to cease or reduce further commercialization of our products, to sell some or all of our technology or assets or to merge with another entity.

OUR PRODUCTS MUST CLEAR SIGNIFICANT REGULATORY HURDLES PRIOR TO MARKETING.

Before we obtain the approvals necessary to sell any of our potential products, we must show through preclinical studies and clinical trials or human testing that each product is safe and effective. Our failure to show any product's safety and effectiveness would delay or prevent regulatory approval of the product and could adversely affect our business. The clinical trials process is complex and uncertain. 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. 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, which could be expensive and time-consuming, and failure to successfully conduct those trials could jeopardize continued commercialization.

The rate at which we complete our clinical trials depends on many factors, including 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 and the eligibility criteria for the trial. Delays in patient enrollment may result in increased costs and longer development times. In addition, some of our collaborative partners have rights to control product development and clinical programs for products developed under the collaborations. As a result, these collaborators may conduct these programs more slowly or in a different manner than we had expected. 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 MAY NOT BE ABLE TO PAY AMOUNTS DUE ON OUR OUTSTANDING INDEBTEDNESS.

We and our subsidiaries may not have sufficient funds to make required payments due under existing debt. If we, or our subsidiaries do not have adequate funds, we will be forced to refinance the existing debt and may not be successful in doing so. Our subsidiary, Glycomed, is obligated to make payments under debentures in the total principal amount of $50 million. The debentures bear interest at a rate of 7 1/2% per annum and are due in 2003. In addition, at December 31, 1999, we had outstanding a $2.5 million convertible note to SmithKline Beecham Corporation and $85.2 million in zero coupon convertible notes to Elan. Subsequent to December 31, 1999, we converted $20 million in zero coupon convertible notes plus accrued interest into 1,600,123 shares of common stock. Glycomed's failure to make payments when due under its debentures would cause us to default under the outstanding notes to Elan or other notes we may issue to Elan.

WE MAY REQUIRE ADDITIONAL STOCK OR DEBT FINANCINGS TO FUND OUR OPERATIONS WHICH MAY NOT BE AVAILABLE ON ACCEPTABLE TERMS.

We have incurred losses since our inception and do not expect to generate positive cash flow to fund our operations for one or more years. As a result, 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 on acceptable terms. In addition, these financings, if completed, still may not meet our capital needs and could result in substantial dilution to our stockholders. For instance, the zero coupon convertible notes outstanding to Elan are convertible into common stock at the option of Elan, subject to some limitations. In addition, we may issue additional notes to Elan with up to a total issue price of $10 million, which also would be convertible into common stock. If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our drug development programs. 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.

WE FACE SUBSTANTIAL COMPETITION.

Some of the drugs that we are developing and marketing will compete with existing treatments. In addition, several companies are developing new drugs that target the same diseases that we are targeting and are taking IR-related and STAT-related approaches to drug development. Many of our existing or potential competitors, particularly large drug companies, have greater financial, technical and human resources than us 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. In addition, academic institutions, governmental agencies and other public and private research organizations are developing products that may compete with the products we are developing. These institutions are becoming more aware of the commercial value of their findings and are seeking patent protection and licensing arrangements to collect payments for the use of their technologies. These institutions also may market competitive products on their own or through joint ventures and will compete with us in recruiting highly qualified scientific personnel. Any of these companies, academic institutions, government agencies or research organizations may develop and introduce products and processes that compete with or are

better than ours. As a result, our products may become noncompetitive or obsolete.

OUR SUCCESS WILL DEPEND ON THIRD-PARTY REIMBURSEMENT AND MAY BE IMPACTED BY

HEALTH CARE REFORM.

Sales of prescription drugs depend significantly on the availability of reimbursement to the consumer from third party payors, such as government and private insurance plans. These third party payors frequently require drug companies to provide predetermined discounts from list prices, and they are increasingly challenging the prices charged for medical products and services. Our current and potential products may not be considered cost-effective and reimbursement to the consumer may not be available or sufficient to allow us to sell our products on a competitive basis.

In addition, the efforts of governments and third party payors to contain or reduce the cost of health care will continue to affect the business and financial condition of drug companies. A number of legislative and regulatory proposals to change the health care system have been discussed in recent years. In addition, an increasing emphasis on managed care in the United States has and will continue to increase pressure on drug pricing. We cannot predict whether legislative or regulatory proposals will be adopted or what effect those proposals or managed care efforts may have on our business. The announcement and/or adoption of such proposals or efforts could adversely affect our profit margins and business.

WE RELY HEAVILY ON COLLABORATIVE RELATIONSHIPS AND TERMINATION OF ANY OF THESE PROGRAMS COULD REDUCE THE FINANCIAL RESOURCES AVAILABLE TO US.

Our strategy for developing and commercializing many of our potential products includes entering into collaborations with corporate partners, licensors, licensees and others. To date, we have entered into collaborations with Organon, Warner-Lambert Company, Eli Lilly and Company, SmithKline Beecham Corporation, American Home Products, Abbott Laboratories, Sankyo Company Ltd., Glaxo-Wellcome plc, Allergan, Inc., and Pfizer Inc. These collaborations provide us with funding and research and development resources for potential products for the treatment or control of metabolic diseases, hematopoiesis, women's health disorders, inflammation, cardiovascular disease, cancer and skin disease, and osteoporosis. These agreements also give our collaborative partners significant discretion when deciding whether or not to pursue any development program. We cannot be certain that our collaborations will continue or be successful.

In addition, our collaborators may develop drugs, either alone or with others, that compete with the types of drugs they currently are developing with us. This would result in less support and increased competition for our programs. If products are approved for marketing under our collaborative programs, any revenues we receive will depend on the manufacturing, marketing and sales efforts of our collaborators, who generally retain commercialization rights under the collaborative agreements. Our current collaborators also generally 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, our product development under these agreements will be delayed or terminated.

We may have disputes in the future with our collaborators, including disputes concerning which of us owns the rights to any technology developed. For instance, we were involved in litigation with Pfizer, which we settled in April 1996, concerning our right to milestones and royalties based on the development and commercialization of droloxifene. These and other possible disagreements between us and our collaborators could delay our ability and the ability of our collaborators to achieve milestones or our receipt of other payments. In addition, any disagreements could delay, interrupt or terminate the collaborative research, development and commercialization of certain potential products, 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.

OUR SUCCESS DEPENDS ON OUR ABILITY TO OBTAIN AND MAINTAIN OUR PATENTS AND OTHER PROPRIETARY RIGHTS.

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 and to avoid infringing the proprietary rights of others, 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. In addition, if we breach our licenses, we may lose rights to important technology and potential products.

Our patent position, like that of many 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, they 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. Further, the manufacture, use or sale of our products may infringe the patent rights of others.

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, United States patent applications may be kept confidential while pending in the Patent and Trademark Office, and patent applications filed in foreign countries are often first published six months or more after filing. 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. If other companies 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 license 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.

We have had and will continue to have discussions with our current and potential collaborators regarding the scope and validity of our patent and other proprietary rights. If a collaborator 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 collaborators to terminate their agreements where contractually permitted. Such a determination could also 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 results, a court may find our patents or those of our licensors invalid or may find that we have infringed on a competitor's rights. If any of our competitors have filed patent applications in the United States which claim technology we also have invented, the 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 have learned that Hoffmann-La Roche Inc. has received a United States patent and has made patent filings in foreign countries that relate to our Panretin(R) capsules and gel products. We filed a patent application with an earlier filing date than Hoffmann-La Roche's patent, which we believe is broader than, but overlaps in part with, Hoffmann-La Roche's patent. We currently are investigating the scope and validity of Hoffmann-La Roche's patent to determine its impact upon our products. The Patent and Trademark Office has informed us that the overlapping claims are patentable to us and has initiated a proceeding to determine whether we or Hoffmann-La Roche are entitled to a patent. We may not receive a favorable outcome in the proceeding. In addition, the proceeding may delay the Patent and Trademark Office's decision regarding our earlier application. If we do not prevail, the Hoffmann-La Roche patent might block our use of Panretin(R) capsules and gel in certain cancers.

We also rely on unpatented trade secrets and know-how to protect and maintain our competitive position. We require our employees, consultants, collaborators 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. Any of these actions might adversely affect our business.

WE RELY ON THIRD-PARTY MANUFACTURERS.

We currently have no manufacturing facilities and we rely on others for clinical or commercial production of our marketed and potential products. To be successful, we will need to manufacture our products, either directly or through others, in commercial quantities, in compliance with regulatory requirements and at acceptable cost. Any extended and unplanned manufacturing shutdowns could be expensive and could result in inventory and product shortages. If we are unable to develop our own facilities or contract with others for manufacturing services, our ability to conduct preclinical testing and human clinical trials will be adversely affected. In addition, our revenues could be adversely affected if we are unable to supply currently marketed products. This in turn could delay our submission of products for regulatory approval and our initiation of new development programs. In addition, although other companies have manufactured drugs acting through IRs and STATs on a commercial scale, we may not be able to do so at costs or in quantities to make marketable products.

The manufacturing process also may be susceptible to contamination, which could cause the affected manufacturing facility to close until the contamination is identified and fixed. In addition, problems with equipment failure or operator error also could cause delays.

OUR BUSINESS EXPOSES US TO PRODUCT LIABILITY RISKS AND WE MAY NOT HAVE SUFFICIENT INSURANCE TO COVER ANY CLAIMS.

Our business exposes us to potential product liability risks. A successful product liability claim or series of claims brought against us could result in payment of significant amounts of money and divert management's attention from running the business. Some of the compounds we are investigating may be harmful to humans. For example, retinoids as a class are known to contain compounds, which can cause birth defects. We may not be able to maintain our insurance on acceptable terms, or our insurance may not provide adequate protection in the case of a product liability claim. To the extent that product liability insurance, if available, does not cover potential claims, we will be required to self-insure the risks associated with such claims.

WE ARE DEPENDENT ON OUR KEY EMPLOYEES, THE LOSS OF WHOSE SERVICES COULD ADVERSELY AFFECT US.

We depend on our key scientific and management staff, the loss of whose services could adversely affect our business. Furthermore, we are currently experiencing a period of rapid growth, which requires us to hire many new scientific, management and operational personnel. Recruiting and retaining qualified management, operations and scientific personnel to perform research and development work also is critical to our success. We may not be able to attract and retain such personnel on acceptable terms given the competition among numerous drug companies, universities and other research institutions for such personnel.

WE USE HAZARDOUS MATERIALS WHICH REQUIRES US TO INCUR SUBSTANTIAL COSTS TO COMPLY WITH ENVIRONMENTAL REGULATIONS.

In connection with our research and development activities, we handle hazardous materials, chemicals and various radioactive compounds. We cannot completely eliminate the risk of accidental contamination or injury from the handling and disposing of hazardous materials. In the event of any accident, we could be held liable for any damages that result, which could be significant. In addition, we may incur substantial costs to comply with environmental regulations. Any of these events could adversely affect our business.

OUR STOCK PRICE MAY BE ADVERSELY AFFECTED BY VOLATILITY IN THE MARKETS.

The market prices and trading volumes for our securities, and the securities of emerging companies like us, have historically been highly volatile and have experienced significant fluctuations unrelated to operating performance. Future announcements concerning us or our competitors may impact the market price of our common stock. These announcements might include:

- the results of research or development testing,
- technological innovations,
- new commercial products,
- government regulation,
- receipt of regulatory approvals by competitors,
- our failure to receive regulatory approvals,

o developments concerning proprietary rights, or
o litigation or public concern about the safety of the products.

YOU MAY NOT RECEIVE A RETURN ON YOUR SHARES OTHER THAN THROUGH THE SALE OF YOUR SHARES OF COMMON STOCK.

We have not paid any cash dividends on our common stock to date, and we do not anticipate paying cash dividends in the foreseeable future. Accordingly, other than through a sale of your shares, you may not receive a return.

OUR SHAREHOLDER RIGHTS PLAN AND CHARTER DOCUMENTS MAY PREVENT TRANSACTIONS THAT COULD BE BENEFICIAL TO YOU.

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, including transactions in which you might otherwise receive a premium for your shares over then-current market prices. These provisions also may limit your ability to approve transactions that you deem to be in your best interests. In addition, our board of directors may issue shares of preferred stock without any further action by you. Such issuances may have the effect of delaying or preventing a change in our ownership.

ITEM 2. PROPERTIES

We currently lease and occupy office and laboratory facilities in San Diego, California. These include a 52,800 square foot facility leased through June 2014, an 82,000 square foot facility leased through February 2014, and a 7,500 square foot facility leased through February 2001. We believe these facilities will be adequate to meet our near-term space requirements.

ITEM 3. LEGAL PROCEEDINGS

From time to time, we are a party to litigation arising in the normal course of business. As of the date of this filing, we are not a party to any litigation which would have a material effect on our financial position, business operations or cash flows.

On August 4, 1998, a lawsuit was filed in the Court of Chancery of the State of Delaware which sought to enjoin the acquisition of Seragen by Ligand. The injunction was denied and the acquisition occurred on August 12, 1998. An amended complaint was filed on or about December 18, 1998 against Seragen, Seragen Technology, Inc., specified former directors and officers and Seragen investors, Boston University and specified trustees, Marathon Biopharmaceuticals L.L.C., Ligand and Knight Acquisition Corp., a wholly owned subsidiary of Ligand at the time of the merger with Seragen ("Knight"). Ligand and Knight were not named as defendants in the original complaint. The operative complaint alleges claims of self-dealing and breach of fiduciary duties of disclosure, loyalty and care by the individual defendants and Seragen investors, and seeks damages on behalf of a class of shareholders who purchased Seragen common stock during the period April 1992 through August 12, 1998. The lawsuit also challenges the fairness of Ligand's acquisition of Seragen, and the allocation of the merger proceeds among the individual defendants, Seragen's investors and minority shareholders. The defendants in the litigation, including Ligand, Knight and Seragen, have filed various motions to dismiss the claims. A hearing on these pending motions is presently scheduled on April 10, 2000. We believe that the lawsuit is without merit and intend to defend against it vigorously.

ITEM 4. SUBMISSION OF MATTERS TO A VOTE OF SECURITY HOLDERS

There were no matters submitted to a vote of security holders in the fourth quarter ended December 31, 1999.

PART II

ITEM 5. MARKETS FOR REGISTRANT'S COMMON STOCK AND RELATED STOCKHOLDERS MATTERS

(a) MARKET INFORMATION

Our common stock trades on the Nasdaq National Market tier of the Nasdaq Stock Market under the symbol "LGND." The following table sets forth the high and low sales prices for our common stock on the Nasdaq National Market for the periods indicated.

<TABLE>
<CAPTION>

	Price Range	
	High	Low
<S>	<C>	<C>
Year Ended December 31, 1998:		
1st Quarter	$ 16 5/8	$ 10 7/8
2nd Quarter	16 3/8	12 1/8
3rd Quarter	13 1/4	5 1/2
4th Quarter	12 3/8	6 15/16
Year Ended December 31, 1999:		
1st Quarter	$ 14 3/4	$ 8 3/16
2nd Quarter	11 7/16	8 3/16
3rd Quarter	11 3/16	6 7/16
4th Quarter	13 7/8	7 1/2

</TABLE>

(b) HOLDERS

As of February 29, 2000, there were approximately 2,127 holders of record of the common stock.

(c) DIVIDENDS

We have never declared or paid any cash dividends on our capital stock and do not intend to pay any cash dividends in the foreseeable future. We currently intend to retain our earnings, if any, to finance future growth. We have no contractual restrictions on paying dividends.

(d) RECENT SALES OF UNREGISTERED SECURITIES

On December 8, 1999, we issued to Elan International Services, Ltd. ("EIS"), a subsidiary of Elan Corporation, plc ("Elan"), 498,433 shares of our common stock as payment of a $5 million milestone due Elan under the Morphelan license agreement. On December 31, 1999, we issued to EIS 2,433,032 shares of our common stock related to the conversion of $20 million in zero coupon convertible senior notes plus accrued interest. The shares of common stock were issued to a single entity, EIS, under a claim of exemption under Regulation S promulgated by the Securities and Exchange Commission or, alternatively, under Section 4(2) of the Securities Act of 1933, as amended.

ITEM 6. SELECTED CONSOLIDATED FINANCIAL DATA

The selected financial data set forth below with respect to our consolidated financial statements has been derived from the audited financial statements. The data set forth below should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the consolidated financial statements and related notes included elsewhere in this filing.

<TABLE>
<CAPTION>

	Year Ended December 31,				
	1999	1998	1997	1996	1995
	(in thousands, except net loss per share data)				
<S>	<C>	<C>	<C>	<C>	<C>
Consolidated Statement of Operations Data:					
Revenues:					
Product sales (1)	$ 11,307	$ 406	$ 418	$ --	$ --
Collaborative research and development and other revenues	26,978	17,267	51,281	36,842	24,516
Contract manufacturing	2,610	--	--	--	--
Total revenues	40,895	17,673	51,699	36,842	24,516
Costs and expenses:					

Cost of products sold (1)	3,563	466	520	--	--
Contract manufacturing	6,926	--	--	--	--
Research and development	59,442	70,273	71,906	59,494	41,636
Selling, general and administrative (1)	27,257	16,568	10,108	10,205	8,181
Technology milestone payment (2)	5,000	--	--	--	--
Write-off of acquired in-process technology (3)	--	45,000	64,970	--	19,564
ALRT contribution	--	--	--	--	17,500
Total costs and expenses	102,188	132,307	147,504	69,699	86,881
Loss from operations	(61,293)	(114,634)	(95,805)	(32,857)	(62,365)
Other income (expense):					
Interest income	2,470	3,070	3,743	3,704	3,603
Interest expense (4)	(12,979)	(8,322)	(8,088)	(8,160)	(5,410)
Debt conversion expense	(2,200)	--	--	--	--
Other	(717)	2,000	--	--	--
Total other income (expense)	(13,426)	(3,252)	(4,345)	(4,456)	(1,807)
Net loss	$ (74,719)	$ (117,886)	$ (100,150)	$ (37,313)	$ (64,172)
Basic and diluted net loss per share	$ (1.58)	$ (2.92)	$ (3.02)	$ (1.30)	$ (2.70)
Shares used in computing net loss per share	47,146,312	40,392,421	33,128,372	28,780,914	23,791,542

</TABLE>

<TABLE>
<CAPTION>

	December 31,				
	1999	1998	1997	1996	1995
	(in thousands)				
<S>	<C>	<C>	<C>	<C>	<C>
Consolidated Balance Sheet Data:					
Cash, cash equivalents, short term investments and restricted investments	$ 49,166	$ 72,521	$ 86,287	$ 84,179	$ 76,903
Working capital	35,978	51,098	62,399	71,680	57,349
Total assets	134,645	156,020	107,423	102,140	93,594
Long-term debt (4)	136,634	90,487	51,379	53,914	49,864
Accumulated deficit	(470,349)	(395,630)	(277,744)	(177,594)	(140,281)
Total stockholders' equity (deficit)	(25,590)	(11,362)	34,349	34,461	28,071

</TABLE>

(1) We began selling and marketing ONTAK and Panretin in 1999.

(2) Consists of technology payment to Elan related to Morphelan. See note 7 of notes to consolidated financial statements.

(3) Includes write-offs related to the Seragen merger and technology acquired from Elan in 1998 and the ALRT transaction in 1997. See notes 4, 7, and 11, respectively, of notes to consolidated financial statements.

(4) Increase in 1999 and 1998 relates to the issuance of zero coupon convertible notes to Elan. See note 7 of notes to consolidated financial statements.

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

This annual report may contain predictions, estimates and other forward-looking statements that involve a number of risks and uncertainties, including those discussed at "Risks and Uncertainties." This outlook represents our current judgment on the future direction of our business. Such risks and uncertainties 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.

Panretin(R) and Targretin(R) are registered trademarks of Ligand Pharmaceuticals Incorporated, and ONTAK(R) is a registered trademark of Seragen, Inc., our wholly-owned subsidiary.

OVERVIEW

Since January 1989, we have devoted substantially all of our resources to our drug discovery and development programs focused on intracellular receptors, also known as IRs, and signal transducers and activators of transcription, also known as STATs. We have been unprofitable since our inception. We expect to incur substantial additional operating losses until the commercialization of our products, begun in the first quarter of 1999, generates sufficient revenues to cover our expenses. We expect that our operating results will fluctuate from quarter to quarter and period to period as a result of differences in the timing of expenses incurred and revenues earned from collaborative research and development, product sales and other arrangements. Some of these fluctuations may be significant. As of December 31, 1999, our accumulated deficit was $470.3 million.

The consolidated results include the results of : Ligand Pharmaceuticals Incorporated; Seragen, Inc. ("Seragen"), acquired in 1998; Marathon Biopharmaceuticals, Inc. ("Marathon"), established in 1999 subsequent to an asset acquisition; Ligand Pharmaceuticals International, Inc., established in 1999; Ligand Pharmaceuticals (Canada) Incorporated; Glycomed Incorporated; and Allergan Ligand Retinoid Therapeutics, Inc. ("ALRT"), acquired in 1997.

In January 1999, we consummated the purchase of the assets of Marathon Biopharmaceuticals LLC ("Marathon LLC"). The purchase of the Marathon LLC assets was completed under an agreement between us, Marathon LLC and other subsidiaries of Boston University dated May 11, 1998. The purchase price consisted of a $5 million payment in January 1999 satisfied through the issuance of 402,820 shares of our common stock and a $3 million cash payment in August 1999.

In February 1999, the United States Food and Drug Administration ("FDA") granted us marketing approval for our first two products, Panretin gel for the treatment of cutaneous lesions of patients with AIDS-related Kaposi's sarcoma, also known as KS, and ONTAK for the treatment of patients with persistent or recurrent cutaneous T-cell lymphoma, also known as CTCL.

In March 1999, we issued to Eli Lilly and Company ("Lilly") 434,546 shares of our common stock as payment of a $5 million milestone due to Lilly under an agreement with us and Seragen covering rights to ONTAK. In addition, we signed marketing and distribution agreements with Ferrer Internacional S.A. to exclusively market and distribute, in Spain, Portugal,

Greece, and Central and South America our five near-term oncology products: ONTAK, Panretin gel, Panretin capsules, Targretin gel and Targretin capsules.

In June 1999, we submitted a new drug application to the FDA seeking marketing clearance for Targretin capsules. The indication sought was for once daily oral administration of Targretin capsules for the treatment of patients with early stage CTCL who have not tolerated other therapies, patients with refractory or persistent early stage CTCL, and patients with refractory advanced stage CTCL. We received approval from the FDA in December 1999. In addition, we became a minority equity investor in a new private corporation, X-Ceptor Therapeutics, Inc. ("X-Ceptor"), whose mission is to conduct research in and identify therapeutic products from the field of orphan nuclear receptors. For additional details regarding X-Ceptor, please see note 12 of the notes to consolidated financial statements.

In July 1999, we issued $40 million of zero coupon convertible notes under the terms of our strategic alliance with Elan Corporation, plc ("Elan") and in August 1999 agreed to amend the underlying financing arrangement to provide for the use of the $30 million of additional financing available under the arrangement for general corporate purposes. In August 1999, we issued $20 million of convertible notes under the amended agreement. For additional details, please see note 7 of the notes to consolidated financial statements.

In August 1999, in addition to making the $3 million cash payment for the Marathon LLC assets, we made a cash payment of $34.1 million related to our contingent merger obligation to Seragen stakeholders. For additional details, please see note 4 of the notes to consolidated financial statements.

In September 1999, we entered into a royalty arrangement with Hoffmann-La Roche Inc. and a collaborative research and development arrangement with Parke-Davis. For additional details, please see notes 8 and 10, respectively, of

the notes to consolidated financial statements.

In December 1999, in addition to receiving FDA approval for Targretin capsules, we submitted a new drug application for Targretin gel for the treatment of patients with early stage CTCL. In February 2000, the new drug application was accepted for priority review by the FDA. Under the priority review, the FDA is expected to complete its review within six months of the December 1999 submission date. In December 1999, we also completed an exchange offer for warrants originally issued in 1995, resulting in net proceeds to us of $13.9 million. In addition, we issued 498,443 shares of common stock to Elan as a $5 million technology milestone payment and 2,433,032 shares related to Elan's conversion of $20 million of outstanding zero coupon convertible notes and accrued interest. We also sold certain royalty rights to a third party for $3.25 million and entered into a marketing and distribution agreement with Alfa Wassermann S.p.A. for the marketing and distribution of our oncology products in Italy.

