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 September 30, 2001 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
(State or Other Jurisdiciton of Incorporation or Organization)

77-0160744
(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: (858) 550-7500

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 October 31, 2001, the registrant had 59,766,782 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)

ASSETS

	September 30, 2001 (Unaudited)	December 31, 2000
Current assets:		
Cash and cash equivalents	$ 17,755	$ 9,224
Short-term investments	21,669	14,439
Funds receivable from Elan	--	10,000
Accounts receivable, net	6,434	2,824
Inventories	4,471	5,651
Other current assets	1,704	2,511
Total current assets	52,033	44,649
Restricted investments	2,369	1,434
Property and equipment, net	9,748	10,972
Acquired technology, net	38,641	40,924
Other assets	14,171	15,443
	$ 116,962	$ 113,422

LIABILITIES AND STOCKHOLDERS' DEFICIT

Current liabilities:		
Accounts payable	$ 4,418	$ 3,827
Accrued liabilities	8,020	12,675
Current portion of deferred revenue	10,043	8,435
Current portion of equipment financing obligations	2,551	3,478
Total current liabilities	25,032	28,415
Long-term portion of deferred revenue	4,343	5,727
Long-term portion of equipment financing obligations	3,299	4,788
Convertible subordinated debentures	46,657	44,651
Accrued acquisition obligation	2,700	2,700
Convertible note	2,500	2,500
Zero coupon convertible senior notes	84,605	79,766
Total liabilities	169,136	168,547
Commitments (Note 6)		
Stockholders' deficit:		
Preferred stock, $0.001 par value; 5,000,000 shares authorized; none issued	--	--
Common stock, $0.001 par value; 130,000,000 shares authorized; 59,706,500 and 56,823,716 shares issued and outstanding at September 30, 2001 and December 31, 2000 respectively	60	57
Additional paid-in capital	522,316	490,484
Deferred warrant expense	(1,038)	(2,076)
Accumulated other comprehensive income	64	46
Accumulated deficit	(572,665)	(542,725)
	(51,263)	(54,214)
Treasury stock, at cost; 73,842 shares	(911)	(911)
Total stockholders' deficit	(52,174)	(55,125)
	$ 116,962	$ 113,422

See accompaning notes.

LIGAND PHARMACEUTICALS INCORPORATED
CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)
(in thousands, except per share data)

	Three Months Ended September 30,		Six Months Ended September 30,	
	2001	2000	2001	2000
		(As restated- see note 1)		(As restated- see note 1)
Revenues:				
Product sales	$ 11,406	$ 6,477	$ 30,015	$ 16,234
Collaborative research and development and other revenues	7,768	7,114	23,683	18,044
Total revenues	19,174	13,591	53,698	34,278
Operating costs and expenses:				
Cost of products sold	3,645	2,238	9,561	6,328
Research and development	12,882	13,229	38,478	38,480
Selling, general and administrative	7,206	8,560	26,249	25,938
Total operating costs and expenses	23,733	24,027	74,288	70,746
Loss from operations	(4,559)	(10,436)	(20,590)	(36,468)
Other income (expense):				
Interest income	475	645	1,757	2,072
Interest expense	(3,464)	(3,221)	(10,358)	(9,885)
Debt conversion expense	--	--	--	(2,025)
Other, net	(196)	(393)	(749)	(267)
Total other income (expense)	(3,185)	(2,969)	(9,350)	(10,105)
Loss before cumulative effect of a change in accounting principle	(7,744)	(13,405)	(29,940)	(46,573)
Cumulative effect on prior years (to December 31, 1999) of changing method of revenue recognition	--	--	--	(13,099)
Net loss	$ (7,744)	$(13,405)	$(29,940)	$(59,672)
Basic and diluted per share amounts:				
Loss before cumulative effect of a change in accounting principle	$ (0.13)	$ (0.24)	$ (0.50)	$ (0.84)
Cumulative effect on prior years (to December 31, 1999) of changing method of revenue recognition	--	--	--	(0.24)
Net loss	$ (0.13)	$ (0.24)	$ (0.50)	$ (1.08)
Weighted average number of common shares	59,581	56,605	59,288	55,341

See accompaning notes.

LIGAND PHARMACEUTICALS INCORPORATED
CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)
(in thousands)

