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 March 31, 2022

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.)*
5980 Horton Street, Suite 405 **Emeryville** **CA**	**94608**
(Address of principal executive offices)	*(Zip Code)*

(858) 550-7500

(Registrant's Telephone Number, Including Area Code)

Securities registered pursuant to Section 12(b) of the Act:

Title of each class:	Trading symbol:	Name of each exchange on which registered:
Common Stock, par value $0.001 per share	**LGND**	**The Nasdaq Global Market**

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 every Interactive Data File required to be submitted 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 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	☐	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 May 5, 2022, the registrant had 16,861,339 shares of common stock outstanding.

LIGAND PHARMACEUTICALS INCORPORATED
QUARTERLY REPORT

FORM 10-Q

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GLOSSARY OF TERMS AND ABBREVIATIONS

Abbreviation	Definition
2021 Annual Report	Annual Report on Form 10-K for the year ended December 31, 2021, filed with the SEC on February 28, 2022
2023 Notes	$750.0 million aggregate principal amount of convertible senior unsecured notes due 2023
Ab Initio	Ab Initio Biotherapeutics, Inc.
Amgen	Amgen, Inc.
APAC	Avista Public Acquisition Corp. II
ASC	Accounting Standards Codification
ASU	Accounting Standards Update
Company	Ligand Pharmaceuticals Incorporated, including subsidiaries
CVR	Contingent value right
Crystal	Crystal Bioscience, Inc.
CyDex	CyDex Pharmaceuticals, Inc.
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
Gilead	Gilead Sciences, Inc.
Icagen	Icagen, Inc.
Ligand	Ligand Pharmaceuticals Incorporated, including subsidiaries
Merger Agreement	Agreement and Plan of Merger, dated as of March 23, 2022, among APAC, Ligand, OmniAb and Merger Sub
Merger Sub	Orwell Merger Sub, Inc., a wholly owned subsidiary of APAC
Metabasis	Metabasis Therapeutics, Inc.
NDA	New Drug Application
OmniAb	OmniAb, Inc.
OmniAb Business	Ligand's antibody discovery business
Pfenex	Pfenex Inc.
Q1 2021	The Company's fiscal quarter ended March 31, 2021
Q1 2022	The Company's fiscal quarter ended March 31, 2022
SBC	Share-based compensation expense
SEC	Securities and Exchange Commission
Separation Agreement	Separation and Distribution Agreement, dated as of March 23, 2022, among APAC, Ligand and OmniAb
Travere	Travere Therapeutics, Inc.
Viking	Viking Therapeutics, Inc.
xCella	xCella Biosciences, Inc.

PART I - FINANCIAL INFORMATION

em 1. Condensed Consolidated Financial Statements

LIGAND PHARMACEUTICALS INCORPORATED
CONDENSED CONSOLIDATED BALANCE SHEETS
(Unaudited)
(in thousands, except par value)

	March 31, 2022	December 31, 2021
ASSETS		
Current assets:		
Cash and cash equivalents	$ 14,993	$ 19,522
Short-term investments	189,006	321,586
Accounts receivable, net	41,797	85,453
Inventory	25,614	27,326
Income taxes receivable	—	6,193
Other current assets	4,656	4,671
Total current assets	276,066	464,751
Deferred income taxes, net	35,655	34,482
Intangible assets, net	539,707	551,040
Goodwill	181,206	181,206
Commercial license rights, net	10,121	10,110
Property and equipment, net	24,584	20,511
Operating lease right-of-use assets	15,783	16,542
Financing lease right-of-use assets	15,620	16,207
Other assets	6,442	2,741
Total assets	$ 1,105,184	$ 1,297,590
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 6,972	$ 8,403
Accrued liabilities	15,877	17,579
Income taxes liability	5,800	—
Current contingent liabilities	1,524	2,588
Deferred revenue	10,503	10,996
Current operating lease liabilities	1,850	2,053
Current financing lease liabilities	52	46
Total current liabilities	42,578	41,665
2023 convertible senior notes, net	176,540	320,717
Long-term contingent liabilities	7,448	8,483
Deferred income taxes, net	39,480	59,095
Long-term operating lease liabilities	16,758	15,494
Other long-term liabilities	29,188	30,977
Total liabilities	311,992	476,431
Commitments and contingencies		
Stockholders' equity:		
Preferred stock, $0.001 par value; 5,000 shares authorized; zero issued and outstanding at March 31, 2022 and December 31, 2021	—	—
Common stock, $0.001 par value; 60,000 shares authorized; 16,861 and 16,767 shares issued and outstanding at March 31, 2022 and December 31, 2021, respectively	17	17
Additional paid-in capital	325,368	372,969
Accumulated other comprehensive loss	(1,031)	(917)
Retained earnings	468,838	449,090
Total stockholders' equity	793,192	821,159
Total liabilities and stockholders' equity	$ 1,105,184	$ 1,297,590

See accompanying notes to unaudited condensed consolidated financial statements.

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

	Three months ended March 31,	
	2022	**2021**
Revenues:		
Royalties	$ 13,695	$ 7,112
Captisol	12,122	31,272
Contract revenue	19,876	16,766
Total revenues	45,693	55,150
Operating costs and expenses:		
Cost of Captisol	4,699	8,153
Amortization of intangibles	11,813	11,786
Research and development	20,307	17,879
General and administrative	18,180	12,617
Total operating costs and expenses	54,999	50,435
Income (loss) from operations	(9,306)	4,715
Other income (expense):		
Gain (loss) from short-term investments	(12,877)	13,061
Interest income	134	296
Interest expense	(789)	(5,831)
Other income (expense), net	2,698	(6,477)
Total other income (loss), net	(10,834)	1,049
Income (loss) before income taxes	(20,140)	5,764
Income tax benefit	4,755	12,342
Net income (loss)	$ (15,385)	$ 18,106
Basic net income (loss) per share	$ (0.91)	$ 1.10
Shares used in basic per share calculations	16,824	16,435
Diluted net income (loss) per share	$ (0.91)	$ 1.05
Shares used in diluted per share calculations	16,824	17,248

See accompanying notes to unaudited condensed consolidated financial statements.

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

	Three months ended March 31,	
	2022	**2021**
Net income (loss):	$ (15,385)	$ 18,106
Unrealized net loss on available-for-sale securities, net of tax	(114)	(55)
Comprehensive income (loss)	$ (15,499)	$ 18,051

See accompanying notes to unaudited condensed consolidated financial statements.

LIGAND PHARMACEUTICALS INCORPORATED
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(Unaudited)
(in thousands)

	Common Stock					
	Shares	Amount	Additional paid in capital	Accumulated other comprehensive loss	Retained earnings	Total stockholders' equity
Balance at December 31, 2021	16,767	$ 17	$ 372,969	$ (917)	$ 449,090	$ 821,159
ASU 2020-06 adoption, net of tax (Note 1)	—	—	(51,130)	—	35,133	(15,997)
Issuance of common stock under employee stock compensation plans, net of shares withheld for payroll taxes	94	—	(5,515)	—	—	(5,515)
Share-based compensation	—	—	9,044	—	—	9,044
Unrealized net loss on available-for-sale securities, net of deferred tax	—	—	—	(114)	—	(114)
Net loss	—	—	—	—	(15,385)	(15,385)
Balance at March 31, 2022	16,861	$ 17	$ 325,368	$ (1,031)	$ 468,838	$ 793,192

	Common Stock					
	Shares	Amount	Additional paid in capital	Accumulated other comprehensive loss	Retained earnings	Total stockholders' equity
Balance at January 1, 2021	16,080	$ 16	$ 318,358	$ (801)	$ 391,952	$ 709,525
Issuance of common stock under employee stock compensation plans, net of shares withheld for payroll taxes	572	1	20,580	—	—	20,581
Share-based compensation	—	—	8,405	—	—	8,405
Unrealized net loss on available-for-sale securities, net of deferred tax	—	—	—	(55)	—	(55)
Warrant and bond hedge unwind transactions	—	—	396	—	—	396
Reacquisition of equity due to 2023 debt extinguishment, net of tax	—	—	(9,086)	—	—	(9,086)
Tax effect for 2023 Notes transactions	—	—	(2,032)	—	—	(2,032)
Net income	—	—	—	—	18,106	18,106
Balance at March 31, 2021	16,652	$ 17	$ 336,621	$ (856)	$ 410,058	$ 745,840

See accompanying notes to unaudited condensed consolidated financial statements.

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

	Three months ended March 31,	
	2022	**2021**
Cash flows from operating activities:		
Net income (loss)	$ (15,385)	$ 18,106
Adjustments to reconcile net income (loss) to net cash provided by operating activities:		
Change in estimated fair value of contingent liabilities	(1,035)	1,684
Depreciation and amortization of intangible assets	13,655	12,565
Amortization of premium on investments, net	51	150
Amortization of debt discount and issuance fees	326	4,916
Amortization of commercial license rights	(11)	528
Loss (gain) on debt extinguishment	(1,532)	4,840
Share-based compensation	9,044	8,405
Deferred income taxes	(16,180)	(12,408)
Loss (gain) from short-term investments	12,877	(13,090)
Other	(80)	238
Changes in operating assets and liabilities:		
Accounts receivable, net	43,638	2,411
Inventory	44	(9,670)
Accounts payable and accrued liabilities	(2,708)	470
Income tax receivable and payable	11,993	1,072
Deferred revenue	(2,453)	(5,695)
Other assets and liabilities	(233)	(3,768)
Net cash provided by operating activities	52,011	10,754
Cash flows from investing activities:		
Purchase of short-term investments	(38,190)	(72,148)
Proceeds from sale of short-term investments	132,866	109,407
Proceeds from maturity of short-term investments	24,830	31,500
Cash paid for equity method investment	(750)	—
Purchase of property and equipment	(4,875)	(3,404)
Other	—	(240)
Net cash provided by investing activities	113,881	65,115
Cash flows from financing activities:		
Repurchase of 2023 Notes	(163,356)	(108,822)
Payments under financing lease obligations	(13)	(3,801)
Proceeds from convertible bond hedge settlement	—	16,855
Payments to convertible bond holders for warrant purchases	—	(16,459)
Net proceeds from stock option exercises and ESPP	347	26,493
Taxes paid related to net share settlement of equity awards	(5,862)	(5,901)
Payments to CVR Holders	(1,416)	—
Other	(121)	—
Net cash used in financing activities	(170,421)	(91,635)
Net decrease in cash, cash equivalents and restricted cash	(4,529)	(15,766)
Cash, cash equivalents and restricted cash at beginning of period	19,522	47,963
Cash, cash equivalents and restricted cash at end of period	$ 14,993	$ 32,197
Supplemental disclosure of cash flow information:		
Interest paid	$ 359	$ 241
Taxes paid	$ —	$ 344
Supplemental schedule of non-cash activity:		
Accrued fixed asset purchases	$ 2,574	$ 87
Accrued inventory purchases	$ 306	$ 775
Unrealized loss on AFS investments	$ (114)	$ (55)

See accompanying notes to unaudited condensed consolidated financial statements.