RESULTS OF OPERATIONS

YEAR ENDED DECEMBER 31, 1999 ("1999"), AS COMPARED WITH YEAR ENDED DECEMBER 31, 1998 ("1998")

Total revenues for 1999 were $40.9 million, an increase of $23.2 million as compared to 1998. Loss from operations for 1999 was $61.3 million, a decrease of $53.3 million as compared to 1998. Net loss for 1999 was $74.7 million or $(1.58) per share, a decrease of $43.2 million from the 1998 net loss of $117.9 million or $(2.92) per share. The principal factors causing these changes are discussed below.

In 1999 we wrote off $5 million related to a milestone payment made to Elan under the license agreement for its product Morphelan. In 1998 we wrote off $30 million of acquired in-process technology related to the merger with Seragen and $15 million related to the license agreement with Elan. For additional details, please see notes 4 and 7, respectively, of the notes to consolidated financial statements.

Product sales for 1999 were $11.3 million, as compared to $406,000 in 1998. The increase is due to revenues from sales of ONTAK and Panretin gel, approved by the FDA in February 1999. Contract manufacturing sales for 1999 were $2.6 million. These sales were generated under contract manufacturing agreements performed at the Marathon facility acquired in January 1999.

Collaborative research and development and other revenues for 1999 were $27 million, an increase of $9.7 million over 1998. The increase in 1999 was due primarily to $5.1 million of revenue earned under royalty arrangements and $3.3 million earned in connection with marketing and distribution agreements entered into in 1999. The year-to-year comparison of collaborative research and development and other revenues is as follows ($,000):

<TABLE>
<CAPTION>

	Year Ended December 31,	
	1999	1998
<S>	<C>	<C>
Collaborative research and development	$16,001	$16,406
Royalties	5,102	-- --
Marketing and distribution agreements	3,250	-- --
Milestone revenues	2,625	861
	$26,978	$17,267

</TABLE>

Certain collaborative research partners accounted for greater than 10% of total revenues in 1999 and 1998. For additional details, please see note 2 of notes to consolidated financial statements.

Cost of products sold increased from $466,000 in 1998 to $3.6 million in 1999. The increase is due to manufacturing costs, amortization of acquired technology, and royalty expenses associated with the sale of our new products.

Contract manufacturing costs incurred at the Marathon facility were $6.9 million.

Research and development expenses were $59.4 million in 1999, compared to $70.3 million in 1998. The decrease was due primarily to the reduction of clinical trial activity related to Panretin gel and Targretin capsules, approved by the FDA in February 1999 and December 1999, respectively, offset in part by increased clinical costs for Targretin gel submitted to the FDA for approval in December 1999. Selling, general and administrative expenses were $27.3 million in 1999, up from $16.6 million in 1998. The increase was due primarily to increased costs associated with the expansion of our sales and marketing activities related to the launch of our new products.

Interest expense in 1999 was $13 million, an increase of $4.7 million over 1998. The increase is due to the accretion related to the $100 million in issue price of zero coupon convertible notes issued to Elan in November 1998 ($40 million), July 1999 ($40 million) and August 1999 ($20 million). The debt conversion expense of $2.2 million relates to the incentive provided to Elan for their conversion of $20 million in notes in December 1999.

We have significant net operating loss carry forwards for federal and state income taxes which are available subject to Internal Revenue Code Sections 382 and 383 carryforward limitations. For additional details, please see note 13 of the notes to consolidated financial statements.

YEAR ENDED DECEMBER 31, 1998 ("1998"), AS COMPARED WITH YEAR ENDED DECEMBER 31, 1997 ("1997")

Total revenues for 1998 were $17.7 million, a decrease of $34 million as compared to 1997. Loss from operations for 1998 was $114.6 million, an increase of $18.8 million as compared to 1997. Net loss for 1998 was $117.9 million or $(2.92) per share, an increase of $17.7 million from the 1997 net loss of $100.2 million or $(3.02) per share. The principal factors causing these changes are discussed below.

In 1998, we wrote off $45 million of in-process technology compared to $65 million in 1997. The 1997 write-off related to the acquisition of ALRT. For additional details on the acquisition of ALRT, please see note 11 of the notes to consolidated financial statements.

Collaborative research and development and other revenues for 1998 were $17.3 million, a decrease of $34 million over 1997. The decrease was primarily related to the elimination of $19 million in revenues earned form ALRT due to the purchase of ALRT in 1997, the completion of research and development collaborations in 1997 and early 1998 which reduced 1998 revenues by $6.4 million, and a reduction in revenues earned in 1998 in the research and development collaboration with Lilly of $9.4 million. The year to year comparison of collaborative research and development and other revenues is as follows ($,000):

<TABLE>
<CAPTION>

	Year Ended December 31,	
	1998	1997
<S>	<C>	<C>
Collaborative research and development	$16,406	$32,284
Milestone revenues	861	-- --
ALRT	-- --	18,997
	$17,267	$51,281

</TABLE>

Certain collaborative research partners accounted for greater than 10% of total revenues in 1998 and 1997. For additional details, please see note 2 of notes to consolidated financial statements.

Research and development expenses were $70.3 million in 1998, compared to $71.9 million in 1997. The decrease was due primarily to the stage of clinical trials on potential products in 1998 as compared to 1997. Selling, general and administrative expenses were $16.6 million in 1998, up from $10.1 million in 1997. The increase was due primarily to increased costs associated with the

expansion of our sales and marketing activities in preparation for the launch of our new products.

LIQUIDITY AND CAPITAL RESOURCES

We have financed our operations through private and public offerings of our equity securities, collaborative research and development and other revenues, issuance of convertible notes, capital and operating lease transactions, equipment financing arrangements, investment income and product sales.

As of December 31, 1999, we had acquired a total of $43.9 million in property, laboratory and office equipment, and tenant leasehold improvements. Of this total, $7.6 million was recorded in the August 1998 merger with Seragen, while substantially all of the balance has been funded through capital lease and equipment financing arrangements. We lease our office and laboratory facilities under operating lease arrangements. Our current facilities were occupied in December 1997. Our equipment financing arrangements extend through June 30, 2000 with $1.8 million of financing available under those arrangements at December 31, 1999. For additional details on our commitments under leases and equipment financing arrangements, please see note 8 of the notes to consolidated financial statements.

Working capital decreased to $36 million as of December 31, 1999, from $51.1 million at the end of 1998. The decrease in working capital resulted from decreases in cash and cash equivalents of $2.9 million and short-term investments of $19.9 million used to finance operating activities offset in part by an increase in accounts receivable of $1.7 million related to the sale of the recently introduced products, a decrease in accounts payable of $7 million due to a reduction in research and development activities, and lower deferred revenues of $1.1 million due to the timing of completion of collaborative agreements.

For the same reasons, cash and cash equivalents, short-term investments and restricted investments decreased to $49.2 million at December 31, 1999 from $72.5 million at December 31, 1998. We primarily invest our cash in United States government and investment grade corporate debt securities.

In 1999, we issued $60 million of zero coupon convertible notes under the terms of our strategic alliance with Elan. We have $10 million of additional financing available under the arrangement that may be used for general corporate purposes. In December 1999 and March 2000, Elan converted a total of $40 million of notes plus accrued interest into common stock. For additional details, please see notes 7 and 14 of the notes to consolidated financial statements.

In August 1999, we made a $37.1 million cash payment due for the purchase of the assets of Marathon and the acquisition of Seragen. However, we withheld $2.9 million of the total amount due specified Seragen stakeholders for potential contingencies. For additional details, please see note 4 of the notes to consolidated financial statements.

We may be required to make milestone payments of up to $10 million to Elan under the Morphelan license agreement and $5 million to Lilly related to sales of ONTAK. These payments may be made in cash or our common stock. For additional details, please see notes 7 and 4, respectively, of the notes to consolidated financial statements.

In December 1999, we generated cash flows from the sale of a royalty stream for $3.25 million and the exercise of certain warrants under an exchange offer resulting in net proceeds of $13.9 million. In January 2000, we sold the contract manufacturing assets of Marathon resulting in cash proceeds of $10 million.

We believe our available cash, cash equivalents, short-term investments and existing sources of funding will be adequate to satisfy our anticipated operating and capital requirements through 2000. Our future operating and capital requirements will depend on many factors, including: the effectiveness of our commercialization activities; 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 ability to establish additional collaborations or changes in existing collaborations; and the cost of manufacturing scale-up.

NEW ACCOUNTING PRONOUNCEMENT

In December 1999, the Securities and Exchange Commission issued Staff Accounting Bulletin ("SAB") No. 101, Revenue Recognition in Financial Statements. SAB No. 101 provides guidance in applying generally accepted accounting principles to revenue recognition in financial statements, including the recognition of nonrefundable up-front fees received in conjunction with a research and development arrangement. The evaluation of the impact of SAB No. 101 has not been completed. However, to the extent SAB No. 101 would be applicable and have a material impact, we would implement this new pronouncement beginning with the first quarter of 2000.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

At December 31, 1999 our investment portfolio includes fixed-income securities of $15.2 million. These securities are subject to interest rate risk and will decline in value if interest rates increase. However, due to the short duration of our investment portfolio, an immediate 10% change in interest rates would have no material impact on our financial condition, results of operations or cash flows.

We generally conduct business including sales to foreign customers, in U.S. dollars and as a result we have very limited foreign currency exchange rate risk. The effect of an immediate 10% change in foreign exchange rates would have no material impact on our financial condition, results of operations or cash flows.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

The consolidated financial statements and supplementary data required by this item are set forth at the pages indicated in Item 14(a)(1).

ITEM 9. CHANGES AND DISAGREEMENTS WITH ACCOUNTANTS AND FINANCIAL DISCLOSURE

Not applicable.

PART III

ITEM 10. DIRECTORS AND EXECUTIVE OFFICERS OF THE REGISTRANT

The sections labeled "Election of Directors", "Executive Officers" and "Section 16(a) Beneficial Ownership Reporting Compliance" appearing in the Company's Proxy Statement to be delivered to stockholders in connection with the 2000 Annual Meeting of Stockholders (the "Proxy Statement") are incorporated herein by reference.

ITEM 11. EXECUTIVE COMPENSATION

The section labeled "Executive Compensation and Other Information" appearing in the Proxy Statement is incorporated herein by reference.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT

The sections labeled "Principal Stockholders" and "Security Ownership of Directors and Management" appearing in the Proxy Statement are incorporated herein by reference.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS

The sections labeled "Executive Compensation and Other Information" and "Certain Relationships and Related Transactions" appearing in the Proxy Statement are incorporated herein by reference.

PART IV

ITEM 14. EXHIBITS, FINANCIAL STATEMENT SCHEDULES, AND REPORTS ON FORM 8-K

(a) (1) FINANCIAL STATEMENTS

The financial statements required by this item are submitted in a separate

section beginning on Page F-1 of this report.

<TABLE>
<CAPTION>
CONSOLIDATED FINANCIAL STATEMENTS OF LIGAND PHARMACEUTICALS INCORPORATED

<S> <C>

</TABLE>

(b) REPORTS ON FORM 8-K.

The following reports on Form 8-K were filed by the Company during the fourth quarter of 1999:

<TABLE>
<CAPTION>

Date of Filing	Description
<S>	<C>
November 19, 1999	Item 5, Warrant Exchange Offer
December 14, 1999	Items 5 and 7, FDA Recommends Marketing Approval for Targretin Capsules
December 23, 1999	Items 5 and 7, Receipt of $13.9 Million From Warrant Exchange Offer

</TABLE>

(c) EXHIBITS - 1999 10-K

<TABLE>
<CAPTION>

Exhibit Number	Description
<S>	<C>
2.1 (1)	Agreement and Plan of Reorganization dated May 11, 1998, by and among the Company, Knight Acquisition Corp. and Seragen, Inc. (Filed as Exhibit 2.1).
2.2 (1)	Option and Asset Purchase Agreement, dated May 11, 1998, by and among the Company, Marathon Biopharmaceuticals, LLC, 520 Commonwealth Avenue Real Estate Corp. and 660 Corporation. (Filed as Exhibit 10.3).
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 Ligand Pharmaceuticals Incorporated.
4.1 (16)	Preferred Shares Rights Agreement, dated as of September 13, 1996, by and between Ligand Pharmaceuticals Incorporated and Wells Fargo Bank, N.A. (Filed as Exhibit 10.1).
4.2 (13)	Amendment to Preferred Shares Rights Agreement, dated as of November 9, 1998, between the Company and ChaseMellon Shareholder Services, L.L.C., as Rights Agent (Exhibit 99.1). (Filed as Exhibit 10.1)
10.1 (3)	The Company's 1992 Stock Option/Stock Issuance Plan, as amended.
10.2 (4)	Form of Stock Option Agreement.
10.3 (4)	Form of Stock Issuance Agreement.
10.12 (4)	1992 Employee Stock Purchase Plan.
10.13 (4)	Form of Stock Purchase Agreement.
10.30 (4)	Form of Proprietary Information and Inventions Agreement.
10.46 (4)	Form of Indemnification Agreement between the Company and each of its directors.
10.47 (4)	Form of Indemnification Agreement between the Company and each of its officers.
10.69 (5)	Form of Automatic Grant Option Agreement.
10.97 (6)	Research, Development and License Agreement, dated December 29, 1994, between SmithKline Beecham Corporation and the Company (with certain confidential portions omitted).

</TABLE>

<TABLE>
<CAPTION>

Exhibit Number	Description
<S>	<C>
10.98 (6)	Stock and Note Purchase Agreement, dated February 2, 1995, between SmithKline Beecham Corporation, S.R. One, Limited and the Company (with certain confidential portions omitted).
10.99 (6)	Third Addendum to Amended Registration Rights Agreement, dated February 3, 1995, between S. R. One, Limited and the Company.
10.158 (7)	Lease, dated March 7, 1997, between the Company and Nexus Equity VI LLC.
10.167 (8)	Development and License Agreement, dated November 25, 1997, between the Company and Eli Lilly

and Company (with certain confidential portions omitted).

10.168 (8) Collaboration Agreement, dated November 25, 1997, among the Company, Eli Lilly and Company, and Allergan Ligand Retinoid Therapeutics, Inc. (with certain confidential portions omitted).

10.169 (8) Option and Wholesale Purchase Agreement, dated November 25, 1997, between the Company and Eli Lilly and Company (with certain confidential portions omitted).

10.170 (8) Stock Purchase Agreement, dated November 25, 1997, between the Company and Eli Lilly and Company.

10.171 (8) First Amendment to Option and Wholesale Purchase Agreement dated February 23, 1998, between the Company and Eli Lilly and Company (with certain confidential portions omitted).

10.172 (8) Second Amendment to Option and Wholesale Purchase Agreement, dated March 16, 1998, between the Company and Eli Lilly and Company (with certain confidential portions omitted).

10.173 (9) Ninth Addendum to Amended Registration Rights Agreement, dated June 24, 1994, between the Company and SmithKline Beecham plc., and is effective as of April 24, 1998.

10.174 (9) Leptin Research, Development and License Agreement, dated March 17, 1998, between the Company and SmithKline Beecham, plc (with certain confidential portions omitted).

10.175 (9) Stock and Warrant Purchase Agreement, dated March 17, 1998, among the Company, SmithKline Beecham, plc. and SmithKline Beecham Corporation (with certain confidential portions omitted).

10.176 (10) Secured Promissory Note, dated March 7, 1997, in the face amount of $3,650,000, payable to the Company by Nexus Equity VI LLC. (Filed as Exhibit 10.1).

10.177 (10) Amended memorandum of Lease effective March 7, 1997, between the Company and Nexus Equity VI LLC. (Filed as Exhibit 10.2)

10.178 (10) First Amendment to Lease, dated March 7, 1997, between the Company and Nexus Equity VI LLC. (Filed as Exhibit 10.3)

10.179 (10) First Amendment to secured Promissory Note, date March 7, 1997, payable to the Nexus Equity VI LLC. (Filed as Exhibit 10.4)

10.183 (11) Extension Option Agreement, dated May 11, 1998, by and among the Company, Seragen, Inc., Marathon Biopharmaceuticals, LLC, 520 Commonwealth Avenue Real Estate Corp. and 660 Corporation. (Filed as Exhibit 99.5)

10.184 (11) Letter agreement, dated May 11, 1998, by and among the Company, Eli Lilly & Company and Seragen, Inc. (Filed as Exhibit 99.6).

10.185 (1) Amendment No. 3 to Option and Wholesale Purchase Agreement, dated May 11, 1998, by and between Eli Lilly and Company and the Company. (Filed as Exhibit 10.6).

10.186 (1) Agreement, dated May 11, 1998, by and among Eli Lilly and Company, the Company and Seragen, Inc. (Filed as Exhibit 10.7).

10.188 (11) Settlement Agreement, dated May 1, 1998, by and among Seragen, Inc., Seragen Biopharmaceuticals Ltd./Seragen Biopharmaceutique Ltee, Sofinov Societe Financiere D'Innovation Inc., Societe Innovatech Du Grand Montreal, MDS Health Ventures Inc., Canadian Medical Discoveries Fund Inc., Royal Bank Capital Corporation and Health Care and Biotechnology Venture Fund (Filed as Exhibit 99.2).

10.189 (11) Accord and Satisfaction Agreement, dated May 11, 1998, by and among Seragen, Inc., Seragen Technology, Inc., Trustees of Boston University, Seragen LLC, Marathon Biopharmaceuticals, LLC, United States Surgical Corporation, Leon C. Hirsch, Turi Josefsen, Gerald S.J. and Loretta P. Cassidy, Reed R. Prior, Jean C. Nichols, Elizabeth C. Chen, Robert W. Crane, Shoreline Pacific Institutional Finance, Lehman Brothers Inc., 520 Commonwealth Avenue Real Estate Corp. and 660 Corporation (Filed as Exhibit 99.4).

10.190 (1) Amendment No. 1 to Service Agreement, dated as of May 11, 1998, by and between Seragen, Inc. and Marathon Biopharmaceuticals, LLC. (Filed as Exhibit 10.11)

</TABLE>

<TABLE>
<CAPTION>
Exhibit Number Description
- ---------- -----------
<S> <C>

10.191 (10) 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)

10.192 (10) Stock Purchase Agreement dated September 30, 1998 between the Company and Elan International Services, Ltd. (with certain confidential portions omitted), (Filed as Exhibit 10.6)

10.193 (10) Tenth Addendum to Registration Rights Agreement dated September 30, 1998 between the Company and Elan International Services, Ltd. (Filed as Exhibit 10.7)

10.194 (12) Eleventh Addendum to Registration Rights Agreement dated November 9, 1998 between the Company and Elan International Services, Ltd.

10.195 (12) Zero Coupon Convertible Senior Note Due 2008 dated November 9, 1998 between the Company and Elan International Services, Ltd., No. R-1.

10.196 (12) Zero Coupon Convertible Senior Note Due 2008 dated November 9, 1998 between the Company and Elan International Services, Ltd., No. R-2.

10.197 (14) Research, Development and License Agreement by and between the Company and Warner-Lambert Company dated September 1, 1999 (with certain confidential portions omitted). (Filed as Exhibit 10.1)

10.198 (14) 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)

10.199 (14) Thirteenth Addendum to Amended Registration Rights Agreement dated June 24, 1994, between the

Company and Warner-Lambert Company, effective September 1, 1999. (Filed as Exhibit 10.3)

10.200 (14) Nonexclusive Sublicense Agreement, effective September 8, 1999, by and among Seragen, Inc., Hoffmann-La Roche Inc. and F. Hoffmann-La Roche Ltd. (with certain confidential portions omitted). (Filed as Exhibit 10.4)

10.201 (14) Amendment to Development, Licence and Supply Agreement between the Company and Elan Corporation, plc dated August 20, 1999 (with certain confidential portions omitted). (Filed as Exhibit 10.5)

10.202 (14) Ligand Purchase Option (to acquire outstanding capital stock of X-Ceptor Therapeutics, Inc.), contained in Schedule I to the Certificate of Incorporation of X-Ceptor Therapeutics, Inc., as amended. (Filed as Exhibit 10.6)

10.203 (14) 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)

10.204 (14) Zero Coupon Convertible Senior Note Due 2008 dated July 14, 1999 between the Company and Monksland Holdings, B.V., No. R-3. (Filed as Exhibit 10.10)

10.205 (14) Zero Coupon Convertible Senior Note Due 2008 dated August 31, 1999 between the Company and Monksland Holdings, B.V., No. R-4. (Filed as Exhibit 10.11)

10.206 (14) Stock Purchase Agreement dated September 30, 1999 by and between the Company and Elan International Services, Ltd. (with certain confidential portions omitted). (Filed as Exhibit 10.13)

10.207 (14) Fourteenth Addendum to Amended Registration Rights Agreement dated June 24, 1994 between the Company and Elan International Services, Ltd., effective September 30, 1999. (Filed as Exhibit 10.14)

10.208 (14) Twelfth Addendum to Amended Registration Rights Agreement dated June 24, 1994 between the Company and Elan International Services, Ltd., effective August 4, 1999. (Filed as Exhibit 10.16)

10.209 (14) Series X Warrant dated August 4, 1999 between the Company and Elan International Services, Ltd. (Filed as Exhibit 10.15)

10.210 (15) Securities Purchase Agreement dated November 6, 1998 among Elan Corporation, plc, Elan International Services, Ltd. and the Company (filed as Exhibit 1). (Filed as Exhibit 10.8)

10.211 (15) Development, Licence and Supply Agreement dated November 6, 1998 between Elan Corporation, plc and the Company (filed as Exhibit 2). (Filed as Exhibit 10.9)

10.212 (15) Letter Agreement dated August 13, 1999 among the Company, Elan International Services, Ltd. and Elan Corporation, plc (filed as Exhibit 3). (Filed as Exhibit 10.12)

10.213 Incentive Agreement dated December 31, 1999 among the Company, Elan International Services, Ltd. and Monksland Holdings, BV.

10.214 Fifteenth Addendum to Amended Registration Rights Agreement dated June 24, 1994, among the Company and certain other persons, effective October 6, 1999.

</TABLE>

<TABLE>
<CAPTION>
Exhibit Number Description
- ---------- -----------
<S> <C>

10.215 Sixteenth Addendum to Amended Registration Rights Agreement dated June 24, 1994, between the Company and Elan International Services, Ltd., effective December 31, 1999.

10.216 Amendment to Ligand Purchase Option (to acquire outstanding capital stock of X-Ceptor Therapeutics, Inc.), contained in Schedule I to the Certificate of Incorporation of X-Ceptor Therapeutics, Inc., as amended October 1, 1999.

10.217 Amended and Restated Series X Warrant dated November 22, 1999 between the Company and Elan International Services, Ltd.

10.218 Royalty Stream Purchase Agreement dated as of December 31, 1999 among Seragen, Inc., the Company, Pharmaceutical Partners, L.L.C., Bioventure Investments, Kft, and Pharmaceutical Royalties, LLC. (with certain confidential portions omitted).

21.1 Subsidiaries of Registrant.

23.1 Consent of Ernst & Young LLP, Independent Auditors.

24.1 Power of Attorney (See Page 35).

27.1 Financial Data Schedule.

</TABLE>

- ----------

<TABLE>
<S> <C>

(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 the 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 Registration Statement on Form S-4 (No. 33-90160) filed on March 9, 1995, as amended.

(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 Exhibit 99.1 filed with the Company's Form S-8 (No. 33-85366), filed on October 17, 1994.

(6) 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.

(7) 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, 1996.

(8) 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, 1997.

(9) 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, 1998.

(10) 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.

(11) Previously filed as, and hereby incorporated by reference to, the numbered exhibit filed with the Current Report on Form 8-K of Seragen, Inc. filed with the Commission on May 15, 1998.

(12) 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, 1998.

(13) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with, the Registration Statement on Form 8-A/A Amendment No. 1 (No. 0-20720) filed on December 24, 1998.

(14) 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.

(15) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with, the Schedule 13D of Elan Corporation, plc, filed on January 6, 1999, as amended.

