UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-Q

MARK ONE

[X] QUARTERLY REPORT PURSUANT TO SECTION 13 OR 15 (D) OF THE SECURITIES EXCHANGE ACT OF 1934

FOR THE QUARTERLY PERIOD ENDED MARCH 31, 1998 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 NUMBER: 0-20720

LIGAND PHARMACEUTICALS INCORPORATED
(EXACT NAME OF REGISTRANT AS SPECIFIED IN ITS CHARTER)

DELAWARE	77-0160744
(STATE OR OTHER JURISDICTION OF INCORPORATION OR ORGANIZATION)	(I.R.S. EMPLOYER IDENTIFICATION NO.)
10275 SCIENCE CENTER DRIVE SAN DIEGO, CA (ADDRESS OF PRINCIPAL EXECUTIVE OFFICES)	92121-1117 (ZIP CODE)

REGISTRANT'S TELEPHONE NUMBER, INCLUDING AREA CODE: (619) 535-7500

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 ___

As of April 30, 1998 the registrant had 38,903,699 shares of Common Stock outstanding.

LIGAND PHARMACEUTICALS INCORPORATED
QUARTERLY REPORT

FORM 10-Q

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* No information provided due to inapplicability of item.

PART I. FINANCIAL INFORMATION
ITEM 1 FINANCIAL STATEMENTS

LIGAND PHARMACEUTICALS INCORPORATED
CONSOLIDATED BALANCE SHEETS
(IN THOUSANDS, EXCEPT SHARE DATA)

<TABLE>
<CAPTION>

	March 31, 1998	December 31, 1997
	(Unaudited)	
<S>	<C>	<C>
ASSETS		
Current assets:		
Cash and cash equivalents	$ 26,054	$ 62,252
Short-term investments	35,728	20,978
Other current assets	2,042	864
Total current assets	63,824	84,094
Restricted short-term investments	2,809	3,057
Property and equipment, net	15,460	14,853
Notes receivable from officers and employees	575	559
Other assets	6,785	4,860
	$ 89,453	$ 107,423
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 4,074	$ 10,717
Accrued liabilities	4,841	5,609
Deferred revenue	2,886	2,616
Current portion of obligations under capital leases	2,723	2,753
Total current liabilities	14,524	21,695
Long-term obligations under capital leases	8,574	8,501
Convertible note	6,250	6,250
Convertible subordinated debentures	37,296	36,628
Stockholders' equity:		
Convertible preferred stock, $.001 par value; 5,000,000		

shares authorized; none issued	--	--
Common stock, $.001 par value; 80,000,000 shares authorized; 38,621,882 shares and 38,504,459 shares issued at March 31, 1998 and December 31, 1997, respectively	39	39
Paid-in capital	312,423	311,681
Adjustment for unrealized gains (losses) on available-for-sale securities	1,642	384
Accumulated deficit	(291,284)	(277,744)
	22,820	34,360
Less treasury stock, at cost (1,114 shares at March 31, 1998 and December 31, 1997)	(11)	(11)
Total stockholders' equity	22,809	34,349
	$ 89,453	$ 107,423

</TABLE>

See accompanying notes.

LIGAND PHARMACEUTICALS INCORPORATED
CONSOLIDATED STATEMENTS OF OPERATIONS
(UNAUDITED)
(IN THOUSANDS, EXCEPT PER SHARE DATA)

<TABLE>
<CAPTION>

	Three Months Ended March 31,	
	1998	1997
<S>	<C>	<C>
Revenues:		
Collaborative research and development:		
Related parties	$ --	$ 5,966
Unrelated parties	4,974	3,737
Other	92	109
	5,066	9,812
Costs and expenses:		
Research and development	14,907	16,626
Selling, general and administrative	2,769	2,319
Total operating expenses	17,676	18,945
Loss from operations	(12,610)	(9,133)
Interest income	1,052	1,069
Interest expense	(1,982)	(2,075)
Net loss	$(13,540)	$(10,139)
Basic and diluted loss per share	$ (.35)	$ (.32)
Shares used in computing net loss per share	38,565	31,994

</TABLE>

See accompanying notes.

LIGAND PHARMACEUTICALS INCORPORATED
CONSOLIDATED STATEMENTS OF CASH FLOWS
(UNAUDITED)

(IN THOUSANDS)

<TABLE>
<CAPTION>

	Three Months Ended March 31,	
	1998	1997
<S>	<C>	<C>
OPERATING ACTIVITIES		
Net loss	$(13,540)	$(10,139)
Adjustments to reconcile net loss to net cash used by operating activities:		
Depreciation and amortization	1,053	973
Amortization of notes receivable from officers and employees	50	56
Amortization of deferred compensation and consulting	--	108
Amortization of warrant subscription receivable	--	478
Accretion of debt discount	668	669
Change in operating assets and liabilities:		
Other current assets	(1,177)	(181)
Receivable from a related party	--	795
Accounts payable and accrued liabilities	(7,411)	(1,294)
Deferred revenue	270	318
Net cash used in operating activities	(20,087)	(8,217)
INVESTING ACTIVITIES		
Purchase of short-term investments	(19,878)	(10,145)
Proceeds from short-term investments	6,386	6,923
Increase in notes receivable from officers and employees	(75)	(50)
Payment of notes receivable from officers and employees	8	--
Increase in other assets	(2,234)	(3,670)
Decrease in other assets	309	30
Purchase of property and equipment	(833)	(52)
Net cash used in investing activities	(16,317)	(6,964)
FINANCING ACTIVITIES		
Principal payments on obligations under capital leases	(784)	(696)
Net change in restricted short-term investment	248	231
Net proceeds from sale of common stock	742	3,593
Net cash provided by financing activities	206	3,128
Net decrease in cash and cash equivalents	(36,198)	(12,053)
Cash and cash equivalents at beginning of period	62,252	34,830
Cash and cash equivalents at end of period	$ 26,054	$ 22,777
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION:		
Interest paid	$ 2,327	$ 2,412
SUPPLEMENTAL SCHEDULE OF NON-CASH INVESTING AND FINANCING ACTIVITIES:		
Additions to obligations under capital leases	$ 827	$ 944
Conversion of note to common stock	--	$ 3,750

</TABLE>

See accompanying notes.

LIGAND PHARMACEUTICALS INCORPORATED
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(UNAUDITED)

MARCH 31, 1998

1. BASIS OF PRESENTATION

The consolidated financial statements of Ligand Pharmaceuticals Incorporated (the "Company") for the three months ended March 31, 1998 and 1997 are

unaudited. These financial statements reflect all adjustments, consisting of only normal recurring adjustments which, in the opinion of management, are necessary to fairly present the consolidated financial position as of March 31, 1998 and the consolidated results of operations for the three months ended March 31, 1998 and 1997. The results of operations for the period ended March 31, 1998 are not necessarily indicative of the results to be expected for the year ending December 31, 1998. For more complete financial information, these financial statements, and the notes thereto, should be read in conjunction with the audited consolidated financial statements for the year ended December 31, 1997 included in the Ligand Pharmaceuticals Incorporated Form 10-K filed with the Securities and Exchange Commission.

In June 1997, the Financial Accounting Standards Board issued SFAS 130, Reporting Comprehensive Income and SFAS 131, Segment Information. Both of these standards are effective for fiscal years beginning after December 15, 1997. SFAS 130 requires that all components of comprehensive income, including net income, be reported in the financial statements in the period in which they are recognized. SFAS 130 requires the change in net unrealized gains (losses) on available-for-sale securities to be included in comprehensive income. As adjusted for this item, comprehensive net loss for the three month periods ended March 31, 1998 and 1997 are $(12.3) million and $(10.2) million respectively. SFAS 131 amends the requirements for public enterprises to report financial and descriptive information about its reportable operating segments. The Company currently operates in one business and operating segment and does not believe adoption of this standard will have a material impact on the Company's financial statements as reported.

2. NET LOSS PER SHARE

Net loss per share is computed using the weighted average number of common shares outstanding.

3. NEW COLLABORATIVE RESEARCH AGREEMENT

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 274,423 shares of Ligand Common Stock for $5.0 million ($18.22 per share, a 20 percent premium over a 15-day trading average daily closing price of the Company's stock prior to execution of the agreement) 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 percent premium if a certain research milestone is achieved and will make cash payments to Ligand if subsequent milestones are met.

The companies reached agreement on the collaboration in March 1998, however, due to required regulatory approvals the agreements were not finalized until April. Had the agreement, warrant and equity purchase closed as of March 31, 1998, Ligand's cash, short-term investments and restricted cash would have been $70.6 million.

PART I. FINANCIAL INFORMATION

ITEM 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This quarterly report may contain predictions, 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. The Company undertakes no obligation to release publicly the results of any revisions to these forward-looking statements to reflect events or circumstances arising after the date hereof.

OVERVIEW

Since January 1989, the Company has devoted substantially all of its resources

to its intracellular receptor ("IR") and Signal Transducers and Activators of Transcription ("STATs") drug discovery and development programs. The Company has been unprofitable since its inception and expects to incur substantial additional operating losses due to continued requirements for research and development, preclinical testing, clinical trials, regulatory activities, establishment of manufacturing processes and sales and marketing capabilities until the approval and commercialization of the Company's products generate sufficient revenues, expected in 1999. The Company expects that losses will fluctuate from quarter to quarter as a result of differences in the timing of expenses incurred and the revenues earned from collaborative arrangements. Some of these fluctuations may be significant. As of March 31, 1998, the Company's accumulated deficit was approximately $291.3 million.

On May 11, 1998, Ligand and Seragen, Inc., ("Seragen") announced the execution of a definitive agreement under which a wholly owned subsidiary of Ligand will merge with Seragen (the "Merger"). In addition, Ligand announced that it had signed a definitive asset purchase agreement to acquire substantially all the assets of Marathon Biopharmaceuticals, LLC ("Marathon"), which currently provides services to Seragen under a service agreement (the "Asset Purchase"). Finally, Ligand announced that it had signed an agreement with Eli Lilly and Company ("Lilly") and Seragen, to be effective upon the closing of the Merger or under certain other circumstances, under which Lilly will assign to Ligand Lilly's rights and obligations under its agreements with Seragen, including its rights to Ontak(TM) (DAB389IL-2, Interleukin-2 Fusion Protein or denileukin diftitox) (the Assignment and collectively, with the Merger and the Asset Purchase, the "Proposed Transactions").

In December 1994, the Company and Allergan, Inc. ("Allergan") formed Allergan Ligand Retinoid Therapeutics, Inc. ("ALRT") to continue the research and development activities previously conducted by the Allergan Ligand Joint Venture (the "Joint Venture"). In June 1995, the Company and ALRT completed a public offering of 3,250,000 units (the "Units") with aggregate proceeds of $32.5 million (the "ALRT Offering") and cash contributions by Allergan and the Company of $50.0 million and $17.5 million, respectively, providing for net proceeds of $94.3 million for retinoid product research and development. Each Unit consisted of one share of ALRT's callable common stock ("Callable Common Stock") and two warrants, each warrant entitling the holder to purchase one share of the Common Stock of the Company. In September 1997, the Company and Allergan exercised their respective options to purchase all of 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 $25.0 million, to holders of the Callable Common Stock in November 1997. Allergen's exercise of the Asset Purchase Option required a cash payment of $8.9 million to ALRT in November 1997, which was used by the Company to pay a portion of the Stock Purchase Option. Prior to September 1997, cash received from ALRT was recorded as contract revenue. As a result of the ALRT buyback, research expenditures incurred related to ALRT activities are no longer reimbursed, eliminating the ALRT contract revenue recognition. The buyback of ALRT was accounted for using the purchase method of accounting. The excess of the purchase price over the fair value of net assets acquired was allocated to in-process technology and written off resulting in a one time noncash charge to results of operations of $65.0 million in 1997.

RESULTS OF OPERATIONS

Three Months Ended March 31, 1998 ("1998"), as compared with Three Months Ended March 31, 1997 ("1997")

The Company had revenues of $5.1 million for 1998 compared to revenues of $9.8 million for 1997. The decrease in revenues is primarily due to the buyback of ALRT which resulted in reduced revenue recognition of $6.0 million compared

to 1997, completion of the Glaxo-Wellcome, plc ("Glaxo") and Sankyo Company Ltd. ("Sankyo") collaborations in 1997, offset by increased revenues from a new research and development collaboration with Lilly which began in November 1997. Revenues in 1998 were derived from the Company's research and development agreements with (i) Lilly of $2.5 million, (ii) SmithKline Beecham Corporation ("SmithKline Beecham") of $784,000, (iii) American Home Products Corporation ("AHP") of $705,000, (iv) Abbott Laboratories ("Abbott") of $300,000 as well as

an up-front license fee of $686,000 from Cytel Corporation ("Cytel") and product sales of Ligand (Canada) in-licensed products of $92,000. Revenues for 1997 were derived from the Company's research and development agreements with (i) ALRT of $6.0 million, (ii) AHP of $1.2 million, (iii) Sankyo of $744,000, (iv) Abbott of $540,000, (v) SmithKline Beecham of $711,000, (vi) Glaxo of $491,000 as well as from product sales of Ligand (Canada) in-licensed products of $109,000.

For 1998, research and development expenses decreased to $14.9 million from $16.6 million in 1997. These expenses decreased primarily due to completion of the research portion of the Sankyo collaboration in October 1997 offset by expansion of the Company's research, clinical and development personnel. Selling, general and administrative expenses increased to $2.8 million in 1998 from $2.3 million in 1997. The increase was primarily attributable to personnel additions and resource expansion in preparation for commercialization activities. Interest income was $1.1 million for 1998 and 1997. Interest expense decreased slightly to $2.0 million for 1998, from $2.1 million in 1997.

The Company has significant net operating loss carryforwards for federal and state income taxes which are available subject to Internal Revenue Code 382 and 383 carryforward limitations.

LIQUIDITY AND CAPITAL RESOURCES

The Company has financed its operations through private and public offerings of its equity securities, collaborative research revenues, capital and operating lease transactions, issuance of convertible notes, investment income and product sales. From inception through March 31, 1998, the Company has raised $196.5 million from sales of equity securities: $78.2 million from the Company's public offerings and an aggregate of $118.3 million from private placements and the exercise of options and warrants.

As of March 31, 1998, the Company had acquired an aggregate of $26.3 million in property, laboratory and office equipment, and $4.7 million in tenant leasehold improvements, substantially all of which has been funded through capital lease and equipment note obligations. In addition, the Company leases its office and laboratory facilities under operating leases. In July 1994, the Company entered into a long-term lease related to the construction of a new laboratory facility, which was completed and occupied in August 1995. In March 1997, the Company entered into a long-term lease, related to a second build-to-suit facility and loaned the construction partnership $3.7 million at an annual interest rate of 8.5% which will be paid back monthly over a 10-year period. The second build-to-suit facility was completed and occupied in December 1997. In February 1997, the Company signed a master lease agreement to finance future capital equipment up to $1.5 million, and in July 1997, the master lease agreement was extended to December 1998 to include up to an additional $4.5 million. Each individual schedule under the extended master lease agreement will be paid back monthly with interest over a five-year period. As of March 31, 1998, the company had $2.8 million available to finance future capital equipment.

Working capital decreased to $49.3 million as of March 31, 1998, from $62.4 million at the end of 1997. The decrease in working capital resulted from a decrease in cash due to increases in clinical trials and product development expenses in late 1997, operating expenses and semi-annual interest payments due on convertible subordinated debentures and convertible notes offset by a decrease in accrued liabilities. For the same reasons, cash and cash equivalents, short-term investments and restricted cash decreased to $64.6 million at March 31, 1998 from $86.3 million at December 31, 1997. The Company primarily invests its cash in United States government and investment grade corporate debt securities.

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 274,423 shares of Ligand Common Stock for $5.0 million ($18.22 per share, a 20 percent premium over a 15-day trading average daily closing price of the Company's stock prior to execution of the agreement) 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 percent premium if a certain research milestone is achieved and will make cash payments to Ligand if subsequent milestones are met.

The companies reached agreement on the collaboration in March 1998, however, due to required regulatory approvals the agreements were not finalized until April. Had the agreement, warrant and equity purchase closed as of March 31, 1998, Ligand's cash, short-term investments and restricted cash would have been $70.6 million.

The Company believes that its available cash, cash equivalents, marketable securities and existing sources of funding will be adequate to satisfy its anticipated capital requirements through 1999. The Company's future capital requirements will depend on many factors, including the pace of scientific progress in 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, changes in the existing collaborations, the cost of manufacturing scale-up and the effectiveness of the Company's commercialization activities.

YEAR 2000 COMPLIANCE

Many currently installed computer systems and software products are coded to accept only two digit entries in the date code field. These date code fields will need to accept four digit entries to distinguish 21st century dates from 20th century dates. As a result, many companies' software and computer systems may need to be upgraded or replaced in order to comply with such "Year 2000" requirements. Certain of the Company's internal computer systems are not year 2000 compliant, and the Company utilizes third-party equipment and software that may not be Year 2000 compliant. The Company has commenced taking actions to correct or convert such internal systems and is in the early stages of conducting an audit of its third-party suppliers as to the Year 2000 compliance of their systems. The Company does not believe that the cost of these actions will have a material adverse affect on the Company's business, financial condition or operating results. However, there can be no assurance that a failure of the Company's internal computer systems or of third-party equipment or software used by the Company, or of systems maintained by the Company's suppliers, to be Year 2000 compliant will not have a material adverse effect on the Company's business, financial condition or operating results. In addition, there can be no assurance that adverse changes in the purchasing patterns of the Company's potential customers as a result of Year 2000 issues affecting such customers will not have a material adverse effect on the Company's business, financial condition or results of operations. These expenditures may result in reduced funds available to purchase the Company's products which could have a material adverse effect on the Company's business, operating results and financial condition.

RISKS AND UNCERTAINTIES

In addition to the other business information contained herein, the following are among the factors that should also be considered carefully in evaluating Ligand, its wholly-owned subsidiaries, Glycomed Inc., Ligand (Canada) Inc. and Allergan Ligand Retinoid Therapeutics, Inc.
("Ligand" or the "Company") and its business.

Uncertainty of Product Development and Commercialization and Related Technology. Ligand was founded in 1987 and has not generated any revenues from the sale of products developed by Ligand or its collaborative partners. To achieve profitable operations, the Company, alone or with others, must successfully develop, clinically test, market and sell its products. Any products resulting from the Company's or its collaborative partners' product development efforts are not expected to be available for sale for at least several years, if at all.

The development of new pharmaceutical products is highly uncertain and subject to a number of significant risks. Potential products that appear to be promising at early stages of development may not reach the market for a number of reasons. Such reasons include the possibilities that potential products are found during preclinical testing or clinical trials to be ineffective or to cause harmful side effects, that they fail to receive necessary regulatory approvals, are difficult or uneconomical to manufacture on a large scale, fail to achieve market acceptance or are precluded from commercialization by proprietary rights

of third parties. To date, Ligand's resources have been substantially dedicated to the research and development of potential pharmaceutical products based upon its expertise in IR and STATs technologies. Even though certain pharmaceutical products act through IRs, some aspects of the Company's IR technologies have not been used to produce marketed products. In addition, the Company is 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. Most of the Company's potential products will require extensive additional development, including preclinical testing and clinical trials, as well as regulatory approvals, prior to commercialization. No assurance can be given that the Company's product development efforts will be successful, that required regulatory approvals from the FDA or equivalent foreign authorities for any indication will be obtained or that any products, if introduced, will be capable of being produced in commercial quantities at reasonable costs or will be successfully marketed. Further, the Company has no sales and only limited marketing capabilities outside Canada, and even if the Company's products in internal development are approved for

marketing, there can be no assurance that the Company will be able to develop such capabilities or successfully market such products.

History of Operating Losses; Accumulated Deficit; Future Capital Needs; Uncertainty of Additional Funding. Ligand has experienced significant operating losses since its inception in 1987. As of March 31, 1998, Ligand had an accumulated deficit of approximately $291.3 million. To date, substantially all of Ligand's revenues have consisted of amounts received under collaborative arrangements. The Company expects to incur additional losses due to continued requirements for research and development, preclinical testing, clinical trials, regulatory activities, establishment of manufacturing processes and sales and marketing capabilities until the approval and commercialization of the Company's products generate sufficient revenues, expected in 1999.

The discovery, development and commercialization of products will require the commitment of substantial resources to conduct research, preclinical testing and clinical trials, to establish pilot scale and commercial scale manufacturing processes and facilities, and to establish and develop quality control, regulatory, marketing, sales and administrative capabilities. The future capital requirements of the Company will depend on many factors, including the pace of scientific progress in its 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, changes in existing collaborations, the cost of manufacturing scale-up and the effectiveness of the Company's commercialization activities. To date, Ligand has not generated any revenue from the sales of products developed by Ligand or its collaborative partners. There can be no assurance that Ligand independently or through its collaborations will successfully develop, manufacture or market any products or ever achieve or sustain revenues or profitability from the commercialization of such products. Moreover, even if profitability is achieved, the level of that profitability cannot be accurately predicted. Ligand expects that operating results will fluctuate from quarter to quarter as a result of differences in the timing of expenses incurred and the revenues received from collaborative arrangements and other sources. Some of these fluctuations may be significant. The Company believes that its available cash, cash equivalents, marketable securities and existing sources of funding will be adequate to satisfy its anticipated capital requirements through 1999.

Glycomed's outstanding indebtedness includes $50 million principal amount of 7 1/2% Convertible Subordinated Debentures Due 2003 (the "Debentures"). There can be no assurance that Glycomed will have the funds necessary to pay the interest on and the principal of the Debentures or, if not, that it will be able to refinance the Debentures.

The Company expects that it will seek any additional capital needed to fund its operations through new collaborations, the extension of existing collaborations, or through public or private equity or debt financings. There can be no assurance that additional financing will be available on acceptable terms, if at all. Any inability of the Company to obtain additional financing or of Glycomed

to service its obligations under the Debentures could have a material adverse effect on the Company.

Uncertainties Related to Clinical Trials. Before obtaining required regulatory approvals for the commercial sale of each product under development, the Company and its collaborators must demonstrate through preclinical studies and clinical trials that such product is safe and efficacious for use. The results of preclinical studies and initial clinical trials are not necessarily predictive of results that will be obtained from large-scale clinical trials, and there can be no assurance that clinical trials of any product under development will demonstrate the safety and efficacy of such product or will result in a marketable product. The safety and efficacy of a therapeutic product under development by the Company must be supported by extensive data from clinical trials. A number of companies have suffered significant setbacks in advanced clinical trials, despite promising results in earlier trials. The failure to demonstrate adequately the safety and efficacy of a therapeutic drug under development would delay or prevent regulatory approval of the product and could have a material adverse effect on the Company. In addition, the FDA may require additional clinical trials, which could result in increased costs and significant development delays.

The rate of completion of clinical trials of the Company's potential products is dependent upon, among other factors, obtaining adequate clinical supplies and the rate of patient accrual. Patient accrual 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 planned patient enrollment in clinical trials may result in increased costs, program delays or both, which could have a material adverse effect on the Company. In addition, some of the Company's current collaborative partners have certain rights to control the planning and execution of product development and clinical programs, and there can be no assurance that such corporate partners' rights to control aspects of such programs will not impede the Company's ability to conduct

such programs in accordance with the schedules and in the manner currently contemplated by the Company for such programs. There can be no assurance that, if clinical trials are completed, the Company or its collaborative partners will submit an NDA with respect to any potential products or that any such application will be reviewed and approved by the FDA in a timely manner, if at all.

Reliance on Collaborative Relationships. The Company's strategy for the development, clinical testing, manufacturing and commercialization of certain of its potential products includes entering into collaborations with corporate partners, licensors, licensees and others. To date, Ligand has entered into drug discovery and development collaborations with Lilly, SmithKline Beecham, AHP, Abbott, Sankyo, Glaxo, Allergan and Pfizer. These collaborations provide Ligand 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, respectively. The Company's collaborative agreements allow its collaborative partners significant discretion in electing to pursue or not to pursue any development program. There can be no assurance that the Company's collaborations will continue or that the collaborations will be successful. In addition, there can be no assurance that Ligand's collaborators will not pursue alternative technologies either on their own or in collaboration with others as a means of developing drugs competitive with the types of drugs currently being developed in collaboration with Ligand, and any such action may result in the withdrawal of support and increased competition for the Company's programs. In addition, if products are approved for marketing under these programs, any revenues to Ligand from these products will be dependent on the manufacturing, marketing and sales efforts of its collaborators, which generally retain commercialization rights under the collaborative agreements. Ligand's current collaborators also generally have the right to terminate their respective collaborations under certain circumstances. If any of the Company's collaborative partners were to breach or terminate its agreements with the Company or otherwise fail to conduct its collaborative activities successfully, the development of the Company's products under such agreements would be delayed or terminated. The delay or termination of any of the collaborations could have a material adverse effect on Ligand.

There can be no assurance that disputes will not arise in the future with Ligand's collaborators, including with respect to the ownership of rights to any technology developed. For example, the Company was involved in litigation with Pfizer, which was settled in April 1996, with respect to Ligand's rights to receive milestones and royalties based on the development and commercialization of droloxifene. These and other possible disagreements between collaborators and the Company could lead to delays in the achievement of milestones or receipt of milestone payments or research revenue, to delays or interruptions in, or termination of, collaborative research, development and commercialization of certain potential products, or could require or result in litigation or arbitration, which could be time consuming and expensive and could have a material adverse effect on the Company.

No Assurance that Recently Announced Transactions Can Be Completed. On May 11, 1998, Ligand announced the Proposed Transactions. The obligations of Ligand and Seragen to consummate the Merger, the obligations of Ligand and Marathon to consummate the Asset Purchase and the obligations of Ligand and Lilly to consummate the Assignment are each subject to the satisfaction of a number of conditions, including the approval of Seragen's shareholders, the effectiveness of a Registration Statement and the accuracy of representations and warranties of each of Ligand, Seragen and Marathon at the respective closings. In addition, each of the agreements may be terminated under certain circumstances prior to the effective date of the Merger. Ligand may not consummate the Asset Purchase until the Merger is consummated. In addition, the Assignment is not effective until the Merger is consummated, or under certain other circumstances. In certain circumstances, Seragen will pay to Ligand a termination fee of $5 million plus a percentage of amounts realized in a competing transaction. There can be no assurance that all of the conditions to the obligations of the parties under the agreements will be satisfied, that the agreements will not be terminated or that the Proposed Transactions will be consummated.

