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

FORM 10-Q

☒ **Quarterly Report Pursuant to Section 13 or 15 (d) of the Securities Exchange Act of 1934**

For the quarterly period ended September 30, 2017

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: 001-33093

LIGAND PHARMACEUTICALS INCORPORATED

(Exact name of registrant as specified in its charter)

Delaware	**77-0160744**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
3911 Sorrento Valley Boulevard, Suite 110 San Diego, CA	**92121**
(Address of principal executive offices)	**(Zip Code)**

(858) 550-7500

(Registrant's Telephone Number, Including Area Code)

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

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

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

Large Accelerated Filer	☒	Accelerated Filer	☐
Non-Accelerated Filer	☐ (Do not check if a smaller reporting company)	Smaller Reporting Company	☐
Emerging Growth Company	☐		

If an emerging growth company, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act. ☐

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

As of October 31, 2017, the registrant had 21,105,476 shares of common stock outstanding.

LIGAND PHARMACEUTICALS INCORPORATED
QUARTERLY REPORT

FORM 10-Q

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GLOSSARY OF TERMS AND ABBREVIATIONS

Abbreviation	Definition
2019 Convertible Senior Notes	$245.0 million aggregate principal amount of convertible senior unsecured notes due 2019
Amgen	Amgen, Inc.
ASC	Accounting Standards Codification
ASU	Accounting Standards Update
Aziyo	Aziyo Med, LLC
CEO	Chief Executive Officer
Company	Ligand Pharmaceuticals Incorporated, including subsidiaries
CorMatrix	CorMatrix Cardiovascular, Inc.
CVR	Contingent value right
Crystal	Crystal Bioscience, Inc.
CyDex	CyDex Pharmaceuticals, Inc.
Amended ESPP	Employee Stock Purchase Plan, as amended and restated
FASB	Financial Accounting Standards Board
FDA	Food and Drug Administration
GAAP	Generally accepted accounting principles in the United States
IPR&D	In-Process Research and Development
Ligand	Ligand Pharmaceuticals Incorporated, including subsidiaries
LSA	Loan and Security Agreement
Metabasis	Metabasis Therapeutics, Inc.
MLA	Master License Agreement
NOLs	Net Operating Losses
OMT	OMT, Inc. or Open Monoclonal Technology, Inc.
Retrophin	Retrophin Inc.
Q3 2017	The Company's fiscal quarter ended September 30, 2017
Q3 2016	The Company's fiscal quarter ended September 30, 2016
SEC	Securities and Exchange Commission
Selexis	Selexis, SA
Viking	Viking Therapeutics

PART I. FINANCIAL INFORMATION

ITEM 1. FINANCIAL STATEMENTS

LIGAND PHARMACEUTICALS INCORPORATED
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited, in thousands, except share data)

	September 30, 2017	December 31, 2016
ASSETS		
Current assets:		
Cash and cash equivalents	$ 32,739	$ 18,752
Short-term investments	169,520	122,296
Accounts receivable	12,816	14,700
Note receivable from Viking	3,007	3,207
Inventory	5,007	1,923
Other current assets	1,112	2,175
Total current assets	224,201	163,053
Deferred income taxes	134,939	123,891
Investment in Viking	5,137	8,345
Intangible assets, net	196,578	204,705
Goodwill	72,207	72,207
Commercial license rights, net	23,721	25,821
Property and equipment, net	3,526	1,819
Other assets	2,028	1,744
Total assets	$ 662,337	$ 601,585
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 3,617	$ 2,734
Accrued liabilities	6,423	6,397
Current contingent liabilities	86	5,088
2019 Convertible Senior Notes, net	221,557	212,910
Total current liabilities	231,683	227,129
Long-term contingent liabilities	5,196	2,916
Other long-term liabilities	695	687
Total liabilities	237,574	230,732
Commitments and Contingencies		
Equity component of currently redeemable convertible notes (Note 3)	21,597	29,563
Stockholders' equity:		
Common stock, $0.001 par value; 33,333,333 shares authorized; 21,094,836 and 20,909,301 shares issued and outstanding at September 30, 2017 and December 31, 2016, respectively	21	21
Additional paid-in capital	793,724	769,653
Accumulated other comprehensive income	3,335	2,743
Accumulated deficit	(393,914)	(431,127)
Total stockholders' equity	403,166	341,290
Total liabilities and stockholders' equity	$ 662,337	$ 601,585

See accompanying notes.

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

	Three months ended September 30,		Nine months ended September 30,	
	2017	**2016**	**2017**	**2016**
Revenues:				
Royalties	$ 21,931	$ 15,698	$ 60,372	$ 39,842
Material sales	7,664	4,219	14,336	13,445
License fees, milestones and other revenues	3,780	1,702	15,930	17,500
Total revenues	33,375	21,619	90,638	70,787
Operating costs and expenses:				
Cost of sales [1]	2,385	999	3,628	2,674
Amortization of intangibles	2,706	2,706	8,126	7,912
Research and development	4,759	5,898	18,254	14,813
General and administrative	7,032	6,550	20,904	20,858
Total operating costs and expenses	16,882	16,153	50,912	46,257
Income from operations	16,493	5,466	39,726	24,530
Other (expense) income:				
Interest expense, net	(2,822)	(3,116)	(8,625)	(9,172)
Increase in contingent liabilities	(1,336)	(958)	(2,302)	(2,595)
Loss from Viking	(1,019)	(1,396)	(3,350)	(14,139)
Other income, net	755	1,215	1,117	2,107
Total other expense, net	(4,422)	(4,255)	(13,160)	(23,799)
Income before income taxes	12,071	1,211	26,566	731
Income tax (expense) benefit	(3,645)	(160)	(7,000)	28
Income from operations	8,426	1,051	19,566	759
Discontinued operations:				
Gain on sale of Oncology Product Line before income taxes	—	—	—	1,139
Income tax expense on discontinued operations	—	—	—	(408)
Income from discontinued operations	—	—	—	731
Net income	$ 8,426	$ 1,051	$ 19,566	$ 1,490
Per share amounts:				
Basic earnings per share data [2]				
Income from continuing operations	$ 0.40	$ 0.05	$ 0.93	$ 0.04
Income from discontinued operations	—	—	—	0.04
Net income	$ 0.40	$ 0.05	$ 0.93	$ 0.07
Diluted earnings per share data [2]				
Income from continuing operations	$ 0.36	$ 0.05	$ 0.84	$ 0.03
Income from discontinued operations	—	—	—	0.03
Net income	$ 0.36	$ 0.05	$ 0.84	$ 0.07
Shares used for computation (in thousands)				
Basic	21,071	20,887	21,007	20,806
Diluted	23,551	22,997	23,262	22,742

(1) Excludes amortization of intangibles.
(2) The sum of net income per share amounts may not equal the totals due to rounding.

See accompanying notes.

LIGAND PHARMACEUTICALS INCORPORATED
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(Unaudited)
(in thousands)

	Three months ended September 30,		Nine months ended September 30,	
	2017	2016	2017	2016
Net income:	$ 8,426	$ 1,051	$ 19,566	$ 1,490
Unrealized net gain on available-for-sale securities, net of tax	605	978	628	367
Less: Reclassification of net realized gain included in net income, net of tax	(329)	(1,071)	(36)	(1,670)
Comprehensive income	$ 8,702	$ 958	$ 20,158	$ 187

See accompanying notes.

LIGAND PHARMACEUTICAL INCORPORATED
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited, in thousands)

	Nine months ended September 30,	
	2017	**2016**
Operating activities		
Net income	$ 19,566	$ 1,490
Less: income from discontinued operations	—	731
Income from continuing operations	19,566	759
Adjustments to reconcile net income to net cash provided by operating activities:		
Non-cash change in estimated fair value of contingent liabilities	2,302	2,595
Realized gain on sale of short-term investment	(371)	(1,776)
Gain on disposal of assets	—	183
Depreciation and amortization	7,581	8,322
Amortization of premium (discount) on investments, net	88	510
Amortization of debt discount and issuance fees	8,647	8,130
Stock-based compensation	15,917	13,690
Deferred income taxes	6,855	347
Change in fair value of the Viking convertible debt receivable and warrants	(426)	(464)
Loss from equity method investment	3,350	14,139
Changes in operating assets and liabilities:		
Accounts receivable	1,909	(411)
Inventory	(1,985)	(2,394)
Other current assets	399	(9)
Other long-term assets	—	(31)
Accounts payable and accrued liabilities	(2,649)	(3,079)
Other	1,075	1,497
Net cash provided by operating activities	62,258	42,008
Investing activities		
Purchase of commercial license rights	—	(17,695)
Payments to CVR holders and other contingency payments	(4,998)	(7,055)
Purchases of property and equipment	(220)	(1,783)
Cash paid for acquisition, net of cash acquired	—	(92,504)
Purchase of short-term investments	(205,121)	(73,109)
Purchase of common stock in equity method investment	—	(1,000)
Purchase of Viking common stock and warrants	—	(700)
Proceeds received from repayment of Viking note receivable	200	300
Proceeds received from repayment of commercial license rights	2,859	—
Proceeds from sale of short-term investments	83,390	23,387
Proceeds from maturity of short-term investments	75,887	113,694
Net cash used in investing activities	(48,003)	(56,465)
Financing activities		
Net proceeds from stock option exercises and ESPP	3,864	4,608
Taxes paid related to net share settlement of equity awards	(4,132)	(999)
Net cash (used in) provided by financing activities	(268)	3,609
Net increase (decrease) in cash and cash equivalents	13,987	(10,848)
Cash and cash equivalents at beginning of period	18,752	97,428
Cash and cash equivalents at end of period	$ 32,739	$ 86,580

Supplemental disclosure of cash flow information		
Interest paid	$ 1,838	$ 1,838
Taxes paid	145	36
Supplemental schedule of non-cash activity		
Stock issued for acquisition, net of issuance cost	—	(77,330)
Unsettled repurchase of common stock	—	(1,554)
Stock and warrant received for repayment of Viking notes receivable	—	1,200
Accrued fixed asset purchases	1,700	—
Accrued inventory purchases	499	—
Unrealized gain (loss) on AFS investments	628	(271)

See accompanying notes

LIGAND PHARMACEUTICALS INCORPORATED
Notes to Condensed Consolidated Financial Statements
(Unaudited)

1. Basis of Presentation and Summary of Significant Accounting Policies

Basis of Presentation

The Company's accompanying unaudited condensed consolidated financial statements have been prepared in accordance with GAAP for interim financial information. In the opinion of management, all adjustments (consisting of normal recurring adjustments) considered necessary for a fair presentation of the financial position and results of operations of the Company and its subsidiaries, have been included. Interim financial results are not necessarily indicative of the results that may be expected for the full year. These financial statements should be read in conjunction with the consolidated financial statements and notes therein included in the Company's Annual Report on Form 10-K for the year ended December 31, 2016 filed on February 28, 2017.

The accompanying condensed consolidated financial statements include Ligand and its wholly-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation

Significant Accounting Policies

The Company describes its significant accounting policies in Note 1 to the financial statements in Item 8 of our Annual Report on Form 10-K for the year ended December 31, 2016.

Use of Estimates

The preparation of condensed consolidated financial statements in conformity with GAAP requires the use of estimates and assumptions that affect the amounts reported in the condensed consolidated financial statements and the accompanying notes. Actual results may differ from those estimates.