Unless the context requires otherwise, references in this report to "Ligand," "we," "us," the "Company," and "our" refer to Ligand Pharmaceuticals Incorporated and its consolidated subsidiaries.

1. Basis of Presentation and Summary of Significant Accounting Policies

Basis of Presentation

Our condensed consolidated financial statements include the financial statements of Ligand and its wholly-owned subsidiaries. All significant intercompany accounts and transactions have been eliminated in consolidation. We have included all adjustments, consisting only of normal recurring adjustments, which we considered necessary for a fair presentation of our financial results. These unaudited condensed consolidated financial statements and accompanying notes should be read together with the audited consolidated financial statements included in our 2021 Annual Report. Interim financial results are not necessarily indicative of the results that may be expected for the full year.

Significant Accounting Policies

We have described our significant accounting policies in *Note 1, Basis of Presentation and Summary of Significant Accounting Policies* of the Notes to Consolidated Financial Statements in our 2021 Annual Report.

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 Standards Updates, Recently Adopted

In August 2020, the FASB issued ASU 2020-06, *Debt - Debt with Conversion and Other Options (Subtopic 470-20) and Derivatives and Hedging - Contracts in Entity's Own Equity (Subtopic 815-40): Accounting for Convertible Instruments and Contracts in an Entity's Own Equity* ("ASU 2020-06"). The guidance simplifies the complexity associated with applying U.S. GAAP for certain financial instruments with characteristics of liabilities and equity. More specifically, the amendments focus on the guidance for convertible instruments and derivative scope exception for contracts in an entity's own equity. Consequently, a convertible debt instrument, such as the Company's 2023 Notes, will be accounted for as a single liability measured at its amortized cost, if no other features require bifurcation and recognition as derivatives. The new guidance also requires the if-converted method to be applied for all convertible instruments and requires additional disclosures. ASU 2020-06 is effective for fiscal years beginning after December 15, 2021, including interim periods within those fiscal years.

We adopted this guidance effective January 1, 2022 under the modified retrospective approach and the comparative information has not been restated and continues to be presented according to accounting standards in effect for those periods. The cumulative effect of the change was recognized as an adjustment to the opening balance of retained earnings at the date of adoption and our 2023 Notes are no longer bifurcated into separate liability and equity components. The principal amount of the 2023 Notes is classified as a single liability measured at amortized cost in the condensed consolidated balance sheet for the period ended March 31, 2022. Upon adoption of ASU 2020-06 on January 1 2022, we recorded an adjustment to the 2023 Notes liability component, deferred tax liabilities, additional paid-in-capital and retained earnings. This adjustment was calculated based on the carrying amount of the 2023 Notes as if it had always been treated as a single liability measured at amortized cost. Furthermore, we recorded an adjustment to the debt issuance costs contra liability and equity (additional paid-in-capital) components under the same premise, as if debt issuance costs had always been treated as a contra liability only. Under this transition method, the cumulative effect of the accounting change increased the carrying amount of the 2023 Notes by $20.4 million, reduced deferred tax liabilities by $4.4 million, reduced additional paid-in capital by $51.1 million and increased retained earnings by $35.1 million. The net balance of the 2023 Notes at January 1, 2022 is $341.1 million which includes an unamortized discount of $2.2 million.

Revenue

Our revenue is generated primarily from royalties on sales of products commercialized by our partners, Captisol material sales, and contract revenue for services, license fees and development, regulatory and sales based milestone payments.

We apply the following five-step model in accordance with ASC 606, Revenue from Contracts with Customers, in order to determine the revenue: (i) identification of the promised goods or services in the contract; (ii) determination of whether the promised goods or services are performance obligations, including whether they are distinct in the context of the contract; (iii) measurement of the transaction price, including the constraint on variable consideration; (iv) allocation of the transaction price to the performance obligations; and (v) recognition of revenue when (or as) the Company satisfies each performance obligation.

Royalties

We receive royalty revenue on sales by our partners of products covered by patents that we or our partners own under contractual agreements. We do not have future performance obligations under these license arrangements. We generally satisfy our obligation to grant intellectual property rights on the effective date of the contract. However, we apply the royalty recognition constraint required under the guidance for sales-based royalties which requires a royalty to be recorded no sooner than the underlying sale occurs. Therefore, royalties on sales of products commercialized by our partners are recognized in the quarter the product is sold. Our partners generally report sales information to us on a one quarter lag. Thus, we estimate the expected royalty proceeds based on an analysis of historical experience and interim data provided by our partners including their publicly announced sales. Differences between actual and estimated royalty revenues, which have not been material, are adjusted in the period in which they become known, typically the following quarter.

Captisol Sales

Revenue from Captisol sales is recognized when control of Captisol material is transferred or intellectual property license rights are granted to our customers in an amount that reflects the consideration we expect to receive from our customers in exchange for those products or rights. A performance obligation is considered distinct from other obligations in a contract when it provides a benefit to the customer either on its own or together with other resources that are readily available to the customer and is separately identified in the contract. For Captisol material or intellectual property license rights, we consider our performance obligation satisfied once we have transferred control of the product or granted the intellectual property rights, meaning the customer has the ability to use and obtain the benefit of the Captisol material or intellectual property license right. We recognize revenue for satisfied performance obligations only when we determine there are no uncertainties regarding payment terms or transfer of control. Sales tax and other taxes we collect concurrent with revenue-producing activities are excluded from revenue. We have elected to recognize the cost of freight and shipping when control over Captisol material has transferred to the customer as an expense in Cost of Captisol. We expense incremental costs of obtaining a contract when incurred if the expected amortization period of the asset that we would have recognized is one year or less or the amount is immaterial. We did not incur any incremental costs of obtaining a contract during the periods reported.

Contract Revenue

Our contracts with customers often include variable consideration in the form of contingent milestone payments. We include contingent milestone payments in the estimated transaction price when it is probable a significant reversal in the amount of cumulative revenue recognized will not occur. These estimates are based on historical experience, anticipated results and our best judgment at the time. If the contingent milestone payment is based on sales, we apply the royalty recognition constraint and record revenue when the underlying sale has taken place. Significant judgments must be made in determining the transaction price for our sales of intellectual property. Because of the risk that products in development with our partners will not reach development milestones or receive regulatory approval, we generally recognize any contingent payments that would be due to us upon the development milestone or regulatory approval. Depending on the terms of the arrangement, we may also defer a portion of the consideration received if we have to satisfy a future obligation, which typically occurs with our contracts for R&D services.

For R&D services we recognize revenue over time and we measure our progress using an input method. The input methods we use are based on the effort we expend or costs we incur toward the satisfaction of our performance obligation. We estimate the amount of effort we expend, including the time it will take us to complete the activities, or the costs we may incur in a given period, relative to the estimated total effort or costs to satisfy the performance obligation. This results in a percentage that we multiply by the transaction price to determine the amount of revenue we recognize each period. This approach requires us to make numerous estimates and use significant judgement. If our estimates or judgements change over the course of the collaboration, they may affect the timing and amount of revenue that we recognize in the current and future periods.

Some customer contracts are sublicenses which require that we make payments to an upstream licensor related to license fees, milestones and royalties which we receive from customers. In such cases, we evaluate the determination of gross revenue as a principal versus net revenue as an agent reporting based on each individual agreement.

Deferred Revenue

Depending on the terms of the arrangement, we may also defer a portion of the consideration received because we have to satisfy a future obligation.

The timing of revenue recognition, billings and cash collections results in billed accounts receivable, unbilled receivables (contract assets), and customer advances and deposits (contract liabilities) on the consolidated balance sheet. Except for royalty revenue and certain service revenue, we generally receive payment at the point we satisfy our obligation or soon after. Therefore, we do not generally carry any contract asset balance. Any fees billed in advance of being earned are recorded as deferred revenue. During the three months ended March 31, 2022 and 2021, the amount recognized as revenue that was previously deferred was $3.7 million, and $7.3 million, respectively.

Disaggregation of Revenue

The following table represents disaggregation of royalties, Captisol and contract revenue (in thousands):

	Three months ended March 31,	
	2022	**2021**
Royalties		
Kyprolis	$ 4,622	$ 4,287
Evomela	2,701	2,333
Teriparatide injection	2,911	16
Rylaze	1,649	—
Other	1,812	476
	$ 13,695	$ 7,112
Captisol		
Captisol - Core	$ 6,226	$ 1,253
Captisol - COVID[(1)]	5,896	30,019
	$ 12,122	$ 31,272
Contract revenue		
Service Revenue	$ 5,146	$ 5,462
License Fees	3,086	1,043
Milestone	9,089	8,417
Other	2,555	1,844
	$ 19,876	$ 16,766
Total	$ 45,693	$ 55,150

(1) Captisol - COVID represents revenue on Captisol supplied for use in formulation with remdesivir, an antiviral treatment for COVID-19.

Short-term Investments

Our short-term investments consist of the following at March 31, 2022 and December 31, 2021 (in thousands):

	Amortized cost	Gross unrealized gains	Gross unrealized losses	Estimated fair value
March 31, 2022				
Bank deposits	$ 6,231	$ —	$ (50)	$ 6,181
Corporate bonds	4,899	—	(84)	4,815
Commercial paper	—	—	—	—
Corporate equity securities	5,807	344	(3,043)	3,108
Mutual fund	152,253	—	(854)	151,399
US government securities	3,245	—	(74)	3,171
Warrants	—	187	—	187
	$ 172,435	$ 531	$ (4,105)	$ 168,861
Viking common stock				20,145
Total short-term investments				$ 189,006
December 31, 2021				
Bank deposits	$ 63,389	$ 13	$ (21)	$ 63,381
Corporate bonds	29,308	17	(38)	29,287
Commercial paper	36,008	2	(12)	35,998
Corporate equity securities	5,807	402	(2,027)	4,182
Mutual fund	152,136	—	(249)	151,887
US government securities	5,577	—	(23)	5,554
Warrants	—	408	—	408
	$ 292,225	$ 842	$ (2,370)	$ 290,697
Viking common stock				30,889
Total short-term investments				$ 321,586

Gain (loss) from short-term investments in our condensed consolidated statements of operations includes both realized and unrealized gain (loss) from our short-term investments in public equity and warrant securities.