	Nine Months Ended September 30,	
	2001	2000
		(As restated - see note 1)
OPERATING ACTIVITIES		
Net loss	$ (29,940)	$ (59,672)
Adjustments to reconcile net loss to net cash used in operating activities:		
Accretion of debt discount and interest	6,845	6,186
Depreciation and amortization of property and equipment	2,755	3,068
Equity in loss of affiliate	830	1,236
Amortization of acquired technology	2,487	2,488
Debt conversion expense	--	2,025
Other	1,051	428
Changes in operating assets and liabilities net of effects from sale of manufacturing assets:		
Accounts receivable	(3,610)	(1,614)
Inventories	1,180	(513)
Other current assets	807	(842)
Accounts payable and accrued liabilities	936	(3,295)
Deferred revenue	224	13,740
Net cash used in operating activities	(16,435)	(36,765)
INVESTING ACTIVITIES		
Purchases of short-term investments	(16,200)	(11,965)
Proceeds from sale of short-term investments	9,041	9,745
Purchases of property and equipment	(1,531)	(1,037)
Payments on accrued acquisition obligation	--	(200)
Decrease in other assets	238	138
Net proceeds from sale of manufacturing assets	--	9,676
Proceeds from sale of investment security	--	1,119
Net cash provided by (used in) investing activities	(8,452)	7,476
FINANCING ACTIVITIES		
Principal payments on equipment financing obligations	(3,022)	(3,091)
Proceeds from equipment financing arrangements	606	1,284
(Increase)/decrease in restricted investments	(935)	577
Net proceeds from issuance of zero coupon convertible senior notes	10,000	--
Net proceeds from issuance of common stock	26,769	12,585
Net cash provided by financing activities	33,418	11,355
Net increase/(decrease) in cash and cash equivalents	8,531	(17,934)
Cash and cash equivalents at beginning of period	9,224	29,903
Cash and cash equivalents at end of period	$ 17,755	$ 11,969
SUPPLEMENTAL DISCLOSURE OF CASH FLOW INFORMATION		
Interest paid	$ 4,456	$ 4,621
SUPPLEMENTAL SCHEDULE OF NON-CASH INVESTING AND FINANCING ACTIVITIES		
Conversion of zero coupon convertible senior notes to common stock	$ --	$ 21,022
Issuance of common stock for acquired technology	5,000	4,000

Issuance of common stock for debt conversion incentive	--	2,025
Accrual of ONTAK obligation for acquired technology	--	5,000

See accompaning notes.

1. Basis of Presentation

The consolidated financial statements of Ligand Pharmaceuticals Incorporated ("Ligand" or the "Company") for the three and nine months ended September 30, 2001 and 2000 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 September 30, 2001 and the consolidated results of operations for the three and nine months ended September 30, 2001 and 2000. The results of operations for the period ended September 30, 2001 are not necessarily indicative of the results to be expected for the year ending December 31, 2001. 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, 2000 included in the Company's Annual Report on Form 10-K and the unaudited consolidated financial statements for the quarters ended March 31, 2001 and June 30, 2001 included in the respective Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission ("SEC").

Principles of Consolidation. The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries.

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

Revenue Recognition. In December 1999, the SEC issued Staff Accounting Bulletin ("SAB") No. 101, *Revenue Recognition in Financial Statements*. SAB No. 101 provides guidance in applying accounting principles generally accepted in the United States to revenue recognition in financial statements, including the recognition of non-refundable up-front fees received in conjunction with contractual arrangements that have multiple performance elements and require continuing involvement. SAB No. 101 requires that such fees be recognized as products are delivered or services are performed that represent the culmination of a separate earnings process.

The Company received non-refundable up-front fees of $18.8 million in 1997, $2.3 million in 1999, and $4.3 million in 2000. The Company initially recognized those payments as revenue upon receipt, as the fees were non-refundable and the Company had transferred technology or product rights at contract inception or incurred costs in excess of the up-front fees prior to initiation of each arrangement. However, under the provisions of SAB No. 101, non-refundable up-front fees must be deferred upon receipt and recognized as products are delivered or services are performed during the term of the arrangement. The Company implemented SAB No. 101 in the fourth quarter of 2000 as a change in accounting principle, retroactive to January 1, 2000, by deferring and recognizing these up-front payments over the term designated in the arrangement. The cumulative effect of this change to December 31, 1999, which was recorded in 2000, was $13.1 million or $0.24 per share. The effect on the three months ended September 30, 2000 increased revenue and decreased loss before cumulative effect of change in accounting principle by $1.5 million or $0.02 per share, while the effect on the results for the nine months ended September 30, 2000 was not significant. The results previously reported have been restated accordingly.

New Accounting Pronouncements. In July 2001, the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standards ("SFAS") No. 141, "Business Combinations" which requires the use of the purchase method of accounting for all business combinations initiated after June 30, 2001 and eliminates the pooling-of-interests method. The Company does not believe that the adoption of SFAS No. 141 will have a significant effect on its financial statements.

In July 2001, the FASB issued SFAS No. 142, "Goodwill and Other Intangible Assets" which requires that goodwill and other intangible assets with indefinite lives no longer be amortized, but instead tested for impairment at least annually. In addition, the standard includes provisions for the reclassification of certain existing intangibles as goodwill and reassessment of the useful lives of existing recognized intangibles. SFAS No. 142 is effective for fiscal years beginning after December 31, 2001. The Company has not determined the effect, if any, that this statement will have on its financial statements.

In October 2001, the FASB issued SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets" which establishes one accounting model to be used for long-lived assets to be disposed of by sale and broadens the presentation of discontinued operations to include more disposal transactions. SFAS No. 144 supercedes SFAS No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of" and the accounting and reporting provisions of APB Opinion No. 30. SFAS No. 144 is effective for fiscal years beginning after December 15, 2001. The Company has not determined the effect, if any, that this statement will have on its financial statements.