Accounting Pronouncements Recently Adopted

In March 2016, the FASB issued *ASU 2016-09, Improvements to Employee Share-Based Payment Accounting*, which is intended to simplify several aspects of the accounting for stock-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. The Company adopted ASU 2016-09 in the first quarter of fiscal year 2017. As a result of the adoption, the Company recorded a $17.9 million cumulative-effect adjustment to retained earnings for the recognition of excess tax benefits generated by the settlement of stock-based awards in prior periods and a discrete income tax benefit of $0.9 million to the income tax provision for excess tax benefits generated by the settlement, in the first quarter of fiscal year 2017, of stock-based awards. As allowed by the new guidance, the Company has elected to account for equity award forfeitures as they occur, and recorded a $0.3 million cumulative-effect adjustment to retained earnings for this accounting change in prior periods.

Recent Accounting Pronouncements

In May 2014, the FASB issued new guidance related to revenue recognition, ASU 2014-09, *Revenue from Contracts with Customers ("ASC 606")*, which outlines a comprehensive revenue recognition model and supersedes most current revenue recognition guidance. The new guidance requires a company to recognize revenue upon transfer of goods or services to a customer at an amount that reflects the expected consideration to be received in exchange for those goods or services. ASC 606 defines a five-step approach for recognizing revenue, which may require a company to use more judgment and make more estimates than under the current guidance. Two methods of adoption are permitted: (a) full retrospective adoption, meaning the standard is applied to all periods presented; or (b) modified retrospective adoption, meaning the cumulative effect of applying the new guidance is recognized at the date of initial application as an adjustment to the opening retained earnings balance.

We are undertaking a substantial effort to be ready for adoption of ASC 606. Some of our contracts have distinct terms which will need to be evaluated separately. We anticipate that this standard will have a material impact on our consolidated financial statements by accelerating the timing of revenue recognition for revenues related to royalties, and potentially certain contingent milestone based payments. We intend to adopt ASC 606 starting as of January 1, 2018 using the modified retrospective method.

In January 2016, the FASB issued ASU 2016-01, *Financial Instruments - Overall (Subtopic 825-10): Recognition and Measurement of Financial Assets and Financial Liabilities.* ASU 2016-01 modifies certain aspects of the recognition, measurement, presentation, and disclosure of financial instruments. ASU 2016-01 is effective for fiscal years beginning after December 15, 2017. We do not expect the adoption of this standard to have a material impact on our financial statements.

In August 2016, the FASB issued ASU 2016-15, *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments*. This new standard will make eight targeted changes to how cash receipts and cash payments are presented and classified in the statement of cash flows. The standard is effective for us in the first quarter of 2018. The standard will require adoption on a retrospective basis unless it is impracticable to apply, in which case we would be required to apply the amendments prospectively as of the earliest date practicable. We are currently evaluating the impact of our pending adoption of ASU 2016-15 on our consolidated financial statements.

In January 2017, the FASB issued ASU No. 2017-01, *Business Combinations (Topic 805), Clarifying the Definition of a Business*, which changes the definition of a business to assist entities with evaluating when a set of assets acquired or disposed of should be considered a business. The new standard requires an entity to evaluate if substantially all the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets; if so, the set would not be considered a business. The new standard also requires a business to include at least one substantive process and narrows the definition of outputs. We expect that these provisions will reduce the number of transactions that will be considered a business. The new standard is effective for interim and annual periods beginning on January 1, 2018, and may be adopted earlier. The standard would be applied prospectively to any transaction occurring on or after the adoption date. We are currently evaluating the impact that this new standard will have on our consolidated financial statements.

Short-term Investments

The Company's investments consist of the following at September 30, 2017 and December 31, 2016 (in thousands):

	September 30, 2017				December 31, 2016			
	Amortized cost	Gross unrealized gains	Gross unrealized losses	Estimated fair value	Amortized cost	Gross unrealized gains	Gross unrealized losses	Estimated fair value
Short-term investments								
Bank deposits	$ 77,307	$ 12	$ (5)	$ 77,314	$ 40,715	$ 19	$ —	$ 40,734
Corporate bonds	50,833	3	(34)	50,802	11,031	—	(5)	11,026
Commercial paper	23,176	3	(2)	23,177	33,074	2	(9)	33,067
U.S. Government bonds	8,490	2	(6)	8,486	7,508	—	(1)	7,507
Agency bonds	4,977	—	—	4,977	7,294	1	—	7,295
Municipal bonds	2,020	—	(8)	2,012	19,624	—	(11)	19,613
Corporate equity securities	254	2,498	—	2,752	1,512	1,542	—	3,054
	$ 167,057	$ 2,518	$ (55)	$ 169,520	$ 120,758	$ 1,564	$ (26)	$ 122,296

Inventory

Inventory, which consists of finished goods, is stated at the lower of cost or market value. The Company determines cost using the first-in, first-out method.

Goodwill and Other Identifiable Intangible Assets

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

	September 30, 2017	December 31, 2016
Indefinite lived intangible assets		
IPR&D	$ 12,246	$ 12,246
Goodwill	72,207	72,207
Definite lived intangible assets		
Complete technology	182,577	182,577
Less: Accumulated amortization	(19,710)	(12,792)
Trade name	2,642	2,642
Less: Accumulated amortization	(883)	(784)
Customer relationships	29,600	29,600
Less: Accumulated amortization	(9,894)	(8,784)
Total goodwill and other identifiable intangible assets, net	$ 268,785	$ 276,912

Commercial License Rights

Commercial license rights consist of the following (in thousands):

	September 30, 2017	December 31, 2016
CorMatrix	$ 15,190	$ 17,284
Selexis	8,531	8,537
	$ 23,721	$ 25,821

Commercial license rights represent a portfolio of future milestone and royalty payment rights acquired from Selexis in April 2013 and April 2015 and CorMatrix in May 2016. Individual commercial license rights acquired are carried at allocated cost and approximate fair value.

In May 2017, the Company entered into a Royalty Agreement with Aziyo pursuant to which the Company will receive royalties from certain marketed products that Aziyo acquired from CorMatrix. Pursuant to the Royalty Agreement, the Company received $5 million in June 2017 and is scheduled to receive another $5 million by the end of 2017 from Aziyo to buydown the royalty rates on the products CorMatrix sold to Aziyo. The Royalty Agreement closed on May 31, 2017, in connection with the closing of the asset sale from CorMatrix to Aziyo (the “CorMatrix Asset Sale”). Pursuant to the Royalty Agreement, the Company will receive a 5% royalty on the products Aziyo acquired in the CorMatrix Asset Sale, reduced from the original 20% royalty from CorMatrix pursuant to the previously disclosed Interest Purchase Agreement, dated May 3, 2016 (the “Original Interest Purchase Agreement”) between CorMatrix and the Company. In addition, Aziyo has agreed to pay the Company up to $10 million of additional milestones tied to cumulative net sales of the products Aziyo acquired in the CorMatrix Asset Sale and to extend the term on these royalties by one year. The Royalty Agreement will terminate on May 31, 2027. In addition, in May 2017, the Company entered into an amended and restated interest purchase agreement (the “Amended Interest Purchase Agreement”) with CorMatrix, which supersedes in its entirety the Original Interest Purchase Agreement. Other than removing the commercial products sold to Aziyo in the CorMatrix Sale, the terms of the Amended Interest Purchase Agreement remain unchanged with respect to the CorMatrix developmental pipeline products, including the royalty rate of 5% on such pipeline products. The Amended Interest Purchase Agreement will terminate 10 years from the date of the first commercial sale of such products.

The Company accounts for the CorMatrix commercial license right as a financial asset in accordance with ASC 310 and amortizes the commercial license right using the 'effective interest' method whereby the Company forecasts expected cash flows over the term of the arrangement to arrive at an annualized effective interest. The annual effective interest associated with the forecasted cash flows from the Royalty Agreement with Aziyo as of September 30, 2017 is 26%. Revenue is

calculated by multiplying the carrying value of the commercial license right by the effective interest. The royalty payments received for the three and nine months ended September 30, 2017, including the $5 million received in June 2017, were accordingly allocated between revenue and the amortization of the commercial license rights.

During the financial statement close process for the three and six months ended June 30, 2017 the Company identified and corrected an immaterial error related to 2016 and the first quarter of 2017. The adjustment related to an error in the recognition of the income associated with this financial asset. In the second quarter of 2017, the Company determined the 'effective interest' method should have been used to recognize income associated with the financial asset and that the method utilized previously was incorrect. The error had the impact of understating Commercial License Rights, revenue and net income in 2016 and the first quarter of 2017. Management evaluated the effect of the adjustment on previously issued interim and annual consolidated financial statements in accordance with SAB No. 99 and SAB No. 108 and concluded that it was qualitatively and quantitatively immaterial to the historical interim and annual periods. Management also concluded that the correcting the error in the second quarter of 2017 would not have a material impact on the 2017 annual expected financial results. As a result, in accordance with SAB No. 108, we corrected our Consolidated Balance Sheets as of June 30, 2017.

The error resulted in an understatement of 2016 and Q1 2017 revenue of $1.3 million and $0.4 million respectively, and an understatement of 2016 and Q1 2017 net income of $0.8 million, or $0.04 per diluted share, and net income of $0.3 million, or $0.01 per diluted share, respectively. The correction of the error in Q2 2017 does not have any impact for the three months ended September 30, 2017, however it resulted in an overstatement of revenue of $1.3 million, and $0.8 million or $0.04 per diluted share for the nine months ended September 30, 2017.

Equity-Method Investment

The Company has approximately 22.1% equity ownership in Viking as of September 30, 2017. The Company records its investment in Viking under the equity method of accounting. The investment is subsequently adjusted for the Company’s share of Viking's operating results, and if applicable, cash contributions and distributions. The market value of the Company's equity investment in Viking was $12.0 million as of September 30, 2017. The Company also has outstanding warrants to purchase 1.5 million shares of Viking's common stock at an exercise price of $1.50 per share at September 30, 2017. The Company recorded the warrants at the fair value of $1.1 million and $0.7 million at September 30, 2017 and December 31, 2016, respectively. See *Note 2 Fair Value Measurement* for details.

In addition, the Company currently has an active MLA with Viking, under which the Company licensed to Viking the rights to five programs. The Company is entitled to receive contingent event-based payments and royalties from Viking based on the progression and eventual sale of any products being developed by Viking under the MLA. No such payment was earned or recognized during the three and nine months ended September 30, 2017 and 2016.

The Company also has a convertible note receivable from Viking under the LSA. Under the terms of the LSA, the principal amount outstanding accrues interest at a fixed rate of 2.5%. On May 8, 2017, the Company entered into an amendment to the LSA, which amends to, among other things, (i) extend the maturity date of the outstanding convertible notes receivable under the LSA from May 21, 2017 to May 21, 2018 and (ii) caused Viking to pay the Company $0.2 million, which reduced first the accrued and unpaid interest and second the unpaid principal amount on the Viking Note by $0.50 for each $1.00 of value. The Company elected to record the convertible notes at fair value, which was $3.0 million and $3.2 million at September 30, 2017 and December 31, 2016, respectively. See *Note 2 Fair Value Measurement* for details.