Uncertainty of Patent Protection; Dependence on Proprietary Technology. The patent positions of pharmaceutical and biopharmaceutical firms, including Ligand, are uncertain and involve complex legal and technical questions for which important legal principles are largely unresolved. In addition, the coverage sought in a patent application can be significantly reduced before or after a patent is issued. This uncertain situation is also affected by revisions to the United States patent law adopted in recent years to give effect to international accords to which the United States has become a party. The extent to which such changes in law will affect the operations of Ligand cannot be ascertained. In addition, there is currently pending before Congress legislation providing for other changes to the patent law which may adversely affect pharmaceutical and biopharmaceutical firms. If such pending legislation is adopted, the extent to which such changes would affect the operations of the Company cannot be ascertained.

Ligand's success will depend in part on its ability to obtain patent protection for its technology both in the United States and other countries. A number of pharmaceutical and biotechnology companies and research and academic institutions have developed technologies, filed patent applications or received patents on various technologies that may be related to Ligand's business. Some of these patent applications, patents or technologies may conflict with Ligand's technologies or patent applications. Any such conflict could limit the scope of the patents, if any, that Ligand may be able to obtain or result in the denial of Ligand's patent applications. In addition, if patents that cover Ligand's activities are issued to other companies, there can be no assurance that Ligand would be able to obtain licenses to such patents at a reasonable cost, if at all, or be able to develop or obtain alternative technology. The Company has from time to time had, continues to have and may have in the future discussions with its current and potential collaborators regarding the scope and validity of the Company's patent and other proprietary rights to its technologies, including the Company's co- transfection assay. If a collaborator or other party were successful in having substantial patent rights of the Company determined to be invalid, it could adversely affect the ability of the Company to retain existing collaborations beyond their expiration or could where contractually permitted, encourage their termination. Such a determination could also adversely affect the Company's ability to enter into new collaborations. If any disputes should arise in the future with respect to the rights in any technology developed with a collaborator or with respect to other matters involving the collaboration,

there could be delays in the achievement of milestones or receipt of milestone payments or research revenues, or interruptions or termination of collaborative research, development and commercialization of certain potential products, and litigation or arbitration could result. Any of the foregoing matters could be time consuming and expensive and could have a material adverse effect on the Company.

Ligand owns or has exclusive rights to more than 150 currently pending patent applications in the United States relating to Ligand's technology, as well as foreign counterparts of certain of these applications in many countries. There can be no assurance that patents will issue from any of these applications or, if patents do issue, that claims allowed will be sufficient to protect Ligand's technology. In addition, Ligand is the owner or exclusive licensee of rights covered by approximately 200 worldwide patents issued or allowed to it or to The Salk Institute of Biological Studies ("The Salk Institute"), Baylor College of Medicine ("Baylor") and other licensors. Further, there can be no assurance that any patents issued to Ligand or to licensors of Ligand's technology will not be challenged, invalidated, circumvented or rendered unenforceable based on, among other things, subsequently discovered prior art, lack of entitlement to the priority of an earlier, related application, or failure to comply with the written description, best mode, enablement or other applicable requirements, or that the rights granted under any such patents will provide significant proprietary protection or commercial advantage to Ligand. The invalidation, circumvention or unenforceability of any of Ligand's patent protection could have a material adverse effect on the Company.

The commercial success of Ligand will also depend in part on Ligand's not infringing patents issued to competitors and not breaching technology licenses that cover technology used in Ligand's products. It is uncertain whether any third-party patents will require Ligand to develop alternative technology or to alter its products or processes, obtain licenses or cease certain activities. If any such licenses are required, there can be no assurance that Ligand will be able to obtain such licenses on commercially favorable terms, if at all. Failure by Ligand to obtain a license to any technology that it may require to commercialize its products could have a material adverse effect on Ligand. Litigation, which could result in substantial cost to Ligand, may also be necessary to enforce any patents issued or licensed to Ligand or to determine the scope and validity of third-party proprietary rights. There can be no assurance that Ligand's patents or those of its licensors, if issued, would be held valid by a court or that a competitor's technology or product would be found to infringe such patents. If any of its competitors have filed patent applications in the United States which claim technology also invented by Ligand, Ligand may be required to participate in interference proceedings declared by the U.S. Patent and Trademark Office ("PTO") in order to determine priority of invention and, thus, the right to a patent for the technology, which could result in substantial cost to Ligand to determine its rights.

Ligand has learned that a United States patent has been issued to, and foreign counterparts have been filed by, Hoffman LaRoche ("Roche") that include claims to a formulation of 9-cis-Retinoic acid (Panretin) and use of that compound to treat epithelial cancers. Ligand had previously filed an application which has an earlier filing date than the Roche patent and which has claims that the Company believes are broader than but overlap in part with claims under the Roche patent. Ligand is currently investigating the scope and validity of this patent to determine its impact upon the Panretin Capsules and Gel products. The PTO has informed Ligand that the overlapping claims are patentable to Ligand and initiated an interference proceeding to determine whether Ligand or Roche is entitled to a patent by having been first to invent the common subject matter. The Company cannot be assured of a favorable outcome in the interference proceeding because of factors not known at this time upon which the outcome may depend. In addition, the interference proceeding may delay the decision of the PTO regarding the Company's application with claims covering the Panretin Capsules and Gel products. While the Company believes that the Roche patent does not cover the use of Panretin Capsules and Gel to treat leukemias such as APL and sarcomas such as KS, or the treatment of skin diseases such as psoriasis, if the Company does not prevail

in the interference proceeding, the Roche patent might block the Company's use of Panretin Capsules and Gel in certain cancers, and the Company may not be able to obtain patent protection for the Panretin Capsules and Gel products.

Ligand also relies upon trade secrets, know-how, continuing technological innovations and licensing opportunities to develop and maintain its competitive position. There can be no assurance that others will not independently develop substantially equivalent proprietary information or otherwise gain access to or disclose such information regarding Ligand. It is Ligand's policy to require its employees, certain contractors, consultants, members of its Scientific Advisory Board and parties to collaborative agreements to execute confidentiality agreements upon the commencement of employment or consulting relationships or a collaboration with Ligand. There can be no assurance that these agreements will not be breached, that they will provide meaningful protection of Ligand's trade secrets or adequate remedies in the event of unauthorized use or disclosure of such information or that Ligand's trade secrets will not otherwise become known or be independently discovered by its competitors.

Lack of Manufacturing Capability; Reliance on Third-Party Manufacturers. Ligand currently has no manufacturing facilities and, accordingly, relies on third parties, including its collaborative partners, for clinical or commercial production of any compounds under consideration as products. Ligand is currently constructing and validating a cGMP pilot manufacturing capability in order to produce sufficient quantities of products for preclinical testing and initial clinical trials. If Ligand is unable to develop or contract on acceptable terms for manufacturing services, Ligand's ability to conduct preclinical testing and human clinical trials will be adversely affected, resulting in the delay of submission of products for regulatory approval and delay of initiation of new development programs, which in turn could materially impair Ligand's competitive position. Although drugs acting through IRs and STATs have been manufactured on a commercial scale by other companies, there can be no assurance that Ligand will be able to manufacture its products on a commercial scale or that such products can be manufactured by Ligand or any other party on behalf of Ligand at costs or in quantities to make commercially viable products.

Limited Sales and Marketing Capability. The creation of infrastructure to commercialize pharmaceutical products is a difficult, expensive and time-consuming process. Ligand currently has no sales and only limited marketing capability outside Canada. In Canada, Ligand has been appointed as the sole distributor of two oncology products, Proleukin, which was developed by Cetus Oncology Corporation and PHOTOFRIN, which was developed by QLT PhotoTherapeutics, Inc. To market any of its products directly, the Company will need to develop a marketing and sales force with technical expertise and distribution capability or contract with other pharmaceutical and/or health care companies with distribution systems and direct sales forces. There can be no assurance that the Company will be able to establish direct or indirect sales and distribution capabilities or be successful in gaining market acceptance for proprietary products or for other products. To the extent the Company enters into co-promotion or other licensing arrangements, any revenues received by the Company will be dependent on the efforts of third parties, and there can be no assurance that any such efforts will be successful.

Substantial Competition; Risk of Technological Obsolescence. Some of the drugs which Ligand is 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 Ligand is targeting as well as IR-related and STAT-related approaches to drug discovery and development. Many of Ligand's existing or potential competitors, particularly large pharmaceutical companies, have substantially greater financial, technical and human resources than Ligand and may be better equipped to develop, manufacture and market products. In addition, many of these companies have extensive experience in preclinical testing and human clinical trials, obtaining FDA and other regulatory approvals and manufacturing and marketing pharmaceutical products. Academic institutions, governmental agencies and other public and private research organizations are conducting research to develop technologies and products that may compete with those under development by the Company. These institutions are becoming increasingly aware of the commercial value of their findings and are becoming more active in seeking patent protection and licensing arrangements to collect royalties for the use of technology that they have developed. These institutions also may market competitive commercial products on their own or through joint ventures and will compete with the Company in recruiting highly qualified scientific personnel. Any of these companies, academic institutions, government agencies or research organizations may develop and introduce products and processes competitive with or superior to those of Ligand. The development by others of new treatment methods for those indications for which Ligand is developing products could render Ligand's products noncompetitive or obsolete.

Ligand's products under development target a broad range of markets. Ligand's competition will be determined in part by the potential indications for which Ligand's products are developed and ultimately approved by regulatory authorities. For certain of Ligand's potential products, an important factor in competition may be the timing of market introduction of Ligand's or competitors' products. Accordingly, the relative speed at which Ligand or its existing or future corporate partners can develop products, complete the clinical trials and regulatory approval processes, and supply commercial

quantities of the products to the market is expected to be an important competitive factor. Ligand expects that competition among products approved for sale will be based, among other things, on product efficacy, safety, reliability, availability, price and patent position.

Ligand's competitive position also depends upon its ability to attract and retain qualified personnel, obtain patent protection or otherwise develop proprietary products or processes, and secure sufficient capital resources.

Extensive Government Regulation; No Assurance of Regulatory Approval. The manufacturing and marketing of Ligand's products and its ongoing research and development activities are subject to and regulation for safety and efficacy by numerous governmental authorities in the United States and other countries. Prior to marketing, any drug developed by the Company must undergo rigorous preclinical and clinical testing and an extensive regulatory approval process mandated by the FDA and equivalent foreign authorities. These processes can take a number of years and require the expenditure of substantial resources.

The time required for completing such testing and obtaining such approvals is uncertain, and there is no assurance that any such approval will be obtained. The Company or its collaborative partners may decide to replace a compound in testing with a modified or optimized compound, thus extending the test period. In addition, delays or rejections may be encountered based upon changes in FDA policy during the period of product development and FDA review of each submitted new drug application or product license application. Similar delays may also be encountered in other countries. There can be no assurance that even after such time and expenditures, regulatory approval will be obtained for any products developed by the Company. Moreover, prior to receiving FDA or equivalent foreign authority approval to market its products, the Company may be required to demonstrate that its products represent improved forms of treatment over existing therapies. If regulatory approval of a product is granted, such approval may entail limitations on the indicated uses for which the product may be marketed. Further, even if such regulatory approval is obtained, a marketed product, its manufacturer and its manufacturing facilities are subject to continual review and periodic inspections, and subsequent discovery of previously unknown problems with a product, manufacturer or facility may result in restrictions on such product or manufacturer, including withdrawal of the product from the market.

Dependence on Third-Party Reimbursement and Health Care Reform. Ligand's commercial success will be heavily dependent upon the availability of reimbursement for the use of any products developed by the Company or its collaborative partners. There can be no assurance that Medicare and third-party payors will authorize or otherwise budget reimbursement for the prescription of any of Ligand's potential products. Additionally, third-party payors, including Medicare, are increasingly challenging the prices charged for medical products and services and may require additional cost-benefit analysis data from the Company in order to demonstrate the cost-effectiveness of its products. There can be no assurance that the Company will be able to provide such data in order to gain market acceptance of its products with respect to pricing and reimbursement.

In the United States, the Company expects that there will continue to be a number of federal and state proposals to implement government control of pricing and profitability of prescription pharmaceuticals. In addition, increasing emphasis on managed health care will continue to put pressure on such pricing. Cost control initiatives could decrease the price that the Company or any of its collaborative partners or other licensees receives for any drugs it or they may discover or develop in the future and, by preventing the recovery of development costs, which could be substantial, and an appropriate profit margin, could have

a material adverse effect on the Company. Further, to the extent that cost control initiatives have a material adverse effect on the Company's collaborative partners, the Company's ability to commercialize its products and to realize royalties may be adversely affected. Furthermore, federal and state regulations govern or influence the reimbursement to health care providers of fees and capital equipment costs in connection with medical treatment of certain patients. If any actions are taken by federal and/or state governments, such actions could adversely affect the prospects for sales of the Company's products. There can be no assurance that action taken by federal and/or state governments, if any, with regard to health care reform will not have a material adverse effect on the Company.

Product Liability and Insurance Risks. Ligand's business exposes it to potential product liability risks which are inherent in the testing, manufacturing and marketing of human therapeutic products. Certain of the compounds the Company is investigating could be injurious to humans. For example, retinoids as a class are known to contain compounds which can cause birth defects. Ligand currently has limited product liability insurance; however, there can be no assurance that Ligand will be able to maintain such insurance on acceptable terms or that such insurance will provide adequate coverage against potential liabilities. The Company expects to procure additional insurance when its products progress to a later stage of development and if any rights to later-stage products are in-licensed in the future. To the extent that product liability insurance, if available, does not cover potential claims, the Company will be required to self-insure the risks associated with such claims. A successful product liability claim or series of claims brought against the Company could have a material adverse effect on the Company.

Dependence on Key Employees. Ligand is highly dependent on the principal members of its scientific and management staff, the loss of whose services might impede the achievement of development objectives. Furthermore, Ligand is currently experiencing a period of rapid growth which requires the hiring of significant numbers of scientific, management and operational personnel. Accordingly, recruiting and retaining qualified management, operations and scientific personnel to perform research and development work in the future will also be critical to Ligand's success. Although Ligand believes it will be successful in attracting and retaining skilled and experienced management, operational and scientific personnel, there can be no assurance that Ligand will be able to attract and retain such personnel on acceptable terms given the competition among numerous pharmaceutical and biotechnology companies, universities and other research institutions for such personnel.

Use of Hazardous Materials. Ligand's research and development involves the controlled use of hazardous materials, chemicals and various radioactive compounds. For example, retinoids as a class are known to contain compounds which can cause birth defects. Although the Company believes that its current safety procedures for handling and disposing of such materials, chemicals and compounds comply with the standards prescribed by state and federal regulations, the risk of accidental contamination or injury from these materials cannot be completely eliminated. In the event of any accident, the Company could be held liable for any damages that result and any such liability could be significant. The Company may incur substantial costs to comply with environmental regulations. Any such event could have a material adverse effect on the Company.

Volatility of Stock Price. The market prices and trading volumes for securities of emerging companies, like Ligand, have historically been highly volatile and have experienced significant fluctuations unrelated to the operating performance of such companies. Future announcements concerning the Company or its competitors may have a significant impact on the market price of the Common Stock. Such announcements might include the results of research, development testing, technological innovations, new commercial products, government regulation, developments concerning proprietary rights, litigation or public concern as to the safety of the products.

Absence of Cash Dividends. No cash dividends have been paid on the Company's Common Stock to date, and Ligand does not anticipate paying cash dividends in the foreseeable future.

Effect of Shareholder Rights Plan and Certain Anti-Takeover Provisions. In September 1996, the Company's Board of Directors adopted a preferred shares

rights plan (the "Shareholder Rights Plan") 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 acquisition of 20% or more of the Company's 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 Company's 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 Company's Common Stock and September 13, 2006.

Ligand's Amended and Restated Certificate of Incorporation (the "Certificate of Incorporation") includes a provision that requires the approval of the holders of 66 2/3% of Ligand's voting stock as a condition to a merger or certain other business transactions with, or proposed by, a holder of 15% or more of Ligand's voting stock, except in cases where certain directors approve the transaction or certain minimum price criteria and other procedural requirements are met (the "Fair Price Provision"). The Certificate of Incorporation also requires that any action required or permitted to be taken by stockholders of Ligand must be effected at a duly called annual or special meeting of stockholders and may not be effected by any consent in writing. In addition, special meetings of the stockholders of Ligand may be called only by the Board of Directors,

the Chairman of the Board or the President of Ligand or by any person or persons holding shares representing at least 10% of the outstanding Common Stock of the Company. The Shareholder Rights Plan, the Fair Price Provision and other charter provisions may discourage certain types of transactions involving an actual or potential change in control of Ligand, including transactions in which the stockholders might otherwise receive a premium for their shares over then current market prices, and may limit the ability of the stockholders to approve transactions that they may deem to be in their best interests. In addition, the Board of Directors has the authority to fix the rights and preferences of and issue shares of preferred stock, which may have the effect of delaying or preventing a change in control of Ligand without action by the stockholders.

PART II. OTHER INFORMATION

ITEM 5 OTHER INFORMATION

On May 11, 1998, Ligand and Seragen announced the execution of a definitive agreement under which a wholly owned subsidiary of Ligand will merge with Seragen (the "Merger"). In addition, Ligand announced that it had signed a definitive asset purchase agreement to acquire substantially all the assets of Marathon Biopharmaceuticals, LLC, which currently provides services to Seragen under a service agreement. Finally, Ligand announced that it had signed an agreement with Eli Lilly and Company ("Lilly") and Seragen, to be effective upon the closing of the Merger or under certain other circumstances, under which Lilly will assign to Ligand Lilly's rights and obligations under its agreements with Seragen, including its rights to Ontak(TM) (DAB389IL-2, Interleukin-2 Fusion Protein or denileukin diftitox). See "Part I-Item 2-Management's Discussion and Analysis of Financial Condition and Results of Operations-Risks and Uncertainties."

ITEM 6 (A) EXHIBITS

Exhibit 10.173 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.

Exhibit 10.174 (1) Leptin Research, Development and License Agreement, dated March 17, 1998, between the Company and SmithKline Beecham, plc.

Exhibit 10.175 (1) Stock and Warrant Purchase Agreement, dated March 17, 1998,

among the Company, SmithKline Beecham, plc. and SmithKline Beecham Corporation.

Exhibit 27.1 Financial Data Schedule

ITEM 6 (B) REPORTS ON FORMS 8-K

None.

(1) Certain confidential portions of this Exhibit were omitted by means of marking such portions with an asterisk (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 of the Securities Exchange Act of 1934.

SIGNATURE

Pursuant to the requirements 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

Date: May 14, 1998 By /s/ PAUL V. MAIER

Paul V. Maier
Senior Vice President and
Chief Financial Officer

EXHIBIT 10.173

NINTH ADDENDUM TO AMENDED REGISTRATION RIGHTS AGREEMENT

This Ninth 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 SmithKline Beecham plc ("Investor") is effective as of April 24, 1998.

RECITALS

A. As of the date hereof, the Company has issued (i) 274,423 shares of the Company's Common Stock (the "Shares") to Investor pursuant to Section 1.1(a) of that certain Stock Purchase Agreement dated as of March 17, 1998 among the Company and Investor (the "Purchase Agreement") and (ii) warrants exercisable into 150,000 shares of the Company's Common Stock (the "Warrant Shares") to Investor pursuant to Section 1.1(c) of the Purchase Agreement.

B. This Addendum serves to include the Shares (and the Warrant Shares, when and if issued) within the definition of "Registrable Securities" under the Registration Rights Agreement and to modify Schedule A to the Registration Rights Agreement to include such Shares, 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 6,150,085 shares of Class B Common Stock (or that number of shares of such other class of stock into which the Common Stock is converted) issued upon conversion of the Company's Preferred Stock to the holders thereof and in the amounts set forth on Schedule A attached hereto, (ii) 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, (iii) 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, (iv) 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, (v) 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 ("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 Note dated October 30, 1997 issued pursuant to the Stock and Note Purchase Agreement (and upon such conversion of the Notes, Schedule A shall be updated to include such shares), (vi) 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 the Investor pursuant to the Purchase Agreement, which shares are reflected on Schedule A attached hereto, 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 Common Stock Purchase Warrant issued to Investor pursuant to the Purchase Agreement

(and upon such conversion of such Warrant, Schedule A shall be updated to include such shares), and (vii) 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) and (vi) 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, Investor and each holder of Registrable Securities and each future holder of Registrable Securities pursuant to Section 2.6(a) of the Registration Rights Agreement.

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

SMITHKLINE BEECHAM PLC	LIGAND PHARMACEUTICALS INCORPORATED
By: /s/ DONALD F. PARMAN	By: /s/ WILLIAM L. RESPESS
Title: Attorney-in-fact	Title: Sr. V.P., General Counsel, Government Affairs

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

SCHEDULE A
to
Ninth Addendum to
Amended Registration Rights Agreement

<TABLE>
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Name	Shares Issued
<S>	<C>
Allergan Pharmaceuticals (Ireland) Ltd., Inc.	1,343,125
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
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
Windsor Venture Lease Partners Ltd., Inc.	283
Total:	2,963,628

</TABLE>

EXHIBIT 10.174

LEPTIN RESEARCH, DEVELOPMENT AND LICENSE AGREEMENT

by and between

SMITHKLINE BEECHAM PLC

and

LIGAND PHARMACEUTICALS INCORPORATED

DATED

MARCH 17, 1998

***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 Exchange Act.

LEPTIN RESEARCH, DEVELOPMENT AND LICENSE AGREEMENT
SMITHKLINE BEECHAM PLC-LIGAND PHARMACEUTICALS INCORPORATED

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LEPTIN RESEARCH, DEVELOPMENT AND LICENSE AGREEMENT

THIS LEPTIN RESEARCH, DEVELOPMENT AND LICENSE AGREEMENT, (hereinafter "Agreement") is by and between SMITHKLINE BEECHAM plc, a corporation of England, having its registered office at New Horizons Court, Brentford, Middlesex, TW8 9EP, England and LIGAND PHARMACEUTICALS INCORPORATED , a Delaware corporation, having its principal place of business at 9393 Towne Centre Drive, San Diego, California, U.S.A.

R E C I T A L S

WHEREAS, LIGAND has developed expertise and acquired proprietary rights relating to the discovery and development of certain pharmaceutical products;

WHEREAS, SB has developed expertise and acquired proprietary rights relating to the discovery, development, marketing and sales of certain pharmaceutical products;

WHEREAS, SB and LIGAND desire to engage in a joint research and development effort directed to the discovery and/or design of compositions of matter which act as MODULATORS (as hereinafter defined) of certain STATS (as hereinafter defined) controlled by LEPTIN in the hope of developing one or more pharmaceutical products from such compounds;

WHEREAS, LIGAND is the owner of all right, title and interest in certain PATENT RIGHTS (as hereinafter defined) and KNOW-HOW (as hereinafter defined); and

WHEREAS, SB desires to obtain certain worldwide licenses from LIGAND under the aforesaid PATENT RIGHTS and KNOW-HOW, and LIGAND is willing to grant to SB such licenses;

NOW, THEREFORE, in consideration of the foregoing premises and the mutual covenants herein contained, SB and LIGAND agree as follows:

ARTICLE 1

DEFINITIONS

For the purposes of this Agreement, the terms defined in this Article 1 shall have the respective meanings set forth below:

1.1 "AFFILIATE" shall mean, with respect to a party to this Agreement, any other entity, whether de jure or de facto, which directly or indirectly controls, is controlled by, or is under common control with, such party. A business entity or party shall be regarded as in control of another business entity if it owns, or directly or indirectly controls, at least *** (or such lesser percentage which is the maximum allowed to be owned by

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

a foreign entity in a particular jurisdiction) of the voting stock or other ownership interest of the other entity, or if it directly or indirectly

possesses the power to direct or cause the direction of the management and policies of the other entity by any lawful means whatsoever.

1.2 "ANNUAL RESEARCH FEE" shall mean the fee paid to LIGAND for scientists for a CONTRACT YEAR, as determined by the LRC. There shall be *** in the *** *** *** *** *** *** *** *** *** *** ***.

1.3 "COMPETING PRODUCT" shall mean, with respect to each specified RESEARCH COMPOUND or PRODUCT, any other RESEARCH COMPOUND or PRODUCT which exhibits similar therapeutic or prophylactic activity and which may be sold for the same indications as such specified RESEARCH COMPOUND or PRODUCT.

1.4 "COMMENCEMENT DATE" shall mean commencement of the RESEARCH PROGRAM under this Agreement, which shall be two (2) weeks after the EFFECTIVE DATE.

1.5 "CONTRACT YEAR" shall mean the twelve (12) month period from the COMMENCEMENT DATE and each subsequent twelve (12) month period during the RESEARCH PROGRAM TERM.

1.6 "DESIGNATED PATHWAY" shall mean the LEPTIN RECEPTOR and the JAK and/or STATS mediated signaling process or processes mediated by the LEPTIN RECEPTOR.

*** *** *** ***.

1.7 "EFFECTIVE DATE" shall mean the date as of which this Agreement is effective and shall be the date all required filings under the Hart-Scott-Rodino Antitrust Improvements Act, as amended (the "HSR Act") with respect to the contemporaneous sale of shares of the Company's Common Stock (as defined in the Stock and Warrant Purchase Agreement of even date herewith) to SB shall have been made and any required waiting period

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under the HSR Act shall have expired or been earlier terminated, and no action or proceeding in the United States of America by law or in equity shall be pending or threatened by any person, firm, corporation, government, governmental authority, regulatory body or agency to enjoin, restrict or prohibit the transactions contemplated under this Agreement or under the Stock and Warrant Purchase Agreement.

1.8 "EXPLORATORY DEVELOPMENT" shall mean development and testing, beyond the RESEARCH PROGRAM, designed to document the pharmaceutical profile of a RESEARCH COMPOUND to demonstrate whether such RESEARCH COMPOUND may be reasonably expected to be useful in the FIELD.

1.9 "FDA" shall mean the United States Food and Drug Administration or any successor entity thereto.

1.10 "FIELD" shall mean any and all uses including the research, discovery, development and commercialization of PRODUCTS which are MODULATORS of the DESIGNATED PATHWAY.

1.11 "FIRST COMMERCIAL SALE" shall mean, with respect to a PRODUCT, the first sale to a THIRD PARTY of such PRODUCT in a country after any required marketing and pricing approvals have been granted by all appropriate

governmental authorities of such country, such first sale being an actual sale or a deemed sale contributing to NET SALES as defined in Section 1.24 and reportable under Section 8.1.

1.12 "FULL DEVELOPMENT" shall mean development and testing of a RESEARCH COMPOUND, or a PRODUCT incorporating such RESEARCH COMPOUND, beyond EXPLORATORY DEVELOPMENT, designed to obtain approval by the appropriate regulatory authorities to market such PRODUCT.