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

Reclassifications. Certain prior year amounts have been reclassified to conform to the current year presentation.

Inventories. Inventories are stated at the lower of cost or market. Cost is determined using the first-in-first-out method. Inventories consist of the following ($,000):

	September 30, 2001	December 31, 2000
Raw materials	$ 936	$ 498
Work-in-process	2,726	4,276
Finished goods	809	877
	$ 4,471	$ 5,651

Other Assets. Other assets consist of the following ($,000):

	September 30, 2001	December 31, 2000
Technology license	$ 4,000	$ 4,000
Prepaid royalty buyout, net	3,468	3,672
Deferred rent	3,261	3,373
Investment in X-Ceptor	2,548	3,378
Other	894	1,020
	$ 14,171	$ 15,443

Accrued Liabilities. Accrued liabilities consist of the following ($,000):

	September 30, 2001	December 31, 2000
Compensation	$ 2,574	$ 2,412
Royalties	2,135	1,122
Interest	995	1,985
ONTAK obligation (Note 4)	-	5,000
Other	2,316	2,156
	$ 8,020	$ 12,675

Comprehensive Loss. Comprehensive loss represents net loss adjusted for the change during the periods presented in unrealized gains and losses on available-for-sale securities less reclassification adjustments for realized gains or losses included in net loss, as well as foreign currency translation adjustments. The accumulated unrealized gains or losses are reported as accumulated other comprehensive loss as a separate component of stockholders' deficit. Comprehensive loss for the three and nine month periods ended September 30, 2001 and 2000 is as follows ($,000):

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2001	2000	2001	2000
		(As restated- see note 1)		(As restated- see note 1)
Comprehensive loss	$ 7,742	$ 13,338	$ 29,922	$ 59,552

2. Zero Coupon Convertible Senior Notes

On December 29, 2000, the Company issued the final $10 million of zero coupon convertible senior notes to an entity affiliated with Elan Corporation, plc ("Elan") provided for under a September 1998 agreement, as amended. These notes are convertible into common stock at $14.16 per share. The proceeds were received on January 2, 2001.

3. Distribution Agreement

In February 2001, the Company and an affiliate of Elan entered into a distribution agreement providing for the distribution of certain of the Company's products in various European and other international territories for a term of 10 years. The Company received a payment at contract inception and additional payments related to subsequent product marketing authorization submission and approval. Additional payments may be received as other product registrations are submitted and approved in specified territories.

4. Arrangement with Lilly

In connection with an agreement between the Company's wholly owned subsidiary, Seragen, Inc. ("Seragen") and Eli Lilly and Company ("Lilly") under which Lilly assigned to Seragen its sales and marketing rights to ONTAK, Lilly received a $5 million milestone payment from the Company in March 2001 following the achievement of cumulative net sales of ONTAK reaching $20 million in October 2000. The Company issued 412,504 shares of its common stock to Lilly as payment for this $5 million milestone.

5. Research and Development Collaborations

In June 2001, the Company and TAP Pharmaceutical Products Inc. ("TAP") entered into a research and collaboration agreement to focus on the discovery and development of selective androgen receptor modulators ("SARMs"). SARMs contribute to the prevention and treatment of certain diseases, including hypogonadism, male and female sexual dysfunction, male and female osteoporosis, frailty, and male hormone replacement therapy. Under the terms of the collaboration, Ligand receives funding during the research phase of the agreement and will potentially receive milestone and royalty payments if the collaboration is successful. TAP was also granted exclusive worldwide rights to manufacture and sell any products resulting from the collaboration in TAP's field.

In June 2001, Bristol-Myers Squibb terminated its mineralocorticoid receptor research and development collaboration with the Company.

6. Commitments

In November 1998, the Company and Elan entered into a Development, Licence and Supply Agreement related to Elan's product Morphelan™. For the rights to Morphelan™ the Company paid Elan certain license fees in 1998 and milestone payments upon the occurrence of certain events in 1999 and 2000. Elan could receive up to $5 million in cash, or subject to certain conditions, in the Company's common stock or notes upon approval of Morphelan for marketing by the FDA. Elan submitted a NDA for Morphelan to the FDA in May 2000. The Company is also committed to spend not less than $7 million through May 2003 to undertake additional clinical activities related to the commercialization of Morphelan™. In the event the Company does not spend this amount, any shortfall would be paid to Elan.

7. Stockholders' Equity

In January 2001, the Company raised net proceeds of approximately $22.4 million in a private placement of 2 million shares of its common stock.

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 at "Risks and Uncertainties" below. This outlook represents our current judgment on the future direction of our business. Such risks and uncertainties could cause actual results to differ materially from any future performance suggested below. We undertake no obligation to release publicly the results of any revisions to these forward-looking statements to reflect events or circumstances arising after the date of this quarterly report.