Accrued Liabilities

Accrued liabilities consist of the following (in thousands):

	September 30, 2017	December 31, 2016
Compensation	$ 2,479	$ 2,603
Professional fees	634	829
Amounts owed to former licensees	457	899
Royalties owed to third parties	1,000	942
Deferred revenue	1,075	—
Other	778	1,124
Total accrued liabilities	$ 6,423	$ 6,397

Stock-Based Compensation

Stock-based compensation expense for awards to employees and non-employee directors is recognized on a straight-line basis over the vesting period until the last tranche vests. The following table summarizes stock-based compensation expense recorded as components of research and development expenses and general and administrative expenses for the periods indicated (in thousands):

	Three months ended September 30,		Nine months ended September 30,	
	2017	2016	2017	2016
Stock-based compensation expense as a component of:				
Research and development expenses	$ 2,394	$ 2,845	$ 8,260	$ 6,112
General and administrative expenses	2,854	2,486	7,657	7,578
	$ 5,248	$ 5,331	$ 15,917	$ 13,690

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

	Three months ended September 30,		Nine months ended September 30,	
	2017	2016	2017	2016
Risk-free interest rate	2.0%	1.3%	2.1%	1.5%
Dividend yield	—	—	—	—
Expected volatility	47%	49%	47%	50%
Expected term	6.5	6.7	6.8	6.6

Lease Obligations

The Company describes its operating lease obligations in Note 5 to the financial statements in Item 8 of its Annual Report on Form 10-K for the year ended December 31, 2016. There were no significant changes in the Company's operating lease commitments during the first nine months of 2017.

Convertible Debt

In August 2014, the Company completed a $245.0 million offering of 2019 Convertible Senior Notes, which bear interest at 0.75%. The Company accounted for the 2019 Convertible Senior Notes by separating the liability and equity components of the instrument in a manner that reflects the Company's nonconvertible debt borrowing rate. As a result, the Company assigned a value to the debt component of the 2019 Convertible Senior Notes equal to the estimated fair value of similar debt instruments without the conversion feature, which resulted in the Company recording the debt instrument at a discount. The Company is amortizing the debt discount over the life of the 2019 Convertible Senior Notes as additional non-cash interest expense utilizing the effective interest method.

Upon the occurrence of certain circumstances, holders of the 2019 Convertible Senior Notes may redeem all or a portion of their notes, which may require the use of a substantial amount of cash. At September 30, 2017, we had a working capital deficit of $7.5 million, which includes the 2019 Convertible Senior notes that are currently redeemable as of September 30, 2017 but excludes another $21.6 million that is classified as mezzanine equity. As noted in Note 3, the debt may change from current to non-current period over period, primarily as a result of changes in the Company’s stock price. Management believes that it is remote that holders of the notes would choose to convert their notes early because the fair value of the security that a noteholder can currently realize in an active market is greater than the conversion value the noteholder would realize upon early conversion. In the unlikely event that all the debt was converted, we have three business days following a 50 trading day observation period from the convert date to pay the principal in cash. We have positive operating income and positive cash flow from operations since December 31, 2013 and, accordingly, while there can be no assurance, we believe we have the ability to raise additional capital through an S-3 registration or via alternative financing arrangements such as convertible or straight debt.

Income Per Share

Basic income per share is calculated by dividing net income by the weighted-average number of common shares outstanding during the period. Diluted income per share is computed based on the sum of the weighted average number of common shares and potentially dilutive common shares outstanding during the period.

Potentially dilutive common shares consist of shares issuable under 2019 Convertible Senior Notes and the associated warrants, stock options and restricted stock. The 2019 Convertible Senior Notes have a dilutive impact when the average market price of the Company’s common stock exceeds the applicable conversion price of the notes. The warrants have a dilutive effect to the extent the market price per share of common stock exceeds the applicable exercise price of the warrants. Potentially dilutive common shares from stock options and restricted stock are determined using the average share price for each period under the treasury stock method. In addition, proceeds from exercise of stock options and the average amount of unrecognized compensation expense for restricted stock are assumed to be used to repurchase shares. In loss periods, basic net loss per share and diluted net loss per share are identical because the otherwise dilutive potential common shares become anti-dilutive and are therefore excluded.

The following table presents the calculation of weighted average shares used to calculate basic and diluted earnings per share:

	Three months ended September 30,		Nine months ended September 30,	
	2017	2016	2017	2016
Weighted average shares outstanding:	21,070,678	20,886,705	21,006,718	20,805,604
Dilutive potential common shares:				
Restricted stock	79,222	134,008	140,340	102,282
Stock options	1,019,342	792,474	980,461	788,106
2019 Convertible Senior Notes	1,334,357	1,184,092	1,118,456	1,046,257
Warrants	47,646	—	15,882	—
Shares used to compute diluted income per share	23,551,245	22,997,279	23,261,857	22,742,249
Potentially dilutive shares excluded from calculation due to anti-dilutive effect	255,101	3,540,806	2,531,219	3,522,063

2. Fair Value Measurements

The following table presents the Company's hierarchy for assets and liabilities measured at fair value.

	September 30, 2017				December 31, 2016			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:								
Short-term investments[1]	$ 2,753	$ 166,767	$ —	$ 169,520	$ 3,054	$ 119,242	$ —	$ 122,296
Note receivable Viking [2]	—	—	3,007	3,007	—	—	3,207	3,207
Investment in warrants [3]	1,110	—	—	1,110	684	—	—	684
Total assets	$ 3,863	$ 166,767	$ 3,007	$ 173,637	$ 3,738	$ 119,242	$ 3,207	$ 126,187
Liabilities:								
Current contingent liabilities-CyDex [4]	$ —	$ —	$ 86	$ 86	$ —	$ —	$ 101	$ 101
Long-term contingent liabilities-CyDex [4]	—	—	1,503	1,503	—	—	1,503	1,503
Long-term contingent liabilities-Metabasis [5]	—	3,693	—	3,693	—	1,413	—	1,413
Liability for amounts owed to former licensees[6]	413	—	—	413	371	—	—	371
Total liabilities	$ 413	$ 3,693	$ 1,589	$ 5,695	$ 371	$ 1,413	$ 1,604	$ 3,388

(1) Investments in equity securities, which the Company received as a result of event-based and upfront payments from licensees, are classified as level 1 as the fair value is determined using quoted market prices in active markets for the same securities. Short-term investments in marketable securities with maturities greater than 90 days are classified as level 2 of the fair value hierarchy, as these investment securities are valued based upon quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market.

(2) The fair value of the convertible note receivable from Viking was determined using a probability weighted option pricing model using a lattice methodology. The fair value is subjective and is affected by certain significant input to the valuation model such as the estimated volatility of the common stock, which was estimated to be 75% at September 30, 2017. Changes in these assumptions may materially affect the fair value estimate.

(3) Investment in warrants, which the Company received as a result of Viking's partial repayment of the Viking note receivable and the Company's purchase of Viking common stock and warrants in April 2016, are classified as level 1 as the fair value is determined using quoted market prices in active markets for the same securities. The change of the fair value is recorded in the other income or expenses in the Company's condensed consolidated statement of operations.

(4) The fair value of the liabilities for CyDex contingent liabilities were determined based on the income approach. To the extent the estimated future income may vary significantly given the long-term nature of the estimate, the Company utilizes a Monte Carlo model. The fair value is subjective and is affected by changes in inputs to the valuation model including management's estimates of timing and probability of achievement of certain revenue thresholds and developmental and regulatory milestones which may be achieved and affect amounts owed to former license holders. Changes in these assumptions can materially affect the fair value estimate.

(5) The liability for CVRs for Metabasis are determined using quoted prices in a market that is not active for the underlying CVR.

(6) The liability for amounts owed to former licensees are determined using quoted market prices in active markets for the underlying investment received from a partner, a portion of which is owed to former licensees.

The following table represents significant unobservable inputs used in determining the fair value of contingent liabilities assumed in the acquisition of CyDex:

	September 30, 2017	December 31, 2016
Revenue volatility	25%	25%
Average probability of commercialization	12.5%	12.5%
Market price of risk	0.03	0.03
Credit rating	BB	BB
Equity risk premium	6%	6%

We received a $0.2 million repayment on the Viking note in Q3 2017. There was no other significant change in estimated fair value of the Viking note receivable and contingent consideration during the nine months ended September 30, 2017.

Other Fair Value Measurements

2019 Convertible Senior Notes

In August 2014, the Company issued $245.0 million aggregate principal amount of its 2019 Convertible Senior Notes. The Company uses a quoted rate in a market that is not active, which is classified as a Level 2 input, to estimate the current fair value of its 2019 Convertible Senior Notes. The estimated fair value of the 2019 Senior Convertible Notes was $447.0 million as of September 30, 2017. The carrying value of the notes does not reflect the market rate. Additionally, at the time of the convertible notes issuance, the Company entered into convertible bond hedges, which is not required to be measured or disclosed at fair value, to offset the impact of potential dilution to the Company's common stock upon the conversion of the notes. See Note 3 *Convertible Senior Notes* for additional information about the convertible notes and the bond hedges.

Viking

The Company records its investment in Viking under the equity method of accounting. See *Note 1 Significant Accounting Policies* for the fair value of the Company's equity investment in Viking.

3. Convertible Senior Notes

As of September 30, 2017, the Company had outstanding $245.0 million principal amount of 0.75% Convertible Senior Notes due August 15, 2019.

0.75% Convertible Senior Notes Due 2019

In August 2014, the Company issued $245.0 million aggregate principal amount of its 2019 Convertible Senior Notes, resulting in net proceeds of $239.3 million. The 2019 Convertible Senior Notes are convertible into common stock at an initial conversion rate of 13.3251 shares per $1,000 principal amount of convertible notes, subject to adjustment upon certain events, which is equivalent to an initial conversion price of approximately $75.05 per share of common stock. The notes bear cash interest at a rate of 0.75% per year, payable semi-annually.

Holders of the 2019 Convertible Senior Notes may convert the notes at any time prior to the close of business on the business day immediately preceding May 15, 2019, under any of the following circumstances:

(1) during any fiscal quarter (and only during such fiscal quarter) commencing after December 31, 2014, if, for at least 20 trading days (whether or not consecutive) during the 30 consecutive trading day period ending on the last trading day of the immediately preceding fiscal quarter, the last reported sale price of the Company's common stock on such trading day is greater than 130% of the conversion price on such trading day;

(2) during the five business day period immediately following any 10 consecutive trading day period, in which the trading price per $1,000 principal amount of notes was less than 98% of the product of the last reported sale price of the Company's common stock on such trading day and the conversion rate on each such trading day; or

(3) upon the occurrence of certain specified corporate events as specified in the indenture governing the notes.

As of September 30, 2017, the Company's last reported sale price has exceeded the 130% threshold described above and accordingly the Convertible Notes have been classified as a current liability as of September 30, 2017. As a result, the related unamortized discount of $21.6 million was classified as temporary equity component of currently redeemable convertible notes on the Company's Condensed Consolidated Balance Sheet. The determination of whether or not the Convertible Notes are convertible as described above is made each quarter until maturity, conversion or repurchase. It is possible that the Convertible Notes may not be convertible in future periods, in which case the Convertible Notes would be classified as long-term debt, unless one of the other conversion events described above were to occur.