1.13 "HTS" shall mean High Throughput Screen, which is a cell culture-based screening assay useful for the discovery and characterization of MODULATORS and which is: (a) is capable of routinely testing or characterizing *** potential MODULATORS per week; (b) is able to detect *** ; (c) is sufficiently reproducible and selective and (d) has an appropriate signal to noise ratio to be useful as an HTS as demonstrated by profiling *** , as *** . Notwithstanding the foregoing, the LRC may decide that
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1.14 "IND" shall mean an Investigational New Drug Application for PRODUCT in the FIELD filed by or on the behalf of SB with the FDA, or the equivalent application(s) filed with the appropriate regulatory authorities in a MAJOR MARKET COUNTRY or under regulations governing a concertation proceeding which includes a MAJOR MARKET

COUNTRY.

1.15 "KNOW-HOW" shall mean all present and future technical information and know-how which is not in the public domain and which relates to HTSs and other technology not in the public domain which is related to the discovery and development of RESEARCH COMPOUNDS, including but not limited to assays for PRIMARY and SECONDARY SCREENING, and the making and using of PRODUCTS.

1.16 "LEPTIN" shall mean any cytokine-like hormone expressed primarily in white adipose tissue and encoded by the OB gene or any naturally occurring or non-naturally occurring modified version thereof.

1.17 "LEPTIN RECEPTOR" shall mean a cell surface protein or protein complex capable of specifically binding to leptin. At least one member of this complex is encoded by the OB receptor gene.

1.18 "LEPTIN RESEARCH COMMITTEE" or "LRC" shall mean the research management committee composed of representatives of LIGAND and SB described in Section 4.1 hereof.

1.19 "LIGAND" shall mean LIGAND Pharmaceuticals Incorporated, a Delaware corporation, having its principal place of business at 9393 Towne Centre Drive, San Diego, California, U.S.A.

1.20 "MAJOR MARKET COUNTRY" shall mean any of Canada, France, Germany, Italy, Japan, Spain and the United Kingdom.

1.21 "MILESTONE I" shall mean the ***
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1.22 "MODULATOR" shall mean a composition of matter other than a LEPTIN, which modulates the DESIGNATED PATHWAY, including, but not limited to, LEPTIN mimetics, potentiators, agonists and antagonists, ***
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1.23 "NDA" shall mean a New Drug Application or Product License

Application filed by or on behalf of SB with the FDA, or equivalent application(s) filed with the appropriate regulatory and pricing authorities in a MAJOR MARKET COUNTRY, or under regulations governing a concertation proceeding which includes a MAJOR MARKET COUNTRY, requesting approval for commercialization of a PRODUCT for an indication in the FIELD.

1.24 "NET SALES" shall mean with respect to a PRODUCT containing a RESEARCH COMPOUND as a pharmaceutically active ingredient, which PRODUCT is sold for its activity as a MODULATOR of the DESIGNATED PATHWAY, the gross invoiced sales of such PRODUCT by SB, its AFFILIATES or sublicensees ("the Selling Party") to THIRD PARTIES:

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1.25 "PATENT RIGHTS" shall mean (a) all issued patents and patent applications heretofore or hereafter filed in any country within the TERRITORY which are or become owned in whole or in part by or licensed to LIGAND or SB or jointly by SB and LIGAND, or to which LIGAND or SB otherwise acquires rights, having claims which read upon a PRODUCT or a RESEARCH COMPOUND or the process of manufacture or use of a PRODUCT or a RESEARCH COMPOUND or upon a method or reagent useful in a method to discover or develop a PRODUCT or RESEARCH COMPOUND, together with any and all patents that have issued or in the future issue therefrom and (b) all divisionals, continuations, continuations-in-part, reexaminations, reissues, renewals, extensions or additions to any such patents and patent applications and patents issuing thereon as well as SPCs; all to the extent and only to the extent that (i) LIGAND or SB now has or hereafter will have the right to grant licenses or other rights thereunder and (ii) the granting of such licenses or rights thereunder is necessary for either party to practice the rights and discharge the obligations it has by reason of this Agreement. PATENT RIGHTS also include patents and patent applications concerning "Transferred Technology" as that term is used in Sections 3.1.2, 13.4 and 14.2.6 and, to that extent, only for the purposes of Section 3.1.2, 13.4 and 14.2.6. "LIGAND SOLE PATENT RIGHTS" shall mean PATENT RIGHTS owned or controlled solely by LIGAND. The LIGAND SOLE PATENT RIGHTS that are the subject of grants to SB hereunder are listed

in Appendix B, the status of which shall be periodically updated.

1.26 "PHASE II" shall mean studies (as defined in 21 C.F.R. 312.21(b)) in human subjects designed to demonstrate the effectiveness of a drug candidate.

1.27 "PHASE III" shall mean studies (as defined in 21 C.F.R. 312.21(c)) in human subjects which are adequately well controlled (as those terms are defined in 21 C.F.R. 314.126) intended to gather additional information about the effectiveness and safety of a drug candidate.

1.28 "PRIMARY SCREENING" shall mean conducting any cell based or other assay, screen or other test on a compound under the RESEARCH PROGRAM to determine initially, to the extent the assay is able to do so, whether such compound functions as a MODULATOR of activity mediated through the DESIGNATED PATHWAY.

1.29 "PRODUCT" shall mean a RESEARCH COMPOUND that has been subjected to full development and has been approved for marketing by the appropriate government regulatory agencies.

1.30 "QUALIFIED SCIENTIST" shall mean a scientist having a Doctor of Philosophy or equivalent degree in a scientific specialty appropriate to work carried out by LIGAND under the RESEARCH PROGRAM or a scientist having a Master's or Bachelor's degree in such a scientific specialty and at least three (3) years of full-time experience in that scientific specialty. Eligible scientific specialties include, but are not limited to, biochemistry, molecular biology, cell biology, and pharmacology.

1.31 "RESEARCH COMPOUND" shall mean a composition of matter which is (i) determined (by SB or LIGAND) to function as a MODULATOR of the DESIGNATED PATHWAY either during the term of the RESEARCH PROGRAM, or, except in the case of termination by SB under Sections 14.4 or 14.5 below, by SB, within *** after expiration or termination of the RESEARCH PROGRAM if the RESEARCH PROGRAM is less than or equal to *** long or within *** if the RESEARCH PROGRAM is longer than *** , and (ii) which is developed and marketed for an indication directly related to its activity as a MODULATOR of the DESIGNATED PATHWAY. Notwithstanding the above, the term RESEARCH COMPOUND shall not embrace *** ***.

1.32 "RESEARCH PROGRAM" shall mean a program of research in the FIELD in which LIGAND and SB will participate under this Agreement and which is described generally in the research work plan set forth in Appendix A hereto, as revised

from time to time as provided in the Agreement.

1.33 "RESEARCH PROGRAM TERM" shall mean, subject to Sections 14.4 and 14.5 below, the period of the RESEARCH PROGRAM measured from the

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COMMENCEMENT DATE and any extensions thereof resulting from the exercise of SB's option under Section 3.3 or by mutual agreement of the parties.

1.34 "SB" shall mean SmithKline Beecham plc, a corporation of England, having its registered office at New Horizons Court, Brentford, Middlesex, TW8 9EP, England.

1.35 "SECONDARY SCREENING" shall mean conducting any cell based or other assay, screen or other test on a RESEARCH COMPOUND using in vitro cell systems or reagents after the PRIMARY SCREENING of such RESEARCH COMPOUND for the purpose of confirming the results of the PRIMARY SCREENING or to test the RESEARCH COMPOUND for cross-reactivity with other than the DESIGNATED PATHWAYS or for determining other relevant properties of the RESEARCH COMPOUND.

1.36 "SPC" shall mean shall mean a right based upon a patent to exclude others from making, using and selling a PRODUCT, such as a Supplementary Patent Certificate.

1.37 "STATs TECHNOLOGY" shall mean that technology currently possessed by or developed during the term of the Agreement by LIGAND, whether or not forming a part of LIGAND's PATENT RIGHTS, that permits or facilitates the discovery and development of MODULATORS of gene transcription controlled by receptor-mediated activation of latent cytoplasmic elements known as STATs (Signal Transducers and Activators of Transcription), including technology relating to the role played in the initiation or maintenance of such gene transcription by a family of kinases referred to as JAKs (Janus Kinase).

1.38 "TERRITORY" shall mean all the countries and territories of the world.

1.39 "THIRD PARTY" shall mean a party other than a party to this Agreement.

1.40 "U.S.A." shall mean the United States of America and all of its territories and possessions.

ARTICLE 2

REPRESENTATIONS AND WARRANTIES

Each party hereby represents and warrants to the other party as follows:

2.1 Corporate Existence and Power. Such party (a) is a corporation duly organized, validly existing and in good standing under the laws of the state or country in which it is incorporated, (b) has the corporate power and authority and the legal right to own and operate its property and assets, to lease the property and assets it operates under lease, and to carry on its business as it is now being conducted, and (c) is in compliance with all requirements of applicable law, except to the extent that any noncompliance would not have a material adverse effect on the properties, business, financial or other condition of such party

and would not materially adversely affect such party's ability to perform its obligations under this Agreement.

2.2 Authorization and Enforcement of Obligations. (a) Such party has the corporate power and authority and the legal right to enter into this Agreement and to perform its obligations hereunder; (b) such party has taken all necessary corporate action on its part to authorize the execution and delivery of this Agreement and the performance of its obligations hereunder; (c) the execution and performance by such party of its obligations under this Agreement will not constitute a breach of, or conflict with, any other agreement or arrangement, whether written or oral, by which it is bound; and (d) this Agreement has been duly executed and delivered on behalf of such party, and constitutes a legal, valid, binding obligation, enforceable against such party in accordance with its terms.

2.3 Consents. All necessary consents, approvals and authorizations of all governmental authorities and other THIRD PARTIES required to be obtained by such party in connection with the execution, delivery and performance of this Agreement have been and shall be obtained.

2.4 Intellectual Property. Such party (a) owns or is the licensee in good standing of all PATENT RIGHTS and KNOW-HOW to be used by it in connection with the RESEARCH PROGRAM, except to the extent that such use is to be based upon intellectual property furnished by the other party; (b) has received no notice of infringement or misappropriation of any alleged rights asserted by any THIRD PARTY in relation to any technology to be used by it in connection with the RESEARCH PROGRAM; and (c) is not in default with respect to any license agreement related to the RESEARCH PROGRAM. Each party shall immediately notify the other party in writing in the event such party hereafter receives a notice of the type referred to in (b) above, or becomes in default under any license agreement referred to in (c) above. Each party further represents and warrants that it will not encumber, with liens, mortgages, security interests or otherwise, any PATENT RIGHTS, KNOW-HOW or other intellectual property to be used in connection with the RESEARCH PROGRAM. Each party further warrants and represents that it will not knowingly engage in any activity in furtherance of the RESEARCH PROGRAM which it reasonably believes or has reason to believe will constitute an infringement of any known THIRD PARTY patent rights, including the knowing unlicensed or otherwise unauthorized use of any assay or any component thereof which is claimed in a patent of a THIRD PARTY in the country of use.

2.5 DISCLAIMER OF WARRANTIES. NOTHING IN THIS AGREEMENT SHALL BE CONSTRUED AS A REPRESENTATION MADE, OR WARRANTY GIVEN, BY LIGAND OR SB (A) THAT ANY PATENT WILL ISSUE BASED UPON ANY PENDING PATENT APPLICATION WITHIN THE PATENT RIGHTS, (B) THAT ANY PATENT WITHIN THE PATENT RIGHTS WHICH ISSUES WILL BE VALID, OR (C) THAT, EXCEPT FOR THE PROVISIONS OF SECTION 2.4 HEREIN WHICH SHALL NOT BE AFFECTED BY THIS SECTION 2.5, THE USE OF ANY LICENSE GRANTED HEREUNDER OR THE USE OF ANY PATENT RIGHTS WILL NOT INFRINGE THE

PATENT OR PROPRIETARY RIGHTS OF ANY OTHER PERSON. FURTHERMORE, NEITHER LIGAND NOR SB MAKES ANY REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, WITH RESPECT TO THE PATENT RIGHTS EXCEPT AS PROVIDED IN SECTION 2.4.

2.6 Each of LIGAND and SB acknowledges that, in entering into this Agreement, the other has relied or will rely upon information supplied by it, information to be supplied by it, and information which it has caused or will cause to be supplied to the other by it's agents, representatives and/or licensees, and each warrants and represents that all such information is and will be timely and accurate in all material respects. Each further warrants and represents that it has not, up through and including the date of this Agreement, omitted to furnish the other with any information concerning the transactions contemplated by this Agreement which would be material to the other's decision to enter into this Agreement and to undertake the commitments and obligations set forth herein.

2.7 Use of Research Funding. LIGAND warrants and represents that it will apply the research funding, if any, it receives from SB under the Agreement solely toward achieving the objectives of the RESEARCH PROGRAM.

ARTICLE 3

RESEARCH PROGRAM

3.1 Research Procedures.

3.1.1 Conduct of Research. LIGAND and SB each shall conduct the work assigned to it in the RESEARCH PROGRAM, and in compliance in all material respects with all requirements of applicable laws and regulations and with all applicable good laboratory practices and good manufacturing practices, and shall provide the following resources:

(a) in the case of LIGAND, allocation of at least *** scientists per CONTRACT YEAR (measured on a full-time equivalent basis) in the *** CONTRACT YEARS, at least *** scientists in the *** CONTRACT YEAR *** , and, thereafter, in the *** CONTRACT YEARS *** (measured on a full time equivalent basis) *** , the scientists to be primarily in the fields of molecular biology and biochemistry and secondarily in the fields of medicinal chemistry and pharmacology, using personnel with sufficient skills and experience, together with sufficient equipment and facilities, to carry out LIGAND's obligations under the RESEARCH PROGRAM provided, however, that at least *** of the LIGAND full-time equivalents shall be made up of *** in the RESEARCH PROGRAM and at least *** of the LIGAND full-time equivalents shall be *** ; and

(b) in the case of SB, allocation of a reasonable amount of time and effort, using personnel with sufficient skills and experience, together with sufficient equipment and

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facilities, to carry out SB's obligations under the RESEARCH PROGRAM .

3.1.2 Development of ***. It shall be LIGAND's responsibility under the RESEARCH PROGRAM to develop, employ and transfer to ***. LIGAND shall transfer to SB no later than *** after the conclusion of the RESEARCH PROGRAM *** , all technology (including all updates thereof) *** (collectively referred to hereinafter in this Agreement as "Transferred Technology"). The LRC shall promptly consider a submission by LIGAND relevant to successful completion of *** and give written notice to LIGAND of its acceptance or rejection of *** which acceptance will not be unreasonably withheld. Each of the parties shall have responsibility for the development of additional assays for SECONDARY SCREENING as set forth in Appendix A, which allocation of responsibility may be amended by the LRC.

3.1.3 Screening Responsibility. Initially, LIGAND shall be responsible for conducting PRIMARY SCREENING and SECONDARY SCREENING of candidate RESEARCH COMPOUNDS as set forth in the RESEARCH PROGRAM and as designated by the LRC and shall regularly inform the LRC of the progress and results thereof. *** , SB will assume some responsibility for such screening according to Appendix A hereof.

3.1.4 Screening of *** . *** compounds

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*** may be tested, at SB's sole discretion, for activity as a MODULATOR of the DESIGNATED PATHWAY (i) by LIGAND during the RESEARCH PROGRAM TERM at SB's prior written request or (ii) by SB, utilizing HTS or any other assay provided by LIGAND during the RESEARCH PROGRAM. LIGAND shall not assert against SB or SB's AFFILIATES, sublicensees or distributors any rights to any and all inventions, discoveries or improvements directly related to *** arising out of such screening (including without limitation, any pharmaceutical use associated with or arising out of such screening). Further, LIGAND shall not transfer any of its rights to such inventions, discoveries or improvements unless such transferee (including, without limitation, sublicensees and assignees) agrees, in writing, that it shall not assert any rights to such inventions, discoveries or improvements (including without limitation, any pharmaceutical use associated

with or arising out of such screening) against SB or SB's AFFILIATES, sublicensees or distributors.

In any event, LIGAND shall not be required to perform any assay that involves screening of *** ***.

Further, LIGAND shall not perform any research or use the *** materials provided by SB for any purpose other than screening requested in writing by SB.

3.1.5 Subcontracts. Neither LIGAND nor SB shall subcontract to THIRD PARTIES portions of the RESEARCH PROGRAM without the prior consent of the LRC, which consent shall not be unreasonably withheld; provided, however, that a party shall have the right to contract for custom synthesis and other routinely used outside services in accordance with its standard procurement practices. Any subcontractor shall enter into a confidentiality agreement with the contracting party, and shall be in compliance in all material respects with all requirements of applicable laws and regulations, together with all applicable good laboratory practices and good manufacturing practices. The contracting party shall supervise and be responsible under this Agreement for such subcontract work.

3.2 Funding of the RESEARCH PROGRAM.

3.2.1 SB shall have ***. SB shall provide funding to LIGAND in the form of an ANNUAL RESEARCH FEE *** , if any, as provided in Section 1.2, subject to Sections 3.2.2 and 3.2.3.

3.2.2 In the event that SB determines, at its sole discretion in accordance with Section 3.3, to extend the term of the RESEARCH PROGRAM beyond the end of the *** CONTRACT YEAR then, in consideration for LIGAND's performance of its obligations under the RESEARCH PROGRAM during such extension period, SB will pay to LIGAND the ANNUAL RESEARCH FEES for the *** CONTRACT YEARS as determined by the LRC; provided, however, that the amount of such fee determination must receive the prior written approval of appropriate SB senior research management before SB shall have any obligation to make any such payments to LIGAND.

3.2.3 The ANNUAL RESEARCH FEES, *** , determined by the LRC shall be paid in advance in *** installments equal to *** of the ANNUAL RESEARCH FEE for any CONTRACT YEAR which follows the end of the *** CONTRACT YEAR, the first payment, if any, being due on the day following the *** of the COMMENCEMENT DATE, and payable within *** thereof and subsequent payments being due at the beginning of each *** thereafter and payable within *** thereof. Within *** of the end of each *** for which a *** payment is made, LIGAND shall provide to SB an

statement specifying and verifying the number of persons assigned to and working in the RESEARCH PROGRAM for that *** . The statement following each even numbered *** shall state whether there has been an overage or underage in the aggregate payments to LIGAND for the even numbered and preceding *** . If the COMMENCEMENT DATE does not coincide with the beginning of a *** , the payment for the *** in which the COMMENCEMENT DATE occurs will be pro-rated for the ***.

3.2.4 At the end of each even numbered *** , LIGAND shall be entitled to reimbursement of any underage in the payments made to it during the preceding

*** ending with that even numbered *** . The reimbursement will be made within *** of the presentation of an invoice showing that underage. If at the end of an even numbered *** there has been an overpayment by SB to LIGAND for that and the preceding *** , then the overpayment shall be credited by SB against the next *** payment due LIGAND after notice of the overage, except in the case of the last statement, in which case the overpayment shall be reimbursed to SB by LIGAND within *** of the presentation of the statement showing that overage.

3.2.5 LIGAND shall maintain sufficient records to verify the calculation of the ANNUAL RESEARCH FEE under Section 1.2 and LIGAND's allocation of LIGAND scientists to the RESEARCH PROGRAM as required under Section 3.1.1(a). In the event the RESEARCH PROGRAM TERM extends beyond the end of the *** CONTRACT YEAR then, not more than *** during the *** of the RESEARCH PROGRAM TERM and for *** after its expiration, SB shall have the right, during normal business hours upon reasonable notice, to audit such records to verify such allocation and calculation. SB shall treat all financial information subject to review under this Section 3.2.5 as confidential, and shall cause its accounting firm to maintain all such financial information in confidence from a THIRD PARTY. The ANNUAL RESEARCH FEE shall be the maximum amount SB shall be obligated to pay LIGAND for its services as part of the RESEARCH PROGRAM and LIGAND shall be responsible for any additional costs incurred by LIGAND in any CONTRACT YEAR, unless SB has agreed in writing in advance to pay any amount beyond the ANNUAL RESEARCH FEE.

3.3 Extension of RESEARCH PROGRAM TERM. No later than six (6) months before the expiration of the RESEARCH PROGRAM TERM as determined by Section 14.4, the LRC will submit to SB a written proposal approved by LIGAND to extend the RESEARCH PROGRAM TERM, such proposal specifying the research to be undertaken during the extended term. SB shall have the option, *** , to extend the time of the RESEARCH PROGRAM TERM for up to *** by giving written notice thereof to LIGAND within *** of receiving such proposal. Subject to Section 3.2, the ANNUAL RESEARCH FEE for the additional years shall be determined in accordance with Section 1.2 based upon the previous CONTRACT YEAR's ANNUAL RESEARCH FEE adjusted for the increase in the *** and the number of full time equivalents and QUALIFIED SCIENTISTS assigned to the RESEARCH PROGRAM

as determined by the LRC.

3.4 Exclusivity.

3.4.1 Except as expressly permitted under this Agreement, SB and LIGAND shall not engage in any activity with any THIRD PARTY in the FIELD during the RESEARCH PROGRAM TERM. Furthermore, except as expressly permitted under this Agreement, ***

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3.4.2 Notwithstanding the provisions of Section 3.4.1 above, but subject to SB's license rights under Article 6 below and the parties' confidentiality and reporting obligations set forth in Sections 3.5 and Articles 11 and 12 below, LIGAND shall have the right to use ***

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*** . However, no testing
under 3.4.2(d) shall be done ***
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3.5 Records and Reports.

3.5.1 Records. LIGAND and SB each shall maintain records, in sufficient

detail and in good scientific manner appropriate for patent purposes, which shall be complete and accurate and shall fully and properly reflect all work done and results achieved in the performance of the RESEARCH PROGRAM (including all data in the form required under all applicable laws and regulations). Such records shall include books, records, reports, research notes, charts, graphs, comments, computations, analyses, recordings, photographs, computer programs and documentation thereof, computer information storage means, samples of materials and other graphic or written data generated in connection with the RESEARCH PROGRAM including any data required to be maintained pursuant to all requirements of applicable laws and regulations.

3.5.2 Inspection of Records. Once each CONTRACT YEAR of the RESEARCH PROGRAM, LIGAND and SB, each at its own cost, shall have the right during normal business hours and upon reasonable notice, to inspect and copy all such records of the other party to the extent reasonably required for the performance of its obligations under this Agreement (with the party owning the records determining what is reasonably required). Each party shall maintain such records and the information of the other party contained therein in confidence in accordance with Section 11.1 below and shall not use such records or information except to the extent otherwise permitted by the Agreement.

3.5.3 Research Reports. LIGAND and SB each shall keep the other party fully informed as to all discoveries and technical developments made under the RESEARCH PROGRAM and likewise LIGAND shall keep SB informed as to research it undertakes pursuant to parts (b) and (c) of Section 3.4.2 above. LIGAND and SB each shall prepare, and distribute to the other party, a reasonably detailed written summary report at such times, in such form and setting forth such information regarding the RESEARCH PROGRAM as determined from time to time by the LRC. Additionally, LIGAND may be required, at SB's sole option, to make a formal presentation to the appropriate SB management committee at an SB location and at LIGAND's expense. Written notice of such presentation shall be given to LIGAND at least thirty (30) days in advance of the presentation. However, no more than two such presentations per year will be required and every effort will be made to schedule any such presentation(s) at the time of a regularly scheduled LRC meeting at an SB location.

3.6 No Solicitation of Employees. During *** thereafter, neither LIGAND nor SB through any of their respective employees who was involved with activities under the RESEARCH PROGRAM shall, without the prior consent of the other party, solicit the employment of any person who during the course of employment with the other party was involved with activities under the RESEARCH PROGRAM and who when solicited is a current employee of the other party. For purposes of this Section 3.6, "solicit" shall not be deemed to mean (a) circumstances where an employee of LIGAND or SB, as the case may be, initially contacts the other party

with regard to possible employment with such other party, or (b) general solicitations of employment not specifically targeted at employees of the other party.

ARTICLE 4

MANAGEMENT OF THE RESEARCH PROGRAM

4.1 LEPTIN RESEARCH COMMITTEE.

4.1.1 Composition of the LRC. The RESEARCH PROGRAM and all preclinical testing of RESEARCH COMPOUNDS before commencing EXPLORATORY DEVELOPMENT shall be conducted under the direction of the LRC. The LRC shall be composed of three (3) named representatives of SB and three (3) named representatives of LIGAND. The initial members of the LRC shall be as set forth below:

<TABLE>
<CAPTION>

LIGAND Representatives	SB Representatives
<S>	<C>
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***	***
***	***

</TABLE>

Each party may replace one or more of its representatives on the LRC from time to time in its sole discretion. In addition, if a party's regular member of the LRC cannot attend a meeting of the committee, an alternate for that meeting shall be appointed by such party. In order to insure continuity of action, a party's designated alternate may attend LRC meetings as a non-voting observer, even if all representatives are present.

4.1.2 Responsibilities of the LRC. The purposes of the LRC shall be to supervise and coordinate the RESEARCH PROGRAM and all preclinical testing of RESEARCH COMPOUNDS before commencement of EXPLORATORY DEVELOPMENT. As part of its responsibilities, the LRC shall (a) review the research by LIGAND and SB under the RESEARCH PROGRAM and the preclinical testing of RESEARCH COMPOUNDS before commencement of EXPLORATORY DEVELOPMENT, (b) monitor the progress of the RESEARCH PROGRAM and evaluate the work performed and the results obtained in relation to the goals of the RESEARCH PROGRAM, (c) plan future activities under, and make any necessary or desirable modifications to, the RESEARCH PROGRAM, (d) recommend RESEARCH COMPOUNDS for further evaluation by the parties under the RESEARCH PROGRAM and for EXPLORATORY DEVELOPMENT and FULL DEVELOPMENT by SB, (e) approve the LIGAND workplan for each quarter of a CONTRACT YEAR under which LIGAND scientists are deployed in the RESEARCH PROGRAM, (f) facilitate the exchange of information between SB and LIGAND relating to the RESEARCH PROGRAM, and (g) attempt resolution of disputes between the parties concerning the RESEARCH PROGRAM. Notwithstanding the responsibilities of the LRC under (a)-(g) above, the LRC shall have no right to extend the RESEARCH PROGRAM to include activities outside the FIELD. The party hosting each meeting of the LRC promptly shall prepare, and deliver to the other party within thirty (30) days after the date of such meeting, minutes of such meeting setting forth all decisions of the LRC relating to the RESEARCH PROGRAM in form and content reasonably acceptable to the other party.