Panretin® and Targretin® are registered trademarks of Ligand, and ONTAK® is a registered trademark of Seragen, Inc., our wholly owned subsidiary. Morphelan™ is a trademark of Elan.

Overview

We develop and market drugs that address patients' critical unmet medical needs in the areas of cancer, men's and women's health, skin diseases, osteoporosis, metabolic, cardiovascular and inflammatory diseases. Our drug discovery and development programs are based on our proprietary gene transcription technology, primarily related to Intracellular Receptors, also known as IRs, and Signal Transducers and Activators of Transcription, also known as STATs.

In 1999, we received marketing approval in the United States for Panretin gel, for the treatment of Kaposi's sarcoma in AIDS patients; ONTAK, for the treatment of patients with persistent or recurrent cutaneous T-cell lymphoma ("CTCL"); and Targretin capsules, for the treatment of CTCL in patients who are refractory to at least one prior systemic therapy. In June 2000, Targretin gel was granted marketing approval in the United States for the treatment of patients with early stage CTCL. In addition, in May 2000, our strategic partner Elan submitted a new drug application ("NDA") for its product Morphelan for the relief of moderate to severe pain. The FDA has issued an approvable letter for the Morphelan NDA and Elan has submitted a response to the FDA's questions in the letter. We have exclusive marketing rights to Morphelan in the United States and Canada. In Europe, we were granted a marketing authorization for Panretin gel in October 2000 and for Targretin capsules in March 2001 and have a marketing authorization application under review for Targretin gel. We expect to launch Panretin gel and Targretin capsules in Europe in the fourth quarter of 2001.

We are currently involved in the research phase of research and development collaborations with Eli Lilly and Company, Organon Company and TAP Pharmaceutical Products Inc.. Collaborations in the development phase are being pursued by Abbott Laboratories, Allergan, Inc., American Home Products, GlaxoSmithkline and Pfizer. We receive funding during the research phase of the arrangements and milestone and royalty payments as products are developed and marketed by our corporate partners. In addition, in connection with some of these collaborations, we received non-refundable up-front payments.

We have been unprofitable since our inception. We expect to incur substantial additional operating losses until sales of our products generate sufficient revenues to cover our expenses. We expect that our operating results will fluctuate from period to period as a result of differences in the timing of expenses incurred and revenues earned from product sales and collaborative research and development arrangements. Some of these fluctuations may be significant.

Results of Operations

Three Months Ended September 30, 2001 Compared to Three Months Ended September 30, 2000

Total revenues for the three months ended September 30, 2001 were $19.2 million, an increase of $5.6 million or 41% over the same period in 2000. Net loss for the three months ended September 30, 2001 was $7.7 million or $0.13 per share, a decrease of $5.7 million compared to net loss of $13.4 million or $0.24 per share for the prior year period. Results for 2000 reflect the implementation of SAB No. 101 effective January 1, 2000. For additional details, see note 1 of the notes to consolidated financial statements.

Product sales for the three months ended September 30, 2001 were $11.4 million compared to $6.5 million for the three months ended September 30, 2000. Sales were driven by a 124% increase in sales of ONTAK to $6.5 million in 2001 and a 36% increase in sales of Targretin capsules to $3.2 million in 2001. Additionally, sales of Targretin gel and Panretin gel increased to $1.7 million in 2001 compared to $1.1 million in 2000.

Sales continue to benefit from increased penetration of private oncology practices, a higher level of products sold for use in post-marketing clinical trials and price increases.

Collaborative research and development and other revenues increased to $7.8 million for the three months ended September 30, 2001 compared to $7.1 million for the prior year period. The increase reflects milestones earned under our collaboration agreements with Lilly and TAP.

Cost of products sold increased to $3.6 million for the three months ended September 30, 2001 compared to $2.2 million for the prior year period as a result of the growth in product sales.

Research and development expenses decreased to $12.9 million for the three months ended September 30, 2001 compared to $13.2 million for the prior year period.

Selling, general and administrative expenses decreased to $7.2 million for the three months ended September 30, 2001 compared to $8.6 million for the prior year period. The decrease reflects significant advertising and promotion expenses in the prior year quarter for the launch of Targretin gel, partially offset by higher costs in 2001 associated with an increased sales force and post-marketing clinical studies.

We have federal, state and foreign income tax net operating loss carryforwards and federal and state research tax credit carryforwards which are available within the limitation set forth in Internal Revenue Code Sections 382 and 383.

Nine Months Ended September 30, 2001 Compared to Nine Months Ended September 30, 2000

Total revenues for the nine months ended September 30, 2001 were $53.7 million, an increase of $19.4 million or 57% over the same period in 2000. Net loss for the nine months ended September 30, 2001 was $29.9 million or $0.50 per share compared to a net loss of $59.7 million or $1.08 per share in 2000 including the cumulative effect of the change in accounting principle of $13.1 million or $0.24 per share related to the 2000 implementation of SAB 101. Excluding the cumulative effect of adopting SAB 101, the net loss for 2000 was $46.6 million or $0.84 per share. For additional details, see note 1 of the notes to consolidated financial statements.