On or after May 15, 2019 until the close of business on the second scheduled trading day immediately preceding August 15, 2019, holders of the notes may convert all or a portion of their notes at any time, regardless of the foregoing circumstances. Upon conversion, the Company must deliver cash to settle the principal and may deliver cash or shares of common stock, at its option, to settle any premium due upon conversion.

The 2019 Convertible Senior Notes will have a dilutive effect to the extent the average market price per share of the Company's common stock for a given reporting period exceeds the conversion price of $75.05 per share. As of September 30, 2017, the “if-converted value” exceeded the principal amount of the 2019 Convertible Senior Notes by $199.5 million.

Convertible Bond Hedge and Warrant Transactions

In August 2014, the Company entered into convertible bond hedges and sold warrants covering 3,264,643 shares of its common stock to minimize the impact of potential dilution to the Company's common stock upon conversion of the 2019 Convertible Senior Notes. The convertible bond hedges have an exercise price of $75.05 per share and are exercisable when and if the 2019 Convertible Senior Notes are converted. If upon conversion of the 2019 Convertible Senior Notes, the price of the Company's common stock is above the exercise price of the convertible bond hedges, the counterparties will deliver shares of common stock and/or cash with an aggregate value approximately equal to the difference between the price of common stock at the conversion date and the exercise price, multiplied by the number of shares of common stock related to the convertible bond hedge transaction being exercised. The convertible bond hedges and warrants described below are separate transactions entered into by the Company and are not part of the terms of the 2019 Convertible Senior Notes. Holders of the 2019 Convertible Senior Notes and warrants will not have any rights with respect to the convertible bond hedges. The Company paid $48.1 million for these convertible bond hedges and recorded the amount as a reduction to additional paid-in capital.

Concurrently with the convertible bond hedge transactions, the Company entered into warrant transactions whereby it sold warrants to acquire approximately 3,264,643 shares of common stock with an exercise price of approximately $125.08 per share, subject to certain adjustments. The warrants have various expiration dates ranging from November 13, 2019 to April 22, 2020. The warrants will have a dilutive effect to the extent the market price per share of common stock exceeds the applicable exercise price of the warrants, as measured under the terms of the warrant transactions. The Company received $11.6 million for these warrants and recorded this amount to additional paid-in capital. The common stock issuable upon exercise of the warrants will be in unregistered shares, and the Company does not have the obligation and does not intend to file any registration statement with the Securities and Exchange Commission registering the issuance of the shares under the warrants.

The following table summarizes information about the equity and liability components of the 2019 Convertible Senior Notes (in thousands).

	September 30, 2017	December 31, 2016
2019 Convertible Senior Notes		
Principal amount outstanding	$ 245,000	$ 245,000
Unamortized discount (including unamortized debt issuance cost)	(23,443)	(32,090)
Total current portion of notes payable	$ 221,557	$ 212,910

4. Income Tax

The Company’s effective tax rate may vary from the U.S. federal statutory tax rate due to the change in the mix of earnings in various state jurisdictions with different statutory rates, benefits related to tax credits, and the tax impact of non-deductible expenses, stock award activities and other permanent differences between income before income taxes and taxable income. The effective tax rate for the three and nine months ended September 30, 2017 was 30% and 26%. The variance from the U.S. federal statutory tax rate of 35% was primarily attributable to tax deductions related to stock award activities which were recorded as discrete items in the quarter. For the three and nine months ended September 30, 2016, the variance from the U.S. federal statutory rate of 35% was primarily as a result of significant permanent book-to-tax differences and state taxes. The permanent differences include non-taxable contingent consideration income (expense) recorded related to the change in market value of contingent liabilities.

5. Stockholders' Equity

The Company grants options and awards to employees and non-employee directors pursuant to a stockholder approved stock incentive plan, which is described in further detail in Note 8, Stockholders' Equity, of Notes to Consolidated Financial Statements in the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 2016.

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

	Stock Options		Restricted Stock Awards	
	Shares	Weighted-Average Exercise Price	Shares	Weighted-Average Grant Date Fair Value
Balance as of December 31, 2016	1,754,275	$ 42.12	308,700	$ 86.61
Granted	202,553	102.43	69,064	101.97
Options exercised/RSUs vested	(120,823)	31.85	(102,810)	81.74
Forfeited	(3,044)	79.74	(966)	89.01
Balance as of September 30, 2017	1,832,961	$ 49.41	273,988	$ 92.30

As of September 30, 2017, outstanding options to purchase 1.4 million shares were exercisable with a weighted average exercise price per share of $37.49.

Employee Stock Purchase Plan

The price at which common stock is purchased under the Amended ESPP is equal to 85% of the fair market value of the common stock on the first or last day of the offering period, whichever is lower. During the nine months ended September 30, 2017, approximately 2,232 shares were issued under the Amended ESPP. As of September 30, 2017, 68,065 shares were available for future purchases under the Amended ESPP.

6. Litigation

The Company records an estimate of a loss when the loss is considered probable and estimable. Where a liability is probable and there is a range of estimated loss and no amount in the range is more likely than any other number in the range, the Company records the minimum estimated liability related to the claim in accordance with *FASB ASC Topic 450 Contingencies.* As additional information becomes available, the Company assesses the potential liability related to its pending litigation and revises its estimates. Revisions in the Company's estimates of potential liability could materially impact its results of operations.

Securities Litigation

In 2012, a federal securities class action and shareholder derivative lawsuit was filed in Pennsylvania alleging that the Company and its CEO assisted various breaches of fiduciary duties based on the Company's purchase of a licensing interest in a development-stage pharmaceutical program from the Genaera Liquidating Trust in 2010 and the Company's subsequent sale of half of its interest in the transaction to Biotechnology Value Fund, Inc. Plaintiff filed a second amended complaint in February 2015, which the Company moved to dismiss in March 2015. The district court granted the motion to dismiss on November 11, 2015. The plaintiff has appealed that ruling to the Third Circuit. The Company intends to continue to vigorously defend against the claims against the Company and its CEO. The outcome of the matter is not presently determinable.

Class Action Lawsuit

In November 2016, a putative shareholder class action lawsuit was filed in the United States District Court for the Southern District of California against the Company, its chief executive officer and chief financial officer. The complaint was voluntarily dismissed without prejudice on May 15, 2017.

7. Subsequent Event

Acquisition of Crystal

In October 2017, the Company acquired Crystal, a biotech company focused in avian genetics and the generation of fully-human therapeutic engineering of animals for the generation of fully-human therapeutic antibodies. Crystal is specialized in the area of antibody research with its HuMab technology. The acquisition is expected to provide additional transgenic antibody discovery platform complementary to Ligand's OmniAb technology and with an in-house antibody discovery laboratory to service R&D needs through contracted service.

Under the terms of the agreement, Ligand paid Crystal shareholders $25 million in cash and up to an additional $10.5 million based on Crystal's achievement of certain research and business milestones prior to December 31, 2019. In addition, Crystal's shareholders will receive ten percent (10%) of revenues above $15 million generated between the closing date and December 31, 2022 by three existing collaboration agreements between Crystal and three of its collaborators, and Crystal's shareholders will receive twenty percent (20%) of revenues above $1.5 million generated between the closing date and December 31, 2022 pursuant to a fourth existing collaboration agreement with a large pharmaceutical company.

Due to the close proximity of the acquisition date and the Company's filing of its interim report on Form 10-Q for the three- and nine-month periods ended September 30, 2017, the initial accounting for the business combination is incomplete, and therefore the Company is unable to disclose the information required by ASC 805, Business Combinations. Such information will be included in the Company's subsequent annual report on Form 10-K for the year ending December 31, 2017.

ITEM 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

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

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

References to "Ligand Pharmaceuticals Incorporated," "Ligand," the "Company," "we" or "our" include Ligand Pharmaceuticals Incorporated and our wholly owned subsidiaries.

Overview

We are a biopharmaceutical company focused on developing and acquiring technologies that help pharmaceutical companies discover and develop medicines. Over our 30 year history, we have employed research technologies such as nuclear receptor assays, high throughput computer screening, formulation science, liver targeted pro-drug technologies and antibody discovery technologies to assist companies in their work toward securing prescription drug approvals. We currently have partnerships and license agreements with over 95 pharmaceutical and biotechnology companies, and over 160 different programs under license with us are currently in various stages of commercialization and development. We have contributed novel research and technologies for approved medicines that treat cancer, osteoporosis, fungal infections and low blood platelets, among others. Our partners have programs currently in clinical development targeting seizure, coma, cancer, diabetes, cardiovascular disease, muscle wasting, liver disease, and kidney disease, among others. We have over 800 issued patents worldwide and over 200 currently pending patent applications.

We have assembled our large portfolio of fully-funded programs either by licensing our own proprietary drug development programs, licensing our platform technologies such as Captisol or OmniAb to partners for use with their proprietary programs, or acquiring existing partnered programs from other companies. Fully-funded programs are those for which our partners pay all of the development and commercialization costs. For our internal programs, we generally plan to advance drug candidates through early-stage drug development or clinical proof-of-concept. Our business model creates value for stockholders by providing a diversified portfolio of biotech and pharmaceutical product revenue streams that are supported by an efficient and low corporate cost structure. Our goal is to offer investors an opportunity to participate in the promise of the biotech industry in a profitable, diversified and lower-risk business than a typical biotech company.

Our business model is based on doing what we do best: drug discovery, early-stage drug development, product reformulation and partnering. We partner with other pharmaceutical companies to leverage what they do best (late-stage development, regulatory management and commercialization) to ultimately generate our revenue. We believe that focusing on discovery and early-stage drug development while benefiting from our partners' development and commercialization expertise will reduce our internal expenses and allow us to have a larger number of drug candidates progress to later stages of drug development. Our revenue consists of three primary elements: royalties from commercialized products, license and milestone payments and sale of Captisol material. In addition to discovering and developing our own proprietary drugs, we selectively pursue acquisitions to bring in new assets, pipelines, and technologies to aid in generating additional potential new revenue streams.

Portfolio Program Updates

Promacta®/Revolade®

- Novartis reported third quarter 2017 net sales of Promacta/Revolade (eltrombopag) of $227 million, a $59 million or 35% increase over the same period in 2016.
- Novartis announced long-term study results supporting the positive safety and efficacy of Revolade (eltrombopag) in adults with chronic/persistent (6 or more months from diagnosis) immune (idiopathic) thrombocytopenia (ITP) were published online in *Blood*. The EXTEND study found that a majority of patients maintained a substantial clinical response and many no longer needed concomitant ITP medications.
- Novartis highlighted the product in abstracts for the upcoming 59th American Society of Hematology (ASH) annual meeting.

