

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

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**FORM 10-Q**

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

**For the quarterly period ended June 30, 2017  
or**

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

**For the Transition Period From \_\_\_\_\_ to \_\_\_\_\_ .  
Commission File Number: 001-33093**

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**LIGAND PHARMACEUTICALS INCORPORATED**

**(Exact name of registrant as specified in its charter)**

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**Delaware  
(State or other jurisdiction of  
incorporation or organization)**

**3911 Sorrento Valley Boulevard, Suite 110 San Diego,  
CA**

**(Address of principal executive offices)**

**77-0160744  
(I.R.S. Employer  
Identification No.)**

**92121  
(Zip Code)**

**(858) 550-7500**

**(Registrant's Telephone Number, Including Area Code)**

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

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

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

|                         |                                                                        |                           |                          |
|-------------------------|------------------------------------------------------------------------|---------------------------|--------------------------|
| Large Accelerated Filer | <input checked="" type="checkbox"/>                                    | Accelerated Filer         | <input type="checkbox"/> |
| Non-Accelerated Filer   | <input type="checkbox"/> (Do not check if a smaller reporting company) | Smaller Reporting Company | <input type="checkbox"/> |
| Emerging Growth Company | <input type="checkbox"/>                                               |                           |                          |

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 July 31, 2017, the registrant had 21,053,494 shares of common stock outstanding.

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LIGAND PHARMACEUTICALS INCORPORATED  
QUARTERLY REPORT

FORM 10-Q

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GLOSSARY OF TERMS AND ABBREVIATIONS

| Abbreviation                  | Definition                                                                                |
|-------------------------------|-------------------------------------------------------------------------------------------|
| 2019 Convertible Senior Notes | \$245.0 million aggregate principal amount of convertible senior unsecured notes due 2019 |
| Amgen                         | Amgen, Inc.                                                                               |
| ASC                           | Accounting Standards Codification                                                         |
| ASU                           | Accounting Standards Update                                                               |
| Aziyo                         | Aziyo Med, LLC                                                                            |
| Company                       | Ligand Pharmaceuticals Incorporated, including subsidiaries                               |
| CorMatrix                     | CorMatrix Cardiovascular, Inc.                                                            |
| CVR                           | Contingent value right                                                                    |
| CyDex                         | CyDex Pharmaceuticals, Inc.                                                               |
| Amended ESPP                  | Employee Stock Purchase Plan, as amended and restated                                     |
| FASB                          | Financial Accounting Standards Board                                                      |
| FDA                           | Food and Drug Administration                                                              |
| GAAP                          | Generally accepted accounting principles in the United States                             |
| IPR&D                         | In-Process Research and Development                                                       |
| Ligand                        | Ligand Pharmaceuticals Incorporated, including subsidiaries                               |
| LSA                           | Loan and Security Agreement                                                               |
| Metabasis                     | Metabasis Therapeutics, Inc.                                                              |
| MLA                           | Master License Agreement                                                                  |
| NOLs                          | Net Operating Losses                                                                      |
| OMT                           | OMT, Inc. or Open Monoclonal Technology, Inc.                                             |
| Par                           | Par Pharmaceuticals, Inc.                                                                 |
| Retrophin                     | Retrophin Inc.                                                                            |
| Q2 2017                       | The Company's fiscal quarter ended June 30, 2017                                          |
| Q2 2016                       | The Company's fiscal quarter ended June 30, 2016                                          |
| SEC                           | Securities and Exchange Commission                                                        |
| Selexis                       | Selexis, SA                                                                               |
| Viking                        | Viking Therapeutics                                                                       |

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### PART I. FINANCIAL INFORMATION