Allowances are recorded for available-for-sale debt securities with unrealized losses. This limits the amount of credit losses that can be recognized for available-for-sale debt securities to the amount by which carrying value exceeds fair value and requires the reversal of previously recognized credit losses if fair value increases. The provisions of the credit losses standard did not have a material impact on our available-for-sale debt securities during the three months ended March 31, 2022.

The following table summarizes our available-for-sale debt securities by contractual maturity (in thousands):

	March 31, 2022	
	Amortized Cost	Fair Value
Within one year	$ 10,095	$ 10,011
After one year through five years	6,523	6,398
Total	$ 16,618	$ 16,409

Our investment policy is capital preservation and we only invest in U.S.-dollar denominated investments. We held a total of 13 positions which were in an unrealized loss position as of March 31, 2022. We believe that we will collect the principal and interest due on our debt securities that have an amortized cost in excess of fair value. The unrealized losses are largely due to changes in interest rates and not to unfavorable changes in the credit quality associated with these securities that impacted our assessment on collectability of principal and interest. We do not intend to sell these securities and it is not more-likely-than-not that we will be required to sell these securities before the recovery of the amortized cost basis. Accordingly, no credit losses were recognized for the three months ended March 31, 2022.

Accounts Receivable and Allowance for Credit Losses

Our accounts receivable arise primarily from sales on credit to customers. We establish an allowance for credit losses to present the net amount of accounts receivable expected to be collected. The allowance is determined by using the loss-rate method, which requires an estimation of loss rates based upon historical loss experience adjusted for factors that are relevant to determining the expected collectability of accounts receivable. Some of these factors include macroeconomic conditions that correlate with historical loss experience, delinquency trends, aging behavior of receivables and credit and liquidity quality indicators for industry groups, customer classes or individual customers. During the three months ended March 31, 2022, we considered the current and expected future economic and market conditions including, but not limited to, the anticipated unfavorable impacts of the COVID-19 pandemic on our business and recorded an adjustment of $(0.1) million of allowance for credit losses, respectively, as of March 31, 2022.

Inventory

Inventory, which consists of finished goods, is stated at the lower of cost or net realizable value. We determine cost using the first-in, first-out method or the specific identification method.

We analyze our inventory levels periodically and write down inventory to net realizable value if it has become obsolete, has a cost basis in excess of its expected net realizable value or is in excess of expected requirements. There were no write-downs related to obsolete inventory recorded for the three months ended March 31, 2022 and 2021. As of March 31, 2022 inventory consists of Captisol prepayments of $21.1 million, and as of December 31, 2021 inventory consists of Captisol prepayments of $24.6 million.

Goodwill and Other Identifiable Intangible Assets

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

	March 31, 2022	December 31, 2021
Indefinite-lived intangible assets		
Goodwill	$ 181,206	$ 181,206
Definite lived intangible assets		
Complete technology	281,097	280,617
Less: accumulated amortization	(82,861)	(78,991)
Trade name	2,642	2,642
Less: accumulated amortization	(1,477)	(1,444)
Customer relationships	40,700	40,700
Less: accumulated amortization	(18,934)	(18,267)
Contractual relationships	362,000	362,000
Less: accumulated amortization	(43,460)	(36,217)
Total goodwill and other identifiable intangible assets, net	$ 720,913	$ 732,246

Commercial License Rights

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

	March 31, 2022			December 31, 2021		
	Gross	Adjustments[1]	Net	Gross	Adjustments[2]	Net
Aziyo and CorMatrix	$ 17,696	$ (9,456)	$ 8,240	$ 17,696	$ (9,461)	$ 8,235
Selexis and Dianomi	10,602	(8,721)	1,881	10,602	(8,727)	1,875
Total	$ 28,298	$ (18,177)	$ 10,121	$ 28,298	$ (18,188)	$ 10,110

(1) Amounts represent accumulated amortization to principal of $ 11.7 million and credit loss adjustments of $ 6.5 million as of March 31, 2022.
(2) Amounts represent accumulated amortization to principal of $ 11.7 million and credit loss adjustments of $ 6.5 million as of December 31, 2021.

Commercial license rights represent a portfolio of future milestone and royalty payment rights acquired from Selexis, S.A. (Selexis) in April 2013 and April 2015, CorMatrix Cardiovascular, Inc. (CorMatrix) in May 2016, which was later acquired by Aziyo in 2017, and Dianomi Therapeutics, Inc. (Dianomi) in January 2019. Commercial license rights acquired are accounted

for as financial assets in accordance with ASC 310,*Receivables,* as further discussed in *Note 1, Basis of Presentation and Summary of Significant Accounting Policies* of the Notes to Consolidated Financial Statements in our 2021 Annual Report.

We estimated the credit losses at the individual asset level by considering the performance against the programs, the company operating performance and the macroeconomic forecast. In addition, we have judgmentally applied credit loss risk factors to the future expected payments with consideration given to the timing of the payment. Given the higher inherent credit risk associated with longer term receivables, we applied a lower risk factor to the earlier years and progressively higher risk factors to the later years. During the three months ended March 31, 2022, we further considered the current and expected future economic and market conditions surrounding the novel coronavirus (COVID-19) pandemic and concluded no further adjustment was needed on the allowance for credit losses as of March 31, 2022.

Accrued Liabilities

Accrued liabilities consist of the following (in thousands):

	March 31, 2022	December 31, 2021
Compensation	$ 3,620	$ 6,532
Professional fees	3,974	2,046
Amounts owed to former licensees	2,677	630
Royalties owed to third parties	—	149
Return reserve	—	2,420
Acquisition related liabilities	—	1,000
Subcontractor	1,757	1,759
Supplier	1,697	848
Accrued interest	394	291
Other	1,758	1,904
Total accrued liabilities	$ 15,877	$ 17,579

Share-Based Compensation

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

	Three months ended March 31,	
	2022	2021
SBC - Research and development expenses	$ 3,914	$ 3,939
SBC - General and administrative expenses	5,130	4,466
	$ 9,044	$ 8,405

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 March 31,	
	2022	2021
Risk-free interest rate	1.6%	0.5%
Dividend yield	—	—
Expected volatility	50%	63%
Expected term (years)	4.7	5

A limited amount of performance-based restricted stock units (PSUs) contain a market condition based on our relative total shareholder return ranked on a percentile basis against the NASDAQ Biotechnology Index over a three-year performance period, with a range of 0% to 200% of the target amount granted to be issued under the award. Share-based compensation cost for these PSUs is measured using the Monte-Carlo simulation valuation model and is not adjusted for the achievement, or lack thereof, of the performance conditions.

Net Income (Loss) Per Share

Basic net income (loss) per share is calculated by dividing net income (loss) by the weighted average number of common shares outstanding during the period. Diluted net 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. Diluted net loss per share is computed based on the sum of the weighted average number of common shares outstanding during the period.

Potentially dilutive common shares consist of shares issuable under the 2023 Notes, stock options and restricted stock. The 2023 Notes have a dilutive impact when the average market price of our common stock exceeds the maximum conversion price. It is our intent and policy to settle conversions through combination settlement, which involves payment in cash equal to the principal portion and delivery of shares of common stock for the excess of the conversion value over the principal portion. 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, the following amounts are assumed to be used to repurchase shares: proceeds from exercise of stock options and the average amount of unrecognized compensation expense for the awards. See *Note 4, Convertible Senior Notes* and *Note 6, Stockholders' Equity*.

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

	Three months ended March 31,	
	2022	2021
Weighted average shares outstanding:	16,824	16,435
Dilutive potential common shares:		
Restricted stock	—	112
Stock options	—	701
Shares used to compute diluted income per share	16,824	17,248
Potentially dilutive shares excluded from calculation due to anti-dilutive effect	6,001	4,277

For the three months ended March 31, 2022, due to the net loss for the period, all of the 0.4 million weighted average equity awards and 1.8 million of potentially dilutive shares in connection with the adoption of ASU 2020-06 were anti-dilutive. Under the new standard, we are required to reflect the dilutive effect of the 2023 Notes by application of the if-converted method.

2. Segment Information

ASC 280, *Segment reporting*, establishes annual and interim reporting standards for an enterprise's operating segments and related disclosures about its products, services, geographic areas and major customers. An operating segment is defined as a component of an enterprise that engages in business activities from which it may earn revenue and incur expenses, and for which discrete financial information is regularly evaluated by the chief operating decision maker in deciding how to allocate resources and assess performance.

We are a biopharmaceutical company focused on developing or acquiring technologies that help pharmaceutical companies discover and develop medicines. Our operating segments are identified in the same manner as they are reported internally and used by our chief operating decision maker for the purpose of evaluating performance and allocating resources. Historically, we have disclosed one reportable segment. On March 23, 2022, we entered into the Merger Agreement, pursuant to which APAC will combine with OmniAb, and acquire the OmniAb Business, in a Reverse Morris Trust transaction. Immediately prior to the Merger and pursuant to the Separation Agreement, we will, among other things, transfer the OmniAb Business, including but not limited to the equity interests of Ab Initio Biotherapeutics, Inc., Crystal Bioscience, Inc., Icagen, LLC, Taurus Biosciences, LLC and xCella Biosciences, Inc. to OmniAb (the "Reorganization") and, in connection therewith, will distribute (the "Distribution") to Ligand stockholders 100% of the common stock of OmniAb. Immediately following the Distribution, Merger Sub will merge with and into OmniAb (the "Merger"), with OmniAb continuing as the surviving company in the Merger and as a wholly owned subsidiary of APAC.

In connection with the execution of the Merger Agreement, we have made organizational changes to better align our organizational structure with our strategy and operations, and management has reorganized the reportable segments to better reflect how the business is evaluated by the chief operating decision maker. Beginning in the first quarter of 2022, we operate the following two reportable segments: (1) OmniAb business and (2) Ligand core business. The OmniAb business segment is focused on enabling the discovery of therapeutic candidates for our partners by pairing antibody repertoires generated from our proprietary transgenic animals with our OmniAb business platform screening tools. The Ligand core business segment is a biopharmaceutical business focused on developing or acquiring technologies that help pharmaceutical companies deliver and develop medicines.

Our chief operating decision maker relies on internal management reporting processes that provide revenue and operating income by reportable segment for making financial decisions and allocating resources. Segment operating income (loss) represents income (loss) before income taxes, interest income, interest expense, other income (expense), net, unallocated share-based compensation, and unallocated corporate overhead. Our management does not evaluate, manage or measure performance of segments using asset information; accordingly, asset information by segment is not prepared or disclosed.