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4.1.3 Meetings of the LRC. The LRC shall meet, at least once each three (3) month period during the term of the RESEARCH PROGRAM, at such times and places as agreed to by LIGAND and SB, *** , or such other locations as the parties shall agree. The first such meeting will be held promptly following the COMMENCEMENT DATE. Meetings of the LRC may be attended by such other non-voting directors, officers, employees, consultants and other agents of LIGAND and SB as the parties from time to time reasonably agree.

4.1.4 Actions by the LRC. Any approval, determination or other action agreed to by *** SB members and *** LIGAND members of the LRC present at the relevant LRC meeting shall be the approval, determination or other action of the LRC; provided, however, that *** representatives of each party shall be present at such meeting.

4.2 Disagreements. All disagreements within the LRC shall be submitted for resolution to the *** on behalf of LIGAND, and *** on behalf of SB or their designees.

4.3 Project Leaders. LIGAND and SB each shall appoint a person (a "Project Leader") to coordinate its part of the RESEARCH PROGRAM. The Project Leaders shall be the primary contacts between the parties with respect to the RESEARCH PROGRAM. As of the COMMENCEMENT DATE the Project Leader for LIGAND shall be *** and the Project Leader for SB shall be the *** . Each party shall notify the other party as soon as practicable upon changing these appointments.

4.4 Availability of Employees. Each party shall make its employees engaged in the RESEARCH PROGRAM available, upon reasonable notice during normal business hours, at their respective places of employment to consult with the other party on issues arising during the RESEARCH PROGRAM and in connection with any request from any regulatory agency, including regulatory, scientific, technical and clinical testing issues.

4.5 Visit of Facilities. Representatives of LIGAND and SB may, upon reasonable notice during normal business hours, (a) visit the facilities where the RESEARCH PROGRAM is being conducted, (b) consult informally, during such visits and by telephone, with personnel of the other party performing work on the RESEARCH PROGRAM, and (c) with the other party's prior approval, which approval shall not be unreasonably withheld, visit the sites of any experiments being conducted by such other party in connection with the RESEARCH PROGRAM, EXPLORATORY DEVELOPMENT or FULL DEVELOPMENT, but only to the extent in each case such other experiments relate to RESEARCH COMPOUNDS or PRODUCTS. On such visits, an employee of the party conducting the research or development shall accompany the employee(s) of the visiting party. If requested by the other party, LIGAND and SB shall cause appropriate individuals working on the RESEARCH PROGRAM, EXPLORATORY DEVELOPMENT or FULL DEVELOPMENT to be available

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for meetings at the location of the facilities where such individuals are employed at times reasonably convenient to the party responding to such request. Any costs and expenses incurred by the requesting party as a result of such visits or consulting shall be paid by the requesting party, including but not limited to, travel, meals and cost of living expenses.

ARTICLE 5

DEVELOPMENT PROGRAM

5.1 EXPLORATORY DEVELOPMENT. LIGAND, SB and/or the LRC from time to time shall make recommendations of RESEARCH COMPOUNDS for EXPLORATORY DEVELOPMENT by SB. SB shall have the right in its sole discretion, but without the obligation,

to select RESEARCH COMPOUNDS for EXPLORATORY DEVELOPMENT alone or with others and shall give prompt written notice to LIGAND of each such selection. SB shall conduct such EXPLORATORY DEVELOPMENT of each such selected RESEARCH COMPOUND as SB desires and shall inform LIGAND and the LRC of the progress and results thereof. SB, at its sole expense, shall fund the costs of EXPLORATORY DEVELOPMENT of any such selected RESEARCH COMPOUND. LIGAND may undertake EXPLORATORY DEVELOPMENT at its own expense, but only under the terms and conditions as provided by Article 6 herein.

5.2 FULL DEVELOPMENT. LIGAND, SB and/or the LRC from time to time shall make recommendations of those RESEARCH COMPOUNDS that have completed EXPLORATORY DEVELOPMENT for FULL DEVELOPMENT by SB. SB shall have the right in its sole discretion, but without the obligation, to select RESEARCH COMPOUNDS for FULL DEVELOPMENT alone or with others and shall give prompt notice to LIGAND of each such selection. SB shall use its commercially reasonable efforts to conduct such preclinical and human clinical trials as SB determines are necessary or desirable to obtain regulatory approvals to manufacture and market such PRODUCTS in the TERRITORY as SB desires and diligently to develop, seek necessary approval to market, commence marketing and market such PRODUCTS for such purpose in the TERRITORY subject to the last sentence of this Section 5.2. SB, at its sole expense, shall fund the costs of FULL DEVELOPMENT of RESEARCH COMPOUNDS and PRODUCTS. Notwithstanding anything else in this Agreement, but subject to LIGAND's rights under Section 6.2, SB shall have the sole discretion to determine which PRODUCTS to develop or market, or to continue to develop or market, those for which regulatory approval to market will be sought, and when and where and how and on what terms and conditions, to market such PRODUCTS in the TERRITORY. LIGAND may undertake FULL DEVELOPMENT at its own expense, but only under the terms and conditions as provided by ARTICLE 6 herein. Throughout this Agreement, the terms "diligent," "diligently," "diligence," "good faith efforts" and "commercially reasonable efforts" with regard to an SB obligation to develop and/or commercialize a PRODUCT means that SB will exercise its reasonable efforts and diligence in accordance with SB's business, legal, medical and scientific judgment and SB's normal practices and procedures for compounds having similar technical and commercial potential.

5.3 Development Information. SB shall keep LIGAND informed as to the progress of the EXPLORATORY DEVELOPMENT and FULL DEVELOPMENT of all RESEARCH COMPOUNDS and PRODUCTS under this Agreement and the filing and obtaining of the approvals necessary for marketing. Within thirty (30) days after the end of each six (6) month period following the commencement of EXPLORATORY DEVELOPMENT by SB of the first RESEARCH COMPOUND, SB shall provide to LIGAND a reasonably detailed written summary report which shall describe the progress of the EXPLORATORY DEVELOPMENT and/or FULL DEVELOPMENT of RESEARCH COMPOUNDS and PRODUCTS under this Agreement.

5.4 Excused Performance. To the extent SB undertakes FULL DEVELOPMENT of a RESEARCH COMPOUND, the obligations of SB with respect to such RESEARCH COMPOUND under this ARTICLE 5 are expressly conditioned upon prioritization by SB and the continuing absence of any adverse condition *** relating to the safety or efficacy or commercial feasibility of that RESEARCH COMPOUND, and such obligations shall be delayed or suspended so long as any such condition or event exists. If any such delay or suspension with respect to any such RESEARCH COMPOUND exceeds *** in duration, such RESEARCH COMPOUND shall be subject to LIGAND's rights under Section 6.2 below in the circumstance where SB is not seeking to develop and has not developed any other RESEARCH COMPOUND and where SB's conduct objectively constitutes abandonment of further development or marketing of RESEARCH COMPOUND within the meaning of Section 6.2.3.

ARTICLE 6

LICENSES

6.1 License Grant to SB. Subject to the provisions hereof, LIGAND hereby grants to SB an exclusive license, which license shall be exclusive even as to LIGAND except to the extent LIGAND retains rights thereto under this Agreement, under LIGAND's PATENT RIGHTS and KNOW-HOW with respect thereto throughout the TERRITORY, including LIGAND's rights in any jointly owned PATENT RIGHTS, to make, have made, import, use, offer for sale and sell PRODUCTS in the FIELD but

subject to LIGAND's license granted in Section 6.2. Subject to the provisions of the Agreement, SB may grant sublicenses to PRODUCTS to any THIRD PARTY under the license granted by this Section 6.1. Except as otherwise expressly provided in this Agreement, SB shall have unfettered rights to grant sublicenses to PRODUCTS to AFFILIATES under the license granted by this Section 6.1. Nothing in this Agreement shall be construed as granting LIGAND any rights, title or ownership interest whatsoever to *** . SB shall deliver a copy of each sublicense to PRODUCTS to LIGAND promptly after granting such sublicense, provided that SB shall have the right to redact all technical and commercial terms which SB deems confidential and proprietary from such agreement prior to submitting it to LIGAND. No sublicense shall relieve SB of any obligations under this Agreement. SB will guarantee that the rights of LIGAND under this Agreement are not adversely affected by any sublicense

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granted pursuant to this Section 6.1. No rights to use PATENT RIGHTS and KNOW-HOW for research and development purposes survive termination or expiration of the RESEARCH PROGRAM except as expressly provided in this Agreement. Notwithstanding the foregoing, SB's rights to use PATENT RIGHTS and KNOW-HOW after expiration or termination shall include all PATENT RIGHTS and KNOW-HOW that are not exclusively owned by LIGAND.

6.2 LIGAND Rights.

6.2.1 *** after the expiration or earlier termination of the RESEARCH PROGRAM, except in the case of termination by SB under Section 14.3 or 14.5 below, LIGAND shall have the right in its sole discretion at its sole expense, for its own benefit or together with a THIRD PARTY, to develop and commercialize in the TERRITORY and in the FIELD (a) those RESEARCH COMPOUNDS which SB abandons or elects not to develop in the FIELD as determined in accordance with Section 6.2.3, and (b) those RESEARCH COMPOUNDS or PRODUCTS for which SB delays or suspends the development or marketing for more than *** as described in Section 5.4 above, as determined in accordance with Section 6.2.3, in each case provided that SB or any of its AFFILIATES or sublicensees is not either diligently developing or commercializing the RESEARCH COMPOUND for any other pharmaceutical purpose or diligently conducting EXPLORATORY DEVELOPMENT or FULL DEVELOPMENT with respect to, or diligently marketing, a COMPETING PRODUCT.

6.2.2 Additionally, at any time after the date *** after the expiration or earlier termination of the RESEARCH PROGRAM, except in the case of termination by SB under Section 14.3 or 14.5 below, if SB abandons or elects not to develop a PRODUCT in the U.S.A. or any MAJOR MARKET COUNTRY, LIGAND shall have the right in its sole discretion and at its sole expense, for its own benefit or together with a THIRD PARTY, to develop and commercialize such PRODUCT in the FIELD but only in the U.S.A. or those MAJOR MARKET COUNTRIES in which SB abandons or elects not to develop such PRODUCT. LIGAND's right to develop and commercialize shall not come into effect if SB, an AFFILIATE, or a sublicensee is diligently conducting EXPLORATORY DEVELOPMENT or FULL DEVELOPMENT of a COMPETING PRODUCT in the affected country or diligently marketing a COMPETING PRODUCT in such country. For purposes of this Section 6.2.2, by way of example but without limitation, SB shall not be deemed to have abandoned or elected not to develop a PRODUCT in a country if (i) SB has received the necessary regulatory approval to market such PRODUCT in the country in question, and (ii) SB has not commenced or has ceased marketing such PRODUCT in the country in question substantially due to adverse business or financial conditions caused by the regulatory authorities or other government authorities of such country which would cause marketing such PRODUCT in such country by SB to be contrary to the financial best interests of LIGAND and SB (including not commencing marketing in the U.S.A. or in a MAJOR MARKET COUNTRY where regulatory authorities or other government authorities have price approval authority and the price approved or proposed by the regulatory authorities or other government authorities is unacceptable to SB), provided, however, that SB commences or resumes

marketing such PRODUCT in such country as soon as reasonably practical after such adverse business or financial conditions cease to exist. SB shall also not be deemed to have abandoned or elected not to develop a PRODUCT in a country (or countries) if SB has commenced EXPLORATORY DEVELOPMENT or FULL DEVELOPMENT with respect to such PRODUCT in the U.S.A. or one or more of the MAJOR MARKET COUNTRIES and has a reasonable intention to commence EXPLORATORY DEVELOPMENT or FULL DEVELOPMENT with respect to such PRODUCT.

6.2.3 In order to determine whether SB has abandoned or elected not to develop or commercialize a RESEARCH COMPOUND or PRODUCT for purposes of Sections 5.4, 6.2.1 and 6.2.2 above, upon written notice from LIGAND, SB shall inform LIGAND in writing within *** of receipt of LIGAND's notice whether it has abandoned or elected not to commercialize such RESEARCH COMPOUND or PRODUCT and, if so requested, shall provide a reasonable explanation of its efforts to develop or commercialize such RESEARCH COMPOUND or PRODUCT. If SB has abandoned or elected not to develop or commercialize such RESEARCH COMPOUND or PRODUCT, then SB additionally shall inform LIGAND in writing whether it is diligently conducting EXPLORATORY DEVELOPMENT or FULL DEVELOPMENT with respect to, or diligently marketing, a COMPETING PRODUCT, and if so requested, shall provide a reasonable explanation of its efforts with respect to such COMPETING PRODUCT. If the parties disagree on the status of any RESEARCH COMPOUND or PRODUCT for purposes of this Section 6.2, the parties shall confer and in good faith attempt to resolve the disagreement between themselves.

6.2.4 If LIGAND exercises its rights under this Section 6.2 with respect to any RESEARCH COMPOUND owned by or licensed to SB, subject to rights of THIRD PARTIES, SB (a) shall grant to LIGAND an exclusive license (with the exclusive right to sublicense) in the TERRITORY (or in the case of Section 6.2.2, in the countries permitted under Section 6.2.2) to make, have made, import, use, offer for sale and sell PRODUCTS corresponding to such RESEARCH COMPOUND in the FIELD, (b) shall provide LIGAND with all such information and data regarding the RESEARCH COMPOUND which SB, or its sublicensees reasonably have available in such country, for example access to drug master file, clinical and QA data and the like, and shall execute such instruments as LIGAND reasonably requests, to enable LIGAND to obtain the appropriate regulatory approvals to market such PRODUCTS in such country and for any other lawful purpose related to development and commercialization of such PRODUCTS in such country, and (c) thereafter shall have no further rights under this Agreement with respect to such RESEARCH COMPOUND or such PRODUCT in the FIELD in the TERRITORY (or in the case of Section 6.2.2, in the countries permitted under Section 6.2.2) except as expressly provided in this Agreement. With respect to any license granted by SB under this Section 6.2.4, the commercial and other terms as provided in Sections 7.2 through 7.4 hereof shall apply to LIGAND mutatis mutandis.

6.2.5 If LIGAND or its sublicensee is not diligently developing or commercializing any such RESEARCH COMPOUND or PRODUCT licensed from SB under

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this Section 6.2 *** after the effective date of such license, then such license shall terminate, and all rights in and to such RESEARCH COMPOUND or PRODUCT shall revert to SB subject to the provisions of this Agreement, except the provisions of this Section 6.2. In determining LIGAND diligence, Sections 5.4 and 6.2 shall apply to LIGAND mutatis mutandis.

ARTICLE 7

ROYALTIES AND OTHER PAYMENTS

7.1 MILESTONE I Payment. Within *** after the LRC determines that

MILESTONE I has been achieved in accordance with this Agreement, SB shall make, unless otherwise made, the equity investment required under Section 1.1(b) of the Stock and Warrant Purchase Agreement of even date herewith.

7.2 Other Milestone Payments. In addition to the funding of the RESEARCH PROGRAM as provided in Section 3.2 above, and subject to Sections 7.3.2 and 14.2.6, as consideration for the STATs TECHNOLOGY and KNOW-HOW provided by LIGAND to the RESEARCH PROGRAM and LIGAND's participation in the RESEARCH PROGRAM, SB shall pay LIGAND each of the milestone payments set forth below, in the specified amounts, within *** after their first achievement in the first of the U.S.A. or a MAJOR MARKET COUNTRY up to a maximum of *** dollars with respect to each RESEARCH COMPOUND.

Milestone	Milestone Payment
***	(i) ***
***	(ii) ***
***	
***	(iii) ***
***	
***	
***	(iv) ***
***	(v) ***

provided that:

(1) ***
***
***;

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(2) by the term *** as used in this Section shall mean ***
***
***;

(3) by the term *** as used in this Section shall mean
***
***
***;

(4) by the term *** as used in this Section shall mean ***
***
***;

(5) by the term *** as used in this Section is meant the ***
***
***
***.

(6) by the term *** as used in this Section is meant the ***
***
***
***
***.

7.3 Royalties Payable by SB.

7.3.1 Patent Protected PRODUCTS.

(a) As consideration for the license under PATENT RIGHTS granted to SB under the Agreement and, independently, LIGAND'S participation in the RESEARCH PROGRAM and subject to Sections 7.3.1(b) and 7.3.2, SB shall make the following royalty payments to LIGAND, on a per PRODUCT basis:

	***	***
	***	***
	***	***

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provided that, for purposes of this Section, achievement of the NET SALES thresholds recited above shall be determined by adding the total annual NET SALES in all countries of the TERRITORY in which the PRODUCT sold, or its method of use for which it is being sold, is claimed in PATENT RIGHTS which have not been abandoned, disclaimed or held to be invalid or unenforceable in a proceeding from which no appeal has been or can be taken. Notwithstanding anything else in this Agreement or any other SB-LIGAND agreement, SB shall pay no more than a single royalty on a single PRODUCT, including but not limited to the event in which a single PRODUCT arises under both this Agreement and another SB-LIGAND agreement, in which case SB shall pay the higher royalty amount.

(b)

***

7.3.2 KNOW-HOW License.

(a) As consideration for the license to KNOW-HOW granted to SB under this Agreement and, independently, LIGAND'S participation in the RESEARCH PROGRAM, in

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lieu of the royalty rates provided in Section 7.3.1(a), SB will pay royalties to LIGAND calculated separately for each annual period using royalty rates which are *** of the royalty rates stated in Section 7.3.1(a) for a period of *** from the date of FIRST COMMERCIAL SALE on NET SALES in countries where no issued PATENT RIGHTS claiming the PRODUCT sold or its method of use exist or where such PATENT RIGHTS have lapsed, been disclaimed, gone abandoned or were held to be

invalid or unenforceable by a decision of a court or tribunal of competent jurisdiction from which no appeal is or can be taken or where ***
***
***
***
***
***
***
***
***
***.

(b) Notwithstanding anything else in this Agreement, regardless of whether *** are tested for any purpose by SB or by LIGAND during the RESEARCH PROGRAM TERM utilizing HTS or any other assay provided by LIGAND, and under any and all circumstances, Sections 7.2, 7.3.1 and 7.3.2(a) shall not apply to *** (as defined in Section 3.1.4).

7.3.3 THIRD PARTY Challenges. Notwithstanding the above, in the event any THIRD PARTY initiates any legal or administrative proceeding challenging the validity, scope or enforceability of PATENT RIGHTS, in any country in the TERRITORY, such as by opposing the grant of a patent in the European Patent Office, and in the event that if such challenge were successful there would be no issued PATENT RIGHTS claiming the PRODUCT in such country, then the royalty obligation in Section 7.3.1 shall be applicable during such period, and the royalty obligation on NET SALES in such country shall be paid by SB during pendency of the proceeding. If during the pendency of such challenge a product is marketed in such country which competes with a PRODUCT sold by SB in that country and the claims in the patent are held to be invalid or otherwise unenforceable with respect to the competing product by a court or other legal or administrative tribunal from which no appeal is or can be taken, then the amount of the royalties owed shall be retroactively calculated at the levels and for the periods given in Section 7.3.2 above for the period the competing product is marketed and the difference between the royalty paid under Section 7.3.1 during this period and the royalty for that period calculated under Section 7.3.2 shall be creditable by SB against future royalty payments owed under Section 7.3.2. From the date of the final decision from which no appeal is or can be taken, royalties will be calculated according to Section 7.3.2.

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7.4 Compulsory Licenses.

7.4.1 In the event that a governmental agency in any country or territory grants or compels LIGAND to grant a license under its PATENT RIGHTS to any THIRD PARTY for PRODUCT, SB shall have the benefit in such country or territory of the terms granted to such THIRD PARTY to the extent that such terms are more favorable than those of this Agreement in the circumstance where there are no PATENT RIGHTS owned exclusively by SB claiming the PRODUCT or the use for which it is being sold or where there are such PATENT RIGHTS, but such PATENT RIGHTS are not the subject of a compulsory license to the same THIRD PARTY.

7.4.2 In the event that a governmental agency in any country or territory grants or compels SB to grant a license under its PATENT RIGHTS to any THIRD PARTY for PRODUCT, SB shall have the benefit in such country or territory of the terms granted to such THIRD PARTY to the extent that such terms are more favorable than those of this Agreement.

7.5 THIRD PARTY Licenses. If, during the term of this Agreement, SB, in its sole reasonable discretion, deems it necessary to seek a license from any THIRD PARTY in order to avoid infringement of such THIRD PARTY's intellectual property rights during the exercise of the license herein granted to SB hereunder, *** of any royalties or other fees paid to such THIRD PARTY under such license may be deducted from that portion of royalties or other payments otherwise due LIGAND under this Agreement payable at a royalty rate *** of NET SALES, and further provided that any excess deduction shall be carried over into subsequent years of the Agreement until the full deduction is taken.

ARTICLE 8

ROYALTY REPORTS AND ACCOUNTING

8.1 Reports, Exchange Rates. During the term of the Agreement following the FIRST COMMERCIAL SALE of a PRODUCT, SB shall furnish to LIGAND a written report for each calendar quarter showing in reasonably specific detail, on a country by country basis, (a) the gross sales of all PRODUCTS sold by SB and its sublicensees in the TERRITORY during the reporting period and the calculation of NET SALES from such gross sales; (b) the royalties payable in U.S. dollars, if any, which shall have accrued hereunder based upon NET SALES of PRODUCTS; (c) withholding taxes, if any, required by law to be deducted in respect of such sales; (d) the dates of the FIRST COMMERCIAL SALES of any PRODUCTS in any country in the TERRITORY during the reporting period; and (e) the exchange rates

used in determining the amount of U.S. dollars. With respect to sales of PRODUCTS invoiced in U.S. dollars, the gross sales, NET SALES, and royalties payable shall be expressed in U.S. dollars. With respect to sales of PRODUCTS invoiced in a currency other than U.S. dollars, the gross sales, NET SALES and royalties payable shall be expressed in the domestic currency of the party making the sale together with the U.S. dollar equivalent of the royalty payable, calculated using the average closing buying rate for such currency quoted in the continental terms method of quoting exchange rates (local currency per U.S. $1) by *** , or, in the absence of quoted exchange rates from *** , a comparable bank or financial institution, *** . Reports shall be due on the sixtieth (60th) day following the close of each calendar quarter. The royalty report shall also state separately the amount of the notional NET SALES upon which the royalty is calculated attributed to notional NET SALES calculated as required under Section 1.24. SB shall keep complete and accurate records in sufficient detail to properly reflect all gross sales and NET SALES and to enable the royalties payable hereunder to be determined. The payment of the calculated quarterly royalty shall accompany the royalty report.

8.2 Audits.

8.2.1 Upon the written request of LIGAND and not more than *** in each calendar year, SB shall permit an independent certified public accounting firm of nationally recognized standing, selected by LIGAND and reasonably acceptable to SB, at *** expense, to have access during normal business hours to such of the records of SB as may be reasonably necessary to verify the accuracy of the royalty reports hereunder for any year ending not more than *** prior to the date of such request. The accounting firm shall disclose to LIGAND only whether the records are correct or not and the specific details concerning any discrepancies. No other information shall be shared.

8.2.2 If such accounting firm concludes that additional royalties were owed during such period, SB shall pay the additional royalties within *** of the date LIGAND delivers to SB such accounting firm's written report so concluding. The fees charged by such accounting firm shall be paid by LIGAND. If the audit discloses that the royalties payable by SB for the audited period are more than *** of the royalties actually paid for such period, then SB shall pay interest at the prime rate on the additional royalties owed.

8.2.3 SB shall include in each permitted sublicense granted by it pursuant to the Agreement a provision requiring the sublicensee to make reports to SB, to keep and maintain records of sales made pursuant to such sublicense and to grant access to such records by LIGAND's accounting firm to the same extent required of SB under the Agreement. Upon the expiration of *** following the end of any year, the calculation of royalties payable with respect to such year shall be binding and conclusive upon LIGAND, SB and its sublicensees, and such sublicensees shall be released from any liability or accountability with respect to royalties for such year.

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8.3 Confidential Financial Information. LIGAND shall treat all financial information subject to review under this Article 8 or under any sublicense agreement as confidential, and shall cause its accounting firm to retain all such financial information in confidence.

ARTICLE 9

METHOD OF PAYMENTS

9.1 Payment Terms. Royalties shown to have accrued by each royalty report provided for under Article 8 of the Agreement shall be due and payable on the date such royalty report is due. Payment of royalties in whole or in part may be made in advance of such due date.

9.2 Payment Method. Except as otherwise agreed between the parties, all royalties and other payments due hereunder shall be paid in U.S. dollars. All royalties and other payments by SB to LIGAND under the Agreement shall be originated from a U.S.A. bank located in the U.S.A. and shall be made by bank wire transfer in immediately available funds to such account as LIGAND shall designate before such payment is due. If at any time legal restrictions in any country in the TERRITORY prevent the prompt remittance in the manner set forth in this Section 9.2 of part or all royalties owing with respect to PRODUCT sales in such country, then the parties shall meet and mutually determine a lawful manner of suspending or remitting the restricted part of such royalty payments so long as such legal restrictions exist.

9.3 Withholding Taxes. All amounts owing from SB to LIGAND under the Agreement are net amounts, and shall be paid without deduction to account for any withholding taxes, value-added taxes or other taxes, levies or charges with respect to such amounts payable on behalf of SB or its sublicensees and any taxes required to be withheld on behalf of SB, or its sublicensees in any country within the TERRITORY; provided, however, that SB may deduct the amount of any taxes required to be withheld on behalf of LIGAND under the laws of any jurisdiction on amounts owing from SB to LIGAND hereunder to the extent SB, or its sublicensees pay to the appropriate governmental authority on behalf of LIGAND such taxes. SB shall use reasonable efforts to minimize any taxes required to be withheld on behalf of LIGAND by SB, or its sublicensees, and promptly shall deliver to LIGAND proof of payment of such taxes together with copies of all communications from or with such governmental authority with respect thereto.

9.4 LIGAND Royalties. In any situation where LIGAND incurs a royalty obligation to SB under this Agreement, unless otherwise agreed, the requirements of ARTICLE 8 and ARTICLE 9 applicable to the reporting and payment of royalties by SB shall be applicable mutatis mutandis to the reporting and payment of royalties by LIGAND.