#### ITEM 1. FINANCIAL STATEMENTS

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

|                                                                                                                                                                             | June 30, 2017 | December 31, 2016 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------|-------------------|
| <b>ASSETS</b>                                                                                                                                                               |               |                   |
| Current assets:                                                                                                                                                             |               |                   |
| Cash and cash equivalents                                                                                                                                                   | \$ 60,223     | \$ 18,752         |
| Short-term investments                                                                                                                                                      | 112,404       | 122,296           |
| Accounts receivable                                                                                                                                                         | 13,462        | 14,700            |
| Note receivable from Viking                                                                                                                                                 | 3,207         | 3,207             |
| Inventory                                                                                                                                                                   | 6,809         | 1,923             |
| Other current assets                                                                                                                                                        | 1,072         | 2,175             |
| Total current assets                                                                                                                                                        | 197,177       | 163,053           |
| Deferred income taxes                                                                                                                                                       | 138,837       | 123,891           |
| Investment in Viking                                                                                                                                                        | 6,014         | 8,345             |
| Intangible assets, net                                                                                                                                                      | 199,284       | 204,705           |
| Goodwill                                                                                                                                                                    | 72,207        | 72,207            |
| Commercial license rights, net                                                                                                                                              | 22,962        | 25,821            |
| Property and equipment, net                                                                                                                                                 | 1,875         | 1,819             |
| Other assets                                                                                                                                                                | 1,668         | 1,744             |
| Total assets                                                                                                                                                                | \$ 640,024    | \$ 601,585        |
| <b>LIABILITIES AND STOCKHOLDERS' EQUITY</b>                                                                                                                                 |               |                   |
| Current liabilities:                                                                                                                                                        |               |                   |
| Accounts payable                                                                                                                                                            | \$ 1,799      | \$ 2,734          |
| Accrued liabilities                                                                                                                                                         | 5,325         | 6,397             |
| Current contingent liabilities                                                                                                                                              | 86            | 5,088             |
| 2019 Convertible Senior Notes, net                                                                                                                                          | 218,630       | 212,910           |
| Total current liabilities                                                                                                                                                   | 225,840       | 227,129           |
| Long-term contingent liabilities                                                                                                                                            | 3,860         | 2,916             |
| Other long-term liabilities                                                                                                                                                 | 915           | 687               |
| Total liabilities                                                                                                                                                           | 230,615       | 230,732           |
| Commitments and Contingencies                                                                                                                                               |               |                   |
| Equity component of currently redeemable convertible notes (Note 5)                                                                                                         | 24,293        | 29,563            |
| Stockholders' equity:                                                                                                                                                       |               |                   |
| Common stock, \$0.001 par value; 33,333,333 shares authorized; 21,049,741 and 20,909,301 shares issued and outstanding at June 30, 2017 and December 31, 2016, respectively | 21            | 21                |
| Additional paid-in capital                                                                                                                                                  | 784,376       | 769,653           |
| Accumulated other comprehensive income                                                                                                                                      | 3,059         | 2,743             |
| Accumulated deficit                                                                                                                                                         | (402,340)     | (431,127)         |
| Total stockholders' equity                                                                                                                                                  | 385,116       | 341,290           |
| Total liabilities and stockholders' equity                                                                                                                                  | \$ 640,024    | \$ 601,585        |

See accompanying notes.