Kyprolis® (carfilzomib), an Amgen Product Utilizing Captisol

- On October 25, 2017, Amgen reported third quarter net sales of Kyprolis (carfilzomib) of $207 million, a $24 million or 13% increase over the same period in 2016. On November 6, 2017, Ono Pharmaceutical Company reported Kyprolis sales in Japan of approximately $13.1 million for the most recent quarter.
- On October 23, 2017, Amgen announced top-line results of the Phase 3 ARROW trial, which showed Kyprolis administered once-weekly at the 70 mg/m2 dose with dexamethasone allowed relapsed and refractory multiple myeloma patients to live 3.6 months longer without their disease worsening than Kyprolis administered twice-weekly at the 27 mg/m2 dose with dexamethasone.
- On August 30, 2017, Amgen announced that the FDA accepted a supplemental New Drug Application (sNDA) based on the overall survival (OS) data from the Phase 3 head-to-head ENDEAVOR trial demonstrating that Kyprolis and dexamethasone (Kd) reduced the risk of death by 21 percent and increased OS by 7.6 months versus Velcade® (bortezomib)

and dexamethasone (Vd) in patients with relapsed or refractory multiple myeloma (median OS 47.6 months for Kd versus 40.0 months for Vd, HR=0.79; p=0.01). The FDA has set an action date of April 30, 2018.
- On July 12, 2017, Amgen announced positive results from final analysis of the Phase 3 ASPIRE trial, showing the study met the key secondary endpoint of OS, demonstrating that Kyprolis, lenalidomide and dexamethasone (KRd) reduced the risk of death by 21% over lenalidomide and dexamethasone alone.

Additional Pipeline and Partner Developments

- Sage Therapeutics announced positive top-line results from two Phase 3 trials of brexanolone in severe postpartum depression (PPD) and in moderate PPD. Sage plans to file a New Drug Application (NDA) with the FDA in 2018.
- Spectrum Pharmaceuticals reported third quarter 2017 net sales of EVOMELA of $10.5 million.
- CASI Pharmaceuticals announced that China's Food and Drug Administration granted priority review for CASI's import drug registration clinical trial application for EVOMELA.
- Melinta Therapeutics announced a merger with NASDAQ-listed Cempra, Inc. to form a company focused on developing and commercializing important anti-infective therapies including recently-approved Baxdela.
- Melinta Therapeutics announced that its commercialization and distribution agreement with Eurofarma Laboratórios for delafloxacin (Baxdela in the U.S.) had been expanded to include 19 countries in South and Central America and the Caribbean.
- Zydus Cadila announced that it received approval to market its bevacizumab biosimilar in India and subsequently launched the drug, which is marketed as Bryxta.
- Exelixis announced that Daiichi Sankyo reported positive top-line results from a phase 3 pivotal trial of esaxerenone in patients with essential hypertension in Japan and that a Japanese regulatory application is expected to be submitted in the first quarter of 2018.
- Retrophin announced that it presented new data from the open label extension portion of the Phase 2 DUET study of sparsentan for the treatment of focal segmental glomerulosclerosis (FSGS) at the American Society of Nephrology Kidney Week 2017.
- Aldeyra Therapeutics announced positive results from a Phase 2a clinical trial of topical ocular ADX-102 in patients with dry eye disease.
- Aldeyra Therapeutics announced it will present data from its Phase 2 clinical trial in noninfectious anterior uveitis at the American Uveitis Society Fall Meeting.
- Viking Therapeutics announced enrollment completion in the ongoing Phase 2 clinical trial of VK5211 in patients who recently suffered a hip fracture.
- Viking Therapeutics announced results of gene expression analysis from its *in vivo* study of VK2809 in Non-Alcoholic Steatohepatitis (NASH) and presented data at the Annual Meeting of the American Association for the Study of Liver Diseases.
- Viking Therapeutics announced presentation of data from an *in vivo* proof-of-concept study of VK2809 in Glycogen Storage Disease Ia at the 13th International Congress of Inborn Errors of Metabolism.
- Viking Therapeutics announced positive top-line results from a 25-week proof-of-concept study of VK0214 in an in vivo model of X-linked adrenoleukodystrophy (X-ALD) and presented data at the 87th Annual Meeting of the American Thyroid Association.
- Sermonix Pharmaceuticals announced completion of a financing round to fund a Phase 2 clinical trial of lasofoxifene in Estrogen Receptor Positive (ER+) Metastatic Breast Cancer.
- Opthea announced further positive results from its Phase 1/2a clinical trial of OPT-302 for wet age-related macular degeneration (wet AMD).
- CStone Pharmaceuticals announced that it received Clinical Trial Application approval from the China Food and Drug Administration to conduct clinical trials in China with CS1001, an OmniAb-derived full-length anti-PDL1 monoclonal antibody.
- Aptevo Therapeutics announced that it had presented new preclinical data on OmniAb-derived APVO436 at the World Bispecific Summit and also at the AACR-NCI-EORTC Molecular Targets and Cancer Therapeutics 2017 annual meeting.
- HanAll Biopharma, an OmniAb partner, announced entering into a strategic collaboration with Harbour BioMed to develop novel biologic therapies in greater China.
- ARMO BioSciences, an OmniAb partner, announced a $67 million Series C-1 financing to fund their immunotherapy pipeline.
- Immunoprecise Antibodies, an OmniAb Contract Research Organization (CRO), announced recent success in conducting OmniAb antibody-generation projects for Aptevo Therapeutics and Tizona Therapeutics.
- A paper was published by Ligand scientists in the journal MAbs, entitled "Chickens with humanized immunoglobulin genes generate antibodies with high affinity and broad epitope coverage to conserved targets", highlighting the use of OmniChicken in antibody drug discovery.

Internal Glucagon Receptor Antagonist (GRA) Program

- In September 2017, Ligand presented positive top-line results from its Phase 2 clinical study evaluating the efficacy and safety of LGD-6972, as an adjunct to diet and exercise, in subjects with type 2 diabetes mellitus (T2DM) inadequately controlled on metformin monotherapy. The study achieved statistical significance ($p < 0.0001$) in the primary endpoint of change from baseline in hemoglobin A1c (HbA1c) after 12 weeks of treatment at all doses tested, demonstrating a robust, dose-dependent reduction in HbA1c of 0.90%, 0.92% and 1.20% with 5 mg, 10 mg and 15 mg of LGD-6972, respectively, compared to a 0.15% reduction with placebo. LGD-6972 was safe and well tolerated, with no drug-related serious adverse events and no dose dependent changes in lipids (including total cholesterol, LDL cholesterol, HDL cholesterol, and triglycerides), body weight or blood pressure after 12 weeks of treatment.

New Licensing Deals

- Ligand announced receipt of a $2 million payment from WuXi Biologics subsequent to their licensing of exclusive rights to the anti-PD-1 antibody GLS-010 to Arcus Biosciences in North America, Europe, Japan and certain other territories. Ligand is also entitled to future milestones and royalties from this antibody.
- Ligand announced a commercial license and supply agreement with Amgen granting rights to use Captisol in the formulation of AMG 330, an anti-CD33 x anti-CD3 (BiTE®) bispecific antibody construct. Ligand is eligible to receive milestone payments, royalties and revenue from Captisol material sales related to AMG 330.
- Ligand entered into Captisol Clinical Use Agreements with both Syros Pharmaceuticals and Vaxxas Inc.

Recent Acquisition

- In October 2017, Ligand acquired Crystal Bioscience and its OmniChicken antibody discovery technology for $25 million cash at closing, up to $10.5 million of success-based milestones and revenue sharing from existing licensees for a defined period. The acquisition initially added four Shots on Goal to Ligand's portfolio, and the OmniChicken technology may be utilized by multiple current OmniAb partners as they seek to develop antibodies for difficult-to-address epitopes.

Results of Operations

Revenue

(Dollars in thousands)	Q3 2017	Q3 2016	Change	% Change	YTD 2017	YTD 2016	Change	% Change
Royalties	**$ 21,931**	$ 15,698	$ 6,233	40%	**$ 60,372**	$ 39,842	$ 20,530	52 %
Material sales	**7,664**	4,219	3,445	82%	**14,336**	13,445	891	7 %
License fees, milestones and other revenue	**3,780**	1,702	2,078	122%	**15,930**	17,500	(1,570)	(9)%
Total revenue	**$ 33,375**	$ 21,619	$ 11,756	54%	**$ 90,638**	$ 70,787	$ 19,851	28 %

Q3 2017 vs. Q3 2016

Total revenue increased $11.8 million, or 54%, to $33.4 million in Q3 2017 compared to $21.6 million in Q3 2016. Royalty revenue increased $6.2 million, or 40%, primarily due to an increase in Promacta, Kyprolis and Evomela royalties. Material sales increased due to timing of customer purchases of Captisol for use in clinical trials and in commercialized products. The increase in license fees, milestones and other revenue is due primarily to the timing of recognition for individual milestones.

YTD 2017 vs YTD 2016

Total revenue increased $19.9 million, or 28%, to $90.6 million in the first nine months of 2017 compared to $70.8 million in the first nine months of 2016. Royalty revenue increased $20.5 million, or 52%, primarily due to an increase in Promacta, Kyprolis and Evomela royalties. Material sales increased due to timing of customer purchases of Captisol for use in clinical trials and in commercialized products. License fees, milestones and other revenue decreased primarily due to the timing of recognition for individual milestones.

Operating Costs and Expenses

(Dollars in thousands)	Q3 2017	% of Revenue	Q3 2016	% of Revenue	YTD 2017	% of Revenue	YTD 2016	% of Revenue
Costs of sales	**$ 2,385**		$ 999		**$ 3,628**		$ 2,674	
Amortization of intangibles	**2,706**		2,706		**8,126**		7,912	
Research and development	**4,759**		5,898		**18,254**		14,813	
General and administrative	**7,032**		6,550		**20,904**		20,858	
Total operating costs and expenses	**$ 16,882**	51%	$ 16,153	75%	**$ 50,912**	56%	$ 46,257	65%

Q3 2017 vs. Q3 2016

Total operating costs and expenses as a percentage of total revenue decreased in Q3 2017 compared to Q3 2016. Total revenue for Q3 2017 increased $11.8 million or 54% while total operating costs and expenses for that quarter decreased $0.7 million. Research and development expenses decreased due to timing of internal development costs offset by an increase in headcount related expenses including stock-based compensation. General and administrative expenses increased primarily due to an increase in legal expenses.

YTD 2017 vs. YTD 2016

Total operating costs and expenses as a percentage of total revenue decreased in the first nine months of 2017 compared to the same period in 2016. Total revenue for the first nine months of 2017 increased $19.9 million or 28% while operating costs and expenses for that period increased $4.7 million. Research and development expenses increased due to timing of internal development costs as well as an increase in stock based compensation.

Other Income (Expense)

(Dollars in thousands)	Q3 2017	Q3 2016	Change	YTD 2017	YTD 2016	Change
Interest expense, net	**$ (2,822)**	$ (3,116)	$ 294	**$ (8,625)**	$ (9,172)	$ 547
Increase in contingent liabilities	**(1,336)**	(958)	(378)	**(2,302)**	(2,595)	293
Loss from Viking	**(1,019)**	(1,396)	377	**(3,350)**	(14,139)	10,789
Other income, net	**755**	1,215	(460)	**1,117**	2,107	(990)
Total other expense, net	**$ (4,422)**	$ (4,255)	$ (167)	**$ (13,160)**	$ (23,799)	$ 10,639

Interest expense, net consisted primarily of accretion of discount on our 2019 Convertible Senior Notes. Increase in contingent liabilities primarily relates to the increase in fair value of certain CVRs associated with our Metabasis acquisition. Loss from Viking is a result of the Company's ownership interest in Viking's operating results accounted for under the equity method and the decrease in the book value of the Company's investment in Viking of $10.0 million in Q2 2016 as a result of the Company's decreased ownership percentage in Viking after Viking's financing. Other income, net consists primarily of short term investment transactions and the change in fair market value of Viking warrants.