Product sales for the nine months ended September 30, 2001 were $30.0 million compared to $16.2 million for the nine months ended September 30, 2000. Sales of ONTAK increased 68% to $16.3 million in 2001 while sales of Targretin capsules increased 105% to $8.9 million. Sales of Targretin gel and Panretin gel increased to $4.7 million in 2001 compared to $1.8 million in 2000.

Sales benefited from increased penetration of private oncology practices, a higher level of products sold for use in post-marketing clinical trials and price increases.

Collaborative research and development and other revenues increased to $23.7 million in 2001 from $18.0 million for the prior year period. This increase is primarily due to 2001 milestones earned from Elan in the first quarter and from Lilly and TAP in the third quarter.

Cost of products sold increased to $9.6 million for the nine months ended September 30, 2001 from $6.3 million for the prior year period as a result of the growth in product sales.

Research and development expenses amounted to $38.5 million for both the nine month periods ended September 30, 2001 and 2000. Compared to 2000, the 2001 expense reflects increased spending on studies of our products in potential new indications offset by reduced registration activities.

Selling, general and administrative expenses increased to $26.2 million for the nine months ended September 30, 2001 compared to $25.9 million for the prior year period. The increase is primarily due to costs associated with the implementation of fully dedicated oncology and dermatology sales forces in the first quarter of 2001, including the addition of 10 sales representatives, and to post marketing clinical trials, partially offset by higher promotion and advertising expenses incurred in 2000 for the launches of Targretin capsules and gel.

Other expense, net decreased to $9.4 million for the nine months ended September 30, 2001 from $10.1 million for the prior year period. The decrease reflects debt conversion expenses of $2 million incurred in 2000 related to the conversion of $20 million convertible notes held by Elan, partially offset by higher net interest expense in 2001.

Liquidity and Capital Resources

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

Working capital was $27.0 million at September 30, 2001 compared to $16.2 million at December 31, 2000. Cash and cash equivalents, short-term investments, restricted investments and funds receivable from Elan totaled $41.8 million at September 30, 2001 compared to $35.1 million at December 31, 2000. We primarily invest our cash in United States government and investment grade corporate debt securities.

Significant cash inflows during the first three quarters of 2001 include proceeds of $22.4 million of net cash received in a private placement of 2 million shares of our common stock and $10 million from the proceeds of the final note issued to Elan. Significant cash outflows include $16.4 million of net cash used to finance operating activities in 2001 compared to $36.8 million in 2000.

Our subsidiary, Glycomed, is obligated to make payments under convertible subordinated debentures in the total principal amount of $50 million. The debentures pay interest semi-annually at a rate of 7 ½% per annum, are due in 2003 and convertible into our common stock at $26.52 per share. In addition, at September 30, 2001, we had outstanding a $2.5 million convertible note to GlaxoSmithKline due in October 2002 with interest at prime and convertible into our common stock at $13.56 per share as well as $84.6 million in zero coupon convertible senior notes to Elan, due in 2008 with an 8% per annum yield to maturity and convertible into our common stock at approximately $14 per share.

Certain of our property and equipment is pledged as collateral under various equipment financing arrangements. As of September 30, 2001, $5.9 million was outstanding under such arrangements with $2.6 million classified as current. Our equipment financing arrangements have terms of four to seven years with interest ranging from 4.88% to 10.66% per annum. We lease our office and research facilities under operating lease arrangements with varying terms through August 2015.

We may be required to make a milestone payment of $5 million to Elan in the event Morphelan receives approval for marketing from the FDA and are required to spend $7 million through May 2003 for clinical expenditures under the Morphelan license agreement. For additional details, please see note 6 of the notes to consolidated financial statements.

We believe our available cash, cash equivalents, short-term investments and existing sources of funding will be adequate to satisfy our anticipated operating and capital requirements through at least the next 12 months. Our future operating and capital requirements will depend on many factors, including: the effectiveness of our commercialization activities; the pace of scientific progress in our research and development programs; the magnitude of these programs; the scope and results of preclinical testing and clinical trials; the time and costs involved in obtaining regulatory approvals; the costs involved in preparing, filing, prosecuting, maintaining and enforcing patent claims; competing technological and market developments; the ability to establish additional collaborations or changes in existing collaborations; and the cost of manufacturing.

Financial Condition

September 30, 2001 Compared to December 31, 2000

Funds receivable from Elan decreased by $10 million reflecting the receipt of cash proceeds in January 2001 from the final note issued to Elan.

Accrued liabilities decreased by $4.7 million reflecting the issuance of our common stock to satisfy a $5 million Lilly milestone obligation for ONTAK discussed in note 4 of the notes to consolidated financial statements.

Stockholders' deficit decreased by $3.0 million due primarily to the proceeds of the private placement described in note 7 of the notes to consolidated financial statements, the issuance of common stock to Lilly described in note 4 of the notes to consolidated financial statements, and the issuance of common stock upon the exercise of employee stock options, offset by the 2001 net loss of $29.9 million.