(16) This exhibit was previously filed as part of, and is hereby incorporated by reference, the numbered exhibit filed with the Company's Registration Statement on Form S-3 (No. 333-12603) filed on September 25, 1996, as amended.
</TABLE>

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/ DAVID E. ROBINSON

David E. Robinson,
President and Chief Executive Officer

Date: March 29, 2000

POWER OF ATTORNEY

Know all men by these presents, that each person whose signature appears below constitutes and appoints David E. Robinson or Paul V. Maier, 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, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

<TABLE>
<CAPTION>

SIGNATURE	TITLE	DATE
<S>	<C>	<C>
/s/ DAVID E. ROBINSON David E. Robinson	Chairman of the Board, President, Chief Executive Officer and Director (Principal Executive Officer)	March 24, 2000
/s/ PAUL V. MAIER Paul V. Maier	Senior Vice President, Chief Financial Officer (Principal Financial and Accounting Officer)	March 24, 2000
/s/ HENRY F. BLISSENBACH Henry F. Blissenbach	Director	March 26, 2000
/s/ ALEXANDER D. CROSS Alexander D. Cross	Director	March 26, 2000
/s/ JOHN GROOM John Groom	Director	March 28, 2000
/s/ IRVING S. JOHNSON Irving S. Johnson	Director	March 27, 2000
/s/ CARL C. PECK Carl C. Peck	Director	March 28, 2000
/s/ MICHAEL A. ROCCA Michael A. Rocca	Director	March 24, 2000

</TABLE>

INDEX TO FINANCIAL STATEMENTS

<TABLE>
<S> <C>

</TABLE>

REPORT OF ERNST & YOUNG LLP, INDEPENDENT AUDITORS

The Board of Directors and Stockholders
Ligand Pharmaceuticals Incorporated

We have audited the accompanying consolidated balance sheets of Ligand Pharmaceuticals Incorporated as of December 31, 1999 and 1998, and the related consolidated statements of operations, stockholders' equity (deficit), and cash flows for each of the three years in the period ended December 31, 1999. 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 auditing standards generally accepted in the 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 consolidated financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Ligand Pharmaceuticals Incorporated at December 31, 1999 and 1998, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 1999, in conformity with accounting principles generally accepted in the United States.

ERNST & YOUNG LLP

San Diego, California
February 22, 2000

LIGAND PHARMACEUTICALS INCORPORATED

CONSOLIDATED BALANCE SHEETS
(in thousands, except share data)

ASSETS

<TABLE>
<CAPTION>

	December 31,	
	1999	1998
<S>	<C>	<C>
Current assets:		
Cash and cash equivalents	$ 29,903	$ 32,801
Short-term investments	17,252	37,166
Accounts receivable, net	1,657	--
Inventories	5,732	6,166
Other current assets	2,135	1,860
Total current assets	56,679	77,993
Restricted investments	2,011	2,554
Property and equipment, net	20,542	23,722
Acquired technology, net	38,969	40,312
Other assets	16,444	11,439
	$ 134,645	$ 156,020
LIABILITIES AND STOCKHOLDERS' DEFICIT		
Current liabilities:		
Accounts payable	$ 5,395	$ 12,363
Accrued liabilities	8,173	7,216
Deferred revenue	3,028	4,115
Current portion of equipment financing obligations	4,105	3,201

Total current liabilities	20,701	26,895
Long-term equipment financing obligations	6,907	8,165
Convertible subordinated debentures	41,977	39,302
Accrued acquisition obligation	2,900	50,000
Convertible note	2,500	2,500
Zero coupon convertible senior notes	85,250	40,520
Commitments		
Stockholders' deficit:		
Convertible preferred stock, $0.001 par value, 5,000,000 shares authorized; none issued	--	--
Common stock, $0.001 par value; 80,000,000 shares authorized, 53,018,248 shares and 45,690,067 shares issued at December 31, 1999 and 1998, respectively	53	46
Paid-in capital	448,784	384,715
Deferred warrant expense	(3,460)	--
Adjustment for unrealized losses on available-for-sale securities	(607)	(482)
Accumulated deficit	(470,349)	(395,630)
	(25,579)	(11,351)
Less treasury stock, at cost (1,114 shares)	(11)	(11)
Total stockholders' deficit	(25,590)	(11,362)
	$ 134,645	$ 156,020

</TABLE>

See accompanying notes.

LIGAND PHARMACEUTICALS INCORPORATED

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

<TABLE>
<CAPTION>

	Year ended December 31,		
	1999	1998	1997
<S>	<C>	<C>	<C>
Revenues:			
Product sales	$ 11,307	$ 406	$ 418
Collaborative research and development and other revenues	26,978	17,267	51,281
Contract manufacturing	2,610	--	--
Total revenues	40,895	17,673	51,699
Costs and expenses:			
Cost of products sold	3,563	466	520
Contract manufacturing	6,926	--	--
Research and development	59,442	70,273	71,906
Selling, general and administrative	27,257	16,568	10,108
Technology milestone payment	5,000	--	--
Write-off of acquired in-process technology	--	45,000	64,970
Total costs and expenses	102,188	132,307	147,504
Loss from operations	(61,293)	(114,634)	(95,805)
Other income (expense) :			
Interest income	2,470	3,070	3,743
Interest expense	(12,979)	(8,322)	(8,088)
Debt conversion expense	(2,200)	--	--
Other	(717)	2,000	--
Total other income (expense)	(13,426)	(3,252)	(4,345)
Net loss	$ (74,719)	$ (117,886)	$ (100,150)
Basic and diluted net loss per share	$ (1.58)	$ (2.92)	$ (3.02)

Shares used in computing net loss per share.....	47,146,312	40,392,421	33,128,372

</TABLE>

See accompanying notes.

LIGAND PHARMACEUTICALS INCORPORATED

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY (DEFICIT)
For the three years ended December 31, 1999
(in thousands, except share data)

<TABLE>
<CAPTION>

	Common stock		Paid-in		Adjustment for unrealized gains (losses) on available-for-sale		Deferred compensation and	Treasurey stock	Total stockholders' equity	Comprehensive
	Shares	Amount	Capital	Warrants	securities	deficit	consulting	Shares	Amount	(deficit) income(loss)
<S>	<C>	<C>	<C>	<C>	<C>	<C>	<C>	<C>	<C>	<C>	<C>
Balance at December 31, 1996.....	31,799,617	$ 32	$214,887	$(2,453)	$(78)	$(177,594)	$ (322)	(1,114)	$(11)	$34,461	
Issuance of Common Stock.....	6,704,842	7	96,794	--	--	--	--	--	--	96,801	
Amortization of deferred compensation and consulting fees.....	--	--	--	--	--	--	322	--	--	322	
Amortization of warrant subscription receivable...	--	--	--	1,535	--	--	--	--	--	1,535	
Write-off of warrant subscription receivable...	--	--	--	918	--	--	--	--	--	918	
Adjustment of unrealized gains on available-for-sale securities.....	--	--	--	--	462	--	--	--	--	462	462
Net loss.....	--	--	--	--	--	(100,150)	--	--	--	(100,150)	(100,150)
Balance at December 31, 1997.....	38,504,459	39	311,681	--	384	(277,744)	--	(1,114)	(11)	34,349	$(99,688)
Issuance of Common Stock.....	7,185,608	7	73,034	--	--	--	--	--	--	73,041	
Adjustment of unrealized losses on available-for-sale securities.....	--	--	--	--	(866)	--	--	--	--	(866)	(866)
Net loss.....	--	--	--	--	--	(117,886)	--	--	--	(117,886)	(117,886)
Balance at December 31, 1998.....	45,690,067	46	384,715	--	(482)	(395,630)	--	(1,114)	(11)	(11,362)	$(118,752)
Issuance of Common Stock	7,328,181	7	59,695	--	--	--	--	--	--	59,702	
Adjustment of unrealized losses on available-for-sale securities....	--	--	--	--	(125)	--	--	--	--	(125)	(125)
Issuance of warrants...	--	--	4,374	(3,990)	--	--	--	--	--	384	
Amortization of deferred warrant expense	--	--	--	530	--	--	--	--	--	530	

Net loss	--	--	--	--	--	(74,719)	--	--	--	(74,719)	(74,719)
Balance at December 31, 1999	53,018,248	$ 53	$448,784	$(3,460)	$(607)	$(470,349)	$ --	(1,114)	$(11)	$(25,590)	$ (74,844)

</TABLE>

See accompanying notes.

LIGAND PHARMACEUTICALS INCORPORATED

CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

<TABLE>
<CAPTION>

	Year ended December 31,		
	1999	1998	1997
<S>	<C>	<C>	<C>
OPERATING ACTIVITIES			
Net loss.....	$ (74,719)	$(117,886)	$(100,150)
Adjustments to reconcile net loss to net cash used by operating activities:			
Depreciation and amortization of property and equipment.....	5,565	4,326	4,133
Amortization of acquired technology	1,343	--	--
Amortization of deferred warrant expense	530	--	--
Amortization of warrant subscription receivable.....	--	--	2,453
Write-off of acquired in-process technology.....	--	45,000	64,970
Technology milestone payment	5,000	--	--
Accretion of debt discount and interest.....	7,942	3,194	2,675
Debt conversion expense.....	2,200	--	--
Other.....	195	257	546
Change in operating assets and liabilities:			
Accounts receivable	(1,657)	--	--
Receivable from a related party.....	--	--	3,087
Inventories.....	434	(2,899)	--
Other current assets	(275)	(1,031)	856
Accounts payable and accrued liabilities.....	(6,011)	891	7,605
Deferred revenue.....	(1,087)	1,499	465
Net cash used in operating activities.....	(60,540)	(66,649)	(13,360)
INVESTING ACTIVITIES			
Purchases of short-term investments.....	(21,402)	(52,245)	(35,033)
Proceeds from short-term investments.....	41,191	35,191	60,339
Purchase of property and equipment.....	(2,385)	(5,457)	(7,424)
Proceeds from sale of property and equipment.....	--	92	109
Payment of accrued acquisition obligation	(37,100)	--	--
Increases in other assets.....	(7,525)	(4,462)	(4,306)
Decreases in other assets.....	2,325	925	146
Net cash paid for exercise of ALRT stock purchase option.....	--	--	(12,661)
Net cash paid for Seragen acquisition.....	--	(5,756)	--
Net cash provided by (used in) investing activities.....	(24,896)	(31,712)	1,170
FINANCING ACTIVITIES			
Principal payments on equipment financing obligations.....	(3,381)	(2,983)	(3,210)
Proceeds from equipment financing arrangements	3,027	3,095	3,146
Net change in restricted investments.....	543	503	470
Net proceeds from the issuance of convertible note.....	--	--	2,500
Net proceeds from issuance of zero coupon convertible senior notes....	60,000	30,000	--
Net proceeds from sale of common stock and warrants.....	22,349	38,295	36,706
Net cash provided by financing activities.....	82,538	68,910	39,612
Net increase (decrease) in cash and cash equivalents.....	(2,898)	(29,451)	27,422
Cash and cash equivalents at beginning of year.....	32,801	62,252	34,830
Cash and cash equivalents at end of year.....	$ 29,903	$ 32,801	$ 62,252

SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:			
Interest paid	$ 4,941	$ 5,736	$ 5,444
SUPPLEMENTAL SCHEDULE OF NON-CASH INVESTING AND FINANCING ACTIVITIES:			
Conversion of zero coupon convertible senior note to common stock	20,537	--	--
Issuance of common stock to satisfy accrued acquisition obligations	10,000	--	--
Issuance of common stock for technology milestone payment	5,000	--	--
Issuance of warrants to X-Ceptor investors	3,990	--	--
Issuance of common stock for debt conversion incentive	2,200	--	--
Issuance of common stock to purchase Seragen	--	25,996	--
Issuance of convertible note and common stock for technology license	--	15,000	--
Conversion of convertible note to common stock	$ --	$ 3,750	$ 7,500

</TABLE>

See accompanying notes.

LIGAND PHARMACEUTICALS INCORPORATED

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. THE COMPANY AND ITS BUSINESS

Ligand Pharmaceuticals Incorporated, a Delaware corporation (the "Company" or "Ligand"), develops and markets drugs that address critical unmet medical needs of patients in the areas of cancer, skin diseases, and men's and women's hormone-related diseases, as well as osteoporosis, metabolic disorders and cardiovascular and inflammatory diseases. Ligand's drug discovery and development programs are based on gene transcription technology, primarily related to Intracellular Receptors and Signal Transducers and Activators of Transcription. The Company includes its direct wholly owned subsidiaries, Ligand Pharmaceuticals International, Inc., Glycomed Incorporated ("Glycomed"), Ligand Pharmaceuticals (Canada) Incorporated, Allergan Ligand Retinoid Therapeutics, Inc. ("ALRT") and Seragen, Inc. ("Seragen").

In February 1999, the Company was granted U.S. Food and Drug Administration ("FDA") marketing approval for its first two products, Panretin(R) gel ("Panretin") for the treatment of Kaposi's sarcoma in AIDS Patients and ONTAK(TM) ("ONTAK") for the treatment of patients with persistent or recurrent cutaneous T-cell lymphoma ("CTCL"). In December 1999, the FDA approved Targretin (R) capsules ("Targretin") for the treatment of CTCL in patients who are refractory to at least one prior systemic therapy. The Company also submitted a New Drug Application ("NDA") to the FDA in December 1999 for Targretin (R) gel for the treatment of patients with early stage CTCL.

The Company's other potential products are in various stages of development. Potential products that appear to be promising at early stages of development may not reach the market for a number of reasons. Substantially all of the Company's revenues to date have been derived from its research and development agreements with major pharmaceutical collaborators. Prior to generating revenues from these products, the Company must complete the development of its products in the human health care market. No assurance can be given that: (1) product development efforts will be successful, (2) required regulatory approvals for any indication will be obtained, (3) any products, if introduced, will be capable of being produced in commercial quantities at reasonable costs or that, (4) patient and physician acceptance of these products will be achieved. There can be no assurance that Ligand will ever achieve or sustain profitability.

The Company faces risks common to companies whose products are in various stages of development. These risks include, among others, the Company's need for additional financing to complete its research and development programs and commercialize its technologies. The Company expects to incur substantial additional research and development expenses, including continued increases in personnel and costs related to preclinical testing, clinical trials, and sales and marketing expenses related to product sales. The Company intends to seek additional funding sources of capital and liquidity through collaborative arrangements, collaborative research or through public or private financing. There is no assurance such financing would be available under favorable terms, if at all.

The Company believes that patents and other proprietary rights are important to its business. The Company's policy is to file patent applications to protect technology, inventions and improvements to its inventions that are considered important to the development of its business. The patent positions of pharmaceutical and biotechnology firms, including the Company, are uncertain and involve complex legal and technical questions for which important legal principles are largely unresolved.

2. SIGNIFICANT ACCOUNTING POLICIES

PRINCIPLES OF CONSOLIDATION

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation. Certain reclassifications have been made to amounts included in the prior years financial statements to conform to the presentation for the year ended December 31, 1999.

USE OF ESTIMATES

The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the amounts reported in the financial statements and disclosures made in the accompanying notes to the consolidated financial statements. Actual results could differ from those estimates.

CASH, CASH EQUIVALENTS AND SHORT-TERM INVESTMENTS

Cash and cash equivalents consist of highly liquid securities with original maturities at the date of acquisition of less than three months. Investments with an original 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 shareholders' deficit.

RESTRICTED INVESTMENTS

Restricted investments consist primarily of a certificate of deposit held with a financial institution as collateral under an equipment financing arrangement.

CONCENTRATIONS OF CREDIT RISK

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. The Company has not experienced any significant losses on its cash equivalents or short-term investments.

The Company extends credit on an uncollateralized basis primarily to wholesale drug distributors throughout the United States. The Company has not experienced significant credit losses on customer accounts.

INVENTORIES

Inventories are stated at the lower of cost or market. Cost is determined using the first-in-first-out method. Inventories consist of the following (in thousands):

<TABLE>
<CAPTION>

	December 31,	
	1999	1998
<S>	<C>	<C>
Raw materials	$ 705	$ 2,382
Work-in-process	3,645	3,634
Finished goods	1,382	150
	$ 5,732	$ 6,166

	==========	==========

</TABLE>

PROPERTY AND EQUIPMENT

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

<TABLE>
<CAPTION>

	December 31,	
	1999	1998
<S>	<C>	<C>
Property	$ 2,649	$ 2,649
Equipment and leasehold improvements	41,240	38,854
Less accumulated depreciation and amortization	(23,347)	(17,781)
Net property and equipment	$20,542	$23,722

</TABLE>

Depreciation of equipment and leasehold improvements is computed using the straight-line method over the estimated useful lives of the assets which range from three to fifteen years. Assets acquired pursuant to capital lease arrangements and leasehold improvements are amortized over their estimated useful lives or their related lease term, whichever is shorter.

ACQUIRED TECHNOLOGY

Acquired technology represents the ONTAK technology acquired in the merger with Seragen which is being amortized on a straight-line basis over the period estimated to be benefited of 15 years. Amortization of acquired technology is included in cost of products sold in the consolidated statements of operations and totaled $1.3 million for the year ended December 31, 1999.

IMPAIRMENT OF LONG-LIVED ASSETS

In accordance with Statement of Financial Accounting Standards ("SFAS") No. 121, Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to be Disposed of, if indicators of impairment exist, the Company assesses the

recoverability of the affected long-lived assets by determining whether the carrying value of such assets can be recovered through undiscounted future operating cash flows. If impairment is indicated, the Company measures the amount of such impairment by comparing the carrying value of the asset to the present value of the expected future cash flows associated with the use of the asset. While the Company's current and historical operating and cash flow losses are indicators of impairment, the Company believes the future cash flows to be received from the long-lived assets will exceed the assets' carrying value, and accordingly the Company has not recognized any impairment losses through December 31, 1999.

FAIR VALUE OF FINANCIAL INSTRUMENTS

The carrying amount of cash, cash equivalents, securities available-for-sale, receivables, accounts payable and accrued liabilities are considered to be representative of their respective fair values because of the short-term nature of those investments. The fair values of the Company's equipment financing obligations, convertible subordinated debentures, convertible note, and zero coupon convertible senior notes approximates their carrying values based upon the current rates and terms offered to the Company for similar financing arrangements.

REVENUE RECOGNITION

Revenues from product sales are recognized upon shipment, net of allowances for returns, rebates and chargebacks. The Company is obligated to accept from customers the return of pharmaceuticals which have reached their expiration date. Contract manufacturing and collaborative research and development and other revenues are recognized on a basis consistent with the performance requirements of the contract. Payments received in advance of performance are

recorded as deferred revenue.

Revenues from significant customers, which accounted for greater than 10% of total revenues, are as follows (in thousands):

<TABLE>
<CAPTION>

	Year Ended December 31,		
	1999	1998	1997
<S>	<C>	<C>	<C>
Eli Lilly (Note 10)	$ 10,095	$ 10,353	$ 19,708
SmithKline Beecham (Note 10)	$ 3,652	$ 3,737	$ 3,235
Allergan Ligand Retinoid Therapeutics (Note 11)	--	--	$ 18,997

</TABLE>

COSTS AND EXPENSES

Cost of products sold includes manufacturing costs, amortization of acquired technology, and royalty expenses associated with the Company's commercial products. Research and development costs are expensed as incurred. Costs and expenses included in research and development expenses related to collaborative research and development arrangements for the years ended December 31, 1999, 1998, and 1997 were $16 million, $17.3 million, and $51.3 million, respectively.

LOSS PER SHARE

Net loss per share is computed using the weighted average number of common shares outstanding. Basic and diluted net loss per share amounts are equivalent for the periods presented as the inclusion of common stock equivalents in the number of shares used for the dilutive computation would be anti-dilutive.

ACCOUNTING FOR STOCK-BASED COMPENSATION

The Company accounts for stock-based compensation in accordance with Accounting Principles Board Opinion No. 25, Accounting for Stock Issued to Employees and with the disclosure requirements of SFAS No. 123, Accounting for Stock-Based Compensation (Note 9).

COMPREHENSIVE INCOME

As of January 1, 1998, the Company adopted SFAS No. 130, Reporting Comprehensive Income. SFAS No. 130 established new rules for the reporting and display of comprehensive income and its components; however, the adoption of this statement has no impact on the Company's net loss or shareholders' deficit. SFAS No. 130 requires unrealized gains or losses on the Company's available-for-sale securities and foreign currency translation adjustments, which prior to adoption were reported separately in shareholders' equity, to be included in other comprehensive income.

3. INVESTMENTS

The following table summarizes the various investment categories at (in thousands):

<TABLE>
<CAPTION>

	Cost	Gross Unrealized Gains (Losses)	Estimated Fair Value
<S>	<C>	<C>	<C>
December 31, 1999			
U.S. Government Securities	$ 2,610	$ (12)	$ 2,598
Corporate Obligations	12,653	(45)	12,608
Certificates of Deposit	2,046	--	2,046
	17,309	(57)	17,252
Certificates of Deposit-restricted	2,011	--	2,011
Equity securities	693	(550)	143
	$ 20,013	$ (607)	$ 19,406
December 31, 1998			

</TABLE>

U.S. Government Securities.....	$ 13,240	$ 5	$ 13,245
Corporate Obligations.....	19,262	63	19,325
Certificates of Deposit.....	4,596	--	4,596
	37,098	68	37,166
Certificates of Deposit-restricted.....	2,554	--	2,554
Equity securities.....	693	(550)	143
	$ 40,345	$ (482)	$ 39,863

</TABLE>

Equity securities are included in long-term other assets.

Realized gains on sales of available-for-sale securities for the year ended December 31, 1998 were $2 million. There were no material realized gains or losses for the years ended December 31, 1999 and 1997.

The amortized cost and estimated fair value of investments at December 31, 1999 and 1998, by contractual maturity, are shown below (in thousands). Expected maturities will differ from contractual maturities because the issuers of the securities may have the right to prepay obligations without prepayment penalties.

<TABLE>
<CAPTION>

	December 31, 1999		December 31, 1998	
	Cost	Estimated Fair Value	Cost	Estimated Fair Value
<S>	<C>	<C>	<C>	<C>
Due in one year or less.....	$ 5,606	$ 5,606	$ 24,270	$ 24,291
Due after one year through three years.....	13,714	13,657	15,382	15,429
Due after three years.....	--	--	--	--
	19,320	19,263	39,652	39,720
Equity securities.....	693	143	693	143
	$ 20,013	$ 19,406	$ 40,345	$ 39,863

</TABLE>

4. MERGER WITH SERAGEN

In August 1998, the Company completed a merger with Seragen (the "Merger") and entered into an agreement with Seragen and Eli Lilly and Company ("Lilly") under which Lilly assigned to the Company Lilly's rights and obligations under its agreements with Seragen, including its sales and marketing rights to ONTAK(TM). In addition, the Company had previously announced that it had signed a definitive asset purchase agreement to acquire substantially all the assets of Marathon Biopharmaceuticals, LLC, ("Marathon") which provided manufacturing services to Seragen under a service agreement.

Under the terms of the merger agreement, Ligand paid merger consideration at closing in the amount of $31.7 million, $5.7 million of which was in cash and $26 million of which was through the issuance of approximately 1,858,515 shares of the Company's Common Stock valued at $13.99 per share. The valuation of the Company's Common Stock for this portion of the transaction was based on the average closing share price for the five trading days prior to signing of the definitive agreement in May 1998. The merger agreement also called for an additional $37 million payment in cash and/or the Company's Common Stock, at the Company's option, to be paid six months after the date of receipt of final FDA approval to market ONTAK. The final FDA approval occurred in February 1999. In August 1999, the Company made a cash payment of $34.1 million. Pending resolution of final contingencies and in accordance with the terms of the merger agreement, the Company withheld the remaining $2.9 million from payments made to certain Seragen stakeholders. The Company purchased substantially all of the assets of Marathon for $8 million through the issuance in January 1999 of 402,820 shares of

the Company's Common Stock with a fair value of $5 million and a $3 million cash payment in August 1999, six months after the FDA approval of ONTAK.

The Company's agreement with Lilly provides for a milestone payment to Lilly upon ONTAK approval by the FDA, a potential future milestone payment to Lilly based on cumulative sales of ONTAK, royalties to Lilly on sales of ONTAK, and payments by Lilly to Ligand as reimbursement for certain ONTAK clinical and other costs incurred by the Company. In March 1999, Ligand issued to Lilly 434,546 shares of the Company's Common Stock as payment of the $5 million milestone for the ONTAK approval. In addition, upon cumulative net sales of ONTAK reaching $20 million, Lilly will receive a second $5 million milestone payment.