Income Tax Expense

(Dollars in thousands)	Q3 2017	Q3 2016	Change	YTD 2017	YTD 2016	Change
Income before income taxes	**$ 12,071**	$ 1,211	$ 10,860	**$ 26,566**	$ 731	$ 25,835
Income tax expense	**(3,645)**	(160)	(3,485)	**(7,000)**	28	(7,028)
Income from operations	**$ 8,426**	$ 1,051	$ 7,375	**$ 19,566**	$ 759	$ 18,807
Effective tax rate	30.2%	13.2%		26.3%	(3.8)%	

We compute our income tax provision by applying the estimated annual effective tax rate to income or loss from recurring operations and adding the effects of any discrete income tax items specific to the period.

In Q1 2017, we adopted *ASU 2016-09, Compensation—Stock Compensation (Topic 718): Improvements to Employee Share Based Payment Accounting.* This new standard requires excess tax benefits recognized on stock-based compensation expense to be reflected in the statement of operations as a component of the provision for income taxes on a prospective basis. See Note 1 to the financial statements in Part I, Item 1 of this quarterly report for more information.

Our effective tax rate for the third quarter of fiscal 2017 was approximately 30%. Excluding discrete tax items primarily related to stock-based compensation tax benefits resulting from the adoption of ASU 2016-09, our effective tax rate for the period was 38% and did not differ significantly from the federal statutory rate of 35%.

Liquidity and Capital Resources

We have financed our operations through offerings of our equity securities, issuance of convertible notes, product sales and the subsequent sales of our commercial assets, royalties, collaborative research and development and other revenue, and operating lease transactions.

We had net income of $8.4 million for the quarter ended September 30, 2017. As of September 30, 2017, our cash, cash equivalents and marketable securities totaled $202.3 million, and we had a working capital deficit of $7.5 million. We believe that our currently available funds, cash generated from operations as well as existing sources of and access to financing will be sufficient to fund our anticipated operating, capital requirements and debt service requirement. We expect to build cash in future months as we continue to generate significant cash flow from royalty, license and milestone revenue and Captisol material sales primarily driven by continued increases in Promacta and Kyprolis sales, recent product approvals and regulatory developments, as well as revenue from anticipated new licenses and milestones. In addition, we anticipate that our liquidity needs can be met through other sources, including sales of marketable securities, borrowings through commercial paper and/or syndicated credit facilities and access to other domestic and foreign debt and equity markets.

While we believe in the viability of our strategy to generate sufficient operating cash flow and in our ability to raise additional funds, there can be no assurances to that effect.

Investments

We invest our excess cash principally in U.S. government debt securities, municipal debt securities, investment-grade corporate debt securities and certificates of deposit. We have established guidelines relative to diversification and maturities that maintain safety and liquidity. These guidelines are periodically reviewed and modified to take advantage of trends in yields and interest rates. Additionally, we own certain equity securities as a result of milestones and license fees received from licensees as well as warrants to purchase Viking common stock.

Borrowings and Other Liabilities

2019 Convertible Senior Notes

We have convertible debt outstanding as of September 30, 2017 related to our 2019 Convertible Senior Notes. In August 2014, we issued $245.0 million aggregate principal amount of convertible senior unsecured notes. The 2019

Convertible Senior Notes are convertible into common stock upon satisfaction of certain conditions. Interest of 0.75% per year is payable semi-annually on August 15th and February 15th through the maturity of the notes in August 2019.

Repurchases of Common Stock

In September 2015, our Board of Directors authorized us to repurchase up to $200.0 million of our common stock from time to time over a period of up to three years. We did not repurchase any shares of common stock during Q3 2017. As of September 30, 2017, $195.6 million remains available for repurchase under the authorized program.

Contingent Liabilities

Metabasis

In connection with the acquisition of Metabasis in January 2010, we entered into four CVR agreements with Metabasis shareholders. The CVRs entitle the holders to cash payments upon the sale or licensing of certain assets and upon the achievement of specified milestones. The fair value of the liability at September 30, 2017 was 3.7 million, and as of December 31, 2016 was $1.4 million.

Leases and Off-Balance Sheet Arrangements

We lease our office facilities under operating lease arrangements with varying terms through April 2023. The agreements provide for increases in annual rents based on changes in the Consumer Price Index or fixed percentage increases of 3.0%. We had no off-balance sheet arrangements at September 30, 2017 and December 31, 2016.

Cash Flows

(Dollars in thousands)	YTD 2017	YTD 2016
Net cash provided by (used in):		
Operating activities	$ 62,258	$ 42,008
Investing activities	(48,003)	(56,465)
Financing activities	(268)	3,609
Net increase (decrease) in cash and cash equivalents	$ 13,987	$ (10,848)

During the first nine months of 2017, we generated cash from operations, from issuance of common stock under employee stock plans and from net proceeds from the sale and maturity of short term investments. During the same period we used cash for investing activities, including payments to CVR holders. We also used cash to pay taxes related to net share settlement of equity awards.

During the first nine months of 2016, we generated cash from operations, from issuance of common stock under employee stock plans and from net proceeds from the sale and maturity of short term investments. During the same period we used cash for investing activities, including payments made to acquire OMT and commercial license rights from CorMatrix, payments to CVR holders and capital expenditures.

Critical Accounting Policies

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

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to market risk from interest rates and equity prices which could affect our results of operations, financial condition and cash flows. We manage our exposure to these market risks through our regular operating and financing activities.

Investment Portfolio Risk

At September 30, 2017, our investment portfolio included investments in available-for-sale equity securities of $169.5 million. These securities are subject to market risk and may decline in value based on market conditions. Due to the short-term duration of our investment portfolio and low risk profile of our investments, a 10% increase in interest rates would not have material effect on the fair value of our portfolio.

Equity Price Risk

Our 2019 Convertible Senior Notes include conversion and settlement provisions that are based on the price of our common stock at conversion or maturity of the notes, as applicable. The minimum amount of cash we may be required to pay is $245.0 million, but will ultimately be determined by the price of our common stock. The fair values of our 2019 Convertible Senior Notes are dependent on the price and volatility of our common stock and will generally increase or decrease as the market price of our common stock changes. In order to minimize the impact of potential dilution to our common stock upon the conversion of the 2019 Convertible Senior Notes, we entered into convertible bond hedges covering 3,264,643 shares of our common stock. Concurrently with entering into the convertible bond hedge transactions, we entered into warrant transactions whereby we sold warrants with an exercise price of approximately $125.08 per share, subject to adjustment. Throughout the term of the 2019 Convertible Senior Notes, the notes may have a dilutive effect on our earnings per share to the extent the stock price exceeds the conversion price of the notes. Additionally, the warrants may have a dilutive effect on our earnings per share to the extent the stock price exceeds the strike price of the warrants.

Foreign currency risk

Through our licensing and business operations, we are exposed to foreign currency risk. Foreign currency exposures arise from transactions denominated in a currency other than the functional currency and from foreign denominated revenues and profit translated into U.S. dollars. Our collaborative partners sell our products worldwide in currencies other than the U.S. dollar. Because of this, our revenues from royalty payments are subject to risk from changes in exchange rates.

We purchase Captisol from Hovione, located in Lisbon, Portugal. Payments to Hovione are denominated and paid in U.S. dollars, however the unit price of Captisol contains an adjustment factor which is based on the sharing of foreign currency risk between the two parties. The effect of an immediate 10% change in foreign exchange rates would not have a material impact on our financial condition, results of operations or cash flows. We do not currently hedge our exposures to foreign currency fluctuations.

Interest rate risk

We are exposed to market risk involving rising interest rates. To the extent interest rates rise, our interest costs could increase. An increase in interest costs of 10% would not have a material impact on our financial condition, results of operations or cash flows.

ITEM 4. CONTROLS AND PROCEDURES

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we evaluated the effectiveness of the design and operation of our disclosure controls and procedures, as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act, as of September 30, 2017. Based upon and as of the date of that evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were not effective to provide reasonable assurance that information required to be disclosed by us in reports we file or submit pursuant to the Exchange Act is (1) recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and (2) accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure. This conclusion was based on the unremediated material weakness in our internal control over financial reporting at September 30, 2017 as further described below.

As described in Item 9A of our Annual Report on Form 10-K for the fiscal year ended December 31, 2016, we identified a material weakness in our internal control over financial reporting with respect to the design of our internal control over the tax accounting for complex transactions that have a significant tax impact, specifically, management did not have adequate supervision and review of certain technical tax accounting performed by third party tax specialists. We concluded that this material weakness was not remediated at December 31, 2016.

To remediate the material weakness described above and to prevent similar deficiencies in the future, we have been implementing additional controls and procedures including:

- engagement of additional independent third party tax experts to assist or review in the tax accounting for non-routine, complex transactions or provide any acceptable alternative practice on the same transaction
- additional training for staff involved in the tax accounting for non-routine, complex transactions

While we continue to strive to improve the respective process and controls over management supervision and review of certain technical tax accounting prepared by third parties, we do not believe the new controls have been functioning for sufficient time for management to conclude the material weakness has been remediated at September 30, 2017.

Our disclosure controls were designed to provide reasonable assurance that the controls and procedures would meet their objectives. Our management, including the Chief Executive Officer and Chief Financial Officer, cannot guarantee that our disclosure controls will prevent all error and all fraud. A control system, no matter how well designed and operated, can provide only reasonable assurance of achieving the designed control objectives and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been detected. These inherent limitations include the realities that judgments in decision making can be faulty, and that breakdowns can occur because of simple error or mistake. Additionally, controls can be circumvented by the individual acts of some persons, by collusions of two or more people, or by management override of the control. Because of the inherent limitations in a cost-effective, maturing control system, misstatements due to error or fraud may occur and not be detected.

Except for the changes mentioned above, there have not been any changes in our internal control over financial reporting during the third quarter that materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

ITEM 1. Legal Proceedings

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

Securities Litigation

In 2012, a federal securities class action and shareholder derivative lawsuit was filed in Pennsylvania alleging that the Company and its CEO assisted various breaches of fiduciary duties based on our purchase of a licensing interest in a development-stage pharmaceutical program from the Genaera Liquidating Trust in 2010 and our subsequent sale of half of our interest in the transaction to Biotechnology Value Fund, Inc. Plaintiff filed a second amended complaint in February 2015, which we moved to dismiss in March 2015. The district court granted the motion to dismiss on November 11, 2015. The plaintiff has appealed that ruling to the Third Circuit. The Company intends to continue to vigorously defend against the claims against the Company and its CEO. The outcome of the matter is not presently determinable.

Class Action Lawsuit

In November 2016, a putative shareholder class action lawsuit was filed in the United States District Court for the Southern District of California against the Company, its chief executive officer and chief financial officer. The complaint was voluntarily dismissed without prejudice on May 15, 2017.

ITEM 1A. RISK FACTORS

The following is a summary description of some of the many risks we face in our business. You should carefully review these risks in evaluating our business, including the businesses of our subsidiaries. You should also consider the other information described in this report. The risk factors set forth below with an asterisk (*) next to the title are new risk factors or risk factors containing material changes from the risk factors previously disclosed in Item 1A of our Annual Report on Form 10-K for the year ended December 31, 2016, as filed with the SEC on February 26, 2016:

Future revenue based on Promacta, Kyprolis and Evomela, as well as sales of our other products, may be lower than expected.