Recent Accounting Pronouncements

In July 2001, the Financial Accounting Standards Board ("FASB") issued Statement of Financial Accounting Standards ("SFAS") No. 141, "Business Combinations" which requires the use of the purchase method of accounting for all business combinations initiated after June 30, 2001 and eliminates the pooling-of-interests method. The Company does not believe that the adoption of SFAS No. 141 will have a significant effect on its financial statements.

In July 2001, the FASB issued SFAS No. 142, "Goodwill and Other Intangible Assets", which requires that goodwill and other intangible assets with indefinite lives no longer be amortized, but instead tested for impairment at least annually. In addition, the standard includes provisions for the reclassification of certain existing intangibles as goodwill and reassessment of the useful lives of existing recognized intangibles. SFAS No. 142 is effective for fiscal years beginning after December 31, 2001. The Company has not determined the effect, if any, that this statement will have on its financial statements.

In October 2001, the FASB issued SFAS No. 144, "Accounting for the Impairment or Disposal of Long-Lived Assets" which establishes one accounting model to be used for long-lived assets to be disposed of by sale and broadens the presentation of discontinued operations to include more disposal transactions. SFAS No. 144 supercedes SFAS No. 121, "Accounting for the Impairment of Long-Lived Assets and for Long-Lived Assets to Be Disposed Of" and the accounting and reporting provisions of APB Opinion No. 30. SFAS No. 144 is effective for fiscal years beginning after December 15, 2001. The Company has not determined the effect, if any, that this statement will have on its financial statements.

Risks and Uncertainties

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

Our product development and commercialization involves a number of uncertainties, and we may never generate sufficient revenues from the sale of products to become profitable.

We were founded in 1987. We have incurred significant losses since our inception. At September 30, 2001, our accumulated deficit was $572.7 million. To date, we have received the majority of our revenues from our collaborative arrangements and only began receiving revenues from the sale of pharmaceutical products in 1999. To become profitable, we must successfully develop, clinically test, market and sell our products. Even if we achieve profitability, we cannot predict the level of that profitability or whether we will be able to sustain profitability. We expect that our operating results will fluctuate from period to period as a result of differences in when we incur expenses and receive revenues from product sales, collaborative arrangements and other sources. Some of these fluctuations may be significant.

Most of our products in development will require extensive additional development, including preclinical testing and human studies, as well as regulatory approvals, before we can market them. We do not expect that any products resulting from our product development efforts or the efforts of our collaborative partners, other than those for which marketing approval has already been received, will be available for sale until the first half of 2002 at the earliest, if at all. There are many reasons that we or our collaborative partners may fail in our efforts to develop our other potential products, including the possibility that:

- preclinical testing or human studies may show that our potential products are ineffective or cause harmful side effects,
- the products may fail to receive necessary regulatory approvals from the FDA or foreign authorities in a timely manner or at all,
- the products, if approved, may not be produced in commercial quantities or at reasonable costs,
- the products once approved, may not achieve commercial acceptance, or
- the proprietary rights of other parties may prevent us or our partners from marketing the products.

We are building marketing and sales capabilities in the United States and Europe which is an expensive and time-consuming process.

Developing the sales force to market and sell products is a difficult, expensive and time-consuming process. We have developed a U.S. sales force of approximately 50 people, some of which are contracted from a third party, and we rely on

third parties to distribute our products. Generally, the distributor is responsible for providing many marketing support services, including customer service, order entry, shipping and billing, and customer reimbursement assistance. In Europe, we will rely initially on other companies to distribute and market our products. We have entered into agreements for the marketing and distribution of our products in territories such as the United Kingdom, Germany, France, Spain, Portugal, Greece, Italy, and Central and South America. We may not be able to continue to expand our sales and marketing capabilities sufficiently to successfully commercialize our products in the territories where they receive marketing approval. To the extent we enter into co-promotion or other licensing arrangements, any revenues we receive will depend on the marketing efforts of others, which may or may not be successful.

Some of our key technologies have not been used to produce marketed products and may not be capable of producing such products.

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

Our drug development programs will require substantial additional future capital.

Our drug development programs require substantial additional capital to successfully complete them, arising from costs to:

- conduct research, preclinical testing and human studies,
- establish pilot scale and commercial scale manufacturing processes and facilities, and
- establish and develop quality control, regulatory, marketing, sales and administrative capabilities to support these programs.

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

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

For example, we are required under the terms of our agreement with Elan to spend not less than $7 million through May 2003 to undertake additional clinical activities related to the commercialization of Morphelan. In the event we do not spend this amount, any shortfall would have to be paid to Elan. If additional funds are required to support our operations and we are unable to obtain them on terms favorable to us, we may be required to cease or reduce further commercialization of our products, to sell some or all of our technology or assets or to merge with another entity.

Our products must clear significant regulatory hurdles prior to marketing.

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

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

We may not be able to pay amounts due on our outstanding indebtedness when due which would cause defaults under these arrangements.