The Merger was accounted for using the purchase method of accounting. The purchase price, totaling $84.1 million, which included liabilities assumed of $2.3 million was allocated to the fair value of the assets acquired. The purchase price is composed of and allocated to the fair value of assets acquired as follows (in thousands):

Issuance of Common Stock (including transaction costs)	$ 25,996
Amounts due to Seragen stakeholders, Marathon and Lilly, payable in Common Stock or cash	50,000
Liabilities assumed	2,360
Net cash paid	5,756
	$ 84,112
Inventories	$ 3,230
Property and equipment	7,905
Identifiable intangible assets:	
Write-off of in-process technology	30,000
Acquired technology	40,312
Other intangibles	2,665
	$ 84,112

The following pro forma condensed statement of operations information has been prepared to give effect to the Merger as if such transaction had occurred at the beginning of the periods presented. The historical results of operations have been adjusted to reflect (1) adjustment for depreciation resulting from adjusting the basis of certain property and equipment to fair value and amortization over 10 years, (2) amortization of acquired technology over 15 years, (3) elimination of Seragen stock issuance costs (1997) and compensation expense amortization (1998), (4) elimination of interest income for Seragen and reduction of Ligand interest income resulting from use of $6 million for the Merger at an annual interest rate of 5.5%, and (5) elimination of interest expense related to certain Seragen liabilities. The information presented is not necessarily indicative of the results of future operations of the merged companies. Included in the 1998 net loss is a one-time charge of $30 million related to in-process research and development included in the intangibles acquired.

Pro Forma Results of Operations (Unaudited)
(in thousands)

	Year Ended December 31,	
	1998	1997
Revenues	$ 20,477	$ 56,413
Net loss	(124,867)	(118,675)
Weighted average shares outstanding	40,392	34,987
Loss per share	(3.09)	(3.39)

5. OTHER ASSETS AND ACCRUED LIABILITIES

Other assets comprise the following (in thousands):

	December 31,

	December 31,	
	1999	1998
<S>	<C>	<C>
Deferred rent	$ 3,381	$ 3,429
Prepaid royalty buyout (Note 8)	3,944	4,080
Intangible assets acquired (Note 4)	2,651	2,665
Investment in X-Ceptor (Note 12)	5,246	--
Other	1,222	1,265
	$ 16,444	$11,439

Accrued liabilities comprise the following (in thousands):

	December 31,	
	1999	1998
<S>	<C>	<C>
Accrued legal	$ 431	$ 1,140
Accrued interest	1,972	1,972
Accrued compensation	2,981	1,784
Other	2,789	2,320
	$ 8,173	$ 7,216

6. CONVERTIBLE SUBORDINATED DEBENTURES

The convertible subordinated debentures pay interest semi-annually at 7.5% per annum and are due in 2003. The difference between the face value and the fair market value at the acquisition date is being accreted up to the face value over the remaining term of the debentures and the accretion is charged to interest expense. The debentures are convertible into the Company's Common Stock at $26.52 per share.

7. STRATEGIC ALLIANCE AND FINANCING

In September 1998, the Company and Elan Corporation, plc ("Elan") signed a binding letter of agreement. Under the terms of the agreement, Elan purchased approximately $20 million of the Company's Common Stock. Elan also purchased from the Company $40 million in issue price of Zero Coupon Convertible Senior Notes, due 2008 with an 8% per annum yield to maturity (the "Notes"). These Notes are convertible into the Company's Common Stock at $14 per share. Under the terms of the initial agreement, up to an additional $70 million of Notes which Elan could also purchase would be convertible into the Company's Common Stock at a price which would be the average of the closing prices of the Company's Common Stock for the 20 trading days immediately prior to the issuance of a Note plus a premium; however, in no event would the conversion price be less than $14 per share or more than $20 per share. The Notes could be used to finance the final payments for the Seragen merger as well as other acquisitions of complementary technologies, subject to the consent of Elan.

In July 1999, the Company issued an additional $40 million of Notes to Elan under the terms of the initial agreement, which are convertible at $14 per share. In August 1999, the Company and Elan agreed to amend the initial agreement to provide that the remaining takedown of up to $30 million in Notes may be utilized for general corporate purposes. Pursuant to this amended agreement, in August 1999, the Company issued $20 million of Notes with terms similar to the Notes previously issued, but convertible at $9.15 per share, which represented a premium over the Company's stock price on the date of issuance. In December 1999, Elan converted the $20 million Note plus accrued interest into 2,244,460 shares of the Company's Common Stock. The Company provided Elan a $2.2 million conversion incentive through the issuance of an additional 188,572 shares of the Company's Common Stock. The incentive was recorded as debt conversion expense in other income (expense). In March 2000, Elan converted an additional $20 million in Notes plus accrued interest into 1,600,123 shares of Common Stock (see Note 14).

The agreement with Elan contains an anti-dilution provision. In accordance with such provision and as a result of other equity issuances by the Company, the Company sold Common Stock and warrants to Elan in 1999 totaling $839,000. Assuming conversion of its outstanding Notes and warrants, Elan would own approximately 17% of Ligand's shares on a fully diluted basis.

Elan also agreed to exclusively license to the Company in the United States and Canada its proprietary product Morphelan(TM), a once-daily, sustained-release, solid oral dosage form of morphine for pain in oncology and HIV patients. For the rights to Morphelan(TM) the Company paid Elan certain license fees in 1998, with milestone payments due upon the occurrence of certain events up to and including the approval of the NDA in the United States. Payments may be in cash, or subject to certain conditions, in the Company's Common Stock or Notes. In November 1998, the Company paid Elan $5 million through the issuance of 429,185 shares of the Company's Common Stock and $10 million from the issuance of Notes. In December 1999, the Company paid Elan a $5 million milestone payment through the issuance of 498,443 shares of the Company's Common Stock. The 1999 consideration of $5 million was written off as a technology milestone payment and the 1998 consideration of $15 million was written off as acquired in-process technology. Elan could receive up to $5 million upon submission of the Morphelan(TM) NDA and another $5 million upon approval of Morphelan by the FDA.

8. COMMITMENTS

LEASES AND EQUIPMENT NOTES PAYABLE

The Company has entered into capital lease and equipment note payable agreements which require monthly payments

through September 2004. The carrying value of equipment under these agreements at December 31, 1999 and 1998 was $20.1 million and $17.3 million, respectively. At December 31, 1999 and 1998, accumulated amortization was $7.9 million and $7.3 million, respectively. The underlying equipment is used as collateral under the equipment notes payable.

The Company has also entered into operating lease agreements for office and research facilities with varying terms through August 2015. The agreements provide for increases in annual rentals based on changes in the Consumer Price Index or fixed percentage increases varying from 3% to 6%. One of these leases requires an irrevocable standby letter of credit of $1.3 million to secure the performance of the Company's lease obligations. Rent expense for the years ended December 31, 1999, 1998 and 1997 was $3.2 million, $3.2 million and $3.4 million, respectively.

At December 31, 1999, annual minimum rental payments due under the Company's leases and equipment notes payable are as follows (in thousands):

<TABLE>
<CAPTION>

	Obligations under capital leases and equipment notes payable	Operating leases
<S>	<C>	<C>
2000	$ 4,894	$ 3,287
2001	3,662	2,975
2002	2,519	2,888
2003	1,295	2,871
2004	285	2,928
Thereafter	--	31,954
Total minimum lease payments	12,655	$ 46,903
Less amounts representing interest	(1,643)	
Present value of minimum lease payments	11,012	
Less current portion	4,105	
	$ 6,907	

</TABLE>

In 1997, one of the Company's main operating lease agreements for office and research facilities expired, and the Company moved into a second build-to-suit facility. In early 1997, the Company entered into a 17-year lease and the Company loaned the construction partnership $3.7 million, which is being repaid with interest over a 10-year period.

ROYALTY AGREEMENTS

The Company has entered into royalty agreements requiring payments in 1999 ranging from 1% to 15% of net sales and up to 35% for license and other royalty arrangements. Currently, the Company is making minimum royalty payments under three agreements, of $315,000 per year. Royalty expense for the years ended December 31, 1999, 1998 and 1997 was $967,000, $75,000 and $276,000, respectively, and is included in cost of products sold in the consolidated statements of operations.

In May 1998, the Company elected to make a final one-time $4.1 million royalty payment to The Salk Institute for Biological Studies as an alternative to paying future royalty payments based on total net sales of defined potential products. The one-time payment is being amortized over the remaining life of the related patents.

In September 1999, Ligand and Seragen entered into a sublicense agreement with Hoffmann-La Roche Inc. ("Roche"), with respect to Seragen's rights under a family of patents called the "Strom Patents." The Strom Patents, licensed by Seragen from Beth Israel Deaconess Medical Center ("Beth Israel"), cover the use of antibodies that target the interleukin-2 receptor to treat transplant rejection and autoimmune diseases. In consideration for the sublicense, Roche paid Seragen a $2.5 million royalty based on sales occurring before the date of the agreement plus Roche will pay royalties on subsequent sales of licensed products. Seragen will also receive milestone payments in the event Roche receives U.S. regulatory approval of licensed products. A non-exclusive license was previously issued by Seragen to Novartis requiring similar royalty payments. Beth Israel receives approximately 35% of the total royalty and milestone payments made related to the Strom Patents.

In December 1999, the Company and Seragen entered into an agreement with Pharmaceutical Partners LLC ("Pharma") whereby Pharma purchased Seragen's royalty stream to be received under the Roche and Novartis royalty agreements described above. Pharma paid $3.25 million in December 1999 and would pay an additional $3.25 million should sales exceed a predetermined amount in any of years 2001 through 2004. In addition, Seragen retains the patents and the right to receive the future milestone payments from Roche described above.

9. STOCKHOLDERS' EQUITY

WARRANTS

At December 31, 1999, the Company had outstanding warrants to purchase 2,586,299 shares of the Company's Common Stock, of which 1,286,643 warrants relate to ALRT ("ALRT warrants") (Note 11). The ALRT warrants have an exercise price of $7.12 per share, the additional warrants have exercise prices ranging from $10 to $20 per share and expire at various dates through October 6, 2006.

In 1999 and 1998, the Company received net proceeds of approximately $17.4 million and $12.5 million, respectively, from investors who elected to exercise their ALRT warrants to purchase 2,939,717 and 2,267,836 shares, respectively. The Company agreed to pay a cost of money incentive to the investors for the early exercise of those warrants which was recorded as a reduction of equity.

STOCK PLANS

The Company's 1992 Stock Option Stock Issuance Plan provides for the issuance of up to 9,073,457 shares of the Company's Common Stock. The large majority of the options granted have 10 year terms and vest over four years of continued employment. The Company's employee stock purchase plan also provides for the sale of up to 355,000 shares of the Company's Common Stock.

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

<CAPTION>

	Shares	Weighted Average Exercise Price
<S>	<C>	<C>
Balance at December 31, 1996	3,796,882	$ 9.55
Granted	875,339	12.75
Exercised	(384,340)	8.59
Cancelled	(219,375)	10.65
Balance at December 31, 1997	4,068,506	10.26
Granted	1,584,604	11.10
Exercised	(211,524)	7.52
Cancelled	(396,567)	11.30
Balance at December 31, 1998	5,045,019	10.56
Granted	894,792	10.67
Exercised	(228,991)	8.29
Cancelled	(405,361)	11.82
Balance at December 31, 1999	5,305,459	$ 10.58
Options exercisable at December 31, 1999	3,344,575	$ 10.33
Options exercisable at December 31, 1998	2,814,876	$ 9.79
Options exercisable at December 31, 1997	2,442,187	$ 9.31

</TABLE>

Following is a further breakdown of the options outstanding as of December 31, 1999:

<TABLE>
<CAPTION>

	Options Outstanding			Options Exercisable	
Range of exercise prices	Options outstanding	Weighted average remaining life in years	Weighted average exercise price	Number Exercisable	Weighted average exercise price
<S>	<C>	<C>	<C>	<C>	<C>
$4.68 - 8.65	1,091,071	5.28	$ 7.37	932,795	$ 7.33
9.00 - 9.60	1,067,734	6.67	9.33	652,531	9.33
9.77 - 11.25	1,137,439	7.69	10.60	529,178	10.55
11.26 - 13.00	1,253,868	7.48	12.22	769,771	12.28
13.25 - $16.38	755,347	7.76	14.22	460,300	14.31
	5,305,459	6.95	$ 10.58	3,344,575	$ 10.33

</TABLE>

At December 31, 1999, 768,507 shares were available under the plans for future grants of stock options or sale of stock.

Pro forma information regarding net loss and loss per share is required by SFAS No. 123, and has been determined as if the Company had accounted for its employee stock options under the fair value method of that Statement. The estimated weighted average fair value at grant date for the options granted during 1999, 1998, and 1997 were $6.73, $6.65, and $5.96

per option, respectively. The fair value for these options was estimated at the dates of grant using a Black-Scholes option pricing model with the following weighted-average assumptions for 1999, 1998 and 1997:

<TABLE>
<CAPTION>

	1999	1998	1997
<S>	<C>	<C>	<C>
Risk free interest rates	6.3%	4.8%	6.3%
Dividend yields	--	--	--
Volatility	70.0%	62.0%	42.7%

Weighted average expected life.....	5 years	5 years	5 years

The Black-Scholes option valuation model was developed for use in estimating the fair value of traded options which have no vesting restrictions and are fully transferable. In addition, option valuation models require the input of highly subjective assumptions including the expected stock price volatility. Because the Company's employee stock options have characteristics significantly different from those of traded options, and because changes in the subjective input assumptions can materially affect the fair value estimate, in management's opinion, the existing models do not necessarily provide a reliable single measure of the fair value of its employee stock options.

For purposes of pro forma disclosures, the estimated fair value of the options is amortized to expense over the options' vesting period. The Company's pro forma information is as follows (in thousands, except for net loss per share information):

	Year Ended December 31,		
	1999	1998	1997
Net loss as reported.....	$ (74,719)	$ (117,886)	$ (100,150)
Net loss pro forma.....	(80,549)	(121,916)	(102,929)
Net loss per share as reported...	(1.58)	(2.92)	(3.02)
Net loss per share pro forma.....	(1.71)	(3.01)	(3.11)

The pro forma effect on net loss for 1999, 1998 and 1997 is not representative of the pro forma effect on net loss in future years because it does not take into consideration pro forma compensation expense related to grants made prior to 1995.

SHAREHOLDER RIGHTS PLAN

In September 1996, the Company's Board of Directors adopted a preferred shareholder rights plan (the "Shareholder Rights Plan"), as amended, which 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, subject to adjustment. The Rights will become exercisable following the tenth day after a person or group announces an acquisition of 20% or more of the Common Stock, or announces commencement of a tender offer, the consummation of which would result in ownership by the person or group of 20% or more of the Common Stock. The Company will be entitled to redeem the Rights at $0.01 per Right at any time on or before the earlier of the tenth day following acquisition by a person or group of 20% or more of the common stock and September 13, 2006.

In November 1998, the Shareholder Rights Plan was amended to exclude Elan or any of its affiliates as an acquiring person to the extent of their ownership on or before November 9, 2005 of up to 25% of the Company's Common Stock on a fully diluted basis or thereafter to the extent their ownership exceeds 20% on November 9, 2005. However, shares acquired pursuant to the arrangements with Elan described in Note 7 are not counted in such determination unless additional shares of the Company's Common Stock have been acquired by Elan outside of such arrangements.

10. COLLABORATIVE RESEARCH AND DEVELOPMENT AGREEMENTS

ELI LILLY AND COMPANY

In November 1997, the Company entered into a strategic alliance with Lilly for the discovery and development of products based on Ligand's Intracellular Receptor technology. Under the agreement, Lilly made a $31.25 million equity investment and agreed to support up to $49 million in research funding. Revenues recognized under the agreement for the years ended December 31, 1999, 1998 and 1997 were $9 million, $10 million and $19.7 million, respectively. The Company also had the option to obtain selected rights to one Lilly specialty pharmaceutical product. In connection with the August 1998 acquisition of Seragen, Ligand obtained from Lilly its rights to ONTAK and entered into an

agreement where Lilly is to fund certain clinical and other regulatory costs incurred by Ligand as mandated by the FDA in the approval of ONTAK. Revenues recognized under this agreement for the years ended December 31, 1999 and 1998 were $1 million and $353,000, respectively.

SMITHKLINE BEECHAM

In February 1995, the Company entered into a research collaboration with SmithKline Beecham Corporation ("SmithKline Beecham") to discover and characterize small molecule drugs to control hematopoiesis. Revenues recognized under the agreement for the years ended December 31, 1999, 1998 and 1997 were $2.7 million, $3 million and $3.2 million, respectively. SmithKline Beecham has agreed to provide the Company up to $21.5 million in research funding and equity investments. To date, SmithKline Beecham has made equity investments of $10 million and invested $2.5 million as a convertible note. The note is convertible into the Company's Common Stock at $13.56 per share and is due October 2002 unless converted into the Company's Common Stock earlier. The interest on the note is payable semi-annually at prime.

In April 1998, SmithKline Beecham plc. and the Company initiated a new collaboration to develop small molecule drugs for the treatment or prevention of obesity. As part of the collaboration, SmithKline Beecham plc. purchased $5 million of the Company's Common Stock and also purchased for $1 million a warrant to purchase 150,000 shares of Ligand Common Stock at $20 per share. The warrant expires in five years, and Ligand may require SmithKline Beecham plc. to exercise the warrant under certain circumstances after three years. SmithKline Beecham plc. will also purchase additional Ligand Common Stock at a 20% premium if a certain research milestone is achieved and will make cash payments to Ligand if subsequent milestones are met. Revenues recognized under the agreement for the years ended December 31, 1999 and 1998 were $1 million and $700,000, respectively.

PARKE-DAVIS

In September 1999, Ligand entered into a research, development and license agreement with the Parke-Davis Pharmaceutical Research Division ("Parke-Davis") of Warner-Lambert Company ("Warner-Lambert") to discover, characterize, design and develop small molecule compounds with beneficial effects for the treatment and prevention of diseases mediated through the estrogen receptor. Some of the diseases affected by drugs that act upon the estrogen receptor are osteoporosis, cardiovascular disease, breast cancer, and mood and cognitive disorders.

Under the terms of the agreement, the Company may receive up to $13 million in research funding through December 2002 as well as future product milestone payments and royalties. Parke-Davis will fund the costs of developing and marketing compounds selected from the collaboration and has been granted the worldwide rights to manufacture and sell any products resulting from the collaboration. The Company will be entitled to milestones at various stages of each compound's development. Upon the marketing of a product, Parke-Davis will pay the Company royalties on net sales of each product on a product-by-product basis. In addition, Warner-Lambert purchased $2.5 million of the Company's Common Stock at fair value.

ABBOTT LABORATORIES

In July 1994 the Company entered into a long-term collaborative research agreement with Abbott Laboratories ("Abbott") to discover and develop drugs for the prevention or treatment of inflammatory diseases. Revenues under the agreement, which was completed in July 1999, for the years ended December 31, 1999, 1998 and 1997 were $600,000, $1.2 million and $1.7 million, respectively.

AMERICAN HOME PRODUCTS CORPORATION

In September 1994, the Company entered into a collaborative research agreement with Wyeth-Ayerst Laboratories, the pharmaceutical division of American Home Products, to discover and develop drugs which interact with the estrogen or progesterone receptors. Revenues under the agreement, which was completed in September 1998, for the years ended December 31, 1998 and 1997 were $1.3 million and $4 million, respectively.

11. ALLERGAN LIGAND RETINOID THERAPEUTICS, INC.

In December 1994, the Company and Allergan, Inc. ("Allergan") formed ALRT for retinoid product research and development. In September 1997, the Company and Allergan exercised their respective options to purchase the callable common stock (the "Stock Purchase Option") and certain assets (the "Asset Purchase Option") of ALRT. The Company's exercise of the Stock Purchase Option required the issuance of 3,166,567 shares of the Company's Common Stock along with cash payments totaling $25 million to holders of the callable common stock in November 1997. Allergan's exercise of the Asset Purchase Option required a cash payment of $8.9 million which was used by the Company to pay a portion of the Stock Purchase Option.

In November 1997, ALRT became a wholly owned subsidiary of the Company. The transaction was accounted for using the purchase method of accounting. The excess of the purchase price over the fair value of the net assets acquired was allocated to in-process technology and was written off, resulting in a one-time non-cash charge to results of operations of $65 million. Details of the acquisition are as follows (in thousands):

<TABLE>
<S> <C>

Total consideration:	
Issuance of Common Stock	$ 52,595
Liabilities assumed	1,010
Warrant subscription receivable write-off	918
Net cash paid for ALRT net of cash received	12,661
	$ 67,184
Less:	
Deferred liabilities write-off	$ 2,214
Write-off of in-process technology	64,970
	$ 67,184

</TABLE>

12. X-CEPTOR THERAPEUTICS, INC.

In June 1999, Ligand became a minority equity investor in a new private corporation, X-Ceptor Therapeutics, Inc. ("X-Ceptor"), whose mission is to conduct research in and identify therapeutic products from the field of orphan nuclear receptors. Ligand invested $6 million in X-Ceptor through the acquisition of convertible preferred stock and owns approximately 17% of X-Ceptor's outstanding capital stock. Ligand is accounting for its investment in X-Ceptor using the equity method of accounting. Ligand's interest in X-Ceptor losses in 1999 was $754,000, which is included in other income (expense) in the consolidated statements of operations. Ligand has also granted to X-Ceptor an exclusive license to use the Ligand orphan nuclear receptors technology that is not currently committed to other partnership programs and a nonexclusive license to use Ligand's enabling proprietary process technology as it relates to drug discovery using orphan nuclear receptors. X-Ceptor made a license payment of $2 million to Ligand. Ligand recognized $1.7 million as revenue in 1999 representing the third-party ownership of X-Ceptor. Ligand has not performed any research and development activities on behalf of X-Ceptor.

Ligand also issued warrants to X-Ceptor investors, founders and certain employees to purchase 950,000 shares of Ligand Common Stock with an exercise price of $10 per share and expiration date of October 6, 2006. The warrants were recorded at their fair value of $4.20 per warrant or $3.9 million as deferred warrant expense within stockholders' deficit and are being amortized to operating expense through June 2002. Amortization was $530,000 in 1999, which is included in research and development expense in the consolidated statements of operations.

Ligand has the right but not the obligation to acquire all, but not less than all, of the outstanding X-Ceptor stock at June 30, 2002 or upon the cash balance of X-Ceptor falling below a pre-determined amount. Upon certain conditions, Ligand may extend the option by 12 months by providing additional funding of $5 million. The option price, payable pro-rata based on total cumulative non-Ligand funding, is up to $61.4 million at June 30, 2002 (or earlier, in certain circumstances) or up to $79.8 million upon extension. The option price may be paid in cash or shares of Ligand common stock, or any combination of the two, at Ligand's sole discretion.

13. INCOME TAXES

At December 31, 1999, the Company had consolidated federal and combined California income tax net operating loss carryforwards of approximately $394 million and $78 million, respectively. The difference between the federal and California tax loss carryforwards is primarily attributable to the capitalization of research and development expenses for California income tax purposes and the 50% limitation on California loss carryforwards. The Company also had foreign net operating loss carryforwards of approximately $5 million, which will begin to expire in 2001 unless previously utilized.

The federal tax loss carryforward will begin to expire in 2002, unless previously utilized. The California tax loss carryforwards began expiring in 1998 (approximately $2 million expired in 1999). The Company also had consolidated federal and combined California research tax credit carryforwards of approximately $17 million and $5 million, respectively, which will begin to expire in 2002 unless previously utilized.

Pursuant to Internal Revenue Code Sections 382 and 383, use of a portion of net operating loss and credit carryforwards will be limited because of cumulative changes in ownership of more than 50% which occurred within three year periods during 1989, 1992 and 1996. However, the Company does not believe the limitations will have a material impact upon the future utilization of these carryforwards. In addition, use of Glycomed's and Seragen's preacquisition tax net operating and

credit carryforwards will also be limited because the acquisitions by the Company represent changes in ownership of more than 50%. Such tax net operating losses and credit carryforwards have been reduced, including the related deferred tax assets.

Significant components of the Company's deferred tax assets as of December 31, 1999 and 1998 are shown below. A valuation allowance has been recognized to fully offset the deferred tax assets as of December 31, 1999 and 1998 as realization of such assets is uncertain.