ARTICLE 10

INFRINGEMENT ACTIONS BY THIRD PARTIES

10.1 If a party, or to its knowledge, any of its sublicensees or customers shall be sued by a THIRD PARTY for infringement of a patent because of the research, development, importation, manufacture, use, offer for sale or sale of RESEARCH COMPOUNDS or PRODUCTS, such party shall promptly notify the other in writing of the institution of such suit. SB shall have the first right but not the obligation to defend such suit at its own expense. If SB does not commence a defense of such suit within ninety (90) days after the receipt of written notice, LIGAND, after notifying SB in writing, shall be entitled to defend such suit at LIGAND's expense. In either event each party shall assist the other party and shall cooperate fully in the defense of such suit and furnish to the

party defending the suit all evidence in its control and reasonable assistance. Any judgments, settlements or damages payable with respect to legal proceedings covered by this Article 10 shall be paid by the party which controls the litigation, subject to any claims against the other party for breach of or indemnification under this Agreement or otherwise available at law or in equity. Any THIRD PARTY royalty payments or damages required to be paid as the result of a judgment or settlement under this Article 10 shall be paid by the party controlling the suit subject to any claims against the other party for breach of or indemnification under this Agreement or otherwise available at law or in equity; provided, however, in the case of a PRODUCT sold by SB, if such damages or THIRD PARTY royalty payments arise from the infringement of a patent having a claim or claims which cover the screening activities of LIGAND or SB under the RESEARCH PROGRAM, the damages or the THIRD PARTY royalty payments shall be fully creditable against royalties owed LIGAND under this Agreement provided, further, that in the event SB defends the suit SB may credit any damages or THIRD PARTY royalties against up to *** of that portion of the royalty payments due LIGAND under this Agreement at a royalty rate *** of NET SALES, and further provided that any excess deduction shall be carried over into subsequent years of the Agreement until the full deduction is taken.

ARTICLE 11

CONFIDENTIALITY

11.1 Nondisclosure Obligations. Except as otherwise provided in this Article 11 and subject to Article 12 hereof, during the term of the Agreement and for a period of *** thereafter, (a) both parties shall maintain in confidence information and data resulting from or related to the RESEARCH PROGRAM or the development of RESEARCH COMPOUNDS or PRODUCTS; and (b) both parties shall also maintain in confidence and use only for purposes of this Agreement all information and data supplied by the other party under this Agreement, which if disclosed in writing is marked "Confidential," or if disclosed orally is promptly thereafter confirmed in writing to be confidential.

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11.2 Permitted Disclosures. For purposes of this Article 11, information and data described in clause (a) or (b) above shall be referred to as "Information." To the extent it is reasonably necessary or appropriate to fulfill its obligations or exercise its rights under this Agreement, (w) a party may disclose Information it is otherwise obligated under this Article 11 not to disclose to its AFFILIATES, sublicensees, consultants, outside contractors and clinical investigators, on a need-to-know basis on condition that such persons or entities agree to keep the Information confidential for the same time periods and to the same extent as such party is required to keep the Information confidential; (x) a party or its AFFILIATES or sublicensees may disclose such Information to government or other regulatory authorities to the extent that such disclosure is reasonably necessary to obtain patents or authorizations to conduct clinical trials with, and to commercially market the PRODUCT, provided that the disclosing party shall request confidential treatment thereof when such treatment is permitted; (y) a party may disclose Information as required by applicable law, regulation or judicial process, provided that such party shall give the other party prior written notice thereof and adequate opportunity to object to any such disclosure or to request confidential treatment thereof; and (z) a party may disclose Information as permitted under Section 11.1.

The obligation not to disclose or use Information shall not apply to any part of such Information that (i) is or becomes patented, published or otherwise part of the public domain other than by acts of the party obligated not to disclose such Information or its AFFILIATES or sublicensees in contravention of this Agreement; or (ii) is disclosed to the receiving party or its AFFILIATES or sublicensees by a THIRD PARTY, provided such Information was not obtained by such THIRD PARTY directly or indirectly from the other party under this Agreement on a confidential basis; or (iii) prior to disclosure under the Agreement, was already in the possession of the receiving party or any of its AFFILIATES or sublicensees, provided such Information was not obtained directly or indirectly from the other party under this Agreement; or (iv) is

disclosed in a press release agreed to by both parties under Section 11.3 below.

11.3 Publicity Review. Without the prior written consent of the other party, neither party shall issue a press release or make any other form of statement to the public regarding the execution, the subject matter, and/or the terms of this Agreement or the Stock and Warrant Purchase Agreement, the work under the RESEARCH PROGRAM or any other aspect of this Agreement or the Stock and Warrant Purchase Agreement. Any of such statements may be made by LIGAND to a THIRD PARTY to whom LIGAND is seeking to sell an equity interest, e.g., common or preferred stock or an instrument convertible into common or preferred stock, or from whom LIGAND is seeking a loan provided that such THIRD PARTY is bound under obligations of confidentiality similar to those of this Article 11; provided, however, that notwithstanding the above, any statements made by LIGAND to a THIRD PARTY pharmaceutical company shall not include non-public information about this Agreement or the Stock and Warrant Purchase Agreement. The consent of the other party shall not be required with respect to disclosure of information about this Agreement by a party when such disclosure is required of it by law or regulation in the opinion of independent counsel. Each party agrees that it shall cooperate fully with the other with respect to all

disclosures regarding this Agreement to the Securities Exchange Commission and any other governmental or regulatory agencies, including requests for confidential treatment of proprietary information of either party included in any such disclosure.

11.4 Bankruptcy Provision. All confidential information disclosed by one party to the other shall remain the intellectual property of the disclosing party. In the event that a party shall file in any court or agency pursuant to any statute or regulation of any state or country, a petition in bankruptcy or insolvency or for reorganization or for an arrangement or for the appointment of a receiver or trustee of the party or of its assets, or if a party proposes a written agreement of composition or extension of its debts, or if a party shall be served with an involuntary petition against it, filed in any insolvency proceeding a court or other legal or administrative tribunal, the bankrupt or insolvent party shall promptly notify the court or other tribunal (a) that confidential information received from the other party under this Agreement remains the property of the other party and (b) of the confidentiality obligations under this Agreement. In addition, the bankrupt or insolvent party shall, to the extent permitted by law, take all steps necessary or desirable to maintain the confidentiality of the other party's confidential information and to insure that the court, other tribunal or appointee maintains such information in confidence in accordance with the terms of this Agreement.

ARTICLE 12

PUBLICATION

12.1 Notice of Publication. During the term of the Agreement, LIGAND and SB each acknowledge the other party's interest in publishing certain of its results to obtain recognition within the scientific community and to advance the state of scientific knowledge. Each party also recognizes the mutual interest in obtaining valid patent protection and protecting business interests. Consequently, either party, its employees or consultants wishing to make a publication (including any oral disclosure made without obligation of confidentiality) relating to work performed by such party as part of the RESEARCH PROGRAM (the "Publishing Party") shall transmit to the other party (the "Reviewing Party") a copy of the proposed written publication or an outline of such oral disclosure at least thirty (30) days prior to submission for publication or oral disclosure. The Reviewing Party shall have the right (a) to propose modifications to the publication for patent, trade secret or commercial reasons and (b) to request a reasonable delay in or avoidance of publication in order to protect patentable information and trade secrets, the disclosure of which would materially affect the interests of the Reviewing Party under this Agreement. A party shall have the right in its own discretion to seek patents on inventions made solely by its own employees.

12.2 Timing of Publication. If the Reviewing Party requests such a delay or avoidance, the Publishing Party shall delay submission or presentation of the publication for a period of ninety (90) days to enable modification as provided

in Section 12.1 or patent applications protecting each party's rights in such information to be filed in accordance with Article 13 below. Upon the expiry of sixty (60) days from transmission to the Reviewing

Party, the Publishing Party shall be free to proceed with the written publication or the presentation, respectively, unless the Reviewing Party has requested the delay or avoidance described above.

ARTICLE 13

PATENTS

13.1 Ownership of Inventions, Applications for Patent and Patents. Subject to such rights as are expressly granted under the Agreement, the entire right, title and interest in all inventions, discoveries, improvements or other technology directed at a RESEARCH COMPOUND or PRODUCT and all processes or uses relating thereto, whether or not patentable (collectively, the "Inventions"), together with all patent applications or patents based thereon, made during and as a result of the RESEARCH PROGRAM (a) by employees or others acting solely on behalf of LIGAND shall be owned solely by LIGAND (the "LIGAND Inventions"), (b) by employees or others acting solely on behalf of SB shall be owned solely by SB (the "SB Inventions"), and (c) by employees or others acting jointly on behalf of LIGAND and SB shall be owned jointly by LIGAND and SB (the "Joint Inventions"). Any dispute regarding the inventorship of an Invention or Joint Invention made under the RESEARCH PROGRAM shall be resolved by the decision of independent patent counsel, mutually acceptable to the parties, after consideration of all evidence submitted by the parties, except to the extent such decision is inconsistent with the subsequent determination of the appropriate patent or judicial authorities. Each party shall promptly disclose to the other party and the LRC the conception or reduction to practice under the RESEARCH PROGRAM of Inventions by employees or others acting on behalf of such party, and such disclosure shall be subject to the confidentiality provisions of Article 11. Each party hereby represents and agrees that all employees and other persons acting on its behalf in performing its obligations under the Agreement shall be obligated under a binding written agreement or applicable law to assign to such party or its AFFILIATE all Inventions made or developed by such employee or other Person.

13.2 Patent Applications.

13.2.1 Priority Filings. When an Invention or Joint Invention has been made under the RESEARCH PROGRAM which may reasonably be considered to be patentable, a priority patent application shall be filed as soon as reasonably possible. As used in this Agreement, a "priority patent application" means a patent application that establishes a filing date under the Convention of Paris for the Protection of Industrial Property. If a Joint Invention has been made under the RESEARCH PROGRAM, SB shall have the first right, using in-house or outside legal counsel selected at SB's sole discretion, to prepare, file, prosecute, maintain and extend patent applications and patents concerning all such inventions and discoveries owned in whole by SB or jointly by SB and LIGAND in countries of SB's choice throughout the world with appropriate credit to LIGAND representatives, including the naming of such parties as inventors where appropriate and in accordance with the relevant

legal requirements, for which SB shall bear the costs relating to such activities which occur at SB's request or direction. SB shall solicit the LRC's advice and review of the nature and text of such patent applications and important prosecution matters related thereto in reasonably sufficient time prior to filing thereof, and SB shall take into account the LRC's reasonable comments related thereto. If SB, prior or subsequent to filing certain patent applications on any inventions or discoveries which are owned in whole or in part by LIGAND, elects not to file, prosecute or maintain such patent applications or ensuing patents or certain claims encompassed by such patent applications or ensuing patents in any country of the TERRITORY, SB shall give LIGAND notice thereof within a reasonable period prior to allowing such patent applications or patents or such certain claims encompassed by such patent

applications or patents to lapse or become abandoned or unenforceable, and LIGAND shall thereafter have the right, at its sole expense, to prepare, file, prosecute and maintain patent applications and patents or divisional applications related to such certain claims encompassed by such patent applications or patents concerning all such inventions and discoveries in countries of its choice throughout the world. The party filing the application with respect to an Invention or Joint Invention made under the RESEARCH PROGRAM shall give the other party an opportunity to review the text of the application before filing, and in good faith shall consider and incorporate the reasonable requests of the other party. The party filing the application with respect to any Invention or Joint Invention made under the RESEARCH PROGRAM shall supply the other party with a copy of the application as filed, together with notice of its filing date and serial number.

13.2.2 Foreign Filing Decisions. No later than nine (9) months following the filing date of a priority patent application with respect to an Invention or Joint Invention made under the RESEARCH PROGRAM filed according to Section 13.2.1 above, the parties shall consult together, through the LRC or otherwise, to determine whether such priority application with respect to such Invention or Joint Invention should be abandoned without replacement; abandoned and refiled; proceeded within the country of filing only; or used as the basis for a claim of priority under the Paris Convention for corresponding applications in or designating other countries. The parties shall consult together to ensure that so far as legally and commercially practicable, the texts filed in the U.S.A. and in other countries contain the same information and claim the same scope of protection.

13.2.3 Prosecution and Maintenance. LIGAND and SB, as applicable, shall have the right, using commercially and legally reasonable practices, to control the prosecution, grant and maintenance of its PATENT RIGHTS with respect to each Invention or Joint Invention made under the RESEARCH PROGRAM, and to select all patent counsel or other professionals to advise, represent or act for it in all matters relating to such PATENT RIGHTS. All costs incurred in connection therewith shall be borne by the party taking action with respect to such PATENT RIGHTS. In the case of Joint Inventions made under the RESEARCH PROGRAM, the party controlling the prosecution, grant and maintenance of such joint PATENT RIGHTS shall consider all reasonable requests of the other party with respect thereto. All costs incurred in connection with the prosecution, grant and maintenance of such joint PATENT RIGHTS shall be paid in equal parts by the parties. Each party shall

inform the other party at regular intervals, or on request, about the status of all patent applications or patents for which it is responsible with respect to Inventions or Joint Inventions made under the RESEARCH PROGRAM.

In the event that LIGAND or SB elects not to file a patent application on an Invention or Joint Invention made under the RESEARCH PROGRAM in any country, or decides to abandon any pending application or granted patent on an Invention or Joint Invention made under the RESEARCH PROGRAM in any country, it shall provide adequate notice to the other party and give the other party the opportunity to file or maintain such application or patent at its own expense.

13.3 Cooperation. Each party shall make available to the other party or its authorized attorneys, agents or representatives, its employees, agents or consultants necessary or appropriate to enable the appropriate party to file, prosecute and maintain patent applications and resulting patents with respect to all Inventions or Joint Inventions made under the RESEARCH PROGRAM, as set forth in Section 13.2 above, for a period of time sufficient for such party to obtain the assistance it needs from such personnel. Where appropriate, each party shall sign or cause to have signed all documents relating to said patent applications or patents at no charge to the other.

13.4 No Other Technology Rights. Except as otherwise provided in the Agreement, under no circumstances shall a party hereto, as a result of the Agreement, obtain any ownership interest or other right in any technology, trade secrets, patents, pending patent applications, PRODUCTS, vaccines, antibodies, cell lines or cultures, or animals of the other party, including items owned, controlled or developed by the other, or transferred by the other to such party

at any time pursuant to the Agreement. It is understood and agreed by the parties that, except for Transferred Technology, the Agreement does not grant to either party any license or other right in basic technology of the other party except to the extent necessary to enable the parties to carry out their part of the RESEARCH PROGRAM, EXPLORATORY DEVELOPMENT, FULL DEVELOPMENT, manufacture, marketing and sales of RESEARCH COMPOUNDS and PRODUCTS.

13.5 Enforcement of PATENT RIGHTS.

13.5.1 LIGAND and SB each shall use good faith efforts to enforce their own PATENT RIGHTS against infringers, and to consult with the other party both prior to and during said enforcement. Upon learning of significant and continuing infringement of such PATENT RIGHTS by a THIRD PARTY in the FIELD, LIGAND or SB, as the case may be, shall promptly provide notice to the other party in writing of the fact and shall supply the other party with all evidence possessed by the notifying party pertaining to and establishing said infringement(s).

13.5.2 LIGAND may elect to initiate legal action with respect to LIGAND SOLE PATENT RIGHTS against such THIRD PARTY in its sole discretion, and SB shall

cooperate fully with LIGAND in any such action at its own out-of-pocket expense, further provided that SB shall have the right, but not the obligation, to join as a party provided it funds up to *** . SB shall have the right to be represented by legal counsel of its own choosing at its sole expense. If LIGAND, within *** of receipt of such notice or such lesser period of time if a further delay would result in material harm, or the loss of a material right, has not commenced legal action against an infringer whose infringing product competes with a PRODUCT and is embraced by a valid claim of said LIGAND SOLE PATENT RIGHTS in that country, which LIGAND SOLE PATENT RIGHTS are licensed to SB hereunder, upon written notice from SB, LIGAND shall promptly either: (i) initiate such action; or (ii) authorize SB to commence such action.

13.5.3 SB may elect to initiate legal action with respect to PATENT RIGHTS owned jointly or solely by SB against such THIRD PARTY in its sole discretion, and LIGAND shall cooperate fully with SB in any such action at its own out-of-pocket expense, further provided that LIGAND shall have the right, but not the obligation, to join as a party provided it funds up to *** . LIGAND shall have the right to be represented by legal counsel of its own choosing at its sole expense. If SB, within *** of receipt of such notice or such lesser period of time if a further delay would result in material harm, or the loss of a material right, has not commenced legal action against an infringer whose infringing product is embraced by a valid claim of said SB PATENT RIGHTS in that country, upon written notice from LIGAND, SB shall promptly either: (i) initiate such action; or (ii) authorize LIGAND to commence such action.

13.5.4 Notwithstanding anything to the contrary, any settlement of such legal action under Section 13.5 by the initiating party shall not require the consent of the non-initiating party unless such settlement would require the other party to be subject to an injunction or to make a monetary payment or would otherwise adversely affect the other party's rights under this Agreement, and such consent will not be unreasonably withheld. The party whose PATENT RIGHTS allegedly are being infringed shall not be obligated to bring or maintain more than one such suit at any time with respect to claims directed to any one method of manufacture or composition of matter. All monies recovered upon the final judgment or settlement of any such suit shall be shared, after reimbursement of expenses, by LIGAND and SB pro rata according to the respective percentages of costs borne by each party in such suit pursuant to this Section 13.5.

13.5.5 Notwithstanding the foregoing, LIGAND and SB shall fully cooperate with each other in the planning and execution of any action to enforce such PATENT RIGHTS, and shall join suit if required by law to do so in order to bring such action.

13.6 Unauthorized Use of PATENT RIGHTS. Neither LIGAND nor SB shall willfully take any action which would, directly or indirectly, infringe, or induce or contribute to the infringement of, one or more claims of any issued patent of the other party or its AFFILIATES, except to the extent such action is

authorized by a license granted under the Agreement. If either LIGAND or SB takes any action, directly or indirectly, to challenge the

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

validity of any issued patent related to the RESEARCH PROGRAM owned by the other party or its AFFILIATES, then the other party shall have the right in its sole discretion to terminate the RESEARCH PROGRAM; provided, however, in the circumstance where the challenged patent is included within the PATENT RIGHTS of the other party, the other party additionally shall have the right to terminate the license granted under Article 6 above, to the extent permitted by law, on a country-by-country basis. For the avoidance of doubt this right to terminate shall not apply to license rights in the U.S. provided that the licensee is not in breach of any obligation which would otherwise give rise to a right of termination. A party shall not be entitled to withhold any milestone payment or payment of any royalty accruing during any challenge by such party to the validity of a patent included within the PATENT RIGHTS of the other party.

13.7 Trademarks:

13.7.1 SB shall be responsible for the selection of all trademarks and tradenames which are employed in connection with any PRODUCT, subject to final review and approval by SB's legal personnel. SB shall be responsible for registration and maintenance of all such trademarks and tradenames, and, in those countries where recordation is required, SB shall be recorded as the registered user of such trademarks. Nothing in this Agreement shall be construed as a grant of rights, by license or otherwise, to LIGAND to use such trademarks and tradenames or any other trademarks and tradenames owned by SB for any purpose. SB shall own such tradenames and trademarks and shall retain such ownership upon termination of this Agreement.

13.7.2 Nothing in this Agreement shall be construed as a grant of rights, by license or otherwise, to either party, to use the name of the other party or any entity affiliated therewith for any purpose whatsoever except as may otherwise be expressly provided for in this Agreement.

13.7.3 Nothing in this Section 13.7 shall be deemed a limitation on LIGAND's right to register and use trademarks or tradenames of its own for PRODUCTS for which it acquires rights under ARTICLE 6.

ARTICLE 14

TERM AND TERMINATION

14.1 Expiration.

14.1.1 Royalty obligations under Section 7.3.1 for each PRODUCT in each country of the TERRITORY shall expire upon the earliest of:

(a) the expiration, abandonment or invalidation of the last remaining PATENT RIGHTS in such country which claims the PRODUCT sold or its method of use for which it is being sold;

(b) introduction of *** ***; and

(c) the expiration of ten (10) years after the priority filing date of pending PATENT RIGHTS which claims the PRODUCT sold or its method of use for which it is being sold.

Notwithstanding the foregoing, once the *** *** *** *** ***.

Expiration of SB's royalty obligations under Section 7.3.1 for a particular PRODUCT under this provision shall not preclude SB from continuing to market such PRODUCT and to use KNOW-HOW related thereto in such country without further royalty payments or any other remuneration to LIGAND, except to the extent that Section 7.3.2 is still applicable to the NET SALES of the particular PRODUCT in the particular country.

14.1.2 Royalty obligations under Section 7.3.2 in each country shall expire ten (10) years from the date of FIRST COMMERCIAL SALE in such country. Expiration of SB's royalty obligations for a particular PRODUCT under this provision shall not preclude SB from continuing to market such PRODUCT and to use KNOW-HOW related thereto in such country without further royalty payments or any other remuneration to LIGAND.

14.1.3 Unless otherwise terminated, this Agreement shall expire upon the later of (a) the expiration, lapse or invalidation of the last remaining PATENT RIGHTS in the TERRITORY which claims PRODUCT, or (b) ten (10) years from the date of FIRST COMMERCIAL SALE in the last country in the TERRITORY in which the PRODUCT is marketed by SB. Expiration of this Agreement under this provision shall not preclude SB from continuing to make, have made, use and sell PRODUCT, *** and to use KNOW-HOW related thereto in the TERRITORY without further royalty payments or any other remuneration to LIGAND.

14.2 Effect of Expiration or Termination.

14.2.1 Upon termination of this Agreement, LIGAND shall have the right to retain any sums already paid by SB hereunder, and SB shall pay all sums accrued hereunder which are then due. With respect to any license granted to LIGAND by SB under Section 6.2 and terminated by LIGAND under Section 14.7, the terms as provided in Sections 14.2.1 through 14.2.2 hereof shall apply to LIGAND mutatis mutandis.

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

14.2.2 Upon termination of this Agreement in its entirety or with respect to any PRODUCT in any country under Section 14.6, SB shall notify LIGAND of the amount of PRODUCT SB, its AFFILIATES, sublicensees and distributors then have on hand, the sale of which would, but for the termination, be subject to royalty, and SB, its AFFILIATES, sublicensees and distributors shall thereupon be permitted to sell that amount of PRODUCT provided that SB shall pay the royalty thereon at the time herein provided for.

14.2.3 Termination of this Agreement in its entirety shall terminate all outstanding obligations and liabilities between the parties arising from this Agreement except those described in Articles 2, 8 and 9 (to the extent applicable to PRODUCT sold, if any, after termination), 11 (for the time limit provided therein), 13, 14, 15, 16, 17, 19 and 20 and other than those outstanding obligations and liabilities resulting from a breach hereof. In addition, any other provision required to interpret and enforce the parties' rights and obligations under this Agreement shall also survive, but only to the extent required for the full observation and performance of this Agreement. Upon termination of this Agreement in its entirety, all LIGAND's interest and rights granted to SB under Article 6 shall revert to LIGAND and all SB's interest and rights granted to LIGAND under Article 6 shall revert to SB.

14.2.4 Termination of the Agreement in accordance with the provisions hereof shall not limit remedies which may be otherwise available in law or equity.

14.2.5 Except as otherwise provided in this Agreement, including

but not limited to Section 3.4.2, until the end of the period of (a) *** after expiration or termination of the RESEARCH PROGRAM if the RESEARCH PROGRAM is less than or equal to *** long or (b) the period of *** after expiration or termination of the RESEARCH PROGRAM if the RESEARCH PROGRAM if the RESEARCH PROGRAM is longer than ***, LIGAND shall have no right to use (i) any HTS, (ii) any KNOW-HOW in the FIELD, (iii) any KNOW-HOW provided to LIGAND by SB and (iv) any RESEARCH COMPOUND.

14.2.6 After expiration or termination of the RESEARCH PROGRAM for other than breach by SB, SB shall have the right to use only so much of LIGAND's STATs TECHNOLOGY which is related to the DESIGNATED PATHWAYS and which has been transferred to SB during the course of the RESEARCH PROGRAM TERM (a) for the purpose of continuing development of a RESEARCH COMPOUND or PRODUCT *** (as defined in Section 3.1.4) and (b) for the identification of additional MODULATORS. For a period of (i) *** after expiration or termination of the RESEARCH PROGRAM if the RESEARCH PROGRAM is less than or equal to *** long or (ii) for a period of *** if the RESEARCH PROGRAM is longer than *** , in the event that a compound is identified by SB, as a result of its activities pursuant to part (b) hereinabove, as having activity as a MODULATOR, such compound will be designated a RESEARCH COMPOUND for which milestone and royalty payments may be payable to LIGAND under Article 7. After the *** referred

to above, as applicable, SB has the right to use the Transferred Technology for its own use, even if the practice of the Transferred Technology by SB does fall within the scope of LIGAND SOLE PATENT RIGHTS, without any further payment to LIGAND. If (i) LIGAND files a patent application on the Transferred Technology no later than *** after expiration or termination of the RESEARCH PROGRAM, (ii) such patent application issues and, but for the license grant in Section 6.1 of this Agreement, SB's use of Transferred Technology after the *** referred to above would have infringed such issued patent and (iii) such PRODUCT arose out of the practice of the Transferred Technology by SB after the *** referenced above, then SB shall pay to LIGAND *** of the royalty rates stated in Section 7.3.1, in accordance with the mechanism provided therein, on the NET SALES of such PRODUCT for a period of ten (10) years from the date of FIRST COMMERCIAL SALE so long as the issued patent was not abandoned, disclaimed, or held to be invalid or unenforceable in a proceeding from which no appeal can be taken during its use with respect to development of the PRODUCT and there is no Competition in the Marketplace (as defined in Section 7.3.1). Section 7.2 shall not apply to any PRODUCT arising out of the practice of the Transferred Technology by SB after the *** referenced above. Notwithstanding the foregoing, if the Transferred Technology does not fall within LIGAND SOLE PATENT RIGHTS, SB shall have *** to LIGAND for any PRODUCT arising from use of the Transferred Technology after the *** and SB shall have no further payment obligations to LIGAND with respect to its continuing use of the Transferred Technology after said *** referred to above.

14.3 Termination In Case of Bankruptcy.

14.3.1 Either party may terminate this Agreement if, at any time, the other party shall file in any court or agency pursuant to any statute or regulation of any state or country, a petition in bankruptcy or insolvency or for reorganization or for an arrangement or for the appointment of a receiver or trustee of the party or of its assets, or if the other party proposes a written agreement of composition or extension of its debts, or if the other party shall be served with an involuntary petition against it, filed in any insolvency proceeding, and such petition shall not be dismissed within sixty (60) days after the filing thereof, or if the other party shall propose or be a party to any dissolution or liquidation, or if the other party shall make an assignment for the benefit of creditors.