Novartis is obligated to pay us royalties on its sales of Promacta, and we receive revenue from Amgen based on both sales of Kyprolis and purchases of Captisol material for clinical and commercial uses. These payments are expected to be a substantial portion of our ongoing revenues for some time. In addition, we receive revenues based on sales of Evomela and other products. Any setback that may occur with respect to any of our partners' products, and in particular Promacta or Kyprolis, could significantly impair our operating results and/or reduce our revenue and the market price of our stock. Setbacks for the products could include problems with shipping, distribution, manufacturing, product safety, marketing, government regulation or reimbursement, licenses and approvals, intellectual property rights, competition with existing or new products and physician or patient acceptance of the products, as well as higher than expected total rebates, returns, discounts, or unfavorable exchange rates. These products also are or may become subject to generic competition.

Future revenue from sales of Captisol material to our license partners may be lower than expected.

Revenues from sales of Captisol material to our collaborative partners represent a significant portion of our current revenues. Any setback that may occur with respect to Captisol could significantly impair our operating results and/or reduce the market price of our stock. Setbacks for Captisol could include problems with shipping, distribution, manufacturing, product safety, marketing, government regulation or reimbursement, licenses and approvals, intellectual property rights, competition with existing or new products and physician or patient acceptance of the products using Captisol.

If products or product candidates incorporating Captisol material were to cause any unexpected adverse events, the perception of Captisol safety could be seriously harmed. If this were to occur, we may not be able to sell Captisol unless and until we are able to demonstrate that the adverse event was unrelated to Captisol, which we may not be able to do. Further, the FDA could require us to submit additional information for regulatory review or approval, including data from extensive safety testing or clinical testing of products using Captisol. This would be expensive and it may delay the marketing of Captisol-enabled products and receipt of revenue related to those products, which could significantly impair our operating results and/or reduce the market price of our stock.

We obtain Captisol from a sole source supplier, and if this supplier were to cease to be able, for any reason, to supply Captisol to us in the amounts we require, or decline to supply Captisol to us, we would be required to seek an alternative source, which could potentially take a considerable length of time and impact our revenue and customer relationships. We maintain inventory of Captisol, which has a five year shelf life, at three geographically dispersed storage locations in the United States and Europe. If we were to encounter problems maintaining our inventory, such as natural disasters, at one or more of these locations, it could lead to supply interruptions.

We currently depend on our arrangements with our partners and licensees to sell products using our Captisol technology. These agreements generally provide that our partners may terminate the agreements at will. If our partners discontinue sales of products using Captisol, fail to obtain regulatory approval for products using Captisol, fail to satisfy their obligations under their agreements with us, or choose to utilize a generic form of Captisol should it become available, or if we are unable to establish new licensing and marketing relationships, our financial results and growth prospects would be materially affected. Furthermore, we maintain significant accounts receivable balances with certain customers purchasing Captisol materials, which may result in the concentration of credit risk. We generally do not require any collateral from our customers to secure payment of these accounts receivable. If any of our major customers were to default in the payment of their obligations to us, our business, operating results and cash flows could be adversely affected.

Further, under most of our Captisol outlicenses, the amount of royalties we receive will be reduced or will cease when the relevant patent expires. Our low-chloride patents and foreign equivalents are not expected to expire until 2033, our high purity patents and foreign equivalents, are not expected to expire until 2029 and our morphology patents and foreign

equivalents, are not expected to expire until 2025, but the initially filed patents relating to Captisol expired starting in 2010 in the United States and in 2016 in most countries outside the United States. If our other intellectual property rights are not sufficient to prevent a generic form of Captisol from coming to market and if in such case our partners choose to terminate their agreements with us, our Captisol revenue may decrease significantly.

Third party intellectual property may prevent us or our partners from developing our potential products; our and our partners' intellectual property may not prevent competition; and any intellectual property issues may be expensive and time consuming to resolve.

The manufacture, use or sale of our potential products or our licensees' products or potential products may infringe the patent rights of others. If others obtain patents with conflicting claims, we may be required to obtain licenses to those patents or to develop or obtain alternative technology. We may not be able to obtain any such licenses on acceptable terms, or at all. Any failure to obtain such licenses could delay or prevent us from pursuing the development or commercialization of our potential products.

Generally, our success will depend on our ability and the ability of our partners to obtain and maintain patents and other intellectual property rights for our and their potential products. Our patent position is uncertain and involves complex legal and technical questions for which legal principles are unresolved. Even if we or our partners do obtain patents, such patents may not adequately protect the technology we own or have licensed. For example, in June 2017, we received a paragraph IV certification from Dr. Reddy's Laboratories advising us that it had filed an ANDA with the FDA seeking approval to market a generic version of Amgen's Kyprolis product. The paragraph IV certification alleges that our U.S. Patent No. 9,493,582 related to Captisol is invalid and/or will not be infringed by the manufacture, use or sale of the product for which the ANDA was submitted. Amgen has disclosed that it has filed a lawsuit against Dr. Reddy's Laboratories, as well as other companies, related to ANDAs seeking marketing approval of a generic version of Kyrpolis. Also, in October 2017, we received a paragraph IV certification from Aurobindo Pharma USA Inc. advising us that it had filed an ANDA with the FDA seeking approval to market a generic version of Amgen's Kyprolis product. The Aurobindo paragraph IV certification similarly alleges that our U.S. Patent No. 9,493,582 related to Captisol is invalid and/or will not be infringed by the manufacture, use or sale of the product for which the ANDA was submitted. In addition, we have received paragraph IV certifications previously, including Par Pharmaceutical's certification related to Merck's NOXAFIL-IV product which Merck has settled. If any existing or future paragraph IV certification or other challenge related to our patent position is successful, it could result in lost revenues or limit our ability to enter into new licenses using the challenged patent.

Any conflicts with the patent rights of others could significantly reduce the coverage of our patents or limit our ability to obtain meaningful patent protection. For example, our European patent related to Agglomerated forms of Captisol was limited during an opposition proceeding, and the rejection of our European patent application related to High Purity Captisol is currently being appealed. In addition, any determination that our patent rights are invalid may result in early termination of our agreements with our license partners and could adversely affect our ability to enter into new license agreements. We also rely on unpatented trade secrets and know-how to protect and maintain our competitive position. We require our employees, consultants, licensees 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 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 this occurs, a court may find our patents or those of our licensors invalid or may find that we have infringed on a competitor's rights. In addition, if any of our competitors have filed patent applications in the United States which claim technology we also have invented, the United States Patent and Trademark Office may require us to participate in expensive interference proceedings to determine who has the right to a patent for the technology.

The occurrence of any of the foregoing problems could be time-consuming and expensive and could adversely affect our financial position, liquidity and results of operations.

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

Our existing collaborations may not continue or be successful, and we may be unable to enter into future collaborative arrangements to develop and commercialize our unpartnered assets. Generally, our current collaborative partners also have the

right to terminate their collaborations at will or under specified circumstances. If any of our collaborative partners breach or terminate their agreements with us or otherwise fail to conduct their collaborative activities successfully (for example, by not making required payments when due, or at all), our product development under these agreements will be delayed or terminated. Disputes or litigation may also arise with our collaborators (with us and/or with one or more third parties), including those over ownership rights to intellectual property, know-how or technologies developed with our collaborators. For example, we are asserting our rights to receive payment against one of our collaborative partners which could harm our relationship with such partner. Such disputes or litigation could adversely affect our rights to one or more of our product candidates and could delay, interrupt or terminate the collaborative research, development and commercialization of certain potential products, create uncertainty as to ownership rights of intellectual property, or could result in litigation or arbitration. In addition, a significant downturn or deterioration in the business or financial condition of our collaborators or partners could result in a loss of expected revenue and our expected returns on investment. The occurrence of any of these problems could be time-consuming and expensive and could adversely affect our business.

Our product candidates, and the product candidates of our partners, face significant development and regulatory hurdles prior to partnering and/or marketing which could delay or prevent licensing, sales-based royalties and/or milestone revenue.

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

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

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

Our OmniAb antibody platform faces specific risks, including the fact that no drug using antibodies from the platform has yet advanced to late stage clinical trials.

None of our collaboration partners using our OmniAb antibody platform have tested drugs based on the platform in late stage clinical trials and, therefore, none of our OmniAb collaboration partners' drugs have received FDA approval. If one of our OmniAb collaboration partners' drug candidates fails during preclinical studies or clinical trials, our other OmniAb collaboration partners may decide to abandon drugs using antibodies generated from the OmniAb platform, whether or not attributable to the platform. All of our OmniAb collaboration partners may terminate their programs at any time without penalty. In addition, our OmniRat and OmniFlic platforms, which we consider the most promising, are covered by two patents within the U.S. and two patents in the European Union and are subject to the same risks as our patent portfolio discussed above, including the risk that our patents may infringe on third party patent rights or that our patents may be invalidated. Further, we face significant competition from other companies selling human antibody-generating rodents, especially mice which compete

with our OmniMouse platform, including the VelocImmune mouse, the AlivaMab mouse, the Trianni mouse and the Kymouse. Many of our competitors have greater financial, technical and human resources than we do and may be better equipped to develop, manufacture and market competing antibody platforms.

If plaintiffs bring product liability lawsuits against us or our partners, we or our partners may incur substantial liabilities and may be required to limit commercialization of our approved products and product candidates.

As is common in our industry, our partners and we face an inherent risk of product liability as a result of the clinical testing of our product candidates in clinical trials and face an even greater risk for commercialized products. Although we are not currently a party to product liability litigation, if we are sued, we may be held liable if any product or product candidate we develop causes injury or is found otherwise unsuitable during product testing, manufacturing, marketing or sale. Regardless of merit or eventual outcome, liability claims may result in decreased demand for any product candidates or products that we may develop, injury to our reputation, discontinuation of clinical trials, costs to defend litigation, substantial monetary awards to clinical trial participants or patients, loss of revenue and the inability to commercialize any products that we develop. We have product liability insurance that covers our clinical trials up to a $10.0 million annual limit. If we are sued for any injury caused by our product candidates or any future products, our liability could exceed our total assets.

Any difficulties from strategic acquisitions could adversely affect our stock price, operating results and results of operations.

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

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

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

We have restated prior consolidated financial statements, which may lead to possible additional risks and uncertainties, including possible loss of investor confidence.

We have restated our consolidated financial statements as of and for the year ended December 31, 2015 (including the third quarter within that year) and for the first and second quarters of fiscal year 2016 in order to correct certain accounting errors. For a description of the material weakness in our internal control over financial reporting identified by management in connection with the Restatement and management’s plan to remediate the material weakness, see “Part I, Item 4 - Controls and Procedures.” As a result of the Restatement, we have become subject to possible additional costs and risks, including (a) accounting and legal fees incurred in connection with the Restatement and (b) a possible loss of investor confidence. Further, we were subject to a shareholder lawsuit related to the Restatement which, if ratified, may be costly to defend and divert our management's attention from other operating matters. See "Part II, Item 1 - Legal Proceedings".

We have identified material weakness in our internal control over financial reporting that, if not remediated, could result in additional material misstatements in our financial statements.