<TABLE>
<CAPTION>

	December 31,	
	1999	1998
	(in thousands)	
<S>	<C>	<C>
Deferred tax liabilities:		
Acquired subordinated debt.....	$ 3,270	$ 4,387
Purchased intangible assets.....	16,964	17,621
Fixed assets.....	2,251	2,684
Total deferred tax liabilities....	22,485	24,692
Deferred tax assets:		
Net operating loss carryforwards.....	144,440	126,771
Research and development credits.....	21,065	17,218
Capitalized research and development.....	9,366	13,604
Capitalized license.....	8,149	6,150
Accrued expenses.....	910	1,347
Other, net	4,330	1,593
Total deferred tax assets.....	188,260	166,683
Net deferred tax assets.....	165,775	141,991
Valuation allowance for deferred tax assets.	(165,775)	(141,991)
	$ --	$ --

</TABLE>

As of December 31, 1999, approximately $2.4 million of the valuation allowance for deferred tax assets related to benefits of stock option deductions which, when recognized, will be allocated directly to paid-in capital.

14. SUBSEQUENT EVENTS

SALE OF CONTRACT MANUFACTURING ASSETS

In January 2000, Ligand sold the assets associated with the contract manufacturing business of Seragen subsidiary Marathon Biopharmaceuticals Inc. for approximately $10 million in cash. Under the terms of the sale, Seragen has entered into a long-term supply agreement with the acquirer of the assets for the manufacture of ONTAK and the performance of certain process and production development work for the next-generation ONTAK product. Seragen has minimal purchase commitments under the agreement and the purchase commitments are consistent with Ligand's current costs to manufacture. The assets sold consist primarily of property and equipment of $6.7 million and intangibles of $2.7 million. The Company recognized an immaterial gain on this transaction in January 2000.

RESEARCH AND DEVELOPMENT COLLABORATION

In February 2000, the Company and Organon entered into a collaboration to focus on small molecule compounds with potential effects for the treatment and prevention of gynecological diseases mediated through the progesterone receptor. Under the terms of the collaboration, Ligand received up front payments and may receive milestone and royalty payments on a product-by-product basis. Organon has been granted exclusive worldwide rights to manufacture and sell any products resulting from the collaboration.

CONVERSION OF ZERO COUPON CONVERTIBLE NOTES

In March 2000, Elan converted an additional $20 million in Notes plus accrued interest, convertible at $14 per share, into 1,501,543 shares of the Company's Common Stock. The Company provided Elan a $2 million conversion incentive through the issuance of an additional 98,580 shares of the Company's Common Stock. The incentive was recorded as debt conversion expense in other income (expense) in the first quarter of 2000.

EXHIBIT 10.213

INCENTIVE AGREEMENT

This incentive agreement (this "Agreement"), dated as of December 31, 1999, by and among Monksland Holdings, BV, a Dutch corporation ("Monksland"), Elan International Services, Ltd., a Bermuda corporation ("EIS"), and Ligand Pharmaceuticals Incorporated, a Delaware corporation ("Ligand").

Recitals

WHEREAS, Ligand issued to Monksland on August 31, 1999 a Zero Coupon Convertible Senior Note due 2008 in the amount of $41,137,581 at maturity (the "Note") under a Securities Purchase Agreement, dated as of November 6, 1998 (the "Purchase Agreement") by and among Ligand, EIS and Elan Corporation, plc, a public limited company organized under the laws of Ireland ("Elan"); and

WHEREAS, Ligand has requested that Monksland convert the Note to shares of Ligand common stock prior to January 1, 2000 and Monksland concurrent with this Agreement is converting the Note to shares of Ligand common stock.

NOW, THEREFORE, in consideration of the covenants and mutual agreements set forth herein and for good and valuable consideration, the receipt and sufficiency of which is hereby acknowledged, the parties hereto agree as follows:

Agreement

Section 1. Agreement to Convert

In consideration for 188,572 shares of Ligand common stock (the "Incentive Shares") to be issued by Ligand to EIS, an affiliate of Monksland, at the request of Monksland, and subject to the terms and conditions of this Agreement, Monksland hereby agrees to convert the Note under its terms and conditions as of the date hereof. Also, at the request of Monksland, the shares to be issued by Ligand upon conversion of the Note shall be issued to EIS at the request of Monksland.

Section 2. Representations & Warranties of Ligand

(i) Except as otherwise set forth in the Schedule of Exceptions (as updated on December 30, 1999) attached hereto as Exhibit A, the representations and warranties of Ligand contained in the Purchase Agreement that are qualified by Material Adverse Effect or materiality are true and correct in all respects and the representations and warranties of Ligand contained in the Purchase Agreement that are not so qualified are true and correct in all material respects, in

each case, on and as of the date hereof, except to the extent that such representations and warranties expressly relate to an earlier date, and Ligand has performed all covenants and agreements and satisfied all conditions on its part to be performed or satisfied under the Purchase Agreement at or prior to the date hereof;

(ii) As of the date hereof and since June 30, 1998, except as set forth in the Additional SEC Reports, no event or development has occurred, and no information has become known, that, individually or in the aggregate, has or would be reasonably likely to have a Material Adverse Effect;

(iii) The issuance of the Incentive Shares has not been enjoined (temporarily or permanently);

(iv) Each of the Purchase Agreement, the Registration Rights Agreement or the New Registration Rights Agreement, as the case may be, the License Agreement and, to the extent outstanding, the Securities, are, and after giving effect to the issuance of the Incentive Shares, will be, valid and enforceable against Ligand, except that (A) the enforcement thereof may be subject to (i) bankruptcy, insolvency, reorganization, moratorium or other similar laws now or hereafter in effect relating to creditors' rights generally and (ii) general

principles of equity and the discretion of the court before which any proceeding therefor may be brought and (B) any rights to indemnity or contribution under the Registration Rights Agreement or the New Registration Rights Agreement, as the case may be, may be limited by federal and state securities laws and public policy considerations, and no event that constitutes a breach of or a default under (or an event which, with notice or passage of time or both would constitute a default under) this Agreement, the Registration Rights Agreement or the New Registration Rights Agreement, as the case may be, the License Agreement or, to the extent outstanding, the Securities, by Ligand has occurred and is continuing or, after giving effect to the issuance and sale of the Incentive Shares, will have occurred and be continuing;

(v) Under the Preferred Share Rights Agreement, dated as of September 13, 1996, between Ligand and Wells Fargo Bank, N.A., as amended (the "Rights Agreement"), no event has occurred that has caused or will cause, and none of the execution of this Agreement or the consummation of the transactions contemplated hereby, including the issuance of the Incentive Shares, will cause, rights issued thereunder to become exercisable or a "Distribution Date" to occur, assuming compliance by Elan and its Affiliates with the provisions of Section 14(c) of the Purchase Agreement; and

(vi) The Registration Rights Agreement has been duly amended to include the Incentive Shares within the definition of Registrable Securities thereunder.

Section 3. Representations & Warranties of EIS

(i) EIS acknowledges that the Incentive Shares will not be registered under the

Securities Act or any other applicable securities laws, will be issued in transactions not requiring registration under the Securities Act and, unless so registered, may not be offered, sold or otherwise transferred except in compliance with the registration requirements of the Securities Act or any other applicable securities law, pursuant to an exemption therefrom or in a transaction not subject thereto and in each case in compliance with the conditions for transfer set forth in paragraph (iii) below;

(ii) EIS is outside the United States and is not a "U.S. person" (as such term is defined in Regulation S);

(iii) Until the expiration of the "one-year distribution compliance period" within the meaning of Rule 903 of Regulation S, EIS will not sell or otherwise transfer the Incentive Shares, except (i) to Ligand or its Subsidiaries, (ii) pursuant to an effective registration statement which has been declared effective under the Securities Act, (iii) in an offshore transaction in accordance with Rule 904 of Regulation S or (iv) pursuant to any other available exemption from the registration requirements of the Securities Act, including Rule 144. After the expiration of such "one-year distribution compliance period," EIS will not sell or otherwise transfer the Incentive Shares, except pursuant to registration under the Securities Act or an available exemption therefrom and, in any case, in accordance with the provisions of Regulation S and applicable state securities laws;

(iv) EIS understands that the certificates representing the Incentive Shares will, so long as appropriate, bear the legend set forth in clause (vi) of Section 4(a) of the Purchase Agreement;

(v) EIS agrees that Ligand shall be entitled to make a notation on its records and give instructions to any transfer agent of the Common Stock in order to implement the restrictions on transfer set forth in the Purchase Agreement;

(vi) EIS believes that it has received all information it considers necessary or appropriate and has had an opportunity to ask questions and receive answers from Ligand regarding the terms and conditions of the issuance and sale of the Incentive Shares and the business, properties, prospects and financial condition of Ligand; provided that this clause (vi) shall in no way limit or modify the representations and warranties of Ligand set forth in Section 3 of the Purchase Agreement or the right of EIS to rely thereon; it is a sophisticated investor and that an investment in the Incentive Shares involves a high degree of risk; and that the valuation price of the Incentive Shares may or

may not exceed the last publicly quoted per share "asked" price of the Common Stock on the date hereof;

(vii) EIS will be acquiring the Incentive Shares for its own account for the purpose of investment and not (i) with a view to, or for sale in connection with, any distribution thereof or (ii) for the account or on behalf of any "U.S. person" (as such term is defined in Regulation S); EIS understands, acknowledges and agrees that it must bear the economic risk of its investment in the Incentive Shares for an indefinite period of time and that prior to any offer or sale of such securities, Ligand may require, as a condition to effecting a transfer of the Incentive Shares, an

opinion of its counsel, acceptable to Ligand, as to the registration or exemption therefrom under the Securities Act;

(viii) EIS was not formed specifically for the purpose of acquiring the Incentive Shares under this Agreement;

(ix) EIS nor any of its Affiliates has, directly or indirectly, within the past 90 days nor will such persons until the expiration of the "one-year distribution compliance period" within the meaning of Rule 903 of Regulation S commencing from the later to occur of (i) the last Additional Closing occurring on or before December 31, 1999 and (ii) the last License Share Issuance occurring on or before the expiration or termination of the License Agreement directly or indirectly, enter into any short selling of any equity security of Ligand (including, without limitation, the Common Stock) or any hedging transaction with respect to any equity security of Ligand, including, without limitation, puts, calls, or other option transactions, option writing and equity swaps, unless in compliance with the Securities Act;

(x) EIS acknowledges that, until November 9, 2000, it shall not, directly or indirectly, without the prior written consent of Ligand, Transfer the Incentive Shares; provided that EIS may Transfer the Incentive Shares to any of its Affiliates and any Affiliate of EIS may Transfer the Incentive Shares to EIS or any Affiliate of EIS, subject to EIS's agreements set forth herein; and

(xi) EIS acknowledges that the issuance of the Incentive Shares shall not result in an adjustment to the Conversion Price of the Notes under Section 6(i) thereof.

Section 4. Acknowledgment of Ligand

Ligand acknowledges notwithstanding anything in the Purchase Agreement, the acquisition of the Incentive Shares by EIS, shall not be violative of any standstill provision contained in the Purchase Agreement, including Section 14(c), or otherwise applicable to EIS, and that the Incentive Shares shall be afforded all of the rights and exceptions afforded the Shares under such applicable provisions; provided that Ligand shall have no obligation to amend the Rights Agreement with respect to the Incentive Shares.

Section 5. Miscellaneous

(i) APPLICABLE LAW. THE VALIDITY AND INTERPRETATION OF THIS AGREEMENT, AND THE TERMS AND CONDITIONS SET FORTH HEREIN, SHALL BE GOVERNED BY AND CONSTRUED IN ACCORDANCE WITH THE LAWS OF THE STATE OF NEW YORK APPLICABLE TO CONTRACTS MADE AND TO BE PERFORMED WHOLLY THEREIN, WITHOUT GIVING EFFECT TO ANY PROVISIONS THEREOF RELATING TO CONFLICTS OF LAW.

(ii) Waiver. No failure or delay on the part of a party hereto in exercising any right,

power or remedy hereunder shall operate as a waiver thereof; nor shall any single or partial exercise of any such right, power or remedy preclude any other or further exercise thereof or the exercise of any other right, power or remedy hereunder.

(iii) Counterparts. This Agreement may be executed in two or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

(iv) Terms. Capitalized terms used but not otherwise defined herein shall have the meanings assigned to them in the Purchase Agreement.

IN WITNESS WHEREOF, this Agreement has been duly executed by the parties hereto and delivered as of the date first written above.

MONKSLAND HOLDINGS, BV

By: /s/Kevin Insley
Name: Kevin Insley
Title: Authorized Signatory

ELAN INTERNATIONAL SERVICES, LTD.

By: /s/Kevin Insley
Name: Kevin Insley
Title: President & CFO

LIGAND PHARMACEUTICALS INCORPORATED

By: /s/David Robinson
Name:
Title:

EXHIBIT 10.214

FIFTEENTH ADDENDUM TO AMENDED REGISTRATION RIGHTS AGREEMENT

This Fifteenth Addendum ("Addendum") to the Amended Registration Rights Agreement dated June 24, 1994, as amended through the date hereof ("Registration Rights Agreement") among Ligand Pharmaceuticals Incorporated (the "Company") and the persons and entities listed on Exhibit A hereto (collectively, the "X-Ceptor Investors and Founders") is effective as of October 6, 1999.

RECITALS

A. The Company has issued warrants to purchase an aggregate of 950,000 shares of the Company's Common Stock with an exercise price equal to $10.00 per share (collectively, the "X-Ceptor Warrants") to the X-Ceptor Investors and Founders.

B. This Addendum serves to include any shares of the Company's Common Stock issuable upon the exercise of the X-Ceptor Warrants within the definition of "Registrable Securities" under the Registration Rights Agreement and to provide that Schedule A to the Registration Rights Agreement shall be further updated to include any such shares issued upon the exercise of the X-Ceptor Warrants, all pursuant to Section 2.6(a) of the Registration Rights Agreement.

NOW, THEREFORE, in consideration of the mutual promises and covenants set forth in the Registration Rights Agreement, the parties agree as follows:

1. Section 1.1, paragraph (f) of the Registration Rights Agreement is hereby restated in its entirety as follows:

"(f) The term "Registrable Securities" means (i) the Common Stock issuable or issued upon exercise of those warrants issued to certain Existing Investors and pursuant to which such Existing Investors were previously granted registration rights by the Company, (ii) the shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issuable upon conversion of those certain Unsecured Convertible Promissory Notes issued to American Home Products Corporation pursuant to the Stock and Note Purchase Agreement dated September 2, 1994, (iii) the 35,957 shares of Common Stock issuable or issued upon exercise of the Warrant issued to Genentech, Inc. in connection with the merger of L.G. Acquisition Corp., a wholly-owned subsidiary of the Company, with and into Glycomed Incorporated, which shares are reflected on Schedule A attached to the Fourth Addendum to this Agreement, (iv) the 164,474 shares of Common Stock (or that number of shares of such other class of stock into which the Common Stock is converted) issued to S.R. One Limited pursuant to a Stock and Note Purchase Agreement dated February 3, 1995 (the "Stock and Note Purchase Agreement"), which shares are reflected on Schedule A attached to the Eighth Addendum to this Agreement, and the shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issuable upon conversion of those certain Unsecured Convertible Promissory Notes dated October 30, 1997

(the "S.R. One Notes") issued pursuant to the Stock and Note Purchase Agreement (and upon such conversion of the S.R. One Notes, Schedule A shall be updated to include such shares), (v) the 274,423 shares of Common Stock (or that number of shares of such other class of stock into which the Common Stock is converted) issued to SmithKline Beecham plc pursuant to a Stock Purchase Agreement dated April 24, 1998 (the "SmithKline Stock Purchase Agreement"), which shares are reflected on Schedule A attached to the Ninth Addendum to this Agreement, and the shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issuable upon conversion of that certain Warrant (the "Warrant") issued pursuant to the SmithKline Stock Purchase Agreement (and upon such conversion of the Warrant, Schedule A shall be updated to include such shares), (vi) the 1,278,970 shares of Common Stock (or that number of shares of such other class of stock into which the Common Stock is converted) issued to Elan International Services, Ltd. pursuant to the Stock Purchase Agreement dated September 30, 1998, which shares are reflected on Schedule A attached to the Tenth Addendum to this Agreement,

(vii) the 437,768 shares of Common Stock (or that number of shares of such other class of stock into which the Common Stock is converted) issued to Elan International Services, Ltd. pursuant to the Securities Purchase Agreement, dated November 6, 1998 (the "Elan Securities Purchase Agreement"), which shares are reflected on Schedule A attached to the Eleventh Addendum to this Agreement, (viii) the shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issuable upon conversion of the Zero Coupon Convertible Senior Notes due 2008 (the "Elan Notes") issued pursuant to the Elan Securities Purchase Agreement (and upon such conversion of the Elan Notes, Schedule A shall be updated to include such shares), (viii) the 429,185 shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issued to Elan Corporation, plc pursuant to the Development, License and Supply Agreement dated November 9, 1998 (the "Elan License Agreement"), which shares are reflected on Schedule A attached to the Eleventh Addendum to this Agreement, (ix) the shares of Common Stock that may be issued to Elan Corporation, plc pursuant to the Elan License Agreement (and upon each such issuance, Schedule A shall be updated to include such shares), (x) the shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issuable to Elan International Services, Ltd. upon exercise of that certain Warrant (the "EIS Warrant") dated August 4, 1999 (and upon such exercise of the EIS Warrant, Schedule A shall be updated to include such shares), (xi) the 289,750 shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issued to Warner Lambert Company pursuant to the Purchase Agreement dated September 1, 1999, which shares are reflected on Schedule A attached to the Thirteenth Addendum to this Agreement, (xii) the 52,742 shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issued to EIS pursuant to the Stock Purchase Agreement dated September 30, 1999, which shares are reflected on Schedule A attached to the Fourteenth Addendum to this Agreement, (xiii) the shares of Common Stock (or

the shares of such other class of stock into which the Common Stock is converted) issuable upon exercise of those certain Series X Warrants dated [October 6, 1999] (the "X-Ceptor Warrants") (and upon any such exercise of the X-Ceptor Warrants, Schedule A shall be updated to include such shares), and (xiv) any Common Stock of the Company issued as (or issuable upon the conversion or exercise of any warrant, right or other security which is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of the shares referenced in (i), (ii), (iii), (iv), (v), (vi), (vii), (viii), (ix), (x), (xi), (xii) and (xiii) above, excluding in all cases, however, any Registrable Securities sold by a person in a transaction in which rights under this Agreement are not assigned."

2. Schedule A of the Registration Rights Agreement is hereby restated in its entirety as attached to this Addendum.

3. This Addendum may be executed in one or more counterparts.

4. This Addendum shall be binding upon the Company, each of the X-Ceptor Investors and Founders, each holder of Registrable Securities and each future holder of Registrable Securities pursuant to Section 2.6(a) of the Registration Rights Agreement.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties have executed this Addendum as of the date first above written.

LIGAND PHARMACEUTICALS INCORPORATED

By: /s/William L. Respess

Its: Senior Vice President
General Counsel, Government Affairs

X-CEPTOR INVESTORS AND FOUNDERS:

Domain Partners IV, L.P.

By: One Palmer Square Associates IV, L.L.C.,
General Partner

By: /s/Kathleen Schoemaker

Its: Managing Member

DP IV Associates, L.P.

By: One Palmer Square Associates IV, L.L.C.,
General Partner

By: /s/Kathleen Schoemaker

Its: Managing Member

[SIGNATURE PAGE TO FIFTEENTH ADDENDUM
TO AMENDED REGISTRATION RIGHTS AGREEMENT]

FARALLON CAPITAL PARTNERS, L.P.
FARALLON CAPITAL INSTITUTIONAL
PARTNERS, L.P.
FARALLON CAPITAL INSTITUTIONAL
PARTNERS II, L.P.
FARALLON CAPITAL INSTITUTIONAL
PARTNERS III, L.P.
RR CAPITAL PARTNERS, L.P.

By: Farallon Partners, L.L.C.,
its General Partner

By: /s/David Cohen

Its:

TechAMP International, L.P.

By: AMP&A Management, LLC,
General Partner

By: /s/ A.M. Papas
Its: Manager

/s/ Kevin Kinsella
- ----------
Kevin Kinsella

/s/Ronald Evans
- ----------
Ronald Evans

/s/Bert O'Malley

- ----------
Bert O'Malley

/s/David Mangelsdorf
- ----------
David Mangelsdorf

[SIGNATURE PAGE TO FIFTEENTH ADDENDUM
TO AMENDED REGISTRATION RIGHTS AGREEMENT]

/s/Richard Heyman
- ----------
Richard Heyman

/s/Robert Giargiari
- ----------
Robert Giargiari

/s/Ming Wei Wang
- ----------
Ming Wei Wang

GIMV N.V.

By: /s/ illegible /s/ illegible
- ---------- ----------
Its: Vice President Vice President

Sofinov Societe Financiere D'Innovation, Inc.

By: /s/Jean-Chirtophe Denondin
- ----------
Its: Vice President

By: /s/Ginette Depelteau
- ----------
Its: Secretary

[SIGNATURE PAGE TO FIFTEENTH ADDENDUM
TO AMENDED REGISTRATION RIGHTS AGREEMENT]

SCHEDULE A

to
Fifteenth Addendum to
Amended Registration Rights Agreement

<TABLE>
<CAPTION>

Name	Shares Issued
<S>	<C>
American Home Products Corporation	374,626

American Home Products Corporation	374,626
American Home Products Corporation	249,749
American Home Products Corporation	124,875
Aspen Venture Partners, L.P.	2,659
Domain Partners IV, L.P.	_____
DP IV Associates, L.P.	_____
Elan Corporation, plc	429,185
Elan International Services, Ltd.	1,769,480
Enterprise Partners	3,745
Ronald Evans	_____
Farallon Capital Partners, L.P.	_____
Farallon Capital Institutional Partners, L.P.	_____
Farallon Capital Institutional Partners II, L.P.	_____
Farallon Capital Institutional Partners III, L.P.	_____
GIMV N.V.	_____
Genentech, Inc.	35,957
Robert Giargiari	_____
Richard Heyman	_____
Kevin Kinsella	_____

Kleiner Perkins Caufield & Byers	7,688
ML Venture Partners II, L.P.	2,417
David Mangelsdorf	_____
Bert O'Malley	_____
RR Capital Partners, L.P.	_____
S.R. One, Limited	164,474
SmithKline Beecham	274,423
Sofinov Societe Financiere D'Innovation	_____
TechAMP International, L.P.	_____
Venrock Associates	3,441
Venrock Associates II, L.P.	1,540
Ming Wei Wang	_____
Warner Lambert Company	289,750
Windsor Venture Lease Partners Ltd., Inc.	283
Total:	4,108,918

- ---

</TABLE>

EXHIBIT 10.215

SIXTEENTH ADDENDUM TO AMENDED REGISTRATION RIGHTS AGREEMENT

This Sixteenth Addendum ("Addendum") to the Amended Registration Rights Agreement dated June 24, 1994, as amended through the date hereof ("Registration Rights Agreement") between Ligand Pharmaceuticals Incorporated (the "Company") and Elan International Services, Ltd. ("EIS") is effective as of December 31, 1999.

RECITALS

A. The Company has issued 188,572 shares of the Company's Common Stock (the "Incentive Shares") to EIS pursuant to the terms of that certain Incentive Agreement dated December 31, 1999 among the Company, EIS and Monksland Holdings, B.V.

B. This Addendum serves to include the EIS Shares within the definition of "Registrable Securities" under the Registration Rights Agreement pursuant to Section 2.6(a) of the Registration Rights Agreement.