The following table provides a reconciliation of revenue and operating income by reportable segment to consolidated results and was derived from each segment's internal financial information as used for corporate management purposes (in thousands):

	Three Months Ended March 31,	
	2022	2021
OmniAb business revenue		
Royalties	$ 263	$ —
Contract	8,915	8,559
Total OmniAb business revenue	9,178	8,559
Ligand core business revenue		
Royalties	13,432	7,112
Captisol - Core	6,226	1,253
Captisol - COVID	5,896	30,019
Contract	10,961	8,207
Total Ligand core business revenue	36,515	46,591
Total revenue	$ 45,693	$ 55,150
Segment operating income (loss)		
OmniAb business	$ (6,189)	$ (4,604)
Ligand core business	9,991	18,446
Total segment operating income	3,802	13,842
Unallocated corporate items		
Shared-based compensation	5,657	4,870
Other corporate expenses	7,451	4,257
Total unallocated corporate items	13,108	9,127
Income (loss) from operations	$ (9,306)	$ 4,715

3. Fair Value Measurements

Assets and Liabilities Measured on a Recurring Basis

The following table presents the hierarchy for our assets and liabilities measured at fair value (in thousands):

	March 31, 2022				December 31, 2021			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Assets:								
Short-term investments, excluding Viking[1]	$ 6,279	$ 162,394	$ 188	$ 168,861	$ 9,735	$ 280,553	$ 409	$ 290,697
Investment in Viking common stock	20,145	—	—	20,145	30,889	—	—	30,889
Total assets	$ 26,424	$ 162,394	$ 188	$ 189,006	$ 40,624	$ 280,553	$ 409	$ 321,586
Liabilities:								
CyDex contingent liabilities	$ —	$ —	$ 334	$ 334	$ —	$ —	$ 349	$ 349
Metabasis contingent liabilities[2]	—	2,782	—	2,782	—	3,358	—	3,358
Icagen contingent liabilities[3]	—	—	5,376	5,376	—	—	7,364	7,364
xCella contingent liabilities[4]	—	—	480	480	—	—	—	—
Amounts owed to former licensor	75	—	—	75	86	—	—	86
Total liabilities	$ 75	$ 2,782	$ 6,190	$ 9,047	$ 86	$ 3,358	$ 7,713	$ 11,157

1. Excluding our investment in Viking, our short-term investments in marketable debt and equity securities are classified as available-for-sale securities based on management's intentions and are at 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. Short-term investments in mutual funds are valued at their net asset value (NAV) on the last day of the period. We have classified marketable securities with original maturities of greater than one year as short-term investments based upon our ability and intent to use any and all of those marketable securities to satisfy the liquidity needs of our current operations. In addition, we have investment in warrants resulting from Seelos Therapeutics Inc. milestone payments that were settled in shares during the first quarter of 2019 and are at level 3 of the fair value hierarchy, based on Black Scholes value estimated by management on the last day of the period.

2. In connection with our acquisition of Metabasis in January 2010, we issued Metabasis stockholders four tradable CVRs, one CVR from each of four respective series of CVR, for each Metabasis share. The CVRs entitle Metabasis stockholders to cash payments as frequently as every six months as cash is received by us from proceeds from the sale or partnering of any of the Metabasis drug development programs, among other triggering events. The liability for the CVRs is determined using quoted prices in a market that is not active for the underlying CVR. The carrying amount of the liability may fluctuate significantly based upon quoted market prices and actual amounts paid under the agreements may be materially different than the carrying amount of the liability. Several of the Metabasis drug development programs have been outlicensed to Viking, including VK2809. VK2809 is a novel selective TR-β agonist with potential in multiple indications, including hypercholesterolemia, dyslipidemia, NASH, and X-ALD. Under the terms of the agreement with Viking, we may be entitled to up to $375 million of development, regulatory and commercial milestones and tiered royalties on potential future sales including a $10 million payment upon initiation of a Phase 3 clinical trial. During the three months ended March 31, 2022, we adjusted the balance of the Metabasis CVR liability by $0.6 million to mark to market.
3. The fair value of Icagen contingent liabilities was determined using a probability weighted income approach. Most of the contingent payments are based on certain revenue milestones as defined in the asset purchase agreement with Icagen. The fair value is subjective and is affected by changes in inputs to the valuation model including management's estimates regarding the timing and probability of achievement of certain developmental and regulatory milestones. Changes in these estimates may materially affect the fair value. During the three months ended March 31, 2022, we paid $1.5 million contingent liability based on revenue milestones to former Icagen shareholders.
4. The fair value of xCella contingent liabilities is determined when it is probable that the earnout liability will occur and the amount can be reasonably estimated. Management concluded that no earnout liability would be recognized at the acquisition date in September 2020. During the three months ended March 31, 2022, management recorded $0.5 million of earnout liability to be allocated to the cost of the acquired assets due to contingencies being met as part of the acquisition agreement.

A reconciliation of the level 3 financial instruments as of March 31, 2022 is as follows (in thousands):

Fair value of level 3 financial instruments as of December 31, 2021	$	7,713
Payments to CVR holders and other contingent payments		(1,545)
Fair value adjustments to contingent liabilities		(458)
Contingent liabilities from xCella asset acquisition		480
Fair value of level 3 financial instruments as of March 31, 2022	$	6,190

Assets Measured on a Non-Recurring Basis

We apply fair value techniques on a non-recurring basis associated with valuing potential impairment losses related to our goodwill, indefinite-lived intangible assets and long-lived assets.

We evaluate goodwill and indefinite-lived intangible assets annually for impairment and whenever circumstances occur indicating that goodwill might be impaired. We determine the fair value of our reporting unit based on a combination of inputs, including the market capitalization of Ligand, as well as Level 3 inputs such as discounted cash flows, which are not observable from the market, directly or indirectly. We determine the fair value of our indefinite-lived intangible assets using the income approach based on Level 3 inputs.

In connection with the organizational changes to the Company's reportable segments, we re-allocated goodwill between thetwo identified reporting units (OmniAb business and Ligand core business). We performed a goodwill impairment analysis immediately before and after the allocation of goodwill and concluded no impairment. At March 31, 2022, there were no indicators of impairment at either of the reporting units.
At March 31, 2022, there were no indicators of impairment of our indefinite-lived intangible assets, or long-lived assets.

4. Convertible Senior Notes

0.75% Convertible Senior Notes due 2023

In May 2018, we issued $750.0 million aggregate principal amount of 0.75% convertible senior notes. The net proceeds from the offering, after deducting the initial purchasers' discount and offering expenses, were approximately $733.1 million. The 2023 Notes will be convertible into cash, shares of common stock, or a combination of cash and shares of common stock, at our election, based on an initial conversion rate, subject to adjustment, of 4.0244 shares per $1,000 principal amount of the 2023 Notes which represents an initial conversion price of approximately $248.48 per share. The maximum conversion rate of the 2023 Notes is 5.2317 per $1,000 principal amount of the 2023 Notes which represents a maximum conversion price of approximately $191.14.

Holders of the 2023 Notes may convert the notes at any time prior to the close of business on the business day immediately preceding November 15, 2022, under any of the following circumstances:

(1) during any fiscal quarter (and only during such fiscal quarter) commencing after September 30, 2018, 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 our 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 our 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.

The notes will have a dilutive effect to the extent the average market price per share of common stock for a given reporting period exceeds the conversion price of $248.48. In connection with the issuance of the 2023 Notes, we incurred $16.9 million of issuance costs, which primarily consisted of underwriting, legal and other professional fees, is amortized to interest expense using the effective interest method over the five year expected life of the 2023 Notes, and the effective interest rate as of March 31, 2022 is 0.5%. During the three months ended March 31, 2022 we recognized a total of $0.8 million in interest expense which includes $0.5 million in contractual interest expense and $0.3 million in amortized issuance costs.

It is our intent and policy to settle conversions through combination settlement, which essentially involves payment in cash equal to the principal portion and delivery of shares of common stock for the excess of the conversion value over the principal portion.

During 2021, we repurchased $152.0 million in principal of the 2023 Notes for $156.0 million in cash, including accrued interest of $0.3 million. After the repurchases, approximately $343.3 million in principal amount of the 2023 Notes were outstanding as of December 31, 2021.

During the three months ended March 31, 2022, we repurchased $165.8 million in principal of the 2023 Notes for $163.7 million in cash, including accrued interest of $0.4 million. We accounted for the repurchase as a debt extinguishment, which resulted in a gain of $1.5 million reflected in other income (expense), net, in our condensed consolidated statement of operations for the three months ended March 31, 2022, and a $0.9 million reduction in debt discount.

Convertible Bond Hedge and Warrant Transactions

In conjunction with the 2023 Notes, in May 2018, we entered into convertible bond hedges and sold warrants covering 3,018,327 shares of our common stock to minimize the impact of potential dilution to our common stock and/or offset the cash payments we are required to make in excess of the principal amount upon conversion of the 2023 Notes. The convertible bond hedges have an exercise price of $248.48 per share and are exercisable when and if the 2023 Notes are converted. We paid $140.3 million for these convertible bond hedges. If upon conversion of the 2023 Notes, the price of our 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 us and are not part of the terms of the 2023 Notes. Holders of the 2023 Notes and warrants will not have any rights with respect to the convertible bond hedges.

Concurrently with the convertible bond hedge transactions, we entered into warrant transactions whereby we sold warrants covering approximately 3,018,327 shares of common stock with an exercise price of approximately $315.38 per share, subject to certain adjustments. We received $90.0 million for these warrants. The warrants have various expiration dates ranging from August 15, 2023 to February 6, 2024. 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 common stock issuable upon exercise of the warrants will be in unregistered shares, and we do not have the obligation and do not intend to file any registration statement with the SEC registering the issuance of the shares under the warrants.

In January 2021, in connection with the repurchases of approximately $20.3 million in principal of the 2023 Notes for approximately $19.1 million in cash, including accrued interest of $0.1 million, during the quarter ended December 31, 2020, we entered into amendments with Barclays Bank PLC, Deutsche Bank AG, London Branch, and Goldman Sachs & Co. LLC to the convertible note hedges transactions we initially entered into in connection with the issuance of the 2023 Notes. The

amendments provide that the options under the convertible note hedges corresponding to such repurchased 2023 Notes will remain outstanding notwithstanding such repurchase.

During the year ended December 31, 2021, in connection with the repurchases of $152.0 million in principal of the 2023 Notes for $156.0 million in cash, including accrued interest of $0.3 million, we entered into Warrant Early Unwind Agreements and Bond Hedge Unwind Agreements with Barclays Bank PLC, Deutsche Bank AG, and Goldman Sachs & Co. LLC to unwind a portion of the convertible note hedges transactions we initially entered into in connection with the issuance of the 2023 Notes. We paid $18.4 million as part of the Warrant Early Unwind Agreements reducing the number of shares covered by the warrants from3,018,327 to 2,559,254. We received $18.9 million as part of the Bond Hedge Early Unwind Agreements reducing the number of options under the convertible bond hedges to 598,021. These unwind transactions resulted in a $0.5 million net increase in additional paid-in-capital in our condensed consolidated balance sheet as of December 31, 2021.