We and our subsidiaries may not have sufficient funds to make required payments due under existing debt. If we or our subsidiaries do not have adequate funds, we will be forced to refinance the existing debt and may not be successful in doing so. Our subsidiary, Glycomed, is obligated to make payments under convertible subordinated debentures in the total principal amount of $50 million. The debentures incur interest semi-annually at a rate of 7 ½% per annum, are due in 2003 and convertible into our common stock at $26.52 per share. In addition, at September 30, 2001, we had outstanding a $2.5 million convertible note to GlaxoSmithKline due in 2002 with interest at prime and convertible into our common stock at $13.56 per share. We also had outstanding $84.6 million in zero coupon convertible senior notes to Elan, due 2008 with an 8% per annum yield to maturity and convertible into our common stock at approximately $14 per share. Glycomed's failure to make payments when due under its debentures and Ligand's failure to make payments due under the convertible note to GlaxoSmithKline would cause us to default under the outstanding notes to Elan.

We may require additional money to run our business and may be required to raise this money on terms which are not favorable to our existing stockholders.

We have incurred losses since our inception and do not expect to generate positive cash flow to fund our operations for one or more years. As a result, we may need to complete additional equity or debt financings to fund our operations. Our inability to obtain additional financing could adversely affect our business. Financings may not be available on acceptable terms. In addition, these financings, if completed, still may not meet our capital needs and could result in substantial dilution to our stockholders. For instance, the zero coupon convertible senior notes outstanding to Elan are convertible into common stock at the option of Elan, subject to some limitations, and in January 2001 we issued 2 million shares of our common stock in a private placement. If adequate funds are not available, we may be required to delay, reduce the scope of or eliminate one or more of our drug development programs. Alternatively, we may be forced to attempt to continue development by entering into arrangements with collaborative partners or others that require us to relinquish some or all of our rights to technologies or drug candidates that we would not otherwise relinquish.

We face substantial competition.

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

Our success will depend on third-party reimbursement and may be impacted by health care reform.

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

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

We rely heavily on collaborative relationships and termination of any of these programs could reduce the financial resources available to us.

Our strategy for developing and commercializing many of our potential products, including products aimed at larger markets, includes entering into collaborations with corporate partners, licensors, licensees and others. These collaborations provide us with funding and research and development resources for potential products for the treatment or control of metabolic diseases, hematopoiesis, women's health disorders, inflammation, cardiovascular disease, cancer and skin disease, and osteoporosis. These agreements also give our collaborative partners significant discretion when deciding whether or not to pursue any development program. For example, in June 2001, Bristol-Myers Squibb terminated its mineralocorticoid receptor research and collaboration agreement with us. Our collaborations may not continue or be successful.

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

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

Our success depends on our ability to obtain and maintain our patents and other proprietary rights.

Our success will depend on our ability and the ability of our licensors to obtain and maintain patents and proprietary rights for our potential products and to avoid infringing the proprietary rights of others, both in the United States and in foreign countries. Patents may not be issued from any of these applications currently on file or, if issued, may not provide sufficient protection. In addition, disputes with licensors under our license agreements may arise which could result in additional financial liability or loss of important technology and potential products.

Our patent position, like that of many pharmaceutical companies, is uncertain and involves complex legal and technical questions for which important legal principles are unresolved. We may not develop or obtain rights to products or processes that are patentable. Even if we do obtain patents, they may not adequately protect the technology we own or have licensed. In addition, others may challenge, seek to invalidate, infringe or circumvent any patents we own or license, and rights we receive under these patents may not provide competitive advantages to us. Further, the manufacture, use or sale of our products may infringe the patent rights of others.

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

licenses to those patents or to develop or obtain alternative technology. We may not be able to obtain any such license on acceptable terms or at all. Any failure to obtain such licenses could delay or prevent us from pursuing the development or commercialization of our potential products.

We have had and will continue to have discussions with our current and potential collaborators regarding the scope and validity of our patent and other proprietary rights. If a collaborator or other party successfully establishes that our patent rights are invalid, we may not be able to continue our existing collaborations beyond their expiration. Any determination that our patent rights are invalid also could encourage our collaborators to terminate their agreements where contractually permitted. Such a determination could also adversely affect our ability to enter into new collaborations.

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

We have learned that Hoffmann-La Roche Inc. has received a United States patent and has made patent filings in foreign countries that relate to our Panretin® capsules and gel products. We filed a patent application with an earlier filing date than Hoffmann-La Roche's patent, which we believe is broader than, but overlaps in part with, Hoffmann-La Roche's patent. We currently are investigating the scope and validity of Hoffmann-La Roche's patent to determine its impact upon our products. The Patent and Trademark Office has informed us that the overlapping claims are patentable to us and has initiated a proceeding to determine whether we or Hoffmann-La Roche are entitled to a patent. We may not receive a favorable outcome in the proceeding. In addition, the proceeding may delay the Patent and Trademark Office's decision regarding our earlier application. If we do not prevail, the Hoffmann-La Roche patent might block our use of Panretin® capsules and gel in specified cancers.