As described in "Item 9A Controls and Procedures" of the Form 10-K filed with SEC on February 28, 2017, management concluded a control deficiency that represents a material weakness was not remediated at December 31, 2016. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of our annual or interim financial statements will not be prevented or detected on a timely basis. As a result of the unremediated material weaknesses, management has concluded that we did not maintain effective internal control over financial reporting as of December 31, 2016. Although management has since implemented new controls and process to remediate the material weakness, we do not believe these new controls have been in place for sufficient time for management to conclude the material weakness has been fully remediated at June 30, 2017. See "Part I, Item 4 - Controls and Procedures."

We continue to refine and implement our remediation plan to address the material weakness. If our remediation efforts are insufficient or if additional material weaknesses in our internal control over financial reporting are discovered or occur in the future, our consolidated financial statements may contain material misstatements and we could be required to restate our financial results, which could materially and adversely affect our business, results of operations and financial condition, restrict our ability to access the capital markets, require us to expend significant resources to correct the material weakness, subject us to fines, penalties or judgments, harm our reputation or otherwise cause a decline in investor confidence.

Changes or modifications in financial accounting standards, including those related to revenue recognition, may harm our results of operations.

From time to time, the Financial Accounting Standards Board, or FASB, either alone or jointly with other organizations, promulgates new accounting principles that could have an adverse impact on our results of operations. For example, in May 2014, FASB issued a new accounting standard for revenue recognition-Accounting Standards Codification Topic 606, Revenue from Contracts with Customers, or ASC 606-that supersedes most current revenue recognition guidance. The new guidance requires a company to recognize revenue upon transfer of goods or services to a customer at an amount that reflects the expected consideration to be received in exchange for those goods or services. The new guidance becomes effective in fiscal 2018.

We anticipate this standard will have a material impact on our consolidated financial statements by accelerating the timing of revenue recognition for revenues related to royalties, and potentially certain contingent milestone based payments. Our practice has been to book royalties one quarter after our partners report sales of the underlying product. Now, under ASC 606, Ligand will estimate and book royalties in the same quarter that our partners report the sale of the underlying product. As a result, we will book royalties one quarter earlier compared to our past practice. We will rely on our partners' earning releases and other information from our partners to determine the sales of our partners' products and to estimate the related royalty revenues. If our partners report incorrect sales, or if our partners delay reporting of their earnings release, our royalty estimates may need to be revised and/or our financial reporting may be delayed.

Any difficulties in implementing this guidance could cause us to fail to meet our financial reporting obligations, which could result in regulatory discipline and harm investors' confidence in us. Finally, if we were to change our critical accounting estimates, including those related to the recognition of license revenue and other revenue sources, our operating results could be significantly affected.

Our ability to use our net operating loss carryforwards and certain other tax attributes to offset future taxable income may be subject to certain limitations.

As of December 31, 2016 we had U.S. federal and state net operating loss carryforwards (NOLs) of approximately $446.3 million and $140.5 million, respectively, which expire through 2036, if not utilized. As of December 31, 2016, we had federal and California research and development tax credit carryforwards of approximately $21.9 million and $19.4 million, respectively. The federal research and development tax credit carryforwards expire in various years through 2036, if not utilized. The California research and development credit will carry forward indefinitely. Under Sections 382 and 383 of Internal Revenue Code of 1986, as amended (Code) if a corporation undergoes an "ownership change," the corporation's ability to use its pre-change NOLs and other pre-change tax attributes, such as research tax credits, to offset its future post-change income and taxes may be limited. In general, an "ownership change" occurs if there is a cumulative change in our ownership by "5% shareholders" that exceeds 50 percentage points over a rolling three-year period. Similar rules may apply under state tax laws. We believe we have experienced certain ownership changes in the past and have reduced our deferred tax assets related to

NOLs and research and development tax credit carryforwards accordingly. In the event that it is determined that we have in the past experienced additional ownership changes, or if we experience one or more ownership changes as a result future transactions in our stock, then we may be further limited in our ability to use our NOLs and other tax assets to reduce taxes owed on the net taxable income that we earn in the event that we attain profitability. Any such limitations on the ability to use our NOLs and other tax assets could adversely impact our business, financial condition and operating results.

We rely on information technology and any failure, inadequacy, interruption or security lapse of that technology, including any cyber security incidents, could harm our ability to operate our business effectively.

Our business is increasingly dependent on critical, complex and interdependent information technology systems, including internet-based systems, to support business processes as well as internal and external communications. Despite the implementation of security measures, our internal computer systems and those of our partners are vulnerable to damage from cyber-attacks, computer viruses, security breaches, unauthorized access, natural disasters, terrorism, war and telecommunication and electrical failures. System failures, accidents or security breaches could cause interruptions in our operations, could lead to the loss of trade secrets or other intellectual property, could lead to the public exposure of personal information of our employees and others, and could result in a material disruption of our clinical and commercialization activities and business operations, in addition to possibly requiring substantial expenditures to remedy. To the extent that any disruption or security breach were to result in a loss of, or damage to, our data or applications, or inappropriate disclosure of confidential or proprietary information, we could incur liability and our business and financial condition could be harmed.

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

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

We sold the 2019 Convertible Senior Notes, which may impact our financial results, result in the dilution of existing stockholders, and restrict our ability to take advantage of future opportunities.

In August of 2014, we sold $245.0 million aggregate principal amount of 0.75% Convertible Senior Notes due 2019, or the 2019 Convertible Senior Notes. We will be required to pay interest on the 2019 Convertible Senior Notes until they come due or are converted, and the payment of that interest will reduce our net income. The sale of the 2019 Convertible Senior Notes may also affect our earnings per share figures, as accounting procedures require that we include in our calculation of earnings per share the number of shares of our common stock into which the 2019 Convertible Senior Notes are convertible. The 2019 Convertible Senior Notes may be converted, under the conditions and at the premium specified in the 2019 Convertible Senior Notes, into cash and shares of our common stock, if any (subject to our right to pay cash in lieu of all or a portion of such shares). If shares of our common stock are issued to the holders of the 2019 Convertible Senior Notes upon conversion, there will be dilution to our shareholders equity. Upon the occurrence of certain circumstances, holders of the 2019 Convertible Senior Notes may require us to purchase all or a portion of their notes for cash, which may require the use of a substantial amount of cash. If such cash is not available, we may be required to sell other assets or enter into alternate financing arrangements at terms that may or may not be desirable. The existence of the 2019 Convertible Senior Notes and the obligations that we incurred by issuing them may restrict our ability to take advantage of certain future opportunities, such as engaging in future debt or equity financing activities.

Impairment charges pertaining to goodwill, intangible assets, commercial license rights, equity method investments or other long-lived assets could have an adverse impact on our results of operations and the market value of our common stock.

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

Our charter documents and concentration of ownership may hinder or prevent change of control transactions.

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

We may be subject to prosecution for violation of federal law due to our agreement with Vireo Health, which is developing drugs using cannabis.

In November 2015, we entered into a license agreement and supply agreement with Vireo Health granting Vireo Health an exclusive right in certain states within the United States and certain global territories to use Captisol in Vireo's development and commercialization of pharmaceutical-grade cannabinoid-based products. However, state laws legalizing medical cannabis use are in conflict with the Federal Controlled Substances Act, which classifies cannabis as a schedule-I controlled substance and makes cannabis use and possession illegal on a national level. The United States Supreme Court has ruled that it is the Federal government that has the right to regulate and criminalize cannabis, even for medical purposes, and thus Federal law criminalizing the use of cannabis preempts state laws that legalize its use. While the Obama administration effectively stated that it is not an efficient use of resources to direct Federal law enforcement agencies to prosecute those lawfully abiding by state-designated laws allowing the use and distribution of medical and recreational cannabis, the Trump administration has indicated that it will reconsider such policy and practice, especially with respect to recreational cannabis. Further, even if the Trump administration affirms the same approach with respect to medical or recreational cannabis initially, there is no guarantee that such policy and practice will not change regarding the low-priority enforcement of Federal laws in states where cannabis has been legalized. Any such change in the Federal government's enforcement of Federal laws could result in Ligand, as the supplier of Captisol, to be charged with violations of Federal laws which may result in significant legal expenses and substantial penalties and fines.

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

The market prices for securities of biotechnology and pharmaceutical companies have historically been highly volatile, and the market has recently experienced significant price and volume fluctuations that are unrelated to the operating performance of particular companies. Continued volatility in the overall capital markets could reduce the market price of our common stock in spite of our operating performance. Further, high stock price volatility could result in higher stock-based compensation expense.

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

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

Our results of operations could be materially negatively affected by economic conditions generally, both in the United States and elsewhere around the world. Continuing concerns over inflation, energy costs, geopolitical issues, the availability and cost of credit, and the U.S. financial markets have contributed to increased volatility and diminished expectations for the economy and the markets going forward. Domestic and international equity markets periodically experience heightened volatility and turmoil. These events may have an adverse effect on us. In the event of a market downturn, our results of operations could be adversely affected by those factors in many ways, including making it more difficult for us to raise funds if necessary, and our stock price may further decline. We cannot provide assurance that our investments are not subject to adverse

changes in market value. If our investments experience adverse changes in market value, we may have less capital to fund our operations.

ITEM 5. Other Information

ITEM 6. EXHIBITS

The Exhibit Index to this Quarterly Report on Form 10-Q is incorporated herein by reference.

SIGNATURES

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.

Date: November 9, 2017

By: /s/ Matthew Korenberg
Matthew Korenberg
Vice President, Finance and Chief Financial Officer
Duly Authorized Officer and Principal Financial Officer

EXHIBIT INDEX

Exhibit Number	Description
31.1	Certification by Principal Executive Officer, Pursuant to Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification by Principal Financial Officer, Pursuant to Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32.1	Certifications by Principal Executive Officer and Principal Financial Officer, Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document

Exhibit 31.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, John L. Higgins, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Ligand Pharmaceuticals Incorporated;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 9, 2017

/s/ John L. Higgins

John L. Higgins
Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Matthew Korenberg, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of Ligand Pharmaceuticals Incorporated;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

   a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 9, 2017

/s/ Matthew Korenberg

Matthew Korenberg
Vice President, Finance and Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER

In connection with the Quarterly Report of Ligand Pharmaceuticals Incorporated (the "Company") on Form 10-Q for the quarter ended September 30, 2017, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, John L. Higgins, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 9, 2017

/s/ John L. Higgins

John L. Higgins
Chief Executive Officer
(Principal Executive Officer)

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. Section 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing. A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.

CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER

In connection with the Quarterly Report of Ligand Pharmaceuticals Incorporated (the "Company") on Form 10-Q for the quarter ended September 30, 2017, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Matthew Korenberg, Vice President, Finance and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: November 9, 2017

/s/ Matthew Korenberg

Matthew Korenberg
Vice President, Finance and Chief Financial Officer
(Principal Financial Officer)

The foregoing certification is being furnished solely to accompany the Report pursuant to 18 U.S.C. Section 1350, and is not being filed for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, and is not to be incorporated by reference into any filing of the Company, whether made before or after the date hereof, regardless of any general incorporation language in such filing. A signed original of this written statement required by Section 906 has been provided to the Company and will be retained by the Company and furnished to the Securities and Exchange Commission or its staff upon request.