The following table summarizes information about the 2023 Notes (in thousands):

	March 31, 2022	December 31, 2021[(1)]
Principal amount of the 2023 Notes outstanding	$ 177,527	$ 343,301
Unamortized discount (including unamortized debt issuance cost)	(987)	(22,584)
Total long-term portion of notes payable	$ 176,540	$ 320,717
Fair value of the 2023 Notes outstanding (Level 2)	$ 172,535	$ 341,801

(1) - Balances as of December 31, 2021 reported before the adoption of ASU 2020-06.

5. Income Tax

Our 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 months ended March 31, 2022 and 2021 was 23.6% and (214.1)%, respectively. The variance from the U.S. federal statutory tax rate of 21% for the three months ended March 31, 2022 was due primarily to the tax deductions related to foreign derived intangible income tax credit as well as the research and development tax credits, which were partially offset by Section 162(m) limitation during the period. The variance from the U.S. federal tax rate of 21% for the three months ended March 31, 2021 was significantly impacted by the discrete tax benefit related to the net excess tax windfalls from the share based compensation resulting from increased stock option exercise activity, stock award vesting and appreciation of our stock price during the period.

6. Stockholders' Equity

We grant 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 9, Stockholders' Equity*, of the Notes to Consolidated Financial Statements in our 2021 Annual Report.

The following is a summary of our 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, 2021	2,199,598	$ 106.00	264,143	$ 138.21
Granted	14,100	$ 114.13	24,840	$ 99.85
Options exercised/RSUs vested	(17,689)	$ 19.61	(126,049)	$ 121.18
Forfeited	(23,285)	$ 54.49	(782)	$ 131.95
Balance as of March 31, 2022	2,172,724	$ 107.31	162,152	$ 145.60

As of March 31, 2022, outstanding options to purchase1.5 million shares were exercisable with a weighted average exercise price per share of $100.59.

Employee Stock Purchase Plan

The price at which common stock is purchased under the Amended Employee Stock Purchase Plan, or 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. As of March 31, 2022, 44,360 shares were available for future purchases under the ESPP.

Share Repurchases

On September 11, 2019, our Board of Directors approved a stock repurchase program authorizing, but not obligating, the repurchase of up to $100.0 million of our common stock from time to time over the next three years. We expect to acquire shares primarily through open-market transactions and may enter into Rule 10b5-1 trading plans, to facilitate open-market repurchases. The timing and amount of repurchase transactions will be determined by management based on our evaluation of market conditions, share price, legal requirements and other factors. We did not have any share repurchases during the three months ended March 31, 2022. Authorization to repurchase $48.8 million of our common stock remained available as of March 31, 2022.

7. Commitment and Contingencies: Legal Proceedings

We record 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, we record the minimum estimated liability related to the claim in accordance with ASC 450, *Contingencies*. As additional information becomes available, we assess the potential liability related to our pending litigation and revises our estimates. Revisions in our estimates of potential liability could materially impact our results of operations.

On October 31, 2019, we received three civil complaints filed in the U.S. District Court for the Northern District of Ohio on behalf of several Indian tribes. The Northern District of Ohio is the Court that the Judicial Panel on Multi-District Litigation ("JPML") has assigned more than one thousand civil cases which have been designated as a Multi-District Litigation ("MDL") and captioned In Re: National Prescription Opiate Litigation. The allegations in these complaints focus on the activities of defendants other than the Company and no individualized factual allegations have been advanced against us in any of the three complaints. We reject all claims raised in the complaints and intend to vigorously defend these matters.

CyDex and Baxter Healthcare Corp. ("Baxter") are parties to a license agreement relating to Ligand's Captisol technology and, more specifically, relating to Captisol-enabled Nexterone (amiodarone HCl premixed injection). Baxter contends that it has
overpaid royalties for several years, and seeks both refunds of those overpayment and a reduced royalty going forward. CyDex contends that Baxter has not paid the royalties due to CyDex under the terms of the license agreement. On April 6, 2021, Baxter initiated an arbitration with the American Arbitration Association pursuant to the arbitration provision of the license agreement. On April 21, 2021, CyDex filed an Answering Statement and Counterdemand. On May 5, 2021, Baxter filed an Answering Statement in response to CyDex's Counterdemand. On June 30, 2021, the parties held a Preliminary Hearing before the arbitrator. The parties have completed fact discovery, exchanged expert witness statements and completed depositions of the expert witnesses. The arbitration hearing is currently scheduled for late May 2022.

From time to time, we may also become subject to other legal proceedings or claims arising in the ordinary course of our business. We currently believe that none of the claims or actions pending against us is likely to have, individually or in the aggregate, a material adverse effect on our business, financial condition or results of operations. Given the unpredictability inherent in litigation, however, we cannot predict the outcome of these matters.

8. Leases

We lease certain office facilities and equipment primarily under various operating leases. Our leases have remaining contractual terms up to ten years, some of which include options to extend the leases for up to five years. Our lease agreements do not contain any material residual value guarantees, material restrictive covenants, or material termination options. Our operating lease costs are primarily related to facility leases for administration offices and research and development facilities, and our finance leases are immaterial.

Lease assets and lease liabilities are recognized at the commencement of an arrangement where it is determined at inception that a lease exists. Lease assets represent the right to use an underlying asset for the lease term, and lease liabilities represent the obligation to make lease payments arising from the lease. These assets and liabilities are initially recognized based on the present value of lease payments over the lease term calculated using our incremental borrowing rate generally applicable to the location of the lease asset, unless the implicit rate is readily determinable. Lease assets also include any upfront lease payments

made and adjusted for lease incentives and other items as prescribed by ASC Topic 842,*Leases*. Lease terms include options to extend or terminate the lease when it is reasonably certain that those options will be exercised.

In addition to base rent, certain of our operating leases require variable payments, such as insurance and common area maintenance. These variable lease costs, other than those dependent upon an index or rate, are expensed when the obligation for those payments is incurred. Leases with an initial term of 12 months or less are not recorded on the balance sheet, and the expense for these short-term leases and for operating leases is recognized on a straight-line basis over the lease term.

The depreciable life of lease assets and leasehold improvements is limited by the expected lease term, unless there is a transfer of title or purchase option reasonably certain of exercise.

Operating and Finance Lease Assets and Liabilities (in thousands):

Assets	**March 31, 2022**	**December 31, 2021**
Operating lease assets	$ 15,783	$ 16,542
Finance lease assets	15,620	16,207
Total lease assets	$ 31,403	$ 32,749
Liabilities		
Current operating lease liabilities	$ 1,850	$ 2,053
Current finance lease liabilities	52	46
	1,902	2,099
Long-term operating lease liabilities	16,758	15,494
Long-term finance lease liabilities	39	58
Total lease liabilities	$ 18,699	$ 17,651

Maturity of Operating and Finance Lease Liabilities as of March 31, 2022 (in thousands):

Maturity Dates	**Operating Leases**
Remaining nine months ending December 31, 2022	$ 1,020
2023	2,712
2024	2,716
2025	2,614
2026	2,700
2027	2,727
Thereafter	8,074
Total lease payments	22,563
Less imputed interest	(3,864)
Present value of lease liabilities	$ 18,699

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 and manufacturing capacity, our Kyprolis and other product royalty revenues, the impact of COVID-19, product returns, product development, and the potential separation of the OmniAb business. 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 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, 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.

We use our trademarks, trade names and services marks in this report as well as trademarks, trade names and service marks that are the property of other organizations. Solely for convenience, trademarks and trade names referred to in this report appear without the ® and ™ symbols, but those references are not intended to indicate, in any way, that we will not assert, to the fullest extent under applicable law, our rights or that the applicable owner will not assert its rights, to these trade marks and trade names.

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 or acquiring technologies that help pharmaceutical companies discover and develop medicines. We employ research technologies such as antibody discovery technologies, ion channel discovery technology, *Pseudomonas fluorescens* protein expression technology, formulation science and liver targeted pro-drug technologies to assist companies in their work toward securing prescription drug and biologic approvals. We currently have partnerships and license agreements with over 140 pharmaceutical and biotechnology companies. Over 400 programs are in various stages of commercialization, development or research and are fully funded by our collaboration partners and licensees. We have contributed novel research and technologies for approved medicines that treat cancer, osteoporosis, fungal infections and postpartum depression, among others. Our collaboration partners and licensees have programs currently in clinical development targeting cancer, seizure, diabetes, cardiovascular disease, muscle wasting, liver disease, and kidney disease, among others. We have over 1,600 issued patents worldwide.

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 and then seek partners to continue development and potential commercialization.

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, sale of Captisol material, and contract revenue from license, milestone and other service payments. 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.

Update on the OmniAb Separation Process

In November 2021, we announced plans to explore multiple paths for OmniAb to become a standalone public company. On March 23, 2022, we entered into the Merger Agreement, pursuant to which APAC will combine with OmniAb, and acquire the OmniAb Business, in a Reverse Morris Trust transaction. Immediately prior to the Merger and pursuant to the Separation Agreement, we will, among other things, transfer the OmniAb Business, including but not limited to the equity interests of Ab Initio Biotherapeutics, Inc., Crystal Bioscience, Inc., Icagen, LLC, Taurus Biosciences, LLC and xCella Biosciences, Inc. to OmniAb (the "Reorganization") and, in connection therewith, will distribute (the "Distribution") to Ligand stockholders 100% of the common stock of OmniAb. Immediately following the Distribution, Merger Sub will merge with and into OmniAb (the "Merger"), with OmniAb continuing as the surviving company in the Merger and as a wholly owned subsidiary of APAC.

Upon the closing of the transaction, Avista Capital Partners ("Avista"), APAC's sponsor has agreed to invest up to $115 million in the combined company, and Ligand will contribute $15 million (less certain transaction and other expenses). The combined company will have an initial pre-money equity valuation of $850 million. Ligand intends to distribute 100% of its equity in OmniAb to Ligand shareholders immediately prior to the business combination with APAC. The transaction is expected to be tax-free to Ligand and its shareholders for U.S. federal income tax purposes. The transaction is expected to close in the second half of 2022.