14.3.2 Notwithstanding the bankruptcy of LIGAND, or the impairment of performance by LIGAND of its obligations under this Agreement as a result of bankruptcy or insolvency of LIGAND, SB shall be entitled to retain the licenses granted herein, subject to LIGAND's rights to terminate this Agreement for reasons other than bankruptcy or insolvency as expressly provided in this

Agreement, and subject to performance by SB of its preexisting obligations under this Agreement. Notwithstanding the bankruptcy of SB, or the impairment of performance by SB of its obligations under this Agreement as a result of bankruptcy or insolvency of SB, LIGAND shall be entitled to retain the licenses granted herein, subject to

SB's rights to terminate this Agreement for reasons other than bankruptcy or insolvency as expressly provided in this Agreement, and subject to performance by LIGAND of its preexisting obligations under this Agreement.

14.3.3 All rights and licenses granted under or pursuant to this Agreement by LIGAND to SB, and by SB to LIGAND, are, and shall otherwise be deemed to be, for purposes of Section 365(n) of the U.S. Bankruptcy Code, licenses of rights to "intellectual property" as defined under Section 101(52) of the U.S. Bankruptcy Code. The parties agree that each party, as a licensee of such rights under this Agreement, shall retain and may fully exercise all of its rights and elections under the U.S. Bankruptcy Code, subject to performance by the licensee of its preexisting obligations under this Agreement. The parties further agree that, in the event of the commencement of a bankruptcy proceeding by or against the licensor under the U.S. Bankruptcy Code, the licensee shall be entitled to a complete duplicate of (or complete access to, as appropriate) any such intellectual property and all embodiments of such intellectual property, and same, if not already in its possession, shall be promptly delivered to the licensee (a) upon any such commencement of a bankruptcy proceeding upon written request therefor by the licensee, unless the licensor elects to continue to perform all of its obligations under this Agreement, or (b) if not delivered under (a) above, upon the rejection of this Agreement by or on behalf of the licensor upon written request therefor by the licensee, provided, however, that upon the licensor's (or its successor's) written notification to the licensee that it is again willing and able to perform all of its obligations under this Agreement, the licensee shall promptly return all such tangible materials to the licensor, but only to the extent that the licensee does not require continued access to such materials to enable the licensee to perform its obligations under this Agreement.

14.4 Expiration or Termination of RESEARCH PROGRAM. The initial term of the RESEARCH PROGRAM shall be *** from the COMMENCEMENT DATE; provided, however, that the term shall be automatically extended by *** if LIGAND has developed an HTS before the *** anniversary of the COMMENCEMENT DATE and such HTS is approved by the LRC under Section 3.1.2. If LIGAND has not developed an HTS approved by the LRC under Section 3.1.2 before the *** anniversary of the COMMENCEMENT DATE, SB can terminate the RESEARCH PROGRAM at any time, in *** , by giving LIGAND *** prior written notice thereof. SB can terminate the RESEARCH PROGRAM as provided in this Agreement without terminating this Agreement.

14.5 Termination for Material Breach. If either party fails or neglects to perform covenants or provisions of this Agreement, including but not limited to the representation and warranty in Section 2.4 that each party will not knowingly engage in any activity in furtherance of the RESEARCH PROGRAM which will or is likely to constitute an infringement of any known THIRD PARTY patent rights, and if such default is material and is not corrected within sixty (60) days after receiving written notice from the other party with respect to such default, such other party shall have the right to terminate this Agreement by giving written notice to the

party in default provided the notice of termination is given within six (6) months of the default and prior to correction of the default.

14.6 Termination by SB on country-by-country basis: Except as provided in Section 14.4, SB may terminate this Agreement with respect to a particular

PRODUCT or all PRODUCTS in any country in the TERRITORY, or the entire TERRITORY, by giving LIGAND *** written notice thereof based on a reasonable determination by SB not to continue development and marketing of a PRODUCT. The PRODUCT so terminated shall be considered abandoned and LIGAND's rights thereto shall be determined pursuant to Section 6.2. In the event that SB shall terminate this Agreement with respect to all PRODUCTS in all countries of the TERRITORY, the PRODUCTS so terminated shall not be considered abandoned, and if LIGAND has not already exercised its right, if any, under Section 6.2 prior to such termination, this Agreement shall be deemed to be terminated in its entirety and Section 14.2 shall apply.

14.7 Termination by LIGAND on country-by-country basis: LIGAND may terminate its rights obtained under Section 6.2 with respect to any RESEARCH COMPOUND or PRODUCT corresponding thereto in any country in the TERRITORY by giving SB at least *** written notice thereof based on a reasonable determination by LIGAND not to continue development and marketing of such RESEARCH COMPOUND or PRODUCT. Termination of LIGAND'S rights with respect to such RESEARCH COMPOUND or PRODUCT in any country in the TERRITORY under this provision shall terminate all licenses granted to LIGAND in such country related to such RESEARCH COMPOUND or PRODUCT under Article 6 with full reversion to SB of all SB's interest and rights, including PATENT RIGHTS and KNOW-HOW, in such country related to such RESEARCH COMPOUND or PRODUCT.

14.8 Termination of the RESEARCH PROGRAM by SB: SB may, *** , terminate the RESEARCH PROGRAM, in its entirety, by giving LIGAND at least *** days written notice thereof based on a reasonable determination by SB, after consultation with LIGAND, using the same standards SB would use in assessing whether or not to continue research, development or commercialization of a product of its own making, that the *** of the RESEARCH PROGRAM or the RESEARCH COMPOUNDS does not justify continuation of the RESEARCH PROGRAM or continued research, development or commercialization of the RESEARCH COMPOUNDS. If SB terminates the RESEARCH PROGRAM under this Section 14.8, SB shall have the option, at its sole discretion, to retain any or all of the licenses granted to SB by LIGAND under Section 6 under LIGAND's PATENT RIGHTS and KNOW-HOW with respect to any or all of the RESEARCH COMPOUNDS identified prior to such termination, such retained licenses to remain subject to the terms of this Agreement, and the applicable Sections of this Agreement shall survive termination under this Section 14.8. SB shall notify LIGAND in writing, no later than *** after termination of the RESEARCH PROGRAM, whether SB wishes to retain licenses to any RESEARCH COMPOUNDS. RESEARCH COMPOUNDS which are not retained by SB in writing under this Section 14.8 shall be immediately subject to Section 6.2 and the date of the written notice of termination of the RESEARCH PROGRAM shall be

deemed the first day of the *** period referred to in Sect. 6.2.1. Further, if SB terminates the RESEARCH PROGRAM under this Section 14.8, LIGAND shall have the right to retain any quarterly installment of the ANNUAL RESEARCH FEE already paid to LIGAND by SB prior to the effective date of termination.

ARTICLE 15

INDEMNITY

15.1 Direct Indemnity. Each party shall indemnify and hold the other party, its AFFILIATES and sublicensees harmless, and hereby forever releases and discharges the other party, its sublicensees, from and against all claims, demands, liabilities, damages and expenses, including attorneys' fees and costs (collectively, "Liabilities") arising out of negligence, recklessness or intentional misconduct of the indemnifying party, or sublicensees in connection with the work performed by such party during the RESEARCH PROGRAM, EXPLORATORY DEVELOPMENT, FULL DEVELOPMENT or the marketing or sale of RESEARCH COMPOUNDS or PRODUCTS hereunder; except in each case to the extent such Liabilities resulted from negligence, recklessness or intentional misconduct of the other party, provided that, the adequate notice and right to participate provisions of Section 15.3 below are followed.

15.2 Other Indemnity.

15.2.1 Each party shall indemnify and hold the other party, its AFFILIATES and sublicensees harmless from and against all Liabilities suffered or incurred in connection with THIRD PARTY claims for personal injuries or any PRODUCT recall to the extent caused by: (a) any failure to test for or provide adequate warnings of adverse side effects to the extent such failure arises out of negligence, recklessness or intentional misconduct in connection with the indemnifying party's preclinical or clinical testing obligations hereunder, (b) any manufacturing defect in any PRODUCT or any other material manufactured by the indemnifying party, AFFILIATES or permitted sublicensees, or (c) any other act or omission (without regard to culpable conduct) of the indemnifying party, or permitted sublicensees in connection with the activities contemplated under the Agreement; except in each case to the extent such Liabilities resulted from negligence, recklessness or intentional misconduct of the other party, provided that, the adequate notice and right to participate provisions of Section 15.3 below are followed.

15.3 Procedure. A party (the "Indemnitee") that intends to claim indemnification under this Article 15 shall promptly notify the other party (the "Indemnitor") of any Liability or action in respect of which the Indemnitee or any of its sublicensees intend to claim such indemnification, and the Indemnitor shall have the right to participate in, and, to the extent the Indemnitor so desires, jointly with any other Indemnitor similarly noticed, to assume the defense thereof with counsel selected by the Indemnitor; provided, however, that an Indemnitee shall have the right to retain its own counsel, with the fees and expenses of such

counsel to be paid by the Indemnitee, if representation of such Indemnitee by the counsel retained by the Indemnitor would be inappropriate due to actual or potential differing interests between such Indemnitee and any other party represented by such counsel in such proceedings. The indemnity agreement in this Article 15 shall not apply to amounts paid in settlement of any loss, claim, damage, liability or action if such settlement is effected without the consent of the Indemnitor, which consent shall not be withheld unreasonably. The failure to deliver notice to the Indemnitor within a reasonable time after the commencement of any such action, if prejudicial to its ability to defend such action, shall relieve such Indemnitor of any liability to the Indemnitee under this Article 15, but the omission to deliver notice to the Indemnitor will not relieve it of any liability that it may have to any Indemnitee otherwise than under this Article 15. The Indemnitee under this Article 15, its employees and agents, shall cooperate fully with the Indemnitor and its legal representatives in the investigation of any action, claim or liability covered by this indemnification.

15.4 Insurance. SB shall maintain, through self-insurance or otherwise, PRODUCT liability insurance with respect to the development, manufacture and sale of PRODUCTS in such amount as SB customarily maintains with respect to its other PRODUCTS having similar technical and commercial potential. SB shall maintain such insurance for so long as it continues to develop, manufacture or sell any PRODUCTS, and thereafter for so long as SB maintains insurance for itself covering such manufacture or sales. The requirement to maintain insurance shall apply mutatis mutandis to LIGAND in the circumstance where LIGAND acquires the right under this Agreement to commercialize a PRODUCT.

15.5 Indemnity Exclusion. A party that relinquishes rights to a RESEARCH COMPOUND or PRODUCT to the other party shall not be obligated to indemnify the other party, or its sublicensees under Sections 15.1 and 15.2 with respect to their use of information obtained from the relinquishing party as a result of the relinquishing of rights to the RESEARCH COMPOUND or PRODUCT.

ARTICLE 16

FORCE MAJEURE

Neither party shall be held liable or responsible to the other party nor be deemed to have defaulted under or breached this Agreement for failure or delay in fulfilling or performing any term of this Agreement when such failure or delay is caused by or results from causes beyond the reasonable control of the affected party including but not limited to fire, floods, embargoes, war, acts of war (whether war be declared or not), insurrections, riots, civil commotions, strikes, lockouts or other labor disturbances, acts of God or acts, omissions or delays in acting by any governmental authority or the other party.

ARTICLE 17

ASSIGNMENT

This Agreement may not be assigned or otherwise transferred, nor, except as expressly provided hereunder, may any right or obligations hereunder be assigned or transferred by either party without the consent of the other party;***

***

***

*** . Any permitted assignee shall assume all obligations of its assignor under this Agreement. If LIGAND desires to assign this Agreement and its rights and obligations hereunder in connection with the transfer or sale of all or substantially all of its business to a Competitor of SB, or in the event of its merger or consolidation or change in control or similar transaction to a Competitor of SB prior to *** , SB shall have the right within *** after receipt of written notice thereof from LIGAND to either (a) grant a consent to such assignment, or (b) terminate the RESEARCH PROGRAM, in which case the RESEARCH PROGRAM shall terminate upon receipt by LIGAND of written notice of such election to terminate. If SB elects to terminate the RESEARCH PROGRAM under the immediately preceding sentence, LIGAND shall be entitled to *** in which the notice of termination is given and (b) *** . Nothing in this Article 17 shall prevent a party from assigning its rights to develop and commercialize a PRODUCT for which it acquires rights from the other under this Agreement which assignment shall be subject to any rights accorded the non-assigning party as a result of this Agreement. As used in Article 17, the term "a Competitor of SB" refers to an entity which, without consideration of the assets acquired as a result of the assignment from LIGAND, either (i) *** .

ARTICLE 18

NOTIFICATION OF PATENT TERM RESTORATION

LIGAND or SB, as the case may be, shall notify the other party of (a) the issuance of each U.S. patent, or foreign patent where extension is possible, included within the PATENT

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

RIGHTS, giving the date of issue and patent number for each such patent, and (b) each notice pertaining to any patent included within the PATENT RIGHTS which it receives as patent owner pursuant to U.S. law, including but not limited to the Drug Price Competition and Patent Term Restoration Act of 1984 (hereinafter called the "Act"), or equivalent foreign laws, including notices pursuant to SectionSection 101 and 103 of the Act from persons who have filed an abbreviated NDA ("ANDA") or with respect to an NDA pursuant to 21 U.S.C. Section355(b). Such notices shall be given promptly, but in any event within five (5) calendar days

of each such patent's date of issue or receipt of each such notice pursuant to the law, whichever is applicable. LIGAND or SB, as the case may be, shall discuss relevant issues and decide upon appropriate action with respect to patent term restoration under the law, any allegations of failure to show due diligence and all awards of patent term restoration (extensions) with respect to the PATENT RIGHTS. Likewise, LIGAND or SB, as the case may be, shall inform the other party of patent extensions and periods of data exclusivity in the rest of the world regarding any PRODUCT.

ARTICLE 19

SEVERABILITY

Each party hereby agrees that it does not intend to violate any public policy, statutory or common laws, rules, regulations, treaty or decision of any government agency or executive body thereof of any country or community or association of countries. If any term or provision of this Agreement is held to be invalid, illegal or unenforceable by a court or other governmental authority of competent jurisdiction, such invalidity, illegality or unenforceability shall not affect any other term or provision of this Agreement, which shall remain in full force and effect. The holding of a term or provision to be invalid, illegal or unenforceable in a jurisdiction shall not have any effect on the application of the term or provision in any other jurisdiction.

ARTICLE 20

MISCELLANEOUS

20.1 Notices. Any consent, notice or report required or permitted to be given or made under this Agreement by one of the parties hereto to the other shall be in writing, delivered personally or by facsimile transmission effective upon such delivery and, in the case of facsimile transmission, confirmation of receipt by the recipient (and promptly confirmed by personal delivery, U.S. first class mail or courier), U.S. first class mail or courier, postage prepaid (where applicable), addressed to such other party at its address indicated below, or to such other address as the addressee shall have last furnished in writing to the addressor and (except as otherwise provided in this Agreement) shall be effective upon receipt by the addressee.

If to LIGAND: LIGAND Pharmaceuticals Incorporated

9393 Towne Center Drive

San Diego, California 92121

Attention: General Counsel

If to SB: SmithKline Beecham plc

New Horizons Court

Brentford, Middlesex, TW8 9EP

England

Attention: Senior Vice President,
Worldwide Business Development

copies to:

SmithKline Beecham Corporation

One Franklin Plaza (Mail Code FP1930)

P.O. Box 7929

Philadelphia, Pennsylvania 19101

U.S.A.

Attention: Senior Vice President,
Worldwide Business Development

SmithKline Beecham Corporation

One Franklin Plaza

P.O. Box 7929

Philadelphia, Pennsylvania 19101, U.S.A.

Attention: General Counsel-U.S.

20.2 Applicable Law. The Agreement shall be governed by and construed in accordance with the laws of the Commonwealth of Pennsylvania.

20.3 Entire Agreement. This Agreement and the concurrently executed Stock and Warrant Purchase Agreement and the accompanying Warrant, Ninth Addendum to the Amended Registration Rights Agreement and the Promissory Notes between LIGAND and SB to which LIGAND and SB are parties contain the entire understanding of the parties with respect to the subject matter hereof and shall supersede all express or implied agreements and understandings, either oral or written, heretofore made relating to the subject matter hereof. This Agreement may be amended, or any term hereof modified, only by a written instrument duly executed by both parties hereto.

20.4 Headings. The captions to the several Articles and Sections hereof are not a part of this Agreement, but are merely guides or labels to assist in locating and reading the several Articles and Sections hereof.

20.5 Independent Contractors. It is expressly agreed that LIGAND and SB shall be independent contractors and that the relationship between the two parties shall not constitute a partnership, joint venture or agency. Neither LIGAND nor SB shall have the authority to make any statements, representations or commitments of any kind, or to take any action, which shall be binding on the other, without the prior consent of the party to do so.

20.6 U.S. Export Laws and Regulations. Each party warrants and represents to the other that it does not intend to, nor will it knowingly export from the U.S.A. or reexport from any foreign country, or knowingly permit a THIRD PARTY to export or reexport technology or technical information of the other party, to a country where such export or reexport would be in violation of U.S. Export Administration Regulations.

20.7 Waiver. The waiver by either party hereto of any right hereunder or the failure to perform or of a breach by the other party shall not be deemed a waiver of any other right hereunder or of any other breach or failure by said other party whether of a similar nature or otherwise.

20.8 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.

IN WITNESS WHEREOF, the parties have executed this Agreement as of the date first set forth above.

SMITHKLINE BEECHAM plc	LIGAND PHARMACEUTICALS INCORPORATED
By: /s/ J-P. Garnier	By: /s/ William L. Respess
J-P. Garnier	William L. Respess

Title: Chief Operating Officer & President Title: Senior Vice President,
General Counsel and Secretary

Date: March 17, 1998 Date: 3/18/98

LEPTIN RESEARCH, DEVELOPMENT AND LICENSE AGREEMENT

SMITHKLINE BEECHAM plc-LIGAND PHARMACEUTICALS INCORPORATED

APPENDIX A

KEY TO ABBREVIATIONS

The following abbreviations are used in this Appendix A:

HTS High Throughput Screen

JAK Janus Kinase

STAT Signal Transducer and Activator of Transcription

The main goal of this collaboration is to discover small molecules that can mimic or potentiate the effects of leptin through the use of screens that detect the activation of the signal transduction systems utilized by leptin.

A. SPECIFIC OBJECTIVES - SUMMARY

***

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

B. WORK TO BE PERFORMED BY LIGAND

***

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

***

C. WORK TO BE DONE BY SB

***

D. JOINT RESEARCH BETWEEN SB AND LIGAND

***

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

E. LIGAND STAFFING REQUIREMENTS:

The LIGAND staffing requirements anticipated for the *** are summarized in the following tables. Decisions about staffing allocation will be reviewed periodically by the LRC.

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Confidential Treatment and filed separately with the Commission.

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TIMINGS TO COMPLETION FROM START OF COLLABORATION

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

CRITICAL PATH FOR DISCOVERY OF SMALL MOLECULE MODULATORS OF LEPTIN ACTION
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LEPTIN RESEARCH, DEVELOPMENT AND LICENSE AGREEMENT
SMITHKLINE BEECHAM plc-LIGAND PHARMACEUTICALS INCORPORATED

APPENDIX B

LIGAND SOLE PATENT RIGHTS

1) ***

2) ***

3) ***

EXHIBIT 10.175

STOCK AND WARRANT PURCHASE AGREEMENT

THIS STOCK AND WARRANT PURCHASE AGREEMENT is made as of the 17th day of March, 1998, by and among Ligand Pharmaceuticals Incorporated, a Delaware corporation (the "Company"), SmithKline Beecham plc, an English public limited company ("Investor"), and SmithKline Beecham Corporation, a Pennsylvania corporation ("SBC").

THE PARTIES HEREBY AGREE AS FOLLOWS:

1. Purchase and Sale of Shares and Warrant.

1.1 Sale and Issuance of Shares and Warrant. SBC shall have joint and several liability for all of Investor's obligations under this Section 1.1.

(a) First Installment. Subject to the terms and conditions of this Agreement, Investor agrees to pay $5,000,000 ("First Installment") to the Company at the Closing and the Company agrees to sell and issue to Investor at the Closing the number of shares (the "First Installment Shares") of the Company's Common Stock equal to $5,000,000 divided by $18.22 (which is 120% of the average daily closing price of the Company's Common Stock reported by the National Association of Securities Dealers, Inc. ("NASD") for the fifteen (15) trading days preceding the fifth (5th) day prior to the date hereof).

(b) Second Installment. Subject to the terms and conditions of this Agreement, Investor agrees to pay $2,250,000 (the "Second Installment") to the Company and the Company agrees to sell and issue to Investor the number of shares (the "Second Installment Shares") of the Company's Common Stock equal to *** divided by 120% of the average daily closing price of the Company's Common Stock reported by the NASD on the *** to the Second Installment Date (as defined below). Investor shall pay the Second Installment to the Company if and when the requirements of the milestone set forth in Section 7.1 (the "Milestone") of the Leptin Research, Development and License Agreement of even date herewith between the Company and Investor (the "Research Agreement") are met. The Company shall deliver written notice to Investor, including documentation of the LRC action (as defined in the Research Agreement), of the satisfaction of the requirements of the Milestone, and shall simultaneously deliver a written certification that the representations and covenants of the Company set forth in Section 2 of this Agreement are true and correct with respect to the Second Installment Shares as of the date of such notice. The date on which such notice is delivered shall be the "Second Installment Date". Investor shall deliver the Second Installment to the Company in accordance with Section 1.2 within thirty (30) days of the Second Installment Date and shall simultaneously deliver a written verification that the representations and covenants of Investor set forth in Section 3 of this Agreement are true and correct with respect to the Second Installment Shares as of the date of delivery of the Second

***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 Exchange Act.

Installment Shares. Upon delivery of the Second Installment to the Company by Investor, the Company shall issue and deliver to Investor a certificate representing the Second Installment Shares (free and clear of all liens, claims and other encumbrances except as otherwise provided herein and in the Registration Rights Agreement (as defined below)).

(c) Sale and Issuance of Warrant. Subject to the terms and conditions of this Agreement, Investor agrees to pay $1,000,000 (the "Warrant Purchase Price") to the Company at the Closing and the Company agrees to sell and issue to Investor at the Closing the Common Stock Purchase Warrant in the form attached hereto as Exhibit A (the "Warrant").

1.2 Closing. The purchase and sale of the First Installment Shares and the Warrant shall take place at the offices of Brobeck, Phleger & Harrison LLP, 550 West "C" Street, Suite 1200, San Diego, California, within three (3) business days after the date on which all conditions to closing set forth in Section 4 and Section 5 have been satisfied, or at such other time and place as the Company and Investor mutually agree upon orally or in writing (which time and place are designated as the "Closing"). At the Closing the Company shall deliver to Investor (i) a certificate representing the First Installment Shares and (ii) the Warrant (both of which shall be free and clear of all liens, claims and other encumbrances except as otherwise provided herein and in the Registration Rights Agreement (as defined below)). In consideration of such delivery, Investor shall make payment of the purchase prices for the First Installment Shares and the Warrant by delivery to the Company of the First Installment and the Warrant Purchase Price. Such payments by Investor at the Closing and all payments with respect to the Second Installment shall be in immediately-available funds in the form of a certified or cashier's check payable to the Company's order or by wire transfer of funds to the Company's designated bank account. Notwithstanding anything to the contrary in this Agreement or the Research Agreement, either Ligand separately or Investor and SBC jointly shall be entitled to terminate this Agreement and the Research Agreement in the event the Closing has not occurred on or before June 1, 1998.

2. Representations and Warranties of the Company. Except as otherwise set forth on the Schedule of Exceptions attached hereto as Exhibit B, the Company hereby represents and warrants to Investor that:

2.1 Organization, Good Standing and Qualification. The Company is a corporation duly organized, validly existing and in good standing under the laws of the State of Delaware and has all requisite corporate power and authority to carry on its business as now conducted and as proposed to be conducted. The Company is duly qualified to transact business and is in good standing in each jurisdiction in which the failure so to qualify would be reasonably expected to have a material adverse effect on the business, operations, properties, assets, prospects or condition (financial or otherwise) of the Company (a "Material Adverse Effect"). Except as disclosed in the Form 10-K (as defined herein), the Company has no subsidiaries.

2.2 Authorization. The Company has all requisite corporate power and authority (i) to execute, deliver and perform its obligations under this Agreement, the Registration Rights Agreement and the Research Agreement; (ii) to issue the Securities (as defined herein) in the manner and for the purpose contemplated by this Agreement, and

(iii) to execute, deliver and perform its obligations under all other agreements and instruments executed and delivered by it pursuant to or in connection with this Agreement, the Registration Rights Agreement and the Research Agreement. All corporate action on the part of the Company, its officers, directors and stockholders necessary for the authorization, execution and delivery of this Agreement, the Securities, the Ninth Addendum to Amended Registration Rights Agreement of even date herewith, which makes Investor a party to the Amended Registration Rights Agreement between the Company and certain of its stockholders (collectively, the "Registration Rights Agreement"), and the Research Agreement, the performance of all obligations of the Company hereunder and thereunder and the authorization, issuance (or reservation for issuance) and delivery of the Securities has been taken or will be taken prior to the Closing, and this Agreement, the Warrant (when issued and fully paid for), the Registration Rights Agreement and the Research Agreement constitute valid and legally binding obligations of the Company, enforceable in accordance with their respective terms, except (i) as limited by applicable bankruptcy, insolvency, reorganization, moratorium, and other laws of general application affecting enforcement of creditors' rights generally and (ii) as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies.

2.3 Valid Issuance of Securities. The First Installment Shares and the Second Installment Shares, if any (collectively, the "Shares") and the Warrant which are being purchased hereunder and the shares of Common Stock

issuable upon exercise of the Warrant, when each are issued, sold and delivered in accordance with the terms hereof and thereof for the consideration expressed herein and therein, will be duly and validly issued, fully paid and nonassessable and, based in part upon the representations of Investor in this Agreement, the Shares and the Warrant will be issued in compliance with all applicable federal and state securities laws.