NOW, THEREFORE, in consideration of the mutual promises and covenants set forth in the Registration Rights Agreement, the parties agree as follows:

1. Section 1.1, paragraph (f) of the Registration Rights Agreement is hereby restated in its entirety as follows:

"(f) The term "Registrable Securities" means (i) the Common Stock issuable or issued upon exercise of those warrants issued to certain Existing Investors and pursuant to which such Existing Investors were previously granted registration rights by the Company, (ii) the shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issuable upon conversion of those certain Unsecured Convertible Promissory Notes issued to American Home Products Corporation pursuant to the Stock and Note Purchase Agreement dated September 2, 1994, (iii) the 35,957 shares of Common Stock issuable or issued upon exercise of the Warrant issued to Genentech, Inc. in connection with the merger of L.G. Acquisition Corp., a wholly-owned subsidiary of the Company, with and into Glycomed Incorporated, which shares are reflected on Schedule A attached to the Fourth Addendum to this Agreement, (iv) the 164,474 shares of Common Stock (or that number of shares of such other class of stock into which the Common Stock is converted) issued to S.R. One Limited pursuant to a Stock and Note Purchase Agreement dated February 3, 1995 (the "Stock and Note Purchase Agreement"), which shares are reflected on Schedule A attached to the Eighth Addendum to this Agreement, and the shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issuable upon conversion of those certain Unsecured Convertible Promissory Notes dated October 30, 1997 (the "S.R. One Notes") issued pursuant to the Stock and Note Purchase Agreement (and upon such conversion of the S.R. One Notes, Schedule A shall be updated to include such shares), (v) the 274,423 shares of Common Stock (or that number of shares of such other class of stock into which the Common Stock is

converted) issued to SmithKline Beecham plc pursuant to a Stock Purchase Agreement dated April 24, 1998 (the "SmithKline Stock Purchase Agreement"), which shares are reflected on Schedule A attached to the Ninth Addendum to this Agreement, and the shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issuable upon conversion of that certain Warrant (the "Warrant") issued pursuant to the SmithKline Stock Purchase Agreement (and upon such conversion of the Warrant, Schedule A shall be updated to include such shares), (vi) the 1,278,970 shares of Common Stock (or that number of shares of such other class of stock into which the Common Stock is converted) issued to Elan International Services, Ltd. pursuant to the Stock Purchase Agreement dated September 30, 1998, which shares are reflected on Schedule A attached to the Tenth Addendum to this Agreement, (vii) the 437,768 shares of Common Stock (or that number of shares of such

other class of stock into which the Common Stock is converted) issued to Elan International Services, Ltd. pursuant to the Securities Purchase Agreement, dated November 6, 1998 (the "Elan Securities Purchase Agreement"), which shares are reflected on Schedule A attached to the Eleventh Addendum to this Agreement, (viii) the shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issuable upon conversion of the Zero Coupon Convertible Senior Notes due 2008 (the "Elan Notes") issued pursuant to the Elan Securities Purchase Agreement (and upon such conversion of the Elan Notes, Schedule A shall be updated to include such shares), (viii) the 429,185 shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issued to Elan Corporation, plc pursuant to the Development, License and Supply Agreement dated November 9, 1998 (the "Elan License Agreement"), which shares are reflected on Schedule A attached to the Eleventh Addendum to this Agreement, (ix) the shares of Common Stock that may be issued to Elan Corporation, plc pursuant to the Elan License Agreement (and upon each such issuance, Schedule A shall be updated to include such shares), (x) the shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issuable to Elan International Services, Ltd. upon exercise of that certain Warrant (the "EIS Warrant") dated August 4, 1999 (and upon such exercise of the EIS Warrant, Schedule A shall be updated to include such shares), (xi) the 289,750 shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issued to Warner Lambert Company pursuant to the Purchase Agreement dated September 1, 1999, which shares are reflected on Schedule A attached to the Thirteenth Addendum to this Agreement, (xii) the 52,742 shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issued to EIS pursuant to the Stock Purchase Agreement dated September 30, 1999, which shares are reflected on Schedule A attached to the Fourteenth Addendum to this Agreement, (xiii) the shares of Common Stock (or the shares of such other class of stock into which the Common Stock is converted) issuable upon exercise of those certain Series X Warrants dated October 6, 1999 (the "X-Ceptor Warrants") (and upon any such exercise of the X-Ceptor Warrants, Schedule A shall be updated to include such shares), (xiv) the 188,572

shares of Common Stock (or that number of shares of such other class of stock into which the Common Stock is converted) issued to Elan International Services, Ltd. pursuant to the Incentive Agreement, dated December 31, 1999, which shares are reflected on Schedule A attached to the Sixteenth Addendum to this Agreement, and (xv) any Common Stock of the Company issued as (or issuable upon the conversion or exercise of any warrant, right or other security which is issued as) a dividend or other distribution with respect to, or in exchange for or in replacement of the shares referenced in (i), (ii), (iii), (iv), (v), (vi), (vii), (viii), (ix), (x), (xi), (xii), (xiii) and (xiv) above, excluding in all cases, however, any Registrable Securities sold by a person in a transaction in which rights under this Agreement are not assigned."

2. Schedule A of the Registration Rights Agreement is hereby restated in its entirety as attached to this Addendum.

3. This Addendum may be executed in one or more counterparts.

4. This Addendum shall be binding upon the Company, EIS, each holder of Registrable Securities and each future holder of Registrable Securities pursuant to Section 2.6(a) of the Registration Rights Agreement.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

IN WITNESS WHEREOF, the parties have executed this Addendum as of the date first above written.

LIGAND PHARMACEUTICALS INCORPORATED

By: /s/David E. Robinson

Its:

ELAN INTERNATIONAL SERVICES, LTD.

By: /s/Kevin Insley

Its:

[SIGNATURE PAGE TO SIXTEENTH ADDENDUM
TO AMENDED REGISTRATION RIGHTS AGREEMENT]

SCHEDULE A

to
Sixteenth Addendum to
Amended Registration Rights Agreement

<TABLE>
<CAPTION>

Name	Shares Issued
<S>	<C>
American Home Products Corporation	374,626
American Home Products Corporation	374,626
American Home Products Corporation	249,749
American Home Products Corporation	124,875
Aspen Venture Partners, L.P.	2,659
Elan Corporation, plc	429,185
Elan International Services, Ltd.	4,202,512
Enterprise Partners	3,745
Genentech, Inc.	35,957
Kleiner Perkins Caufield & Byers	7,688
ML Venture Partners II, L.P.	2,417
S.R. One, Limited	164,474
SmithKline Beecham	274,423
Venrock Associates	3,441
Venrock Associates II, L.P.	1,540
Warner Lambert Company	289,750
Windsor Venture Lease Partners Ltd., Inc.	283
Total:	6,541,950

</TABLE>

EXHIBIT 10.216

State of Delaware

Office of the Secretary of State

I, EDWARD J. FREEL, SECRETARY OF STATE OF THE STATE OF DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT COPY OF THE CERTIFICATE OF AMENDMENT OF "X-CEPTOR THERAPEUTICS, INC.", FILED IN THIS OFFICE ON THE FIRST DAY OF OCTOBER, A.D. 1999, AT 4 O'CLOCK P.M.

A FILED COPY OF THIS CERTIFICATE HAS BEEN FORWARDED TO THE NEW CASTLE COUNTY RECORDER OF DEEDS.

/s/ Edward J. Freel

[SEAL] Edward J. Freel, Secretary of State

3057193 8100 AUTHENTICATION: 0008418

991418040 DATE: 10-05-99

CERTIFICATE OF AMENDMENT OF
AMENDED AND RESTATED CERTIFICATE OF INCORPORATION
OF
X-CEPTOR THERAPEUTICS, INC.

Kevin J. Kinsella and Michael O'Donnell certify that:

1. They are the Chief Executive Officer and the Secretary, respectively, of X-Ceptor Therapeutics, Inc., a Delaware Corporation (the "Corporation") originally incorporated on June 16, 1999.

2. Paragraph 7.4 (a)(i) of Schedule I of the Amended and Restated Certificate of Incorporation is amended to read in its entirety as follows:

"(i) The fair market value of a share of Common Stock (the "Fair Market Value") shall be determined in accordance with the following formula:

A = B/C

Where: A = Fair Market Value per share of Common Stock

B = $61,400,000 less an amount equal to product of (i) $2.07432, multiplied by (ii) the excess, if any, of (A) 18,900,000, over (B) the aggregate number of shares of Series B Preferred sold by the Company on the closing Date and within 120 days of the closing Date (excluding any shares held by Ligand, its affiliates or any of their transferees) (such amount being the "Series B Shortfall") if the Exercise Date occurs at any time on or before the Third Anniversary, or $79,800,000 less an amount equal to the product of (i) $2.6959, multiplied by (ii) the Series B Shortfall if the Exercise Date occurs after the Third Anniversary

C = Number of shares of Common Stock outstanding on the Option Closing Date taking into account the automatic conversion of any shares of Preferred Stock pursuant to the company's Certificate of Incorporation immediately prior to the Option Closing Date (excluding any shares held by Ligand, its affiliates (in excess of an aggregate of 200,000 shares of Common Stock) or

any of their transferees) and including all shares issuable upon conversion or exercise of options, warrants, convertible notes or other convertible or exercisable securities (collectively, "Convertible Securities")"

IN WITNESS WHEREOF, this Certificate of Amendment of the Amended and Restated Certificate of Incorporation, which amends certain provisions of the Amended and Restated Certificate of Incorporation of the Corporation, having been duly adopted in accordance with Section 242 of the Delaware General Corporation Law, has been duly executed by its Chief Executive Officer and Secretary this 29th day of September, 1999.

/s/ Kevin J. Kinsella

Kevin J. Kinsella, Chief Executive Officer

/s/Michael J. O'Donnell

Michael J. O'Donnell, Secretary

EXHIBIT 10.217

No. X-1

NEITHER THIS WARRANT NOR ANY OF THE SECURITIES ISSUABLE HEREUNDER HAS BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND MAY NOT BE OFFERED, SOLD, TRANSFERRED, ASSIGNED OR HYPOTHECATED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT UNDER SAID ACT WITH RESPECT TO THE SECURITIES OR UNLESS LIGAND PHARMACEUTICALS INCORPORATED RECEIVES AN OPINION OF COUNSEL FOR THE HOLDER OF THIS WARRANT SATISFACTORY TO LIGAND PHARMACEUTICALS INCORPORATED, STATING THAT SUCH OFFER, SALE, TRANSFER, ASSIGNMENT OR HYPOTHECATION IS EXEMPT FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.

THIS WARRANT IS VOID AFTER 5:00 P.M., SAN DIEGO TIME, ON AUGUST 3, 2006.

LIGAND PHARMACEUTICALS INCORPORATED

AMENDED AND RESTATED
SERIES X WARRANT
FOR THE PURCHASE OF
91,406 SHARES OF COMMON STOCK

IN CONSIDERATION OF the payment by the initial holder hereof (the "Initial Holder") to LIGAND PHARMACEUTICALS INCORPORATED, a Delaware corporation ("LIGAND"), of Three Hundred Eighty-Three Thousand Nine Hundred Five Dollars and Twenty Cents ($383,905.20), LIGAND hereby certifies that

ELAN INTERNATIONAL SERVICES, LTD.

or any registered assignee of the Initial Holder (each of the Initial Holder and any such registered assignee being hereinafter referred to as the "Holder") is entitled, subject to the provisions of this Warrant, to purchase from LIGAND, at any time or from time to time on or after the earlier of (i) August 4, 2000 (the "Exercise Date") or (ii) the date which is ten (10) days prior to the Acceleration Date (as hereinafter defined) and before 5:00 p.m. San Diego time, on August 3, 2006 (the "Exercise Period"), Ninety-One Thousand Four Hundred Six (91,406) fully paid and nonassessable shares of Common Stock, $.001 par value, of LIGAND. The term "Common Stock" shall mean the aforementioned Common Stock of LIGAND together with any other equity securities that may be issued by LIGAND in connection therewith or in substitution therefor as provided herein. The purchase price per share for such shares of Common Stock shall be equal to $10.00 as appropriately adjusted pursuant to Section 9 and Section 10 hereof (the "Exercise Price").

For purposes of this Warrant, (a) "Acceleration Event" means the occurrence of any of the following events: (i) LIGAND shall, or shall agree to, merge or consolidate with any other corporation as a result of which the stockholders of LIGAND own less than a majority of the voting stock of the surviving corporation immediately following such consolidation or merger; (ii) LIGAND shall, or shall agree to, be acquired (by merger or otherwise) by any unaffiliated person (including any individual, partnership, joint venture, corporation, trust or group thereof); (iii) LIGAND shall, or shall agree to, sell, lease, transfer or otherwise dispose of all or substantially all of its assets to any unaffiliated person; or (iv) any "person" or "group" (within the meaning of Section 13(d) and Section 14(d) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")), shall announce the commencement of a bona fide tender offer or exchange offer in accordance with the rules and regulations of the Exchange Act to purchase or acquire securities in LIGAND, such that after such purchase or acquisition, the acquiror "beneficially owns" or would "beneficially own" (as defined in Rule 13d-3 under the Exchange Act) securities of LIGAND representing 30% or more of the combined voting power of LIGAND's then outstanding securities having power to vote in the election of directors; (b) "Acceleration Date" means the first date upon which an Acceleration Event occurs, provided that, if approval of the shareholders of LIGAND is required in connection with such Acceleration Event, Acceleration Date means the date of such shareholder

approval; and (c) "Closing Price" means the closing price per share of the Common Stock on the principal national securities exchange on which the Common Stock is listed or admitted to trading or, if not listed or traded on any such exchange, on the National Association of Securities Dealers Automated Quotation System ("Nasdaq") National Market System ("Nasdaq National Market"), or if not listed or traded on any such exchange or system, the average of the last bid and offer price per share on the Nasdaq over-the-counter system or, if such quotations are not available, the fair market value as reasonably determined by the Board of Directors of LIGAND or any committee of such Board. Other capitalized terms used herein but not defined herein shall have the meanings given such terms in the Purchase Agreement.

The number of shares of Common Stock to be received upon the exercise of this Warrant and the Exercise Price are subject to adjustment from time to time as hereinafter set forth. The shares of Common Stock deliverable upon such exercise, as adjusted from time to time, are hereinafter sometimes referred to as "Warrant Shares."

1. Exercise of Warrant.

(a) This Warrant may be exercised in whole or in increments of one hundred (100) shares (unless the Warrant is exercisable for a lesser number of shares in which case the Warrant may be exercised only in whole), at any time or from time to time, during the Exercise Period by presentation and surrender thereof to LIGAND, at its offices designated in Section 17 hereof, with the Purchase Form attached hereto duly executed and accompanied by cash or a certified or official bank check drawn to the order of "LIGAND PHARMACEUTICALS INCORPORATED" in the amount of the Exercise Price multiplied by the number of Warrant Shares specified in such form. If this Warrant should be exercised in part only, LIGAND shall, upon surrender of this Warrant, execute and deliver a new Warrant evidencing the rights of the Holder thereof to purchase the balance of the Warrant Shares purchasable hereunder. Upon

receipt by LIGAND during the Exercise Period of this Warrant and such Purchase Form, in proper form for exercise, together with proper payment of the Exercise Price, at such office, the Holder shall be deemed to be the holder of record of the number of Warrant Shares specified in such form, provided, however, that if the date of such receipt by LIGAND is a date on which the stock transfer books of LIGAND are closed, such person shall be deemed to have become the record holder of such shares on the next succeeding business day on which the stock transfer books of LIGAND are open. LIGAND shall pay any and all documentary, stamp or similar issue or transfer taxes payable in respect of the issue or delivery of such Warrant Shares. Any new or substitute Warrant issued under this Section 1 or any other provision of this Warrant shall be dated the date of this Warrant.

(b) Each certificate representing any Warrant Shares issued upon exercise of this Warrant (unless such Warrant Shares have been registered pursuant to the Twelfth Addendum to Registration Rights Agreement by and among LIGAND and the other parties named therein, as amended from time to time (the "Rights Agreement")) shall be endorsed with a legend in substantially the following form:

THE SECURITIES EVIDENCED BY THIS CERTIFICATE HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND MAY NOT BE OFFERED, SOLD, TRANSFERRED, ASSIGNED OR HYPOTHECATED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT UNDER SAID ACT WITH RESPECT TO THE SECURITIES OR UNLESS LIGAND PHARMACEUTICALS INCORPORATED RECEIVES AN OPINION OF COUNSEL FOR THE HOLDER OF SUCH SECURITIES SATISFACTORY TO LIGAND PHARMACEUTICALS, INCORPORATED STATING THAT SUCH OFFER, SALE, TRANSFER, ASSIGNMENT OR HYPOTHECATION IS EXEMPT FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.

2. Right To Exchange Warrant.

(a) The Holder shall have the right to require LIGAND to exchange this Warrant (the "Exchange Right") (subject to the availability of such Exchange Right pursuant to the Securities Act of 1933, as amended (the "Act") and the rules and regulations thereunder), in whole or in increments of one hundred (100) shares (unless the Warrant is exercisable for a lesser number of shares in which case the Warrant may be exchanged only in whole), at any time during the

Exercise Period, for shares of Common Stock as provided for in this Section 2. Upon exercise of the Exchange Right, LIGAND shall deliver to the Holder (without payment by the Holder of any Exercise Price) the number of shares of Common Stock calculated as follows:

$$X = \frac{Y(A-B)}{A}$$

Where: X = the number of shares of Common Stock to be issued to the Holder upon the exercise of the Exchange Right.

Y = the number of Warrant Shares for which exchange has been requested.

A = the Closing Price for the trading day immediately preceding the receipt of the Warrant and the Purchase Form as provided in Section 2(b).

B = the Exercise Price for the Warrant Shares in effect immediately prior to the exercise of the Exchange Right.

(b) The Exchange Right may be exercised by the Holder, at any time or from time to time, on any Business Day by delivering this Warrant and the Purchase Form attached hereto to LIGAND at its offices designated in Section 17 hereof, and specifying that the Holder is exercising the Exchange Right to acquire the number of shares of Common Stock then issuable upon such exchange pursuant to Section 2(a). If this Warrant should be exchanged in part only, LIGAND shall, upon surrender of this Warrant, execute and deliver a new Warrant evidencing the rights of the Holder thereof to purchase the balance of the Warrant Shares purchasable hereunder. Upon receipt by LIGAND during the Exercise Period of this Warrant and such Purchase Form, in proper form for exercise, at such office, the Holder shall be deemed to be the holder of record of the number of Warrant Shares issuable upon exercise of the Exchange Right as calculated pursuant to Section 2(a), provided, however, that if the date of such receipt by LIGAND is a date on which the stock transfer books of LIGAND are closed, such person shall be deemed to have become the record holder of such shares on the next succeeding Business Day on which the stock transfer books of LIGAND are open. LIGAND shall pay any and all documentary, stamp or similar issue or transfer taxes payable in respect of the issue or delivery of such Warrant Shares.

(c) No fractional shares of Common Stock shall be issued to the Holder in connection with the exchange of this Warrant pursuant to this Section 2. Instead of any fractional shares of Common Stock that would otherwise be issuable to the Holder, LIGAND shall pay to the Holder a cash adjustment in respect of such fractional interest in an amount equal to that fractional interest multiplied by the Closing Price for the trading day immediately preceding the receipt of this Warrant and the Purchase Form as provided in Section 2(b).

3. Warrant Register. This Warrant shall be registered in a register (the "Warrant Register") to be maintained by LIGAND at its offices in the name of the record holder set forth above. LIGAND may deem and treat the registered Holder of this Warrant as the absolute owner thereof (notwithstanding any notation of ownership or other writing hereon made by anyone), for the purpose of any exercise hereof or any distribution to the Holder hereof and for all other purposes, and LIGAND shall not be affected by any notice to the contrary.

4. Reservation of Shares. LIGAND hereby agrees that at all times there shall be reserved for issuance and delivery upon exercise of this Warrant all shares of its Common Stock or other shares of capital stock of LIGAND from time to time issuable upon exercise of this Warrant. All such shares shall be duly authorized and when issued upon such exercise shall be validly issued, fully paid and nonassessable, free and clear of all liens, security interests, charges and other

encumbrances or restrictions on sale granted by LIGAND and free and clear of all preemptive rights granted by LIGAND.

Before taking any action that would cause a reduction pursuant to the

provisions hereof of the Exercise Price below the then par value (if any) of the Warrant Shares issuable upon exercise of this Warrant, LIGAND shall take any corporate action that may, in the opinion of its counsel, be necessary in order that LIGAND may validly and legally issue fully paid and nonassessable Warrant Shares at the initial Exercise Price as so adjusted.

5. Transfer of the Warrant and Warrant Shares.

(a) Neither this Warrant nor any of the Warrant Shares nor any interest in either may be offered, sold, assigned, pledged, hypothecated, encumbered or in any other manner transferred or disposed of, in whole or in part, except in accordance with Section 6 hereof and in compliance with applicable United States federal and state securities laws, the securities laws of other applicable jurisdictions, and the terms and conditions of the Purchase Agreement and hereof. Except as provided below, each Warrant shall bear the following legend:

NEITHER THIS WARRANT NOR ANY OF THE SECURITIES ISSUABLE HEREUNDER HAS BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, AND MAY NOT BE OFFERED, SOLD, TRANSFERRED, ASSIGNED OR HYPOTHECATED IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT UNDER SAID ACT WITH RESPECT TO THE SECURITIES OR UNLESS LIGAND PHARMACEUTICALS INCORPORATED RECEIVES AN OPINION OF COUNSEL FOR THE HOLDER OF THIS WARRANT SATISFACTORY TO LIGAND PHARMACEUTICALS INCORPORATED, STATING THAT SUCH OFFER, SALE, TRANSFER, ASSIGNMENT OR HYPOTHECATION IS EXEMPT FROM THE REGISTRATION AND PROSPECTUS DELIVERY REQUIREMENTS OF SAID ACT.

Notwithstanding the foregoing, the Holder may require LIGAND to issue a Warrant without the legend set forth above in substitution for a legended Warrant if either (i) the sale, transfer or other disposition of such Warrant is registered under the Act and applicable securities laws or (ii) the Holder has received an opinion of counsel satisfactory to LIGAND that such registration is not required with respect to such Warrant. The provisions of this Section 5 shall be binding upon all subsequent holders of this Warrant. No transfer or assignment of this Warrant may be made except in accordance with the provisions of Section 6 hereof.

(b) The original offering and sale of this Warrant was intended to be exempt from registration under the Act by virtue of Section 4(2) of the Act and the provisions of Regulation D promulgated under the Act. LIGAND is not under any obligation to register this Warrant or the Warrant Shares other than as provided in the Rights Agreement.

(c) This Warrant and the Warrant Shares may not be sold, transferred or otherwise disposed of unless (i) the sale, transfer or other disposition of this Warrant or the Warrant Shares, as the case may be, are registered under the Act and applicable securities laws or (ii) in the opinion of counsel satisfactory to LIGAND, an exemption from the registration

requirements of the Act and such securities laws is available, and in the absence of an effective registration statement covering such securities or an available exemption from registration under the Act, this Warrant and the Warrant Shares must be held indefinitely.

6. Exchange, Transfer or Assignment of Warrant.

(a) Subject to the provisions of Section 5 hereof, this Warrant may be assigned or transferred, at the option of the Holder but only to an accredited investor within the meaning of Rule 501(a) of Regulation D, upon surrender of this Warrant to LIGAND, with the Warrant Assignment Form attached hereto duly executed and information in such form as reasonably requested by LIGAND substantiating such assignee's status as an accredited investor accompanied by funds sufficient to pay any transfer tax. LIGAND shall execute and deliver a new Warrant in the name of the assignee named in such instrument of assignment, and this Warrant shall promptly be canceled. LIGAND shall not be required to issue any Warrant to any assignee other than an accredited investor.

(b) This Warrant may not be divided or exchanged for other Warrants of denominations exercisable for less than one hundred (100) Warrant Shares.

(c) Any transfer or assignment of this Warrant shall be without charge (other than the cost of any transfer tax) to the Holder and any new Warrant issued pursuant to this Section 6 shall be dated the date hereof. The term

"Warrant" as used herein includes any new Warrant issued pursuant to this Section or Sections 1, 2, 5 or 7 hereof.

7. Lost, Mutilated or Missing Warrant. Upon receipt by LIGAND of evidence satisfactory to it of the loss, theft, destruction or mutilation of this Warrant, and (in the case of loss, theft or destruction) of satisfactory indemnification, and upon surrender and cancellation of this Warrant, if mutilated, LIGAND shall authenticate and deliver a new Warrant of like tenor and date.

8. Rights of the Holder. The Holder shall not, by virtue hereof, be entitled to any rights of a shareholder in LIGAND, either at law or in equity, and the rights of the Holder are limited to those expressed in this Warrant.