In April 2022, OmniAb filed with the SEC a registration statement on Form 10 registering shares of OmniAb common stock and APAC filed with the SEC a registration statement on Form S-4 registering shares of APAC common stock, warrants and certain equity awards. The Form S-4 filed by APAC includes a proxy statement/prospectus in connection with the APAC shareholder vote required for the proposed transaction. The Form 10 filed by OmniAb includes portion of the Form S-4 registration statement filed by APAC which will serve as an information statement/prospectus in connection with the spin-off of OmniAb. Ligand's shareholders and other interested persons are advised to read the preliminary and definitive registration statements, and documents incorporated by reference therein, as these materials contain important information about APAC, OmniAb and the proposed business combination. The proxy statement/prospectus contained in APAC's registration statement will be mailed to APAC shareholders as of a record date to be established for voting on the proposed business combination.

The registration statements, proxy statement/prospectus/information statement and other documents are also available at www.sec.gov, or by request to Avista Public Acquisition Corp. II, 65 East 55th Street, 18th Floor, New York, NY 10022.

Portfolio Program Updates

OmniAb® Platform Updates

The OmniAb discovery platform provides our pharmaceutical industry partners with access to diverse antibody repertoires and high-throughput screening technologies to enable discovery of next-generation therapeutics. At the heart of the OmniAb platform is the Biological Intelligence™ (BI) of our proprietary transgenic animals, including OmniRat, OmniChicken and OmniMouse that have been genetically modified to generate antibodies with human sequences to facilitate development of human therapeutic candidates. Over 55 partners have access to OmniAb-derived antibodies and more than 250 programs are being actively developed or commercialized. As of March 31, 2022, there were 25 active clinical- or commercial- stage OmniAb-derived antibodies.

In March 2022, Immunovant held an R&D day, where they highlighted Batoclimab (IMVT-1401), an OmniAb-derived monoclonal antibody targeting the neonatal Fc receptor. Immunovant announced plans to initiate a Phase 3 trial in myasthenia gravis in the first half of 2022 with top-line results expected in 2024. Immunovant further outlined plans to initiate clinical trials in four additional indications in 2022, with two of the indications expected to enter directly into pivotal trials. Batoclimab is also being developed by Harbour BioMed in China and is currently in an ongoing pivotal Phase 3 trial in patients with myasthenia gravis.

Aptevo Therapeutics announced that a patient with relapsed/refractory acute myeloid leukemia in an ongoing Phase 1b trial received an allogeneic stem cell transplant after receiving APVO436 and experiencing significant reduction in bone

marrow blasts. This follows Aptevo's previous announcement that a patient receiving combination therapy is also moving to transplant after one cycle of therapy.

In Q1 2022 and recently, OmniAb entered into new platform licensing agreements with LTZ Therapeutics, Seismic Therapeutics, LifeArc and an undisclosed venture-backed Bay Area immune-oncology company.

Ligand Core Business Portfolio Updates

In March 2022, Travere Therapeutics announced the submission of an NDA to the FDA for accelerated approval of sparsentan for IgA nephropathy (IgAN). Travere announced that plans are underway to submit an NDA for accelerated approval to the FDA for focal segmental glomerulosclerosis (FSGS) and a combined IgAN and FSGS Marketing Authorisation Application in Europe in mid-2022.

In April 2022, Merck announced the FDA granted Breakthrough Designation for V116, a 21-valent pneumococcal vaccine utilizing Ligand's CRM197 vaccine carrier protein produced using the Pelican Expression Technology platform. Merck plans to initiate Phase 3 clinical trials for V116 in 2022.

On February 2, 2022 Jazz Pharmaceuticals announced the submission of a supplemental BLA to the FDA seeking approval for a M/W/F intramuscular dosing schedule for Rylaze™ as a component of a multi-agent chemotherapeutic regimen for the treatment of acute lymphoblastic leukemia. Jazz announced on their fourth quarter 2021 earnings call plans to submit regulatory filings for Rylaze in Europe in mid-2022 with potential approval in 2023.

In February 2022, BeiGene, Ltd. announced the launch of KYPROLIS® (carfilzomib) for injection in China for patients with relapsed/refractory (R/R) multiple myeloma. KYPROLIS is licensed to BeiGene in China under a strategic collaboration with Amgen, and was approved in July 2021 by the China National Medical Products Administration (NMPA) in combination with dexamethasone for the treatment of adult patients with R/R multiple myeloma who have received at least two prior therapies, including a proteasome inhibitor and an immunomodulatory agent.

In March 2022, Outlook Therapeutics announced it submitted a Biologics License Application (BLA) to the FDA for ONS-5010, an investigational ophthalmic formulation of bevacizumab for the treatment of wet age-related macular degeneration that, if approved, will be branded as LYTENAVA™ (bevacizumab-vikg).

Results of Operations

Revenue

(Dollars in thousands)	Q1 2022	Q1 2021	Change	% Change
Royalties	**$ 13,695**	$ 7,112	$ 6,583	93 %
Captisol - Core	**6,226**	1,253	4,973	397 %
Captisol - COVID	**5,896**	30,019	(24,123)	(80) %
Contract revenue	**19,876**	16,766	3,110	19 %
Total revenue	**$ 45,693**	$ 55,150	$ (9,457)	(17) %

Total revenue decreased by $(9.5) million, or (17)%, to $45.7 million in Q1 2022 compared to $55.2 million in Q1 2021 primarily due to the $24.1 million decrease in sales of COVID related Captisol that is used in formulation with remdesivir. Non-COVID Captisol sales increased by $5.0 million, with the increase primarily due to increased demand from Baxter, Fareva Mirabel, and Novartis in Q1 2022 compared to Q1 2021. Royalties and contract revenue increased in Q1 2022 compared to Q1 2021, with the increase primarily attributable to the increase in partner product sales of Kyprolis, Evomela, Teriparatide Injection, and Rylaze.

Revenues attributable to the Ligand core business segment and OmniAb business segment were $36.5 million and $9.2 million, respectively, for the first quarter of 2022. Revenues attributable to the Ligand core business segment and OmniAb business segment were $46.6 million and $8.6 million, respectively, for the first quarter of 2021.

Royalty revenue is a function of our partners' product sales and the applicable royalty rate. Kyprolis royalty rates are under a tiered royalty rate structure with the highest tier being 3.0%. Evomela has a fixed royalty rate of 20%. Teriparatide injection has a tiered royalty between 25% and 40% on sales that have been adjusted for certain deductible items as defined in

the respective license agreement. The Rylaze royalty rate is tiered between 3% and 5%. Contract revenue includes service revenue, license fees and development, regulatory and sales based milestone payments.

The following table represents royalty revenue by program (in millions):

(in millions)	Q1 2022 Estimated Partner Product Sales	Effective Royalty Rate	Q1 2022 Royalty Revenue	Q1 2021 Estimated Partner Product Sales	Effective Royalty Rate	Q1 2021 Royalty Revenue
Kyprolis	**$ 297.5**	**1.6 %**	**$ 4.6**	$ 266.0	1.6 %	$ 4.3
Evomela	**13.5**	**20.0 %**	**2.7**	11.7	20.0 %	2.3
Teriparatide injection[(1)]	**9.1**	**32.0 %**	**2.9**	—	— %	—
Rylaze	**50.0**	**3.3 %**	**1.6**	—	— %	—
Other	**70.7**	**2.6 %**	**1.9**	27.1	1.8 %	0.5
Total	**$ 440.8**		**$ 13.7**	$ 304.8		$ 7.1

(1) - Teriparatide injection sales have been adjusted for certain deductible items as defined in the respective license agreement.

Operating Costs and Expenses

(Dollars in thousands)	Q1 2022	% of Revenue	Q1 2021	% of Revenue
Cost of Captisol	**$ 4,699**		$ 8,153	
Amortization of intangibles	**11,813**		11,786	
Research and development	**20,307**		17,879	
General and administrative	**18,180**		12,617	
Total operating costs and expenses	**$ 54,999**	120%	$ 50,435	91%

Total operating costs and expenses during Q1 2022 increased by $4.6 million, or 9%, compared to Q1 2021 primarily attributable to the OmniAb spin-off related transaction costs recorded in Q1 2022.

Cost of Captisol decreased primarily due to the decrease in Captisol sales during Q1 2022 compared to Q1 2021.

Amortization of intangibles remained steady in Q1 2022 compared to the same period in 2021 as there have been no significant changes to the gross balance of intangible assets over these periods. Amortization of intangibles were $8.8 million and $3.0 million for the Ligand core business segment and OmniAb business segment during Q1 2022, respectively. Amortization of intangibles were $8.8 million and $3.0 million for the Ligand core business segment and OmniAb business segment during Q1 2021, respectively.

At any one time, we are working on multiple R&D programs. As such, we generally do not track our R&D expenses on a specific program basis. Our R&D expenses increased in Q1 2022 compared to the same period in 2021 due to the increase in R&D activities at Icagen, Crystal, and Pfenex, which primarily consisted of salaries and lab costs. Excluding $0.9 million unallocated corporate items, R&D expenses were $8.2 million and $11.2 million for the Ligand core business segment and OmniAb business segment during Q1 2022, respectively. Excluding $0.8 million unallocated corporate items, R&D expenses were $8.0 million and $9.1 million, respectively, for non-OmniAb business segment and OmniAb business segment during Q1 2021.

General and administrative expenses increased in Q1 2022 compared to the same period in 2021 primarily attributable to the $4.8 million of OmniAb spin-off related transaction costs incurred compared to no transaction costs being recorded in Q1 2021. Excluding $12.2 million unallocated corporate items, general and administrative expenses were $4.8 million and $1.2 million, respectively, for Ligand core business segment and OmniAb business segment during Q1 2022. Excluding $8.3 million unallocated corporate items, general and administrative expenses were $3.2 million and $1.1 million, respectively, for Ligand core business segment and OmniAb business segment during Q1 2021.

Other Income (Expense)

(Dollars in thousands)	Q1 2022	Q1 2021	Change
Gain (loss) from short-term investments	**$ (12,877)**	$ 13,061	$ (25,938)
Interest income	**134**	296	(162)
Interest expense	**(789)**	(5,831)	5,042
Other income (expense), net	**2,698**	(6,477)	9,175
Total other income (expense), net	**$ (10,834)**	$ 1,049	$ (11,883)

The fluctuation in the gain (loss) from short-term investments is primarily driven by the changes in the fair value of our ownership in Viking common stock, contributing an unrealized loss of $10.7 million in Q1 2022 as compared to an unrealized gain of $9.1 million in Q1 2021.

Interest income consists primarily of interest earned on our short-term investments. The decrease over the prior period was due to the decrease in our short-term investment balance.