2.4 SEC Reports. The Company has heretofore filed with the Securities and Exchange Commission (the "SEC") pursuant to the Securities Exchange Act of 1934, as amended (the "Exchange Act"), all reports and other documents required to be filed, including an Annual Report on Form 10-K for the year ended December 31, 1996 (the "Form 10-K"). None of such reports, or any other reports, documents, registration statements, definitive proxy materials and other filings required to be filed with the SEC under the rules and regulations of the SEC (the "SEC Filings") contains any untrue statement of a material fact or omits to state a material fact required to be stated therein or necessary in order to make the statements made, at the time and in light of the circumstances under which they were made, not misleading. Since December 31, 1996, the Company has timely filed with the SEC all SEC Filings and all such SEC Filings complied in all material respects with all applicable requirements of the Securities Act of 1933, as amended (the "Securities Act"), the Exchange Act, and the rules thereunder. The audited financial statements of the Company included or incorporated by reference in the 1996 Annual Report and the unaudited financial statements contained in the quarterly reports on Form 10-Q each have been prepared in accordance with such acts and rules and with United States generally accepted accounting principles applied on a consistent basis throughout the periods indicated therein and with each other, except as may be indicated therein or in the notes thereto and except that the unaudited interim financial statements may not contain all footnotes and adjustments required by United States generally accepted accounting principles, and fairly present the financial condition of the Company as at the dates thereof and the results of its operations and statements of cash flows for the periods

then ended, subject, in the case of unaudited interim financial statements, to normal year-end adjustments. Except as reflected in such financial statements, the Company has no material liabilities, absolute or contingent, other than ordinary course liabilities incurred since the date of the last such financial statements in connection with the conduct of the business of the Company. Since December 31, 1996, except as set forth in the Company's SEC Filings, there has been no:

(a) change in the assets, liabilities, financial condition or operating results of the Company from that reflected in the 1996 Annual Report, except changes in the ordinary course of business that have not, individually or in the aggregate, resulted in and are not reasonably expected to result in a Material Adverse Effect (and except that the Company expects to continue to incur substantial operating losses, which may be material);

(b) damage, destruction or loss, whether or not covered by insurance, materially and adversely affecting the business, properties or financial condition of the Company (and except that the Company expects to continue to incur substantial operating losses, which may be material);

(c) waiver or compromise by the Company of a material right or of a material debt owed to it;

(d) satisfaction or discharge of any lien, claim or encumbrance by the Company, except in the ordinary course of business and which is not material to the business, properties or financial condition of the Company (as such business is presently conducted);

(e) material change to a material contract or arrangement by which the Company or any of its assets is bound or subject;

(f) sale, assignment or transfer to a third party that is not an affiliate of the Company (as hereafter defined) of any material patents, trademarks, copyrights, trade secrets or other intangible assets for compensation which is less than fair value;

(g) mortgage, pledge, transfer of a security interest in, or lien, created by the Company, with respect to any of its material properties or assets, except liens for taxes not yet due or payable;

(h) declaration, setting aside or payment or other distribution in respect of any of the Company's capital stock, except any direct or indirect redemption, purchase or other acquisition of any such stock by the Company; or

(i) event or condition of any type that has had or is reasonably expected to have a Material Adverse Effect.

For purposes of this Section 2.4 of this Agreement, the term "affiliate of the Company" means any individual or entity directly or indirectly controlling, controlled by or under common control with, the Company. Without limiting the foregoing, the direct or indirect ownership of 50% or more of the outstanding voting securities of any entity, or the right to receive 50% or more of the profits or earnings of an entity, shall be deemed to constitute control.

2.5 Contracts. With respect to each of the material contracts, commitments and agreements of the Company, the Company is not, and has no actual knowledge that any other party is, in default under or in respect of any such material contract, commitment or agreement, the result of which default would have a Material Adverse Effect. No party to any such material contract, commitment or agreement, would be authorized or permitted to terminate its obligations thereunder by reason of the execution and delivery of this Agreement or any of the transactions contemplated herein.

2.6 Compliance. The Company has complied with, and is not in default under or in violation of its Certificate of Incorporation, Bylaws or any and all laws, ordinances and regulations or other governmental restrictions, orders, judgments or decrees, applicable to the Company's business as presently conducted and as proposed to be conducted, including individual products marketed by it, where any such default or violation would have a Material Adverse Effect. The Company has not received notice of any possible or actual violation of any applicable law, ordinance, regulation, or order, the result of which violation would be reasonably expected to have a Material Adverse Effect. The Company is not a party to any agreement or instrument, or subject to any charter or other corporate restriction, or any judgment, order, decree, law, ordinance, regulation or other governmental restriction which would prevent or impede, or be breached or violated by, or would result in the creation of any lien or encumbrance upon any assets of the Company by, the transactions contemplated in this Agreement, the execution, delivery or performance of the Registration Rights Agreement or the Research Agreement, except that no representation or warranty is made with respect to filings required by the Hart-Scott-Rodino Antitrust Improvements Act of 1976 as amended.

2.7 Compliance with Other Instruments. The execution, delivery and performance of this Agreement and of the transactions contemplated hereby will not result in any violation of or constitute, with or without the passage of time and the giving of notice, either a default under any provision of the Company's Certificate of Incorporation or Bylaws.

2.8 Governmental Consents. No consent, approval, order or authorization of, or registration, qualification, designation, declaration or filing with, any federal, state or local governmental authority is required on the part of the Company in connection with the Company's valid execution, delivery and performance of this Agreement, the Registration Rights Agreement and the Research Agreement, except for any filings under any applicable state securities laws and except for any filing under the Hart-Scott-Rodino Antitrust Improvements Act of 1976 as amended. The filings under state securities laws, if any, will be effected by the Company at its cost within the applicable stipulated statutory period.

2.9 Litigation. There is no action, suit, proceeding or investigation pending or currently threatened against the Company which questions the validity of this Agreement, the Registration Rights Agreement or the Research Agreement, or the right of the Company to enter into such agreements or to consummate the transactions contemplated hereby or thereby. There is no action, suit, proceeding or investigation pending or currently threatened against the Company, which singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would materially adversely affect the business, properties, operations, financial condition, income or business prospects of the Company as presently being conducted.

2.10 Permits. Except as disclosed in the SEC Filings (including, among other things, the lack of FDA approvals for the commercial sale of the Company's product candidates), the Company has all governmental franchises, permits, licenses, and any similar authority necessary for the conduct of its business as now being conducted by it or as proposed to be conducted by it, the lack of which could have a Material Adverse Effect. The Company is not in default in any material respect under any of such franchises, permits, licenses or other similar authority.

2.11 Taxes. The Company has filed all federal, state and other tax returns which are required to be filed and has heretofore paid all taxes which have become due and payable, except where the failure to file or pay would not be reasonably expected to have a Material Adverse Effect. The provision for taxes on the balance sheet as of December 31, 1996 is sufficient for the payment of all accrued and unpaid taxes of the Company with respect to the period then ended.

2.12 Title. The Company has good and marketable title to all material property and assets reflected in the financial statements to the 1996 Annual Report (or as described in the SEC Filings). The Company occupies its leased properties under valid and binding leases conforming to the description thereof set forth in the SEC Filings.

2.13 Intellectual Property. The Company owns, or possesses adequate rights to use, all of its patents, patent rights, trade secrets, know-how, proprietary techniques, including processes and substances, trademarks, service marks, trade names and copyrights described or referred to in the SEC Filings or owned or used by it or which is necessary for the conduct of its business as presently conducted, except where the failure to own or possess such patents, patent rights, trade secrets, know-how, proprietary techniques, including processes and substances, trademarks, service marks, trade names and copyrights would not have a Material Adverse Effect. The Company has not received any notice of infringement of or conflict with asserted rights of others with respect to any patents, patent rights, trade secrets, know-how, proprietary techniques, including processes and substances, trademarks, service marks, trade names and copyrights which, singly or in the aggregate, if the subject of an unfavorable decision, ruling or finding, would be reasonably expected to have a Material Adverse Effect.

2.14 Capitalization; Options and Warrants. The authorized capital stock of the Company consists of Eighty-Five million (85,000,000) shares, of which Eighty million

(80,000,000) shares are Common Stock, par value $0.001 per share, and Five million (5,000,000) shares are Preferred Stock, par value $0.001 per share, of which Eighty thousand (80,000) shares have been designated Series A Participating Preferred Stock. As of September 30, 1997, 32,977,938 shares of the Company's Common Stock and no shares of Preferred Stock were issued and outstanding. Except for the transactions contemplated hereby and except as set forth in the Company's SEC Filings, since December 31, 1996, the Company has not granted any option (except for stock options granted under the Company's stock option plans), warrants, rights (including conversion or preemptive rights, except for stock purchased under the Company's stock purchase plans), or similar rights to any person or entity to purchase or acquire any rights with respect to any shares of capital stock of the Company that in the aggregate exceed 250,000

shares.

2.15 Nasdaq National Market Designation. The Common Stock is currently included in the Nasdaq National Market of the Nasdaq Stock Market and the Company knows of no reason or set of facts which is likely to result in the termination or inclusion of the Common Stock in the Nasdaq National Market or the inability of such stock to continue to be included in the Nasdaq National Market. The Company shall use all commercially reasonable efforts to maintain the Non-Quantitative Designation Criteria contained in Section 4460 of the NASD Manual to the extent such criteria are within the control of the Company. Nothing in this Section shall be interpreted to preclude the Company from listing its Common stock on a national securities exchange in lieu of the Nasdaq National Market.

2.16 Accuracy of Representations and Warranties. No representation or warranty by the Company contained in this Agreement, and no statement contained in any exhibit, schedule, disclosure, certificate, list or other instrument delivered or to be delivered to Investor pursuant hereto or in connection with the transactions contemplated hereby contains any untrue statement of a material fact or omits to state any material fact necessary to make the statements contained herein or therein not misleading.

3. Representations and Warranties of Investor. Investor and SBC hereby jointly and severally represent and warrant that:

3.1 Organization, Good Standing and Qualification. Investor is a public limited company duly organized, validly existing and in good standing under the laws of England. SBC is a corporation duly organized, validly existing and in good standing under the laws of the Commonwealth of Pennsylvania. Investor and SBC each has all requisite power and authority to carry on its business as now conducted and as proposed to be conducted.

3.2 Authorization. All corporate action on the part of each Investor and SBC, and their respective officers and directors necessary for the authorization, execution and delivery of this Agreement and the Registration Rights Agreement and the performance of all obligations of Investor and SBC hereunder and thereunder has been taken or will be taken prior to the Closing, and this Agreement and the Registration Rights Agreement constitute valid and legally binding obligations of Investor and SBC as their interests appear, enforceable in accordance with their respective terms, except (i) as limited by applicable

bankruptcy, insolvency, reorganization, moratorium, and other laws of general application affecting the enforcement of creditors' rights generally, and (ii) as limited by laws relating to the availability of specific performance, injunctive relief, or other equitable remedies.

3.3 Purchase Entirely for Own Account. This Agreement is made with Investor and SBC in reliance upon Investor's representation to the Company, which by execution of this Agreement Investor hereby confirms, that the Shares and the Warrant to be received by Investor and the shares of Common Stock issuable upon exercise of the Warrant (collectively, the "Securities") will be acquired for investment for Investor's own account, not as a nominee or agent, and not with a view to the resale or distribution of any part thereof, and that Investor does not have any present intention of selling, granting any participation in, or otherwise distributing the same in violation of the Securities Act or any state securities laws. By executing this Agreement, Investor further represents that it does not have any contract, undertaking, agreement or arrangement with any person to sell, transfer or grant participations to such person or to any third person, with respect to any of the Securities. Investor and SBC each represent that it has full power and authority to enter into this Agreement.

3.4 Investment Experience. Investor acknowledges that it is able to fend for itself, can bear the economic risk of its investment and has such knowledge and experience in financial or business matters that it is capable of evaluating the merits and risks of the investment in the Securities. Investor also represents that it has not been organized for the purpose of acquiring the

Securities.

3.5 Accredited Investor. Investor is an "accredited investor" within the meaning of SEC Rule 501 of Regulation D, as presently in effect.

3.6 Restricted Securities. Investor understands that the Securities it is purchasing are characterized as "restricted securities" under the federal securities laws inasmuch as they are being acquired from the Company in a transaction not involving a public offering and that under such laws and applicable regulations such Securities may be resold without registration under the Securities Act only in certain limited circumstances. In this connection, Investor represents that it is familiar with SEC Rule 144, as presently in effect, and understands the resale limitations imposed thereby and by the Securities Act.

3.7 Further Limitations on Disposition. Without in any way limiting the representations set forth above, Investor further agrees not to make any disposition of all or any portion of the Securities unless and until the transferee has agreed in writing for the benefit of the Company to be bound by Sections 3.7, 6.2 and 7 (except that Sections 3.7, 6.2 and 7 shall not apply to a transferee in a registered public offering or a sale under Rule 144 or as provided in Section 7) of this Agreement, all provisions of the Registration Rights Agreement and the Warrant, if applicable, and:

(a) There is then in effect a Registration Statement under the Securities Act covering such proposed disposition and such disposition is made in accordance with such Registration Statement; or

(b) (i) Investor shall have notified the Company of the proposed disposition and shall have furnished the Company with a reasonably detailed statement of the circumstances surrounding the proposed disposition (to the extent required for purposes of securities law compliance), and (ii) if reasonably requested by the Company, Investor shall have furnished the Company with an opinion of counsel (which may be Investor's or SBC's inside counsel), in form and substance reasonably satisfactory to the Company, that such disposition will not require registration of such shares under the Securities Act. It is agreed that the Company will not require opinions of counsel for transactions made pursuant to Rule 144 except in unusual circumstances.

3.8 Legends. It is understood that the certificates evidencing the Securities may bear one or all of the following legends:

(a) "These securities have not been registered under the Securities Act of 1933, as amended. They may not be sold, offered for sale, pledged or hypothecated in the absence of a registration statement in effect with respect to the securities under such Act or an opinion of counsel satisfactory to the Company that such registration is not required or unless sold pursuant to Rule 144 of such Act."

(b) "These securities are subject to certain transfer restrictions contained in a certain Stock and Warrant Purchase Agreement dated March 17, 1998, as amended from time to time, a copy of which may be obtained from the Company without charge."

(c) Any legend required by any applicable state securities laws.

To the extent that such legends are no longer applicable, the Company shall cause its transfer agent to remove the legends upon request by Investor.

3.9 Governmental Consents. No consent, approval, order or authorization of, or registration, qualification, designation, declaration or filing with, any federal, state or local governmental authority is required on the part of Investor or SBC in connection with Investor's or SBC's valid execution, delivery and performance of this Agreement, the Warrant or the Registration Rights Agreement, or the issuance of the Shares and the Warrant, except for any filings under any applicable state securities laws and except for

any filing under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended.

4. Conditions of Investor's Obligations at Closing. The obligations of Investor under Sections 1.1(a) and (c) of this Agreement are subject to the fulfillment on or before the Closing of each of the following conditions, the waiver of which shall not be effective without the consent of Investor thereto:

4.1 Representations and Warranties. The representations and warranties of the Company contained in Section 2 shall be true on and as of the Closing with the same effect as though such representations and warranties had been made on and as of the date of the Closing.

4.2 Performance. The Company shall have performed and complied with all agreements, obligations and conditions contained in this Agreement that are required to be performed or complied with by it on or before the Closing, and all corporate or other proceedings in connection with the transactions contemplated at the Closing and all documents incident thereto shall be reasonably satisfactory in form and in substance to Investor.

4.3 Compliance Certificate. An officer of the Company shall have delivered to Investor a certificate certifying that (a) the conditions specified in Sections 4.1 and 4.2 have been fulfilled; (b) the Company has not filed a petition in bankruptcy or insolvency or for reorganization or for an arrangement or for the appointment of a receiver or trustee of its assets, nor is the Company aware of any events or action that would make any such filing or arrangement imminent; and (c) no action or event has occurred, nor is any action or event imminent, that would impair the Company's ability to perform as contemplated under the Research Agreement.

4.4 Approvals. All authorizations, approvals, or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required as of the Closing in connection with the lawful issuance and sale of the Shares and the Warrant pursuant to this Agreement shall have been duly obtained and shall be effective as of the Closing.

4.5 Proceedings and Documents. All corporate and other proceedings in connection with the transactions contemplated at the Closing and all documents incident thereto shall be reasonably satisfactory in form and substance to Investor and it shall have received all such counterpart original and certified or other copies of such documents as it may reasonably request.

4.6 Research Agreement. The Company and SBC shall have entered into the Research Agreement.

4.7 Registration Rights Agreement. The Company and Investor shall have entered into the Ninth Addendum to Amended Registration Rights Agreement.

4.8 Opinion of Company Counsel. Investor shall have received an opinion from the Company's Senior Vice President, General Counsel, Government Affairs and Secretary, dated as of the Closing, in form and substance reasonably acceptable to Investor.

4.9 Conditions of Investor's Obligations at Second Installment. The obligations of Investor or SBC under Section 1.1(b) are subject to the fulfillment on or before the closing of the Second Installment of the following conditions, the waiver of which shall not be effective without the consent of Investor thereto: (a) all Second Installment Shares shall, when issued, sold and delivered, be duly and validly issued, fully paid and nonassessable; (b) the offer and sale of the Second Installment Shares shall comply with applicable federal and state securities laws; (c) the Company shall have filed with the SEC all material reports required by the Exchange Act to be filed as of the date of the applicable closing; and (d) all authorizations, approvals or permits, if any, of any governmental authority

or regulatory body of the United States or of any state that are required in connection with the lawful issuance and sale of the Second Installment Shares shall have been duly obtained and shall be effective as of the proposed closing.

5. Conditions of the Company's Obligations at Closing. The obligations of the Company to Investor under this Agreement are subject to the fulfillment on or before the Closing of each of the following conditions by Investor:

5.1 Representations and Warranties. The representations and warranties of Investor contained in Section 3 shall be true on and as of the Closing with the same effect as though such representations and warranties had been made on and as of the Closing.

5.2 Performance. Investor shall have performed and complied with all agreements, obligations and conditions contained in this Agreement that are required to be performed or complied with by it on or before the Closing, and all corporate or other proceedings in connection with the transactions contemplated at the Closing and all documents incident thereto shall be reasonably satisfactory in form and in substance to the Company.

5.3 Compliance Certificate. An officer of Investor shall have delivered to the Company a certificate certifying that the conditions specified in Sections 5.1 and 5.2 have been fulfilled.

5.4 Payment of Purchase Price. Investor shall have delivered the purchase prices specified in Sections 1.1(a) and (b).

5.5 Qualifications. All authorizations, approvals, or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required as of the Closing in connection with the lawful issuance and sale of the Shares and the Warrant pursuant to this Agreement shall have been duly obtained and shall be effective as of the Closing.

5.6 Research Agreement. The Company and SBC shall have entered into the Research Agreement.

5.7 Registration Rights Agreement. The Company and Investor shall have entered into the Ninth Addendum to Amended Registration Rights Agreement.

5.8 Conditions of Company's Obligations at Second Installment. The obligations of the Company under Section 1.1(b) are subject to the fulfillment on or before the closing of the Second Installment of the following conditions, the waiver of which shall not be effective without the consent of the Company thereto: (a) the representations and warranties of Investor (or SBC, if SBC is purchasing the Second Installment Shares) contained in Section 3 shall be true on and as of the closing with the same effect as though such representations and warranties had been made on and as of the closing; (b) the offer and sale of the Second Installment Shares shall comply with applicable federal and state securities laws; and (c) all authorizations, approvals or permits, if any, of any governmental authority or regulatory body of the United States or of any state that are required in connection with the lawful issuance and sale of the Second Installment Shares shall have been duly obtained and

shall be effective as of the proposed closing.

6. Covenants of the Parties.

6.1 Additional Registration Rights. Following the payment by Investor of the Second Installment, the Company and Investor (or SBC, as applicable) shall enter into an Addendum to the Registration Rights Agreement, in substantially the form of the Ninth Addendum entered into in connection with the Closing pursuant to which such shares of stock of the Company obtained by Investor (or SBC, as applicable) shall be included within the definition of "Registrable Securities" under the Registration Rights Agreement and Schedule A of the Registration Rights Agreement shall be restated accordingly.

6.2 Transfer Restriction. Notwithstanding any rights under the Registration Rights Agreement, Investor hereby agrees that without the prior written consent of the Company (which may be withheld in its sole discretion), neither it nor any affiliate (as defined in Rule 144 of the Act promulgated by the SEC ("Affiliate")) shall, directly or indirectly sell, offer to sell, contract to sell (including, without limitation, any short sale), grant any option to purchase or otherwise transfer or dispose of (other than to donees who agree to be similarly bound) the Shares, the Warrant and any shares of Common Stock issued upon exercise of the Warrant (collectively, the "Restricted Securities") until the later of (i) *** following the date of this Agreement or (ii) *** . Notwithstanding the foregoing, transfers solely among Investor Affiliates shall not be subject to the transfer restrictions set forth in this Section 6.2 provided the Affiliate transferee agrees in writing to be bound by this Section 6.2. In order to enforce the foregoing covenant, the Company may impose legends and/or stop-transfer instructions with respect to the Restricted Securities held by Investor or any Affiliate (and the Restricted Securities of every other person subject to the foregoing restriction).

6.3 Standstill Provisions. Commencing as of the Closing and for the period until the earlier of (i) three (3) years following the date of this Agreement and (ii) the termination of the Research Program (as defined in Section 1.34 of the Research Agreement), so long as Investor and its Affiliates (including SBC) together own shares which represent more than *** of the outstanding Common Stock of the Company, Investor (including SBC and all Affiliates of Investor) shall not acquire beneficial ownership of any shares of Common Stock of the Company, any securities convertible into or exchangeable for Common Stock, or any other right to acquire Common Stock, except by way of stock dividends or other distributions or offerings made available to holders of Common Stock generally, from the Company or any other person or entity, without the prior written consent of the Company, which consent may be withheld in its sole discretion; provided, however, that in no event shall (i) the original purchase of securities pursuant to that certain Stock and Note Purchase Agreement between *** (ii) the original purchase of securities pursuant to this Agreement, (iii) the exercise of the Warrant, or

(iv) the acquisition by SBC (or any affiliate of SBC) of another company that atthe time of the acquisition owns securities of the Company constitute a violation of this Section 6.3.

6.4 Diligent Efforts. The parties to this Agreement hereby agree to use diligent efforts to cause the conditions contained in Sections 4 and 5 hereof to be satisfied.

7. Right of First Offer.

7.1 Right of First Offer.

(a) Investor shall not make any disposition of all or any portion (or any interest) of the Restricted Securities without first giving the Company the right to accept an offer to purchase such Restricted Securities, except for any dispositions that are exempt pursuant to the terms of Section 7.3. Subject to Section 6.2, at the time Investor wishes to make a disposition of any or all of the Restricted Securities (except for dispositions that are exempt pursuant to the terms of Section 7.3), it shall submit a written offer to sell all, but not less than all, of such Restricted Securities which Investor wishes to dispose (the "Offered Shares") to the Company (the "Offer") by facsimile to the Company's President or Chief Operating Officer (such facsimile to be received during the Company's normal business hours and to be confirmed in writing by notice pursuant to Section 8.6) as follows:

(i) If Investor wishes to sell the Offered Shares in an open market disposition, the Offer shall disclose the number of Offered Shares proposed to be sold. As soon as practicable after receipt of the Offer,

but in no event later than three business days after Investor makes the Offer, the Company shall have the option to accept the Offer to purchase the Offered Shares at the higher of (i) the closing market price on the business day next preceding the day of the Offer or (ii) the closing market price on the business day next preceding the day the Offer is accepted by the Company. In the event the Company does not purchase the Offered Shares offered by Investor pursuant to the Offer, Investor may sell the Offered Shares at any time within ninety (90) days after the expiration of the Offer. Any such sale shall be made in the open market at the market prices prevailing at the time of the sale.

(ii) If Investor wishes to sell or otherwise transfer the Offered Shares in a privately negotiated transaction, whether through broker-dealers who may act as agent or acquire the Offered Shares as principal, or otherwise, the Offer shall disclose the number of Offered Shares proposed to be sold or transferred and the price at which the Offered Shares are offered to the Company. As soon as practicable after receipt of the Offer, but in no event later than three business days after Investor makes the Offer, the Company shall have the option to accept the Offer to purchase the Offered Shares at the higher of (i) the price per share set forth in the Offer or (ii) the closing market price on the business day next preceding the day the Offer is accepted by the Company. In the event the Company does not purchase the Offered Shares offered by Investor pursuant to the Offer, and provided that the price specified in the Offer is not greater than the closing market price on the business day nextpreceding the day of the Offer, Investor may sell or transfer the Offered Shares at any time within ninety (90) days after the expiration of the Offer for any price.

(iii) If Investor wishes to effect an underwritten offering of the Offered Shares pursuant to registration rights granted by the Company (if permitted thereby), the Offer shall disclose the number of Offered Shares proposed to be sold to the underwriters. The Company shall have the option to purchase the Offered Shares at the higher of (i) the closing market price on the business day next preceding the day of the Offer or (ii) the closing market price on the business day next preceding the day the Offer is accepted by the Company. As soon as practicable after receipt of the Offer, but in no event later than three business days after Investor makes the Offer, the Company shall have the option to accept the Offer to purchase the Offered Shares. In the event the Company does not purchase the Offered Shares offered by Investor pursuant to the Offer, Investor may sell the Offered Shares in an underwritten offering commenced within ninety (90) days after the expiration of the Offer.

(b) Any Offered Shares not sold in accordance with the applicable terms and within the applicable time periods provided in subsection (a) above shall continue to be subject to the Company's right of first offer pursuant to this Section 7.

(c) The provisions of subsections (a) and (b) above shall not apply to any disposition of Restricted Securities in which the aggregate number of such Restricted Securities involved in such disposition is less than *** (subject to appropriate adjustment in the event of such stock splits, stock dividends, recapitalizations and the like) during any thirty (30)-day period.

(d) The provisions of subsections (a) and (b) above shall not apply to any disposition of Restricted Securities made in a privately negotiated transaction, whether through broker-dealers who may act as agent or acquire such Restricted Securities as principal, or otherwise, in which: (i) the aggregate number of such Restricted Securities involved in such disposition is less than *** (subject to appropriate adjustment in the event of stock splits, stock dividends, recapitalizations and the like); and (ii) no other disposition under this Section 7.1(d) shall have occurred for a period of at least thirty (30) days prior to the applicable disposition; and (iii) such disposition shall not be to an entity a material portion of the business operations of which relates to the pharmaceutical industry, or to an affiliate of such entity or to a third party purchasing on behalf of such entity. The Restricted Securities subject to this Section 7.1(d) shall bear a legend reasonably acceptable to the Company reflecting the restrictions set forth herein.

(e) If the Company accepts an Offer under this Section 7, the closing of such purchase shall occur within twenty (20) business days after acceptance of the Offer by the Company. Upon such acceptance, the Company and Investor shall be legally obligated to consummate the purchase contemplated thereby.