9. Anti-Dilution Provision. The Exercise Price and the number of Warrant Shares that may be purchased upon the exercise hereof shall be subject to change or adjustment as follows:

(a) Stock Dividends and Stock Splits. If at any time after the date hereof and before 5:00 p.m., San Diego time, on the last day of the Exercise Period, (i) LIGAND shall fix a record date for the issuance of any stock dividend payable in shares of Common Stock or (ii) the number of shares of Common Stock shall have been increased by a subdivision or split-up of shares of Common Stock, then, on the record date fixed for the determination of holders of Common Stock entitled to receive such dividend or immediately after the effective date of such subdivision or split-up, as the case may be, the number of shares to be delivered upon exercise of this Warrant shall be appropriately increased so that the Holder thereafter shall be entitled to receive the number of shares of Common Stock that the Holder would have owned immediately

following such action had this Warrant been exercised immediately prior thereto, and the Exercise Price shall be appropriately decreased.

(b) Combination of Stock. If at any time after the date hereof and before 5:00 p.m., San Diego time, on the last day of the Exercise Period, the number of shares of Common Stock outstanding shall have been decreased by a combination of the outstanding shares of Common Stock, then, immediately after the effective date of such combination, the number of shares of Common Stock to be delivered upon exercise of this Warrant shall be appropriately decreased so that the Holder thereafter shall be entitled to receive the number of shares of Common Stock that the Holder would have owned immediately following such action had this Warrant been exercised immediately prior thereto, and the Exercise Price shall be appropriately increased.

(c) Reorganization, etc. If at any time after the date hereof and before 5:00 p.m., San Diego time, on the last day of the Exercise Period, any capital reorganization of LIGAND, or any reclassification of the Common Stock, or any consolidation of LIGAND with or merger of LIGAND with or into any other person or entity or any sale, lease or other transfer of all or substantially all of the assets of LIGAND to any other person or entity shall be effected in such a way that upon consummation of such transaction, the holders of Common Stock shall be entitled to receive stock, securities or assets with respect to or in exchange for Common Stock, then, upon exercise of this Warrant in accordance with Section 1 hereof, the Holder shall have the right to receive the kind and amount of stock, securities or assets receivable upon such reorganization, reclassification, consolidation, merger or sale, lease or other transfer by a holder of the number of shares of Common Stock that the Holder would have been entitled to receive upon exercise of this Warrant pursuant to Section 1 hereof had this Warrant been exercised immediately before such reorganization, reclassification, consolidation, merger or sale, lease or other transfer, subject to adjustments that shall be as nearly equivalent as may be practicable to the adjustments provided for in this Section 9.

(d) Rights Offering. If LIGAND at any time after the date of issuance hereof and before 5:00 p.m., San Diego time, on the last day of the Exercise Period, shall issue or sell or fix a record date for the issuance of rights, options, warrants or convertible or exchangeable securities to all holders of Common Stock entitling them to subscribe for or purchase Common Stock or securities convertible into Common Stock, in any such case, at a price per share (or having a conversion price per share) that, together with the value (if for

consideration other than cash, as determined in good faith by the Board of Directors of LIGAND) of any consideration paid for any such rights, options, warrants, or convertible or exchangeable securities, is greater than the Exercise Price and less than the Closing Price on the date of such issuance or sale or on such a record date then, immediately after the date of such issuance or sale, or on such record date, the number of shares to be delivered upon exercise of this Warrant shall be appropriately increased so that the Holder thereafter, during the Exercise Period, will be entitled to receive the number of shares of Common Stock determined by multiplying the number of shares the Holder would have been entitled to receive immediately before the date of such issuance or sale or such record date by a fraction, the denominator of which will be the number shares of Common Stock outstanding on such date plus the number of shares of Common Stock that the aggregate offering price of the total number of shares so offered for subscription or purchase (or the aggregate

initial conversion price of the convertible securities so offered) would purchase at such Closing Price, and the numerator of which will be the number of shares of Common Stock outstanding on such date plus the number of shares of Common Stock offered for subscription or purchase (or into which the convertible securities so offered are initially convertible), and the exercise price shall be appropriately adjusted. The time of occurrence of an event giving rise to an adjustment pursuant to this Section 9(d) shall, in the case of a dividend, be the record date and shall, in the case of an issuance or sale, be the date of such issuance or sale.

(e) Special Dividends. If LIGAND at any time after the date of issuance of this Warrant and before 5:00 p.m., San Diego time, on the last day of the Exercise Period shall distribute to all holders of its Common Stock cash, debt securities or other assets (including evidences of indebtedness), except to the extent paid out of retained or accumulated earnings, the Exercise Price will be adjusted so that immediately following the date fixed by LIGAND as the record date in respect of such issuance it shall equal the price determined by multiplying the Exercise Price in effect immediately prior to the close of business on the record date for the determination of the shareholders entitled to receive such dividend by a fraction, the numerator of which shall be the Closing Price on such record date less the then fair market value as determined by the Board of Directors of LIGAND, whose determination shall be conclusive, of the portion of the securities or assets distributed applicable to one share of Common Stock and the denominator of which shall be such Closing Price. Such adjustment shall become effective on such record date.

(f) No Adjustments to Exercise Price. No adjustment in the Exercise Price in accordance with the provisions of subsections 10(a), (b), (c), (d) or (e) above need be made if such adjustment would amount to a change in such Exercise Price of less than $0.01; provided, however, that the amount by which any adjustment is not made by reason of the provisions of this section shall be carried forward and taken into account at the time of any subsequent adjustment in the Exercise Price.

(g) Fractional Shares. No fractional shares of Common Stock or scrip shall be issued to the Holder in connection with the exercise of this Warrant. Instead of any fractional shares of Common Stock that would otherwise be issuable to the Holder, LIGAND shall pay to the Holder a cash adjustment in respect of such fractional interest in an amount equal to that fractional interest multiplied by the Closing Price on the date of exercise.

(h) Definition of Common Stock. For purposes of this Section 9, the term "Common Stock" shall mean (i) the class of stock designated as the Common Stock of LIGAND on the date hereof, or (ii) any other classes of stock resulting from successive changes or reclassifications of such shares consisting solely of changes in par value or from par value to no par value, or from no par value to par value.

10. Notices of Certain Events.

(a) If at any time after the date hereof and before the expiration of the Exercise Period:

(i) LIGAND authorizes the issuance to all holders of its Common Stock of rights, options or warrants to subscribe for or purchase shares of its Common Stock or any other subscription rights, options or warrants; or

(ii) LIGAND authorizes the distribution to all holders of its Common Stock of evidences of its indebtedness or assets (other than cash dividends or distributions payable out of retained earnings or stock dividends); or

(iii) there shall be any capital reorganization of LIGAND or reclassification of the Common Stock (other than a change in par value of the Common Stock or an increase in the authorized capital stock of LIGAND not involving the issuance of any shares thereof) or any consolidation or merger to which LIGAND is a party (other than a consolidation or merger in which LIGAND is the continuing corporation and that does not result in any reclassification or change in the Common Stock outstanding) or a conveyance, lease or transfer of all or substantially all of the properties and assets of LIGAND (other than the granting of a security interest); or

(iv) there shall be any voluntary or involuntary dissolution, liquidation or winding-up of LIGAND; or

(v) there shall be any other event that would result in an adjustment pursuant to Section 9 hereof in the Exercise Price or the number of Warrant Shares that may be purchased upon the exercise hereof;

LIGAND shall cause to be mailed or delivered to the Holder, (A) at least twenty (20) days (or ten (10) days in any case specified in clauses (i) or (ii) above) before the applicable record or effective date hereinafter specified or (B) on the date on which any case specified in clauses (i) through (v) above is publicly announced, whichever is later, a notice stating (A) the date as of which the holders of Common Stock of record entitled to receive any such rights, options, warrants or distributions is to be determined, or (B) the date on which any such reorganization, reclassification, consolidation, merger, conveyance, transfer, dissolution, liquidation or winding-up is expected to become effective, and the date as of which it is expected that holders of Common Stock of record shall be entitled to exchange their shares of Common Stock for securities or other property, if any, deliverable upon such reorganization, reclassification, consolidation, merger, conveyance, transfer, dissolution, liquidation or winding-up.

(b) LIGAND shall (i) at least twenty (20) days before the occurrence of any Acceleration Event (unless the occurrence of that Acceleration Event is beyond its control, in which case, LIGAND shall as soon as practicable) or (ii) on the date on which any such Acceleration Event is publicly announced, whichever is later, cause to be mailed or delivered to the Holder a notice describing in reasonable detail such Acceleration Event and informing the Holder that Warrant may be exercised by the Holder thereof.

(c) Any failure by LIGAND to provide notice to the Holder in accordance with this Section 10 shall not affect the legality or validity of any such distribution, right, option, warrant,

consolidation, merger, conveyance, lease, transfer, dissolution, liquidation or winding-up or the vote upon any such action.

11. Officer's Certificate. Whenever the number of Warrant Shares that may be purchased upon exercise of this Warrant is adjusted as required by the provisions of this Warrant, LIGAND shall forthwith file in the custody of its Secretary or an Assistant Secretary an officer's certificate showing the adjusted number of Warrant Shares that may be purchased on exercise of this Warrant and the adjusted Exercise Price, determined as herein provided, setting forth in reasonable detail the facts requiring such adjustment and the manner of computing such adjustment. Each such officer's certificate shall be made available at all reasonable times for inspection by the Holder. LIGAND shall, forthwith after each such adjustment, cause a copy of such certificate to be mailed to the Holder.

12. Listing of Warrant Shares. The Warrant Shares, when registered pursuant to the Rights Agreement or otherwise tradeable under Rule 144 of the Act, shall

be listed or admitted to trading on either a national securities exchange or the Nasdaq National Market consistent with the shares of Common Stock then outstanding at the time of issuance of the Warrant Shares.

13. Representations of Holder.

The Holder hereby represents, covenants and acknowledges to LIGAND that:

(a) this Warrant and the Warrant Shares are "restricted securities" as such term is used in the rules and regulations under the Act and that such securities have not been and will not be registered under the Act or any state securities law (unless such Warrant Shares have been registered pursuant to the Rights Agreement), and that such securities must be held indefinitely unless a transfer can be made pursuant to appropriate exemptions;

(b) the Holder has read, and fully understands, the terms of this Warrant set forth on its face and the attachments hereto, including the restrictions on transfer contained herein;

(c) the Holder is purchasing for investment for its own account and not with a view to or for sale in connection with any distribution of this Warrant or the Warrant Shares and it has no intention of selling such securities in a public distribution in violation of the federal securities laws or any applicable state securities laws; provided that nothing contained herein will prevent Holder from transferring such securities in compliance with the terms of this Warrant and the applicable federal and state securities laws;

(d) the Holder is an "accredited investor" within the meaning of paragraph (a) of Rule 501 of Regulation D promulgated by the Securities and Exchange Commission (the "Commission") and an "excluded purchaser" within the meaning of Section 25102(f) of the California Corporate Securities Law of 1968; and

(e) the Holder (i) has received all information the Holder has requested from LIGAND and considers necessary or appropriate for deciding whether to acquire this Warrant, (ii) has had an opportunity to ask questions and receive answers from LIGAND regarding the

terms and conditions of this Warrant and to obtain any additional information necessary to verify the accuracy of the information given to the Holder, and (iii) has such knowledge and experience in financial and business matters such that the Holder is capable of evaluating the merits and risks of the investment in this Warrant.

14. Successors. All the provisions of this Warrant by or for the benefit of LIGAND or the Holder shall bind and inure to the benefit of their respective successors, assignees, heirs and personal representatives.

15. Headings. The headings of sections of this Warrant have been inserted for convenience of reference only, are not to be considered a part hereof and shall in no way modify or restrict any of the terms or provisions hereof.

16. Amendments. This Warrant may be amended by the written consent of LIGAND and the Holder hereof.

17. Notices. All notices, requests and other communications to LIGAND or Holder hereunder shall be in writing (including telecopy or similar electronic transmissions), shall refer specifically to this Warrant and shall be personally delivered or sent by telecopy or other electronic facsimile transmission, by overnight delivery with a nationally recognized overnight delivery service or by registered mail or certified mail, return receipt requested, postage prepaid, in each case to the respective address specified below (or to such address as may be specified in writing to the other party hereto):

(a) If to LIGAND, to:

Ligand Pharmaceuticals Incorporated
10275 Science Center Drive
San Diego, CA 92121
Attention: President

with a copy to the attention of General Counsel

(b) If to HOLDER, to the address set forth in the Warrant Register that shall be maintained by LIGAND in accordance with Section 3 hereof.

Any notice or communication given in conformity with this Section 17 shall be deemed to be effective when received by the addressee, if delivered by hand, one (1) day after deposit with a nationally recognized overnight delivery service and three (3) days after mailing, if mailed.

18. Governing Law. This Warrant shall be governed by and construed in accordance with the laws of the State of California, as applied to contracts made and performed entirely within the State of California.

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IN WITNESS WHEREOF, LIGAND has duly caused this Warrant to be signed and attested by its duly authorized officers and to be dated as of November 22, 1999.

LIGAND PHARMACEUTICALS INCORPORATED

/s/Paul V. Maier

By: Paul V. Maier

Title: Senior Vice President, Chief Financial Officer

Attest: /s/William L. Respess
- ---
By: William L. Respess

Title: Senior Vice President, General Counsel, Government Relations

ACCEPTED AND AGREED TO BY:

ELAN INTERNATIONAL SERVICES, LTD.

/s/Kevin Insley
- ---
By: Kevin Insley

Title: President & CFO

[SIGNATURE PAGE TO SERIES X WARRANT]

PURCHASE FORM

Dated:_____

The undersigned hereby irrevocably exercises the attached Warrant to purchase _____ shares of LIGAND Common Stock and (i) herewith either (a) makes payment of $_____ in payment of the Exercise Price thereof on the terms and conditions specified in the attached Warrant Certificate or (b) if the undersigned elects pursuant to Section 2 of the attached Warrant to convert such Warrant into LIGAND Common Stock, the undersigned exercises the attached Warrant by exchange under the terms of Section 2, (ii) surrenders the attached Warrant Certificate and all right, title

and interest therein to LIGAND and (iii) directs that the Warrant Shares deliverable upon the exercise of such Warrant and cash payment in respect of fractional Warrant Shares, if any, and any unexercised Warrant be registered (in the case of such Warrants and Warrant Shares) in the name and at the address specified below and delivered thereto.

Signature:

Name:
(Please Print)

Address:

City, Sate and Zip Code:

Taxpayer Identification or Social Security Number:

Any unexercised Warrant Shares evidenced by the attached Warrant Certificate are to be issued to:

Name:
(Please Print)

Address:

City, Sate and Zip Code:

Taxpayer Identification or Social Security Number:

NOTE: THE ABOVE SIGNATURE MUST CORRESPOND WITH THE NAME AS WRITTEN UPON THE FACE OF THE ATTACHED WARRANT IN EVERY PARTICULAR, WITHOUT ALTERATION OR ENLARGEMENT OR ANY CHANGE WHATSOEVER.

WARRANT ASSIGNMENT FORM

FOR VALUE RECEIVED and in compliance with the provisions of Sections 5 and 6 of the attached Warrant, _____ hereby sells, assigns and transfers to:

Name:
(Please Print)

Address:

City, Sate and Zip Code:

Taxpayer Identification or Social Security Number:

its right to purchase up to _____ Warrant Shares represented by the attached Warrant and does hereby irrevocably constitute and appoint _____ attorney to transfer said Warrant on the books of LIGAND, with full power of substitution in the premises.

Dated:_____ _____
Signature of registered holder

NOTE: THE ABOVE SIGNATURE MUST CORRESPOND WITH THE NAME AS WRITTEN UPON THE FACE OF THE ATTACHED WARRANT IN EVERY PARTICULAR, WITHOUT ALTERATION OR ENLARGEMENT OR ANY CHANGE WHATSOEVER.

EXHIBIT 10.218

ROYALTY STREAM PURCHASE AGREEMENT

AMONG

PHARMACEUTICAL PARTNERS, L.L.C.

BIOVENTURE INVESTMENTS, Kft

PHARMACEUTICAL ROYALTIES, L.L.C.

and

SERAGEN, INC.

LIGAND PHARMACEUTICALS INCORPORATED

Dated as of December 31, 1999

*** Certain confidential portions of this Exhibit were omitted by means of blackout of the text (the "Mark"). This Exhibit has been filed separately with the Secretary of the Commission without the Mark pursuant to the Company's Application Requesting Confidential Treatment under Rule 24b-2 under the 1934 Act.

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ROYALTY STREAM PURCHASE AGREEMENT

AGREEMENT dated as of December 31, 1999 among Seragen, Inc., a Delaware corporation ("Seller"), with respect to Article IX, Ligand Pharmaceuticals Incorporated, a Delaware corporation ("Ligand"), as guarantor of Seller's obligations, Pharmaceutical Partners, L.L.C. , a Delaware limited liability company ("Pharma Partners"), Bioventure Investments, Kft, an affiliate of Pharma Partners ("Bioventure"), and Pharmaceutical Royalties, LLC, an affiliate of Pharma Partners ("Pharma Royalties"), as assignees. Bioventure and Pharma Royalties are hereinafter collectively referred to as the "Pharma Affiliates". Pharma Partners and the Pharma Affiliates are collectively referred to hereinafter as "Buyer".

W I T N E S S E T H:

WHEREAS, Buyer desires to purchase certain assets of Seller from Seller, and Seller desires to sell, assign and transfer such assets to Buyer, upon the terms and subject to the conditions hereinafter set forth; and

WHEREAS, Buyer desires that Ligand unconditionally guaranty the obligations of Seller set forth in this Agreement, and Ligand, in order to induce Buyer to enter into this Agreement, agrees to such guaranty, upon the terms and subject to the conditions hereinafter set forth.

NOW, THEREFORE, in consideration of the foregoing and the representations, warranties, covenants and agreements herein contained, the parties hereto agree as follows:

ARTICLE I

DEFINITIONS

1.01 Definitions. The following terms, as used herein, have the following meanings:

"Affiliate" means with respect to any Person, any Person directly or indirectly controlling, controlled by or under common control with such other Person.

"Closing" has the meaning set forth in Section 2.01.

"Beth Israel Agreement" means the License and Royalty Agreement between Beth Israel Hospital Association ("Beth Israel") and Seller dated as of June 1, 1990.

"Beth Israel Royalty" means ***% of the Gross Royalty less deductions therefrom permitted under the Beth Israel Agreement.

"Enabling Agreements" means the Beth Israel Agreement, the Novartis License and the Roche License.

*** Portions of this page have been omitted pursuant to a request for Confidential Treatment and filed separately with the Commission.

"Excluded Liabilities and Obligations" has the meaning set forth in Section 2.02.

"Governmental Authority" means any government, court, regulatory or administrative agency or commission, or other governmental authority, agency or instrumentality, whether federal, state or local (domestic or foreign), including, without limitation, the U.S. Patent and Trademark Office (the "PTO") and the U.S. National Institutes of Health.

"Gross Royalty" means all royalty payments made to Seller or any other Person under the Novartis License and the Roche License after January 1, 2001; provided that, for purposes of this Agreement, Gross Royalty shall not include any milestone payment made to Seller pursuant to Section 3.2 of the Roche License.

"Lien" means, with respect to any agreement or other asset, any mortgage, lien, pledge, charge, security interest or encumbrance of any kind in respect of such asset.

"Novartis License" means that License Agreement entered into between Seller and Sandoz Pharma, Ltd. executed by Seller on September 4, 1996 and by Sandoz on August 27, 1996.

"Patents" means the patents and applications in Schedule A hereto of which Seller is the exclusive licensee under the Beth Israel Agreement and which are subject to the Novartis License and the Roche License.

"Person" means an individual, corporation, partnership, association, trust or other entity or organization, but not including a government or political subdivision or any agency or instrumentality of such government or political subdivision.

"Purchase Price" has the meaning set forth in Section 2.04.

"Roche License" means that Nonexclusive Sublicense Agreement of September 8, 1999 by and between Seller on the one hand and Hoffmann-La Roche Inc. and F. Hoffmann-La Roche Ltd. on the other.

"Seragen Royalty" means ***% of the Gross Royalty.

ARTICLE II

PURCHASE AND SALE OF SERAGEN ROYALTY

2.01 Purchase and Sale. Upon the terms and subject to the conditions of this Agreement: (a) Pharma Partners agrees to cause the Pharma Affiliates to purchase from Seller, and Seller agrees to sell and transfer to the Pharma Affiliates, upon execution of this Agreement, free and clear of all Liens, the Seragen Royalty. For purposes of this Agreement, Bioventure shall purchase ***% and Pharma Royalties shall purchase ***%, respectively, of the Seragen

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Royalty. The payment of the Purchase Price by the Pharma Affiliates to Seller is sometimes hereinafter referred to as the "Closing".

(b) At the Closing, Seller shall cause to be delivered to Pharma Partners and the Pharma Affiliates:

(i).....a certified copy of the Board of Directors of Seller authorizing the Agreement and the transactions contemplated thereby; and

(ii) a receipt for the Purchase Price.

At and after the Closing, if requested by Pharma Partners, Seller will execute and deliver to Pharma Partners or the Pharma Affiliates such instruments and documents as may be reasonably requested by Pharma Partners in order to evidence the Pharma Affiliates' ownership of the Seragen Royalty, including without limitation such UCC registration forms as Pharma Partners may request.

2.02 No Assumed Obligations. Notwithstanding any provision in this Agreement or any other writing to the contrary, the Pharma Affiliates are acquiring only the Seragen Royalty and are not assuming any liability or obligation of Seller of whatever nature, whether presently in existence or arising or asserted hereafter, whether under any of the Enabling Agreements or otherwise. All such liabilities and obligations shall be retained by and remain obligations and liabilities of Seller (the "Excluded Liabilities and Obligations").

2.03 Excluded Assets. Buyer does not, by purchase of the Seragen Royalty, acquire any assets or contract rights of Seller under the Enabling Agreements except all rights, title and interest to the Seragen Royalty. Buyer acknowledges that milestone payments made to Seller pursuant to Section 3.2 of the Roche License are not included in the Seragen Royalty. Notwithstanding the foregoing in this Section 2.03, after the Closing, at the request of Pharma Partners, Seller and Pharma Partners agree to develop and make jointly in good faith an approach to the licensees under the Novartis License and the Roche License in order to facilitate the direct payment by such licensees of the Seragen Royalty to the Pharma Affiliates.

2.04 Initial Purchase Price. Upon execution and delivery of this Agreement, the Pharma Affiliates shall pay to Seller $3,250,000.00 (the "Purchase Price"). Bioventure shall make ***% of such payment and Pharma Royalties shall make ***% of such payment. The payment will be made by federal funds wire transfer at the Closing pursuant to wiring instructions received from Seller.

2.05 Contingent Purchase Price. In the circumstance where net sales (as defined in the Roche License) reported by Roche to Seller under the Roche License for any of calendar years 2001, 2002, 2003 or 2004 exceed *** , the Pharma Affiliates will make a one-time payment to Seller equal to $3,250,000.00 within thirty (30) days of receipt from Seller of an invoice therefor; provided that (a) Seller shall include with its invoice a copy (certified as true and correct by an executive officer of Seller) of all applicable documentation provided by

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Confidential Treatment and filed separately with the Commission.

Roche to Seller evidencing the amount of such net sales, (b) the Roche License remains in full force and effect and there shall have been no breach or default by Seller thereunder and Buyer shall have received a certificate signed by an executive officer of Seller to such effect and (c) the payment obligation of the Pharma Affiliates under this Section 2.05 shall not be triggered until 30 days after the date on which the Pharma Affiliates shall have received an amount equal to the Seragen Royalty for such *** net sales for the applicable calendar year. Bioventure shall make ***% of any such payment and Pharma Royalties shall make ***% of any such payment.

ARTICLE III

REPRESENTATIONS AND WARRANTIES OF SELLER

Seller hereby represents and warrants to Buyer that:

3.01 Corporate Existence and Power. Seller is a corporation duly incorporated, validly existing and in good standing under the laws of the State of Delaware, and has all corporate powers and all licenses, authorizations, consents and approvals required to carry on its business as now conducted.

3.02 Corporate Authorization. The execution, delivery and performance by Seller of this Agreement, and the consummation by Seller of the transactions contemplated hereby are within Seller's corporate powers and have been duly authorized by all necessary corporate action on the part of Seller. This Agreement has been duly executed and delivered and constitutes a valid and binding agreement of Seller.