Interest expense includes the 0.75% coupon cash interest expense in addition to the non-cash accretion of discount (including the amortization of debt issuance cost) on our 2023 Notes for the three months ended March 31, 2022. The decrease was primarily due to the adoption of ASU 2020-06 which significantly reduced the debt discount balance subject to amortization. See *Note 1, Basis of Presentation and Summary of Significant Accounting Policies* for detail on ASU 2020-06 adoption. In addition, we carried a lower average debt outstanding balance during Q1 2022 as compared to Q1 2021. During the three months ended March 31, 2022, we repurchased $165.8 million in principal of the 2023 Notes. See *Note 4, Convertible Senior Notes.*

Other income (expense), net, in Q1 2022 increased by $9.2 million as compared to Q1 2021, primarily due to a $1.5 million gain on extinguishment of debt and $1.0 million gain for the fair value adjustment of Metabasis and Icagen CVRs during Q1 2022 compared to a $4.8 million loss on extinguishment of debt and $1.4 million loss for the fair value adjustment of Metabasis and Icagen CVRs during Q1 2021. See *Note 3, Fair Value Measurements.*

Income Tax Benefit (Expense)

(Dollars in thousands)	Q1 2022	Q1 2021	Change
Income (loss) before income taxes	**$ (20,140)**	$ 5,764	$ (25,904)
Income tax benefit	**4,755**	12,342	(7,587)
Income (loss) from operations	**$ (15,385)**	$ 18,106	$ (33,491)
Effective tax rate	23.6 %	(214.1) %	

We compute our income tax provision by applying the estimated annual effective tax rate to income from operations and adding the effects of any discrete income tax items specific to the period. The effective tax rate for the three months ended March 31, 2022 and 2021 was 23.6% and (214.1)%, respectively. The variance from the U.S. federal statutory tax rate of 21% for the three months ended March 31, 2022 was due primarily to the tax deductions related to foreign derived intangible income tax credit as well as the research and development tax credits, which were partially offset by Section 162(m) limitation during the period. The variance from the U.S. federal statutory tax rate of 21% for the three months ended March 31, 2021 was significantly impacted by discrete tax benefits from share-based compensation resulting from increased stock option exercise activity, stock award vesting and appreciation of our stock price during the period.

Liquidity and Capital Resources

As of March 31, 2022, our cash, cash equivalents, and short-term investments totaled $204.0 million, which decreased by $137.1 million from the end of last year due to factors described in the *Cash Flow Summary* below. Our primary source of liquidity, other than our holdings of cash, cash equivalents, and short-term investments, has been cash flows from operations. Our ability to generate cash from operations provides us with the financial flexibility we need to meet operating, investing, and financing needs.

Historically, we have liquidated our short-term investments and/or issued debt and equity securities to finance our business needs as a supplement to cash provided by operating activities. Our short-term investments include U.S. government debt securities, investment-grade corporate debt securities, mutual funds and certificates of deposit. We have established guidelines relative to diversification and maturities of our investments in order to provide both safety and liquidity. These

guidelines are periodically reviewed and modified to take advantage of trends in yields and interest rates. Additionally, we own certain securities which are classified as short-term investments that we received as a result of a milestone and an upfront license payment as well as 6.7 million shares of common stock in Viking.

In May 2018, we issued an aggregate principal amount of $750.0 million of the 2023 Notes. During the three months ended March 31, 2022, we repurchased $165.8 million in principal of the 2023 Notes for $163.7 million in cash, including accrued interest of $0.4 million. After the repurchases, $177.5 million in principal amount of the 2023 Notes remain outstanding. We may continue to use cash on hand to repurchase additional 2023 Notes through open-market transactions, including through Rule 10b5-1 trading plans to facilitate open-market repurchases, or otherwise, from time to time. The timing and amount of repurchase transactions will be determined by management based on the evaluation of market conditions, trading price of the 2023 Notes, legal requirements and other factors. The 2023 Notes were not convertible as of March 31, 2022. It is our intent and policy to settle conversions through combination settlement, which essentially involves payment in cash equal to the principal portion and delivery of shares of common stock for the excess of the conversion value over the principal portion. See *Note 4, Convertible Senior Notes.*

We believe that our existing funds, cash generated from operations and existing sources of and access to financing are adequate to fund our need for working capital, capital expenditures, debt service requirements, continued advancement of research and development efforts, potential stock repurchases and other business initiatives we plan to strategically pursue, including acquisitions and strategic investments.

As of March 31, 2022, we had $9.0 million in fair value of contingent consideration liabilities associated with prior acquisitions to be settled in future periods.

Cash Flow Summary

(Dollars in thousands)	Q1 2022	Q1 2021
Net cash provided by (used in):		
Operating activities	$ 52,011	$ 10,754
Investing activities	$ 113,881	$ 65,115
Financing activities	$ (170,421)	$ (91,635)

During the three months ended March 31, 2022, we repurchased $165.8 million in principal of the 2023 Notes for $163.7 million in cash, including accrued interest of $0.4 million. During the three months ended March 31, 2021, we repurchased $104.5 million in principal of the 2023 Notes for $109.1 million in cash, including accrued interest of $0.2 million.

Critical Accounting Policies and Estimates

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. There have been no material changes in our critical accounting policies and estimates as compared to the critical accounting policies and estimates described in our 2021 Annual Report, other than the adoption of the Accounting Standards Updates described in Item 1. Condensed consolidated Financial Statements - *Note 1, Basis of Presentation and Summary of Significant Accounting Policies,* related to convertible debt.

Item 3. Quantitative and Qualitative Disclosures about Market Risk

There were no substantial changes to our market risks in the three months ended March 31, 2022, when compared to the disclosures in Item 7A of our 2021 Annual Report.

Item 4. Controls and Procedures

We carried out an evaluation, under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, of the effectiveness of our disclosure controls and procedures, as defined in

Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934. Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that our disclosure controls and procedures as of March 31, 2022 were effective to ensure that information required to be disclosed by us in reports that we file or submit under the Securities Exchange Act of 1934 is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and that such information is accumulated and communicated to management, including our Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

There were no changes in our internal control over financial reporting that occurred during the quarter ended March 31, 2022 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1. Legal Proceedings

For information that updates the disclosures set forth under Part I. Item 3. Legal Proceedings in our 2021 Annual Report, refer to*Note 7, Commitment and Contingencies: Legal Proceedings*, to the Condensed Consolidated Financial Statements contained in Part I. Item 1. of this report.

Item 1A. Risk Factors

Other than as set forth below, we do not believe that there have been any material changes to the risk factors disclosed in Part I, Item 1A of our 2021 Annual Report. The risk factors described in our 2021 Annual Report and below are not the only risks we face. Factors we currently do not know, factors that we currently consider immaterial or factors that are not specific to us, such as general economic conditions, may also materially adversely affect our business or our consolidated operating results, financial condition or cash flows.

The Merger is subject to the satisfaction of certain conditions, which may not be satisfied on a timely basis, if at all.

The consummation of the Merger is subject to customary closing conditions for transactions involving special purpose acquisition companies, including, among others:

- the expiration or termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended;
- receipt of required consents and approvals from certain governmental authorities;
- no agreement between Ligand or APAC and any governmental authority pursuant to which Ligand or APAC has agreed not to consummate the Merger shall have been effected;
- no governmental authority of competent jurisdiction shall have enacted, issued or granted any law (whether temporary, preliminary or permanent), in each case that is in effect and which has the effect of restraining, enjoining or prohibiting the consummation of the transaction;
- APAC shall have at least $5,000,001 of net tangible assets as of the Closing;
- the APAC common stock issuable pursuant to the Merger shall have been approved for listing on Nasdaq, subject to official notice of issuance;
- Ligand, OmniAb, APAC and Merger Sub shall each have performed and complied in all material respects with the obligations, covenants and agreements required by the Merger Agreement to be performed or complied with by it at or prior to filing, or a later date as agreed to by the parties;
- customary bring down conditions related to the accuracy of the parties' respective representations, warranties and pre-closing covenants in the Merger Agreement;
- the consummation of the Distribution, Reorganization and other transactions contemplated by the Separation Agreement shall have occurred;
- each of APAC's and OmniAb's registration statements to be filed with the United States Securities and Exchange Commission shall have become effective;
- APAC's shareholder approval; and
- the receipt by Ligand and APAC of certain tax opinions.

Additionally, APAC's obligation to consummate the Business Combination is also subject to there having been no "Material Adverse Effect" on OmniAb since the date of the Merger Agreement.

Additionally, the obligations of OmniAb to consummate or cause to be consummated the Merger is subject to the satisfaction of the following additional conditions, any one (1) or more of which may be waived in writing by the OmniAb, among other things:

- the completion of the transactions contemplated by the Merger Agreement; and
- the resignation of all directors and all executive officers of APAC.

There can be no assurance that such closing conditions will be satisfied or waived, or that the Merger will be consummated. Further, we cannot assure you that the approval of APAC's stockholders will be obtained. We, OmniAb and APAC may be subject to shareholder lawsuits, or other actions filed in connection with or in opposition to the Merger, which could prevent or delay the consummation of the Merger.

If the Distribution, together with certain related transactions, fails to qualify as a reorganization under Sections 355 and 368(a)(1)(D) of the Internal Revenue Code of 1986, as amended (the "Code"), or the Merger fails to qualify as a reorganization under Section 368(a) of the Code, Ligand and its stockholders could incur significant tax liabilities, and APAC and OmniAb could be required to indemnify Ligand for taxes that could be material pursuant to indemnification obligations under the tax matters agreement to be entered into in connection with the closing of the Merger (the "Tax Matters Agreement").

Ligand expects to receive a tax opinion from Latham & Watkins LLP, tax counsel to Ligand, which shall provide that the Distribution will qualify as a reorganization under Sections 355 and 368(a)(1)(D) of the Code and that the Merger will not cause Section 355(e) of the Code to apply to the Distribution. In addition, the obligations of Ligand and OmniAb to complete the Merger are conditioned upon, among other things, Ligand's receipt of such tax opinion. The obligation of APAC to complete the Merger is conditioned upon, among other things, receipt of an opinion of Weil, Gotshal & Manges LLP, tax counsel to APAC, that the Merger will be treated as a reorganization under Section 368(a) of the Code. The opinions will be based on, among other things, certain facts, assumptions, representations and undertakings from Ligand, OmniAb and APAC, including those regarding the past and future conduct of the companies' respective businesses and other matters. If any of these facts, assumptions, representations, or undertakings are incorrect or not satisfied, Ligand may not be able to rely on the opinions, and Ligand and its stockholders could be subject to significant U.S. federal income tax liabilities. In addition, the opinions will not be binding on the IRS or the courts. Notwithstanding the opinions, the IRS could determine on audit that the Distribution or Merger does not qualify as a reorganization if it determines that any of the facts, assumptions, representations or undertakings on which the opinions are based are not correct or have been violated or that the Distribution or Merger should be taxable for other reasons, including as a result of a significant change in stock or asset ownership after the Distribution.