(f) The provisions of this Section 7 shall not have any effect at such times as Investor and SBC together with their Affiliates own shares of the Common Stock of the Company which represent less than *** of the outstanding Common Stock of the Company.

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

7.2 Binding Effect. The Company's right of first offer shall be assignable in whole or in part by the Company, (but only after the Company receives notice of a transfer which is subject to the Company's right of first offer and only with respect to that individual transaction) and shall inure to the benefit of its successors and assigns. The Company's right of first offer shall be binding upon any transferee of any Restricted Securities acquired pursuant to a disposition that is exempt from the right of first offer pursuant to the terms of Section 7.3. However, the Company's right of first offer shall not apply to any transferee of any Restricted Securities if the Restricted Securities were previously offered to the Company pursuant to Section 7.1, the Company elected not to purchase such Restricted Securities and Investor sold such Restricted Securities to the transferee in compliance with Section 7.1.

7.3 Exempt Transfers. Subject to Section 7.2, the Company's right of first offer shall not apply to (i) transfers to Affiliates of Investor or SBC or to donees, provided the transferee agrees to be bound by the obligations of this Agreement, or (ii) transactions involving a merger, reorganization, recapitalization, exchange offer or sale of all or substantially all of the business or capital stock of the Company approved by the Company's board of directors.

8. Miscellaneous.

8.1 Survival of Warranties. The warranties, representations and covenants of the Company and Investor and SBC contained in or made pursuant to this Agreement shall survive the execution and delivery of this Agreement and the Closing and shall in no way be affected by any investigation of the subject matter thereof made by or on behalf of Investor, SBC or the Company.

8.2 Successors and Assigns. Except as otherwise provided herein, the terms and conditions of this Agreement shall inure to the benefit of and be binding upon the respective successors and assigns of the parties (including transferees of any of the Shares or the Warrant sold hereunder or any shares issuable upon the exercise of the Warrant), provided, however, Investor's or SBC's rights and obligations under Section 1.1 shall not be assignable, except to an Affiliate so long as the performance by the Affiliate is guaranteed by SBC in form and substance reasonably acceptable to the Company. Nothing in this Agreement, express or implied, is intended to confer upon any party other than the parties hereto or their respective successors and assigns any rights, remedies, obligations, or liabilities under or by reason of this Agreement, except as expressly provided in this Agreement.

8.3 Governing Law. This Agreement shall be governed by and construed under the laws of the State of California as applied to agreements among California residents entered into and to be performed entirely within California.

8.4 Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

8.5 Titles and Subtitles. The titles and subtitles used in this Agreement are used for convenience only and are not to be considered in construing or interpreting this Agreement.

8.6 Notices. Unless otherwise provided, any notice required or permitted under this Agreement shall be given in writing by personal delivery to the party to be notified or by Federal Express or other overnight package delivery service or registered or certified mail, postage prepaid and addressed to the party to be notified at the following addresses, or at such other address as such party may designate by five (5) days' advance written notice to the other parties (with notice deemed given upon receipt):

If to the Company:

Ligand Pharmaceuticals Incorporated
10275 Science Center Drive
San Diego, California 92121
Attn: William L. Respess, Esq.

If to Investor:

SmithKline Beecham plc
New Horizons Court
Brentford, Middlesex, TW8 9EP
England
Attn: Senior Vice President,
Worldwide Business Development

If to SBC:

SmithKline Beecham Corporation
One Franklin Plaza (FP2225)
P.O. Box 7929
Philadelphia, Pennsylvania 19102
Attn: General Counsel - U.S.

8.7 Finder's Fee. Each party represents that it neither is nor will be obligated for any finders' fee or commission in connection with this transaction. Each party agrees to indemnify and to hold harmless the other from any liability for any commission or compensation in the nature of a finders' fee (and the costs and expenses of defending against such liability or asserted liability) for which the indemnifying party or any of its officers, partners, employees, or representatives is responsible.

8.8 Expenses. Irrespective of whether the Closing is effected, each party shall pay all costs and expenses that it incurs with respect to the negotiation, execution, delivery and performance of this Agreement. Notwithstanding the foregoing, the Company shall pay any and all stamp, transfer and other similar taxes payable or determined to be

payable in connection with the execution and delivery of this Agreement or the original issuance of the Securities, including shares issuable upon exercise of the Warrant, and shall save and hold Investor harmless from and against any and all liabilities with respect to or resulting from any delay in paying, or omission to pay, such taxes.

8.9 Amendments and Waivers. Any term of this Agreement may be amended and the observance of any term of this Agreement may be waived (either generally or in a particular instance and either retroactively or prospectively), only with the written consent of the Company, Investor and SBC. Any amendment or waiver effected in accordance with this paragraph shall be binding upon each holder of any securities purchased under this Agreement at the time outstanding, each future holder of all such securities, and the Company.

8.10 Severability. If one or more provisions of this Agreement are held to be unenforceable under applicable law, such provision shall be excluded from this Agreement and the balance of the Agreement shall be interpreted as if such provision were so excluded and shall be enforceable in accordance with its terms.

8.11 Entire Agreement. This Agreement and the documents referred to herein constitute the entire agreement among the parties with respect to the subjects hereof and thereof and no party shall be liable or bound to any other party in any manner by any warranties, representations, or covenants with respect to such subjects except as specifically set forth herein or therein.

[Remainder of This Page Intentionally Left Blank]

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

THE COMPANY:

LIGAND PHARMACEUTICALS INCORPORATED

By: /s/ William L. Respess

Title: Senior Vice President

General Counsel, Govt. Affairs

INVESTOR:

SMITHKLINE BEECHAM PLC

By: /s/ J-P. Garnier

Title: Chief Operating Officer & President

SBC:

SMITHKLINE BEECHAM CORPORATION

By: /s/ J-P Garnier

Title: Chief Operating Officer & President

EXHIBIT A

FORM OF WARRANT

A-1

No. SBC-1

150,000 Shares

COMMON STOCK PURCHASE WARRANT

THESE SECURITIES HAVE NOT BEEN REGISTERED UNDER THE SECURITIES ACT OF 1933, AS AMENDED, OR APPLICABLE STATE SECURITIES LAWS. IN THE ABSENCE OF AN EFFECTIVE REGISTRATION STATEMENT UNDER SUCH ACT AND SUCH LAWS, THESE SECURITIES MAY NOT BE OFFERED, SOLD, TRANSFERRED OR OTHERWISE DISPOSED OF, EXCEPT PURSUANT TO AN APPLICABLE EXEMPTION FROM THE REGISTRATION REQUIREMENTS OF SAID ACT AND SUCH LAWS AND UPON OBTAINING AN OPINION OF COUNSEL (WHICH MAY BE COUNSEL FOR THE COMPANY), SATISFACTORY TO THE COMPANY, THAT SUCH DISPOSITION MAY BE MADE WITHOUT REGISTRATION OF THE SECURITIES UNDER SUCH ACT AND SUCH LAWS, OR, WITH RESPECT TO FEDERAL SECURITIES LAWS ONLY, UNLESS SOLD PURSUANT TO RULE 144.

THESE SECURITIES ARE SUBJECT TO CERTAIN TRANSFER RESTRICTIONS CONTAINED IN A CERTAIN STOCK AND WARRANT PURCHASE AGREEMENT DATED MARCH 17, 1998, A COPY OF WHICH MAY BE OBTAINED FROM THE COMPANY WITHOUT CHARGE.

LIGAND PHARMACEUTICALS INCORPORATED

INCORPORATED UNDER THE LAWS OF THE STATE OF DELAWARE

THIS CERTIFIES THAT, for value received, SmithKline Beecham plc, an English public limited company (including any permitted successors and assigns, "Holder"), is entitled to purchase, on the terms hereof, One Hundred Fifty Thousand (150,000) fully paid and nonassessable shares of Common Stock, par value $0.001 per share (the "Common Stock"), of Ligand Pharmaceuticals Incorporated, a Delaware corporation (the "Company").

1. Exercise of Warrant. The terms and conditions upon which this Warrant may be exercised, and the shares of Common Stock issuable upon exercise hereof (sometimes referred to herein as the "Warrant Shares") may be purchased, are as follows:

1.1 Term. This Warrant may be exercised in whole or in part at any time after the date hereof, but at or prior to 5:00 p.m. Pacific Standard Time on March 17, 2003, after which time this Warrant shall terminate and shall be void and of no further force or effect.

1.2 Purchase Price. The per share purchase price for the shares of Common Stock to be issued upon exercise of this Warrant shall be Twenty

Dollars ($20.00), subject to adjustment as provided herein.

1.3 Method of Exercise. The exercise of the purchase rights evidenced by this Warrant shall be effected by (i) the surrender of the Warrant, together with a duly executed copy of the subscription form attached hereto, to the Company at its principal offices and (ii) the delivery of the purchase price for the number of shares of Common Stock for which the purchase rights hereunder are being exercised by check or bank draft payable to the Company's order or by wire transfer of the purchase price to the Company's designated bank account.

1.4 Issuance of Shares. Upon the exercise of the purchase rights evidenced by this Warrant, a certificate or certificates for the purchased Warrant Shares shall be issued to the Holder as soon as practicable.

1.5 Limitations on Exercise. Any exercise of the Warrant, whether pursuant to this Section 1 or the Company Option, shall be subject to compliance with applicable governmental laws and regulations.

2. Certain Adjustments.

2.1 Mergers, Consolidations or Sale of Assets.

a. If at any time there shall be a capital reorganization (other than a combination or subdivision of the Common Stock otherwise provided for herein), or a merger or consolidation of the Company with or into another corporation, then, as a part of such reorganization, merger or consolidation, lawful provision shall be made so that the Holder shall thereafter be entitled to receive upon exercise of this Warrant, during the period specified in this Warrant and upon payment of the purchase price, the number of shares of stock or other securities or property of the Company or the successor corporation resulting from such reorganization, merger or consolidation to which a holder of the Common Stock issuable upon exercise of this Warrant would have been entitled under the provisions of the agreement in such reorganization, merger or consolidation if this Warrant had been exercised immediately before that reorganization, merger or consolidation. In any such case, appropriate adjustment (as determined in good faith by the Company's Board of Directors) shall be made in the application of the provisions of this Warrant with respect to the rights and interests of the Holder after the reorganization, merger or consolidation to the end that the provisions of this Warrant (including adjustment of the purchase price then in effect and the number of Warrant Shares issuable upon exercise hereof) shall be applicable after that event,

as near as reasonably may be, in relation to any shares or other property issuable after that event upon exercise of this Warrant.

b. If at any time there shall be a sale of the Company's properties and assets as, or substantially as, an entirety to any other person, then the Company shall give each Holder of this Warrant notice of such sale. The Holder of this Warrant shall have thirty (30) days from the date of such notice to exercise this Warrant in accordance with Section 1 above; provided, that if this Warrant is not so exercised prior to the end of such thirty (30) day period, this Warrant shall terminate and be of no further force or effect. Upon exercise of this Warrant prior to the end of such thirty (30) day period, the Holder hereof shall be entitled to receive the number of shares of stock or other securities or property of the Company resulting from such sale to which a holder of the Common Stock issuable upon exercise of this Warrant would have been entitled if this Warrant had been exercised immediately before such sale.

2.2 Splits and Subdivisions. In the event the Company should at any time or from time to time fix a record date for the effectuation of a split or subdivision of the outstanding shares of Common Stock or the determination of the holders of Common Stock entitled to receive a dividend or other distribution payable in additional shares of Common Stock or other securities or rights convertible into, or entitling the holder thereof to receive directly or indirectly, additional shares of Common Stock (hereinafter referred to as the

"Common Stock Equivalents"), without payment of any consideration by such holder for the additional shares of Common Stock or Common Stock Equivalents, then, as of such record date (or the date of such distribution, split or subdivision if no record date is fixed), the purchase price shall be appropriately decreased and the number of Warrant Shares issuable upon exercise hereof shall be appropriately increased in proportion to such increase of outstanding shares.

2.3 Combination of Shares. If the number of shares of Common Stock outstanding at any time after the date hereof is decreased by a combination of the outstanding shares of Common Stock, the purchase price shall be appropriately increased and the number of Warrant Shares issuable upon exercise hereof shall be appropriately decreased in proportion to such decrease in outstanding shares of Common Stock.

2.4 Adjustments for Other Distributions. In the event the Company shall declare a distribution payable in securities of other persons, evidences of indebtedness issued by the Company or other persons, assets (excluding cash dividends) or options or rights not referred to in subsection 2.2, then, in each such case for the purpose of this subsection 2.4, upon exercise of this Warrant the Holder shall be entitled to a proportionate share of any such distribution as though the Holder was the holder of the number of shares of Common Stock of the Company issuable upon exercise of this Warrant as of the record date fixed for the determination of the holders of Common Stock of the Company entitled to receive such distribution.

2.5 Certificate as to Adjustments. In the case of each adjustment or readjustment of the purchase price and the number of Warrant Shares issuable upon exercise

of this Warrant pursuant to this Section 2, the Company will promptly compute such adjustment or readjustment in accordance with the terms hereof and cause a certificate setting forth such adjustment or readjustment and showing in detail the facts upon which such adjustment or readjustment is based to be delivered to the Holder. The Company will, upon the written request at any time of the Holder, furnish or cause to be furnished to such Holder a certificate setting forth:

a. Such adjustments and readjustments;

b. The purchase price at the time in effect; and

c. The number of Warrant Shares and the amount and nature, if any, of other property at the time issuable upon the exercise of the Warrant.

2.6 Notices of Record Date, etc. In the event of:

a. Any taking by the Company of a record of the holders of the Common Stock of the Company for the purpose of determining the holders thereof who are entitled to receive any dividend (other than a cash dividend payable out of earned surplus at the same rate as that of the last such cash dividend theretofore paid) or other distribution, or any right to subscribe for, purchase or otherwise acquire any shares of stock of any class or any other securities or property, or to receive any other right; or

b. Any capital reorganization of the Company, any reclassification or recapitalization of the Common Stock of the Company or any transfer of all or substantially all of assets of the Company to any other person or any consolidation or merger involving the Company; or

c. Any voluntary or involuntary dissolution, liquidation or winding-up of the Company;

the Company will mail to the holder of this Warrant, at least ten (10) days prior to the earliest date specified therein, a notice specifying:

(i) The date on which any such record is to be taken for

the purpose of such dividend, distribution or right, and the amount and character of such dividend, distribution or right; and

(ii) The date on which any such reorganization, reclassification, transfer, consolidation, merger, dissolution, liquidation or winding-up is expected to become effective and the record date for determining the stockholders entitled to vote thereon, if any.

3. Fractional Shares. No fractional shares shall be issued in connection with any exercise of this Warrant. In lieu of the issuance of any such fractional share, the Company shall make a cash payment equal to the then fair market value of such fractional share as determined in good faith by the Company's Board of Directors.

4. Reservation of Common Stock. The Company shall at all times reserve and keep available out of its authorized but unissued shares of Common Stock, solely for the purpose of effecting the exercise of this Warrant, such number of its shares of Common Stock as shall from time to time be sufficient to effect the exercise of this Warrant; and if at any time the number of authorized but unissued shares of Common Stock shall not be sufficient to effect the exercise of the entire Warrant, in addition to such other remedies as shall be available to the Holder, the Company will use its reasonable best efforts to take such corporate action as may, in the opinion of its counsel, be necessary to increase its authorized but unissued shares of Common Stock to such number of shares as shall be sufficient for such purposes.

5. Privileges of Stock Ownership. Prior to the exercise of this Warrant, the Holder shall not be entitled, by virtue of holding this Warrant, to any rights of a stockholder of the Company.

6. Limitation of Liability. Except as otherwise provided herein, in the absence of affirmative action by the Holder to purchase the Warrant Shares, no mere enumeration herein of the rights or privileges of the Holder shall give rise to any liability of such Holder for the purchase price or as a stockholder of the Company, whether such liability is asserted by the Company or by creditors of the Company.

7. Transfers and Exchanges.

7.1 Transfer Restrictions. Subject to the requirements of Section 3 and the transfer restrictions of Sections 6.1, 6.2 and 7 of the Stock and Warrant Purchase Agreement dated March 17, 1998, between the Company, the Holder and SmithKline Beecham Corporation (the "Purchase Agreement"), which terms shall apply to this Warrant and the Warrant Shares, and subject to compliance with applicable federal and state securities laws, this Warrant and all rights hereunder are transferable in whole or in part by the Holder. The transfer shall be recorded on the books of the Company upon the surrender of this Warrant, properly endorsed, to the Company at its principal offices and the payment to the Company of all transfer taxes and other governmental charges imposed on such transfer. In the event of a partial transfer, the Company shall issue to the several holders one or more appropriate new warrants.

7.2 Partial Exercises. In the event of a partial exercise of this Warrant, the Company shall issue an appropriate new warrant to the Holder.

7.3 Form of New Warrants. All new warrants issued in connection with transfers, exchanges or partial exercises shall be identical in form and provision to this Warrant except as to the number of shares.

7.4 Legends. Certificates evidencing the Warrant Shares shall bear the following legend:

"These securities are subject to certain transfer restrictions contained in a certain Stock and Warrant Purchase Agreement dated March 17, 1998, a copy of which may be obtained from the Company without charge."

8. Company Right to Require Holder to Purchase Warrant Shares.

8.1 Company Option; Exercise Period. On any date after *** , on which the daily closing price of the Common Stock reported on the National Association of Securities Dealers, Inc. *** (collectively, the "Trigger Event"), the Company shall have the right (the "Company Option") to require that the Holder purchase all of the Warrant Shares not previously purchased.

8.2 Company Notice. Following the Trigger Event, the Company may deliver written notice to the Holder (the "Company Notice") of its election to exercise the Company Option, which Company Notice shall specify the number of Warrant Shares the Holder shall be required to purchase and the date on which the Company proposes the Warrant Shares be issued.

8.3 Deliveries by the Holder. Within ten (10) business days after the receipt of the Company Notice, the Holder shall deliver to the Company (i) this Warrant, together with a duly executed copy of the subscription form attached hereto electing to purchase the number of Warrant Shares specified in the Company Notice, (ii) the purchase price for the number of Warrant Shares specified in the Company Notice by check or bank draft payable to the Company's order or by wire transfer of the purchase price to the Company's designated bank account and (iii) such documents and certificates as the Company may reasonably request to comply with applicable securities and other laws and contractual obligations.

8.4 Closings. The Company shall, as soon as practicable upon receipt of this Warrant, the subscription form and the purchase price, cause to be issued to the Holder a certificate or certificates for the purchased Warrant Shares, and, if the subscription is for less than the total number of Warrant Shares that may at the time be purchased under the Warrant, a new warrant representing the right to purchase the remaining Warrant Shares.

8.5 Legends. Notwithstanding anything herein to the contrary, unless the Warrant Shares have been registered for sale or resale under the Securities Act of 1933, as amended (the "Securities Act"), each certificate for Warrant Shares issued hereunder shall bear standard and customary legends regarding nontransferability in the absence of registration or exemption from registration under the Securities Act and any applicable state statutes.

9. Successors and Assigns. The terms and provisions of this Warrant shall be binding upon the Company and the Holder and their respective successors and assigns.

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

10. Loss, Theft, Destruction or Mutilation of Warrant. Upon receipt by the Company of evidence reasonably satisfactory to it of the loss, theft, destruction or mutilation of this Warrant, and in case of loss, theft or destruction, of indemnity or security reasonably satisfactory to the Company, and upon reimbursement to the Company of all reasonable expenses incidental thereto, and upon surrender and cancellation of this Warrant, if mutilated, the Company will make and deliver a new warrant of like tenor and dated as of the date of such cancellation, in lieu of this Warrant.

11. Saturdays, Sundays, Holidays, etc. If the last or appointed day for the taking of any action or the expiration of any right required or granted herein shall be a Saturday, Sunday or legal holiday, then such action may be

taken or such right may be exercised, except as to payment of the purchase price, on the next succeeding day that is not a Saturday, Sunday or legal holiday.

12. Amendments and Waivers. Any term of this Warrant may be amended and the observance of any term of this Warrant may be waived (either generally or in a particular instance and either retroactively or prospectively), only with the written consent of the Company and the Holder.

13. Notice. Any notice required under this Warrant shall be delivered in the manner set forth in Section 8.6 of the Purchase Agreement.

[REMAINDER OF THIS PAGE INTENTIONALLY LEFT BLANK]

In witness whereof, this Common Stock Purchase Warrant has been executed as of the date set forth below.

Dated: April 24, 1998 LIGAND PHARMACEUTICALS INCORPORATED

By: /s/ William L. Respess

Title: Sr. V.P., General Counsel, Government Affairs

The undersigned Holder agrees and accepts this Warrant and acknowledges that it has read and confirms each of the representations contained in Section 3 of the Purchase Agreement.

SMITHKLINE BEECHAM PLC

By: /s/ Donald F. Parman

Title: Attorney-in-Fact

[SIGNATURE PAGE TO COMMON STOCK PURCHASE WARRANT]

SUBSCRIPTION FORM

Ligand Pharmaceuticals Incorporated
10275 Science Center Drive
San Diego, California 92121

Ladies and Gentlemen:

The undersigned, _____, hereby elects to purchase, pursuant to the provisions of the Common Stock Purchase Warrant dated April 24, 1998, held by the undersigned, _____ shares of the Common Stock of Ligand Pharmaceuticals Incorporated, a Delaware corporation.

The undersigned hereby confirms and acknowledges the investment representations and warranties made in the Stock and Warrant Purchase Agreement dated March 17, 1998, among Ligand Pharmaceuticals Incorporated, the Holder and SmithKline Beecham Corporation, and reaffirms each of such representations and warranties as of the date hereof and accepts such shares subject to the restrictions of such Agreement.

Dated:_____ ,_____

(Signature must conform exactly to name of Holder as specified on the face of the Warrant)

(Print Name)

(Address)

EXHIBIT B

SCHEDULE OF EXCEPTIONS

This Schedule of Exceptions is made and given pursuant to Section 2 of the Stock and Warrant Purchase Agreement dated as of March 17, 1998 (the "Agreement"). The section numbers in this Schedule of Exceptions correspond to the section numbers in the Agreement; however, any information disclosed herein under any section number shall be deemed to be disclosed and incorporated into any other section number under the Agreement where such disclosure would otherwise be appropriate. Any terms defined in the Agreement shall have the same meaning when used in this Schedule of Exceptions as when used in the Agreement unless the context otherwise requires.

Nothing herein constitutes an admission of any liability or obligation of the Company nor an admission against the Company's interest. The inclusion of any agreement or other matter herein or any exhibit hereto should not be interpreted as indicating that the Company has determined that such an agreement or other matter is necessarily material to the Company. Investor and SBC each acknowledge that certain information contained in this schedule may constitute material confidential information relating to the Company which may not be used for any purpose other than in connection with Investor's decision to purchase the Company's Common Stock and the Warrant pursuant to the Agreement.

Schedule 2.1 -- Organization, Good Standing and Qualification

Allergan Ligand Retinoid Therapeutics, Inc. ("ALRT") is a Delaware corporation which, following the consummation of the buyback of all outstanding shares of Callable Common Stock of ALRT, $0.001 par value per share (the "Callable Common Stock") in November 1997 described below, is a subsidiary of the Company.

Schedule 2.2 -- Authorization

The Company intends to file a Nasdaq National Market Notification Form for Listing of Additional Shares Pursuant to SEC Rule 10b-17 shortly following the issuance of the Shares.

Schedule 2.4 -- SEC Reports

In September 1997, the Company filed a Registration Statement on Form S-1 (No. 333-36535) (the "Registration Statement") with the Securities and Exchange Commission in connection with the public offering of an indefinite number of shares of Common Stock, par value $.001 per share (the "Shares") of the Company with an aggregate value of $46,410,000. In addition, the Company filed a Schedule 13e-3 with respect to the transaction. In November 1997, the Company issued an aggregate of 3,166,567 shares of Common Stock and paid an aggregate of $25,000,000 in cash to ALRT stockholders. ALRT's stockholders received such Shares in connection with the Company's exercise of its option to acquire all of the outstanding shares of the Callable Common Stock.

In September 1997, in connection with the Company and Allergan, Inc.'s ("Allergan") exercise of their respective options to purchase Callable Common Stock and assets of ALRT as set forth in the Registration Statement, the Company and ALRT also agreed to restructure the terms and conditions relating to research, development, commercialization and sublicense rights for the ALRT compounds, as more fully described in the Registration Statement. The restructured arrangement with Allergan closed in November 1997.

In October 1997, the Company announced the closure of the Alameda facility housing Glycomed at the expiration of the leases in October 1997. In connection with this closure, Glycomed's assets and programs were transferred for integration with the Company's San Diego operations.

In November 1997, the Company and Eli Lilly and Company ("Lilly") entered into a strategic alliance for the discovery and development of products based upon the Company's intracellular technology. The collaboration will focus on products with broad applications across metabolic diseases, including diabetes, obesity, dislipidemia, insulin resistance and cardiovascular diseases associated with insulin resistance and obesity. The specifics of the transaction with Lilly are more fully described in the Registration Statement and included a $37.5 million equity investment by Lilly in Ligand.

In December 1997, the Company converted $1.25 million of the convertible notes outstanding to American Home Products into 124,875 shares of the Company's Common Stock at a $10.01 conversion price, resulting in an outstanding balance of convertible notes of $3.75 million.

Schedule 2.13 -- Intellectual Property

The Company has become aware that a United States patent has been issued to, and foreign counterparts have been filed by, Hoffman LaRoche ("LaRoche") which covers pharmaceutical uses of 9-cis-retinoic acid (LGD1057) which may conflict with the Company's right under the patent applications. The U.S. Patent and Trademark Office ("PTO") has informed the Company that the overlapping claims are patentable to the Company and initiated an interference proceeding to determine whether the Company or LaRoche is entitled to a patent by having been first to invent the common subject matter. The Company cannot be assured of a favorable outcome in the interference proceeding because of factors not known at this time which may impact the outcome. In addition, the interference proceeding may delay the decision of the PTO regarding the Company's application for the Oral and Topical Panretin (LGD1057) products. While the Company believes that the LaRoche patent does not cover the use of Oral and Topical Panretin (LGD1057) to treat leukemias such as APL and sarcomas such as KS, or the treatment of skin diseases such as psoriasis, if the Company does not prevail in the interference proceeding, the LaRoche patent might block the Company's use of Oral and Topical Panretin (LGD1057) in certain cancers, and the Company may not be able to obtain patent protection for the Oral and Topical Panretin (LGD1057) products.

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<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.
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