3.03 Corporate Authorization Governmental Authorization. The execution, delivery and performance by Seller of this Agreement does not require any notice to, action or consent by or in respect of, or filing with, any Governmental Authority.

3.04 Corporate Authorization Non-Contravention. (a) The execution, delivery and performance by Seller of this Agreement does not and will not (i) contravene or conflict with the corporate charter or bylaws of Seller, (ii) contravene or conflict with or constitute a violation of any provision of any law or regulation binding upon or applicable to Seller or the Seragen Royalty which contravention, conflict or violation could reasonably be expected to have a material adverse effect on the Seragen Royalty; (iii) contravene or conflict with or constitute a violation of any judgment, injunction, order or decree binding upon or applicable to either of Seller or the Seragen Royalty which contravention, conflict or violation could reasonably be expected to have a material adverse effect on the Seragen Royalty; (iv) constitute a default under or give rise to any right of termination, cancellation or acceleration of any right or obligation of Seller or to a loss of any benefit relating to the Seragen Royalty, or (v) result in the creation or imposition of any Lien on the Seragen Royalty (except for any Lien in favor of the Buyer).

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(b) Seller has not granted, and there does not currently exist, any Lien on the Seragen Royalty, on any of the Enabling Agreements or on any amounts payable to Seller under the Novartis License or the Roche License.

3.05 No Undisclosed Material Liabilities. There are no material liabilities related to Seragen Royalty of any kind whatsoever, whether accrued, contingent, absolute, determined, determinable or otherwise, and there is no existing condition, situation or set of circumstances which could reasonably be expected to result in such a liability.

3.06 Litigation. There is no action, suit, investigation or proceeding (or any basis therefor), of which Seller has received notice, pending or, to the knowledge of Seller, threatened, before any Governmental Authority or arbitrator

that has or could materially affect the Seragen Royalty. There have been no claims made by any Person with respect to, and no actions, suits or other proceedings relating to the Seragen Royalty which could reasonably be expected to have a material adverse effect thereon.

3.07 Compliance with Laws. Seller is not in violation of, has not violated, and to the knowledge of Seller, is not under investigation with respect to and has not been threatened to be charged with or given notice of any violation of, any law, rule, ordinance or regulation, or judgment, order or decree entered by any Governmental Authority applicable to the Seragen Royalty which could reasonably be expected to have a material adverse effect thereon.

3.08 Intellectual Property. (a) Schedule A sets forth a true and complete list of the Patents specifying as to each, as applicable (i) the owner of such Patent; and (ii) the jurisdictions by or in which each Patent has issued or an application for patent has been filed, including the respective patent or application numbers.

(b) Seller has the right under the Beth Israel Agreement to procure and maintain the Patents and has taken all material measures required to protect the value of the Patents.

(c) Seller has an exclusive license to the Patents under the Beth Israel Agreement. To its knowledge, Seller, Beth Israel, and each inventor of the Patents has complied with the PTO duty of candor and good faith in dealing with the PTO, including the duty to disclose to the PTO all information known to be material to the patentability of each claim of the U.S. Patents. All assignments from each inventor to, as the case may be, the owner thereof or to a predecessor in interest to the owner thereof, have been executed and recorded with the PTO for each of the U.S. Patents.

(d) The copies of the Enabling Agreements as provided by Seller to Buyer are true and correct copies. There have been no amendments or modifications to any of the Enabling Agreements. The Gross Royalty is not subject to any claim of off-set for any other liability or obligation of Seller. Seller is in material compliance with the Beth Israel Agreement and is not in breach of its obligations with respect thereto which breach could reasonably be expected to have a material adverse effect on its rights thereunder. Roche and Novartis are, to the knowledge of Seller, in compliance with, respectively, the Roche License and the Novartis License and Seller has no reason to believe that either Roche or Novartis does not intend to comply with its obligations pursuant to the Roche License and the Novartis License, respectively, including their

respective obligations to pay royalties on products covered thereby. Except for the Roche License and the Novartis License, Seller has not granted any licenses or other rights and has no obligations to grant licenses or other rights with respect to the Patents, and, except for the Enabling Agreements, there are no other contracts, arrangements, or understandings relating to the Seragen Royalty.

(e) Seller has taken all reasonable actions under all applicable foreign jurisdictions to protect its license interests in the Patents in each such jurisdiction where such Patents are filed.

3.09 Finders' Fees. There is no investment banker, broker, finder or other intermediary which has been retained by or is authorized to act on behalf of Seller who might be entitled to any fee or commission from Buyer or any of its Affiliates upon consummation of the transactions contemplated by this Agreement.

3.10 Other Information. Neither this Agreement nor any of the exhibits and schedules appended hereto contains any untrue statement of a material fact or omits to state a material fact necessary in order to make the statements contained therein not misleading.

ARTICLE IV

REPRESENTATIONS AND WARRANTIES OF BUYER

Buyer hereby represents and warrants to Seller that:

4.01 Organization and Existence. Pharma Partners and each of the Pharma Affiliates is duly organized, validly existing and in good standing under the laws of its jurisdiction of organization and has all applicable powers and all material governmental licenses, authorizations, consents and approvals required to carry on its business as now conducted.

4.02 Corporate Authorization. The execution, delivery and performance by Buyer of this Agreement and the consummation by Buyer of the transactions contemplated hereby are within the powers of Buyer and have been duly authorized by all necessary action on the part of Buyer. This Agreement constitutes a valid and binding agreement of Buyer.

4.03 Governmental Authorization. The execution, delivery and performance by Buyer of this Agreement does not require any action by or in respect of, or filing with, any Governmental Authority.

4.04 Non-Contravention. The execution, delivery and performance by Buyer of this Agreement does not and will not (i) contravene or conflict with the organizational documents of Pharma Partners or either of the Pharma Affiliates, (ii) contravene or conflict with or constitute a violation of any provision of any law or regulation binding upon or applicable to Buyer; or (iii) contravene or conflict with or constitute a violation of any judgment, injunction, order or decree binding upon or applicable to Buyer.

4.05 Finders' Fees. There is no investment banker, broker, finder or other intermediary that has been retained by or is authorized to act on behalf of Buyer who might be

entitled to any fee or commission from Seller upon consummation of the transactions contemplated by this Agreement.

4.06 Financing. At the Closing, Bioventure will have sufficient funds available to pay ***% of the Purchase Price and Pharma Royalties will have sufficient funds available to pay ***% of the Purchase Price.

4.07 Litigation. There is no action, suit, investigation or proceeding pending against, or to the knowledge of Buyer threatened against or affecting, Buyer before any court or arbitrator or any governmental body, agency or official which in any matter challenges or seeks to prevent, enjoin, alter or materially delay the transactions contemplated hereby.

ARTICLE V

COVENANTS

Buyer and Seller agree that:

5.01 Maintenance of Enabling Agreements. (a) Seller shall exercise fully all of its rights, and comply fully with all of its obligations, under the Enabling Agreements and shall not, without Pharma Partners' prior written approval (not to be unreasonably withheld), permit any amendment or take any other action (or omit to take any action) with respect thereto which could reasonably be expected to impair the Seragen Royalty. For purposes of this Section 5.01, it shall be reasonable for Pharma Partners to withhold its approval with respect to any amendment, action or omission if, in the reasonable opinion of Pharma Partners, such amendment, action or omission could have the effect of reducing the Seragen Royalty.

(b) Without Pharma Partners' prior written approval, Seller shall not sell, transfer, assign or otherwise dispose of, or grant any Lien on, the Novartis License or the Roche License. Without Pharma Partners' prior written approval, Seller shall not sell, transfer, assign or otherwise dispose of, or grant any Lien on, the Beth Israel Agreement if such sale, transfer, assignment or disposal could have the effect of reducing the Gross Royalty payable to Seragen.

(c) Seller shall pay all maintenance or annuity fees necessary to maintain each issued patent included in the Patents in force for the full term of each such patent. Seller shall in good faith exercise reasonable judgment in the continued prosecution of each patent application included in the Patents, and of

any continuation or divisional patent application thereof. If Seller elects to abandon any patent application included within the Patents, or of any continuation or divisional patent application thereof, Seller shall notify Buyer not less than ninety (90) days prior to such action.

5.02 Confidentiality. After the Closing, Buyer and Seller will hold, and will use reasonable commercial efforts to cause their officers, directors, employees, accountants, counsel, consultants, advisors and agents to hold, in confidence, unless compelled to disclose by judicial or administrative process or unless required by law or the rules and regulations of the Securities

*** Portions of this page have been omitted pursuant to a request for Confidential Treatment and filed separately with the Commission.

and Exchange Commission or any securities exchange or trading system, all confidential documents and information concerning Buyer, Seller and the Seragen Royalty.

5.03 Public Announcement. Except as required by law or the rules and regulations of the Securities and Exchange Commission or any securities exchange or trading system, the parties agree to consult with each other before issuing any press release or making any public statement with respect to Buyer's acquisition of the Seragen Royalty. Such press release or public statement shall, to the extent possible, be a joint release.

5.04 Payment of Seragen Royalty. Within five (5) business days of a Payment Event (as defined below) Seller will remit by federal funds wire transfer (a) ***% of the Seragen Royalty to Bioventure and (b) ***% of the Seragen Royalty to Pharma Royalties. The amount of the Seragen Royalty payment shall be determined based upon the amount of the Gross Royalty. Each remittance shall be made by wire transfer pursuant to instructions received from Pharma Partners. Any payment of the Seragen Royalty which is not paid when due shall bear interest at the prime interest rate as announced by Citibank, N.A. plus ***%. By notice to Seller, Pharma Partners may change the instructions or the amounts payable hereunder to each of the Pharma Affiliates. As used herein, "Payment Event" means the receipt by Seller or any of its Affiliates of a Gross Royalty payment or, in the absence of such receipt, the making by Novartis or Roche of a Gross Royalty payment to any other Person.

5.05 Roche and Novartis Royalty Reports. Seller has the right to receive reports concerning royalties payable to Seller under the Roche and Novartis Licenses. Seller shall provide Buyer with a copy (certified by an executive officer of Seller) of each such report upon making the Seragen Royalty payment applicable thereto which reports will be subject to the provisions of Section 5.02 and applicable confidentiality provisions of the Novartis and Roche Licenses.

5.06 Roche and Novartis Audits. Seller has the right under the Roche and Novartis Licenses to perform audits relative to assuring the accuracy of reports related to royalty payments made thereunder. At Buyer's request and at Buyer's expense, Seller shall cause such audits to be conducted on the terms provided in the Roche and Novartis Licenses.

5.07 Breach of Roche or Novartis Licenses. Upon any occurrence of a breach by Roche or Novartis under the Roche and Novartis Licenses, respectively, which is not cured as provided in the applicable agreement and which affects the Seragen Royalty, at Buyer's request and Buyer's expense, using counsel selected by Buyer, Seller shall seek to enforce the applicable agreement with respect to the breach thereof. Buyer shall be entitled to control such litigation, including any counterclaim alleging invalidity of the Patents or otherwise alleging that the Novartis License or Roche License is invalid or unenforceable. Seller shall cooperate with Buyer and Buyer's counsel in such litigation including, without limitation, (a) if requested by Buyer or its counsel, Seller shall make available to Buyer and its counsel at Seller's offices all of Seller's books and records reasonably related to such litigation, including copies thereof and (b) if requested by Buyer or its counsel, Seller shall cause its officers, directors, employees and agents (i) to execute and deliver all true and correct affidavits and other documents as may be

*** Portions of this page have been omitted pursuant to a request for Confidential Treatment and filed separately with the Commission.

requested by Buyer or its counsel and (ii) to appear and testify at any proceedings relating to such litigation, including any depositions or interim appearances. All recoveries obtained by such enforcement shall be for the benefit of Buyer and, if received by Seller, shall be immediately remitted, without off-set or deduction, to the Pharma Affiliates. Notwithstanding the foregoing in this Section 5.07, if Roche or Novartis makes any claim against Seller or Ligand (whether as a counterclaim or otherwise) for damages which could result in Seller or Ligand suffering an out-of-pocket loss in the form of a damages award against Seller or Ligand in favor of Roche or Novartis, then Seller or Ligand shall be entitled to control the defense of such claim, using counsel selected by Ligand and at Seller's or Ligand's expense. In no event shall Pharma Partners or any of the Pharma Affiliates be liable for any judgment or damages awarded against Seller or Ligand in such circumstances.

ARTICLE VI

SURVIVAL; INDEMNIFICATION

6.01 Indemnification. Seller hereby indemnifies Buyer and its Affiliates against and agrees to hold each of them harmless from any and all damage, loss, liability and expense (including, without limitation, reasonable expenses of investigation and reasonable attorneys' fees and expenses in connection with any action, suit or proceeding) (collectively, "Loss") incurred or suffered by Buyer or any of its Affiliates arising out of any misrepresentation or breach of warranty, covenant or agreement made or to be performed by Seller pursuant to this Agreement, including any failure by Seller to satisfy any of the Excluded Liabilities and Obligations.

6.02 Procedures; No Waiver; Exclusivity. (a) The party seeking indemnification under Section 6.01 (the "Indemnified Party") agrees to give prompt notice to the party against whom indemnity is sought (the "Indemnifying Party") of the assertion of any claim, or the commencement of any suit, action or proceeding in respect of which indemnity may be sought under such Section; provided that the failure to give such notice shall not affect the Indemnified Party's rights hereunder except to the extent the Indemnifying Party is materially prejudiced by such failure. The Indemnifying Party may, and at the request of the Indemnified Party shall, participate in and control the defense of any such third party suit, action or proceeding at its own expense. The Indemnifying Party shall not be liable under Section 6.01 for any settlement effected without its prior consent of any claim, litigation or proceeding in respect of which indemnity may be sought hereunder; provided that such consent may not be unreasonably withheld.

(b) No investigation by Buyer of the Enabling Agreements or otherwise shall limit Buyer's rights to indemnification hereunder.

(c) After the Closing, Section 6.01 will provide the exclusive remedy for any misrepresentation, breach of warranty, covenant or other agreement or other claim arising out of this Agreement or the transactions contemplated hereby.

(d) The representations, warranties, covenants and agreements contained herein shall survive the Closing. The expiration of any term of this Agreement shall not excuse any party hereto from its liability in respect of any breach hereof prior to such expiration.

ARTICLE VII

TERM

7.01 Term. This Agreement will expire 90 days after the termination or expiration of the Roche License and the Novartis License; provided that the Pharma Affiliates shall have received all applicable Seragen Royalty payments.

7.02 Termination by Seller. This Agreement may be terminated by Seller solely in the event that Buyer fails to make timely payment of the contingent purchase price pursuant to Section 2.05 hereof, which failure is not cured within sixty (60) days of written notice given by Seller to Buyer.

ARTICLE VIII

MISCELLANEOUS

8.01 Notices. All notices, requests and other communications to either party hereunder shall be in writing (including telex, telecopy, or similar writing) and shall be given,

(a) if to Pharma Partners or either of the Pharma Affiliates, to:

c/o Pharmaceutical Partners, L.L.C.
675 Third Avenue
Suite 3000
New York, NY 10017
Attention: Pablo Legorreta
David Madden
Telecopy: (917) 368-0021

with a copy to:

Testa, Hurwitz & Thibeault, LLP
125 High Street
Boston, MA 02110
Attention: F. George Davitt
Telecopy: (617) 248-7100

(b) if to Seller, to:

Seragen, Inc.
10275 Science Center Drive
San Diego, CA 92121

Attention: General Counsel
Facsimile: (858) 550-1825

(c) if to Ligand, to:

Ligand Pharmaceuticals Incorporated
10275 Science Center Drive
San Diego, CA 92121
Attention: General Counsel
Facsimile: (858) 550-1825

or to such other address as any party may have furnished to the others in writing in accordance herewith, except that notices of change of address shall only be effective upon receipt. All notices and other communications given to any party hereto in accordance with the provisions of this Agreement shall be deemed to have been given on the date of receipt if delivered by hand or overnight courier service or sent by fax prior to 4:00 p.m. (New York time) or on the date five business days after dispatch by certified or registered mail if mailed, in each case delivered, sent or mailed (properly addressed) to such party as provided in this Section 10.01.

8.02 Amendments; No Waivers. (a) Any provisions of this Agreement may be amended or waived if, and only if, such amendment or waiver is in writing and signed, in the case of an amendment, by Pharma Partners and each of the Pharma Affiliates, Seller and, with respect to Article IX hereof, Ligand, or in the case of a waiver, by the party against whom the waiver is to be effective.

(b) No failure or delay by either party in exercising any right, power or privilege hereunder shall operate as a waiver thereof nor shall any single or partial exercise thereof preclude any other or further exercise thereof or the exercise of any other right, power or privilege. The rights and remedies herein provided shall be cumulative and not exclusive of any rights or remedies

provided by law.

8.03 Expenses. Except as otherwise provided herein, all costs and expenses incurred in connection with this Agreement shall be paid by the party incurring such cost or expense.

8.04 Successors and Assigns. The provisions of this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns. After the Closing, without limiting the generality of the foregoing, nothing herein shall prohibit or restrict Pharma Partners or any of the Pharma Affiliates from assigning any of its rights and obligations hereunder to any Affiliate of Pharma Partners or any other Person; provided that, without the consent of Seller and Ligand, no such assignment to a Person who is not an Affiliate of Pharma Partners or the Pharma Affiliates shall relieve Pharma Partners or the Pharma Affiliates from their obligations hereunder.

8.05 Governing Law; Jurisdiction. This Agreement shall be construed in accordance with and governed by the law of the State of New York. Process in any such suit, action or proceeding may be served on any party anywhere in the world, whether within or without the jurisdiction of any such court.

8.06 Counterparts; Effectiveness. This Agreement may be signed in any number of counterparts, each of which shall be an original, with the same effect as if the signatures thereto and hereto were upon the same instrument. This Agreement shall become effective when each party hereto shall have received a counterpart hereof signed by the other party hereto.

8.07 Entire Agreement. This Agreement and the Exhibits and Schedules hereto constitute the entire agreement between the parties with respect to the subject matter hereof and supersede all prior agreements, understandings and negotiations, both written and oral, between the parties with respect to the subject matter of this Agreement. No representation, inducement, promise, understanding, condition or warranty not set forth herein has been made or relied upon by either party hereto. None of this Agreement, nor any provision hereof, is intended to confer upon any Person other than the parties hereto any rights or remedies hereunder.

8.08 Captions. The captions herein are included for convenience of reference only and shall be ignored in the construction or interpretation hereof.

ARTICLE IX

GUARANTY

9.1 The Guaranty. Ligand hereby unconditionally guarantees the full and punctual performance of the obligations of Seller under this Agreement. Upon failure by the Seller to pay punctually any such amount, Ligand shall forthwith on demand pay the amount not so paid at the place and in the manner specified in this Agreement.

9.2 Guaranty Unconditional. The obligations of Ligand hereunder shall be unconditional and absolute and, without limiting the generality of the foregoing, shall not be released, discharged or otherwise affected by:

(a) any extension, renewal, settlement, compromise, waiver or release in respect of any obligation of Seller under this Agreement, by operation of law or otherwise;

(b) any modification or amendment of or supplement to this Agreement or the Enabling Agreements;

(c) any change in the corporate existence, structure or ownership of Seller, or any insolvency, bankruptcy, reorganization or other similar proceeding affecting the Seller or its assets or any resulting release or discharge of any obligation of Seller contained in this Agreement;

(d) the existence of any claim, set-off or other rights which Ligand may

have at any time against Seller;

(e) any invalidity or unenforceability relating to or against Seller for any reason of this Agreement, or any provision of applicable law or regulation purporting to prohibit the payment by Seller of the Seragen Royalty; or

(f) any other act or omission to act or delay of any kind by Seller or any other corporation or Person or any other circumstance whatsoever which might, but for the provisions of this paragraph, constitute a legal or equitable discharge of Ligand's obligations hereunder.

9.3 Discharge Only Upon Payment in Full; Reinstatement in Certain Circumstances. Ligand's obligations hereunder shall remain in full force and effect until this Agreement shall have terminated and all amounts payable by Seller under this Agreement shall have been paid in full. If any time any payment of the Seragen Royalty or any other amount payable by the Seller under this Agreement is rescinded or must be otherwise restored or returned upon the insolvency, bankruptcy or reorganization of Seller or otherwise, Ligand's obligations hereunder with respect to such payment shall be reinstated as though such payment had been due but not made at such time.

9.4 Waiver by Ligand. Ligand irrevocably waives acceptance hereof, presentment, demand, protest and any notice not provided for herein, as well as any requirement that at any time any action be taken by any corporation or Person against Seller or any other corporation or Person.

IN WITNESS WHEREOF, the parties hereto have caused this Agreement to be duly executed by their respective authorized officers as of the day and year first above written.

SERAGEN, INC.

By: /s/ William L. Respess
Name: William L. Respess
Title: Vice President, General Counsel

LIGAND PHARMACEUTICALS INCORPORATED

By: /s/ William L. Respess
Name: William L. Respess
Title: Senior Vice President, General Counsel, Government Relations

PHARMACEUTICAL PARTNERS, L.L.C.

By: /s/ David Madden
David Madden
Managing Member

BIOVENTURE INVESTMENTS, Kft

By: /s/ illegible
Name: illegible
Title: Managing Director

PHARMACEUTICAL ROYALTIES, LLC

By: PHARMACEUTICAL ROYALTIES, LLC
Managing Member

By: /s/ David Madden
David Madden
Managing Member

SCHEDULE A

PATENT MATTERS

U.S. Pat. No. 5,011,684
U.S. Pat. No. 5,336,489
U.S. Pat. No. 5,510,105
U.S. Pat. No. 5,587,162
U.S. Pat. No. 5,607,675
U.S. Pat. No. 5,674,494
U.S. Pat. No. 5,916,559
***

Australian Pat. No. 575,210
Canadian Pat. No. 1,275,951
New Zealand Pat. No. 213,983

All patents and patent applications are owned by Beth Israel Hospital Association (now known as Beth Israel Deaconess Medical Center).

*** Portions of this page have been omitted pursuant to a request for Confidential Treatment and filed separately with the Commission.

EXHIBIT 21.1

SUBSIDIARIES OF THE REGISTRANT
LIGAND PHARMACEUTICALS, INCORPORATED
LIST OF SUBSIDIARIES

<TABLE>
<CAPTION>

Name	Jurisdiction of Incorporation
<S>	<C>
Glycomed Incorporated	California
Ligand Pharmaceuticals (Canada) Incorporated	Saskatchewan, Canada
Allergan Ligand Retinoid Therapeutics, Inc.	Delaware
Ligand Pharmaceuticals International, Inc.	Delaware
Ligand JVR, Inc.	Delaware
Seragen Incorporated	Delaware
Marathon Biopharmaceuticals, Inc.	Delaware
Seragen Technology, Inc.	Delaware
Seragen Biopharmaceuticals Ltd.	Vancouver, Canada

</TABLE>

EXHIBIT 23.1

CONSENT OF ERNST & YOUNG LLP, INDEPENDENT AUDITORS

We consent to the incorporation by reference in the Registration Statements on Forms S-3 and Forms S-8 of our report dated February 22, 2000, with respect to the consolidated financial statements of Ligand Pharmaceuticals Incorporated included in its Annual Report (Form 10-K) for the year ended December 31, 1999.

ERNST & YOUNG LLP
San Diego, California
March 27, 2000

<TABLE> <S> <C>

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EXHIBIT 27.1

This schedule contains summary financial information extracted from SEC Form 10-K for the twelve months ended December 31, 1999 and is qualified in its entirety by reference to such financial statements. (in thousands except earnings per share)

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<FN>
<F1>INCLUDES BONDS, MORTGAGES AND OTHER LONG-TERM DEBT, INCLUDING CAPITALIZED LEASES.
<F2>INCLUDES ADDITIONAL PAID IN CAPITAL, OTHER ADDITIONAL CAPITAL AND RETAINED EARNINGS, APPROPRIATED AND UNAPPROPRIATED.
<F3>PER CHIEF ACCOUNTANT AT THE SEC, THIS AMOUNT EXCLUDES SALES AND G&A EXPENSES, INCLUDES COSTS AND EXPENSES APPLICABLE TO SALES AND REVENUES, AND TANGIBLE COSTS OF GOODS SOLD.
<F4>INCLUDES RESTRICTED CASH.
</FN>

</TABLE>