If the Distribution, together with certain related transactions, is ultimately determined not to qualify as a reorganization, the Distribution could be treated as a taxable disposition of shares of OmniAb stock by Ligand and as a taxable dividend or capital gain to Ligand's stockholders for U.S. federal income tax purposes. If the Merger is ultimately determined not to qualify as a reorganization, the Merger could be treated as a taxable disposition of OmniAb stock by Ligand stockholders. In either such case, Ligand and its stockholders that are subject to U.S. federal income tax could incur significant U.S. federal income tax liabilities.

Under the Tax Matters Agreement that APAC and OmniAb will enter into with Ligand, APAC and OmniAb will generally be required to indemnify Ligand against taxes incurred by Ligand that arise as a result of certain actions or omissions by APAC or OmniAb that prevent the Distribution, together with certain related transactions, from qualifying as a reorganization under Sections 355 and 368(a)(1)(D) of the Code. Further, even if APAC and OmniAb are not responsible for tax liabilities of Ligand under the Tax Matters Agreement, OmniAb nonetheless could be liable under applicable U.S. federal tax law for such liabilities if Ligand were to fail to pay them. If APAC or OmniAb is required to pay any liabilities under the circumstances set forth in the Tax Matters Agreement or pursuant to applicable tax law, the amounts may be significant.

The anticipated benefits of the Separation and Merger may not be achieved.

We may not be able to achieve the full strategic and financial benefits expected to result from the Separation and Merger, including the potential that the Separation and Merger Combination will:

- allow each business to pursue its own operational and strategic priorities and more quickly respond to trends, developments and opportunities in its respective markets;
- create two separate and distinct management teams focused on each business's unique strategic priorities, target markets and corporate development opportunities;
- give each business opportunity and flexibility by pursuing its own investment, capital allocation and growth strategies consistent with its long-term objectives;
- allow investors to separately value each business based on the unique merits, performance and future prospects of each business, providing investors with two distinct investment opportunities;
- enhance the ability of each business to attract and retain qualified management and to better align incentive-based compensation with the performance of each separate business; and
- give each of OmniAb and Ligand its own equity currency for use in connection with acquisitions.

We may not achieve the anticipated benefits of the Separation and Merger for a variety of reasons. Further, such benefits, if ultimately achieved, may be delayed. In addition, the Separation and Merger could materially and adversely affect our business, financial condition and results of operations.

The Separation and Distribution may expose Ligand and OmniAb to potential liabilities arising out of state and federal fraudulent conveyance laws and legal dividend requirements.

The Separation and Distribution are subject to review under various state and federal fraudulent conveyance laws. Fraudulent conveyance laws generally provide that an entity engages in a constructive fraudulent conveyance when (i) the entity transfers assets and does not receive fair consideration or reasonably equivalent value in return; and (ii) the entity: (a) is insolvent at the time of the transfer or is rendered insolvent by the transfer; (b) has unreasonably small capital with which to carry on its business; or (c) intends to incur or believes it will incur debts beyond its ability to repay its debts as they mature. An unpaid creditor or an entity acting on behalf of a creditor (including without limitation a trustee or debtor-in-possession in a bankruptcy by OmniAb or Ligand or any of our respective subsidiaries) may bring an action alleging that the Separation or Distribution or any of the related transactions constituted a constructive fraudulent conveyance. If a court accepts these allegations, it could impose a number of remedies, including without limitation, voiding OmniAb's claims against Ligand, requiring the future OmniAb stockholders to return to Ligand some or all of the shares of OmniAb common stock issued in the Distribution, or providing Ligand with a claim for money damages against OmniAb in an amount equal to the difference between the consideration received by Ligand and OmniAb fair market value at the time of the Distribution.

The measure of insolvency for purposes of the fraudulent conveyance laws will vary depending on which jurisdiction's law is applied. Generally, an entity would be considered insolvent if (i) the present fair saleable value of its assets is less than the amount of its liabilities (including contingent liabilities); (ii) the present fair saleable value of its assets is less than its probable liabilities on its debts as such debts become absolute and matured; (iii) it cannot pay its debts and other liabilities (including contingent liabilities and other commitments) as they mature; or (iv) it has unreasonably small capital for the business in which it is engaged. We cannot assure you what standard a court would apply to determine insolvency or that a court would determine that OmniAb or Ligand or any of our subsidiaries were solvent at the time of or after giving effect to the Distribution.

The Distribution of OmniAb common stock is also subject to review under state corporate distribution statutes. Under the DGCL, a corporation may only pay dividends to its stockholders either (i) out of its surplus (net assets minus capital) or (ii) if there is no such surplus, out of its net profits for the fiscal year in which the dividend is declared or the preceding fiscal year. Although Ligand intends to make the Distribution of OmniAb common stock entirely from surplus, we cannot assure you that a court will not later determine that some or all of the Distribution to Ligand stockholders was unlawful.

The announcement of the proposed Separation and Merger could disrupt OmniAb's relationships with its customers, suppliers, business partners and others, as well as its operating results and business generally.

Risks relating to the impact of the announcement of the Separation and Merger on OmniAb's business include the following:

- its employees may experience uncertainty about their future roles, which might adversely affect OmniAb's ability to retain and hire key personnel and other employees;
- customers, suppliers, business partners and other parties with which OmniAb maintains business relationships may experience uncertainty about its future and seek alternative relationships with third parties, seek to alter their business relationships with OmniAb or fail to extend an existing relationship with OmniAb; and
- OmniAb has expended and will continue to expend significant costs, fees and expenses for professional services and transaction costs in connection with the proposed Separation and Merger.

If any of the aforementioned risks were to materialize, they could lead to significant costs which may impact the combined company's results of operations and cash available to fund its business.

We will incur transaction costs in connection with the Separation and Merger.

OmniAb has both incurred and expects to incur significant, non-recurring costs in connection with consummating the Separation and Merger and operating as a public company following the consummation of the Separation and Merger. OmniAb may also incur additional costs to retain key employees. Although certain transaction expenses incurred in connection with the Merger Agreement, including all legal, accounting, consulting, investment banking and other fees, expenses and costs, will be paid by APAC following the closing of the Merger, OmniAb expects some increased operational costs as well. We will also bear all of OmniAb's expenses if the Merger is not consummated.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

None.

Item 3. Defaults Upon Senior Securities

None.

em 4. Mine Safety Disclosures

Not applicable.

Item 5. Other Information

None.

Item 6. Exhibits

Exhibit Number	Description of Exhibit	Incorporated by Reference				Filed Herewith
		Form	File Number	Date of Filing	Exhibit Number	
2.1*	Agreement and Plan of Merger, dated as of March, 23, 2022, by and among Avista Public Acquisition Corp. II, Ligand Pharmaceuticals Incorporated, OmniAb, Inc. and Orwell Merger Sub Inc.	8-K	001-33093	March 24, 2022	2.1	
2.2*	Separation and Distribution Agreement, dated as of March 23, 2022, by and among Avista Public Acquisition Corp. II, Ligand Pharmaceuticals Incorporated and OmniAb, Inc.	8-K	001-33093	March 24, 2022	2.2	
2.3	Sponsor Insider Agreement, dated March 23, 2022, by and among OmniAb, Inc., Avista Public Acquisition Corp. II and the other parties signatory thereto	8-K	001-33093	March 24, 2022	2.3	
2.4	Amended and Restated Forward Purchase Agreement, dated March 23, 2022, by and among Avista Public Acquisition Corp. II, Avista Acquisition LP II and OmniAb, Inc.	8-K	001-33093	March 24, 2022	2.4	
3.1	Amended and Restated Certificate of Incorporation of the Company	S-4	333-58823	July 9, 1998	3.1	
3.2	Certificate of Amendment of the Amended and Restated Certificate of Incorporation of the Company, dated June 14, 2000	10-K	0-20720	March 29, 2001	3.5	
3.3	Certificate of Amendment of the Amended and Restated Certificate of Incorporation of the Company, dated June 30, 2004	10-Q	0-20720	August 5, 2004	3.6	
3.4	Certificate of Amendment of the Amended and Restated Certificate of Incorporation of the Company, dated November 17, 2010	8-K	001-33093	November 19, 2010	3.1	
3.5	Certificate of Amendment of the Amended and Restated Certification of Incorporation of the Company, dated June 19, 2018	S-8	333-233130	August 8, 2019	3.6	
3.6	Fourth Amended and Restated Bylaws of the Company	8-K	001-33093	October 30, 2020	3.1	
4.1	Specimen stock certificate for shares of the common stock of the Company	10-K	001-33093	March 1, 2018	4.1	
4.2	Indenture, dated as of May 22, 2018, between the Company and Wilmington Trust, National Association, as trustee, including the form of 0.75% Convertible Senior Notes due 2023	8-K	001-33093	May 22, 2018	4.1	
4.3	Description of Registered Securities	10-K	001-33093	February 24, 2021	4.3	
10.1*	Employee Matters Agreement, dated as of March 23, 2022, by and among Ligand Pharmaceuticals Incorporated, Avista Public Acquisition Corp. II, OmniAb, Inc. and Orwell Merger Sub Inc.	8-K	001-33093	March 23, 2022	10.1	
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.					X
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.					X
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.					X

101	The following financial information from our Quarterly Report on Form 10-Q for the quarter ended March 31, 2022, formatted in iXBRL (inline eXtensible Business Reporting Language): (i) Consolidated Condensed Balance Sheets, (ii) Consolidated Condensed Statements of Operations, (iii) Consolidated Condensed Statement of Comprehensive Income, (iv) Consolidated Condensed Statements of Stockholders' Equity, (v) Consolidated Condensed Statements of Cash Flows, and (vi) the Notes to Consolidated Condensed Financial Statements.	X
104	The cover page from the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2022, formatted in Inline XBRL and contained in Exhibit 101.	X

* Schedules and exhibits omitted pursuant to Item 601(b)(2) of Regulation S-K. Ligand Pharmaceuticals Incorporated agrees to furnish supplementally a copy of any omitted schedule to the Securities and Exchange Commission upon request.

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: May 9, 2022

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

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: May 9, 2022

/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: May 9, 2022

/s/ Matthew Korenberg

Matthew Korenberg
Executive 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 March 31, 2022, 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 Compa

Date: May 9, 2022

/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 March 31, 2022, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Matthew Korenberg, Executive 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 Compa

Date: May 9, 2022

/s/ Matthew Korenberg

Matthew Korenberg
Executive 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.