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

We rely on third-party manufacturers to supply our products and thus have little control over our manufacturing resources.

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

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

Our business exposes us to product liability risks or our products may need to be recalled and we may not have sufficient insurance to cover any claims.

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

We are dependent on our key employees, the loss of whose services could adversely affect us.

We depend on our key scientific and management staff, the loss of whose services could adversely affect our business. Furthermore, we may need to hire new scientific, management and operational personnel. Recruiting and retaining qualified management, operations and scientific personnel is also critical to our success. We may not be able to attract and retain such personnel on acceptable terms given the competition among numerous drug companies, universities and other research institutions for such personnel.

We use hazardous materials that require us to incur substantial costs to comply with environmental regulations.

In connection with our research and development activities, we handle hazardous materials, chemicals and various radioactive compounds. To properly dispose of these hazardous materials in compliance with environmental regulations, we are required to contract with third parties at substantial cost to us. We cannot completely eliminate the risk of accidental contamination or injury from the handling and disposing of hazardous materials, whether by us or by our third-party contractors. In the event of any accident, we could be held liable for any damages that result, which could be significant.

Our stock price may be adversely affected by volatility in the markets.

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

- the results of research or development testing of ours or our competitors' products,
- technological innovations related to diseases we are studying,
- new commercial products introduced by our competitors,
- government regulation of our industry,
- receipt of regulatory approvals by competitors,
- our failure to receive regulatory approvals for products under development,
- developments concerning proprietary rights, or
- litigation or public concern about the safety of our products.

Future sales of our common stock may depress our stock price.

Sales of substantial amounts of our common stock in the public market could seriously harm prevailing market prices for our common stock. These sales might make it difficult or impossible for us to sell additional securities when we need to raise capital.

You may not receive a return on your shares other than through the sale of your shares of common stock.

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

Our shareholder rights plan and charter documents may prevent transactions that could be beneficial to you.

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

PART I. FINANCIAL INFORMATION
ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

At September 30, 2001, our investment portfolio includes fixed-income securities of $19.6 million. These securities are subject to interest rate risk and will decline in value if interest rates increase. However, due to the short maturities of holdings in our investment portfolio, an immediate 10% change in interest rates would not have a material impact on our financial condition, results of operations or cash flows. Declines in interest rates over time will, however, reduce our interest income while increases in interest rates over time will increase our interest expense.

We generally conduct business, including sales to foreign customers, in U.S. dollars. As a result we have very limited foreign currency exchange rate risk. An immediate 10% change in foreign exchange rates would not have a material impact on our financial condition, results of operations or cash flows.

ITEM 6 (A) EXHIBITS

Exhibit 3.1 (1)	Amended and Restated Certificate of Incorporation of the Company (Filed as Exhibit 3.2).
Exhibit 3.2 (1)	Bylaws of the Company, as amended (Filed as Exhibit 3.3).
Exhibit 3.3 (2)	Amended Certificate of Designation of Rights, Preferences and Privileges of Series A Participating Preferred Stock of Ligand Pharmaceuticals Incorporated.
Exhibit 3.5 (6)	Certificate of Amendment of the Amended and Restated Certificate of Incorporation of the Company.
Exhibit 4.1 (8)	Specimen stock certificate for shares of Common Stock of the Company.
Exhibit 4.2 (3)	Preferred Shares Rights Agreement, dated as of September 13, 1996, by and between Ligand Pharmaceuticals Incorporated and Wells Fargo Bank, N.A. (Filed as Exhibit 10.1)
Exhibit 4.3 (4)	Amendment to Preferred Shares Rights Agreement, dated as of November 9, 1998, between the Company and ChaseMellon Shareholder Services, L.L.C., as Rights Agent (Filed as Exhibit 99.1).
Exhibit 4.4 (7)	Indenture, dated as of December 23, 1992 by and between Glycomed Incorporated and Chemical Trust Company of California. (Filed as Exhibit 4.3).
Exhibit 4.5 (5)	First Supplement Indenture, dated as of May 18, 1995 by and among the Company, Glycomed Incorporated and Chemical Trust Company of California. (Filed as Exhibit 10.133).

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

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

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

(4) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with, the Registration Statement on Form 8-A/A Amendment No. 1 (No. 0-20720) filed on November 10, 1998.

(5) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Registration Statement on Form S-4 (No. 33-90160) filed on March 9, 1995, as amended.

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

(7) This exhibit was previously filed as part of, and is hereby incorporated by reference to the numbered exhibit filed with the Registration Statement on Form S-3 of Glycomed Incorporated (Reg. No. 33-55042) filed on November 25, 1992, as amended.

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

ITEM 6 (B) REPORTS ON FORM 8-K

No reports on Form 8-K were filed during the quarter ended September 30, 2001.

LIGAND PHARMACEUTICALS INCORPORATED

September 30, 2001

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: November 7, 2001

By: /S/ PAUL V.MAIER
Paul V. Maier
Senior Vice President, Chief Financial Officer