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

|                                                           | Three months ended |                   | Six months ended |                 |
|-----------------------------------------------------------|--------------------|-------------------|------------------|-----------------|
|                                                           | June 30,           |                   | June 30,         |                 |
|                                                           | 2017               | 2016              | 2017             | 2016            |
| <b>Revenues:</b>                                          |                    |                   |                  |                 |
| Royalties                                                 | \$ 14,211          | \$ 9,754          | \$ 38,441        | \$ 24,144       |
| Material sales                                            | 5,550              | 3,886             | 6,672            | 9,227           |
| License fees, milestones and other revenues               | 8,234              | 5,881             | 12,151           | 15,798          |
| <b>Total revenues</b>                                     | <b>27,995</b>      | <b>19,521</b>     | <b>57,264</b>    | <b>49,169</b>   |
| <b>Operating costs and expenses:</b>                      |                    |                   |                  |                 |
| Cost of sales <sup>(1)</sup>                              | 903                | 720               | 1,244            | 1,675           |
| Amortization of intangibles                               | 2,706              | 2,681             | 5,420            | 5,206           |
| Research and development                                  | 4,822              | 4,914             | 13,495           | 8,915           |
| General and administrative                                | 6,549              | 7,237             | 13,872           | 14,309          |
| <b>Total operating costs and expenses</b>                 | <b>14,980</b>      | <b>15,552</b>     | <b>34,031</b>    | <b>30,105</b>   |
| Income from operations                                    | 13,015             | 3,969             | 23,233           | 19,064          |
| <b>Other (expense) income:</b>                            |                    |                   |                  |                 |
| Interest expense, net                                     | (2,860)            | (3,051)           | (5,803)          | (6,055)         |
| Increase in contingent liabilities                        | (825)              | (332)             | (966)            | (1,638)         |
| Loss from Viking                                          | (1,248)            | (11,138)          | (2,330)          | (12,743)        |
| Other income, net                                         | 218                | 501               | 359              | 892             |
| <b>Total other expense, net</b>                           | <b>(4,715)</b>     | <b>(14,020)</b>   | <b>(8,740)</b>   | <b>(19,544)</b> |
| Income before income taxes                                | 8,300              | (10,051)          | 14,493           | (480)           |
| Income tax (expense) benefit                              | (2,242)            | 3,881             | (3,356)          | 187             |
| <b>Income (loss) from operations</b>                      | <b>6,058</b>       | <b>(6,170)</b>    | <b>11,137</b>    | <b>(293)</b>    |
| Discontinued operations:                                  |                    |                   |                  |                 |
| Gain on sale of Oncology Product Line before income taxes | —                  | —                 | —                | 1,139           |
| Income tax expense on discontinued operations             | —                  | —                 | —                | (408)           |
| <b>Income from discontinued operations</b>                | <b>—</b>           | <b>—</b>          | <b>—</b>         | <b>731</b>      |
| <b>Net income (loss)</b>                                  | <b>\$ 6,058</b>    | <b>\$ (6,170)</b> | <b>\$ 11,137</b> | <b>\$ 438</b>   |
| <b>Per share amounts:</b>                                 |                    |                   |                  |                 |
| Basic earnings (loss) per share data <sup>(2)</sup>       |                    |                   |                  |                 |
| Income (loss) from continuing operations                  | \$ 0.29            | \$ (0.30)         | \$ 0.53          | \$ (0.01)       |
| Income from discontinued operations                       | —                  | —                 | —                | 0.04            |
| <b>Net income (loss)</b>                                  | <b>\$ 0.29</b>     | <b>\$ (0.30)</b>  | <b>\$ 0.53</b>   | <b>\$ 0.02</b>  |
| Diluted earnings per share data <sup>(2)</sup>            |                    |                   |                  |                 |
| Income (loss) from continuing operations                  | \$ 0.26            | \$ (0.30)         | \$ 0.48          | \$ (0.01)       |
| Income from discontinued operations                       | —                  | —                 | —                | 0.04            |
| <b>Net income (loss)</b>                                  | <b>\$ 0.26</b>     | <b>\$ (0.30)</b>  | <b>\$ 0.48</b>   | <b>\$ 0.02</b>  |
| Shares used for computation (in thousands)                |                    |                   |                  |                 |
| Basic                                                     | 21,013             | 20,832            | 20,975           | 20,765          |
| Diluted                                                   | 23,216             | 20,832            | 23,117           | 20,765          |

(1) Excludes amortization of intangibles.

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

See accompanying notes.

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

|                                                                                       | Three months ended |                   | Six months ended |                 |
|---------------------------------------------------------------------------------------|--------------------|-------------------|------------------|-----------------|
|                                                                                       | June 30,           |                   | June 30,         |                 |
|                                                                                       | 2017               | 2016              | 2017             | 2016            |
| Net income (loss) :                                                                   | \$ 6,058           | \$ (6,170)        | \$ 11,137        | \$ 438          |
| Unrealized net gain/(loss) on available-for-sale securities, net of tax               | 90                 | 539               | 24               | (559)           |
| Less: Reclassification of net realized (gain)/loss included in net income, net of tax | (136)              | (364)             | 292              | (600)           |
| Comprehensive income (loss)                                                           | <u>\$ 6,012</u>    | <u>\$ (5,995)</u> | <u>\$ 11,453</u> | <u>\$ (721)</u> |

*See accompanying notes.*

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

|                                                                                   | Six months ended |           |
|-----------------------------------------------------------------------------------|------------------|-----------|
|                                                                                   | June 30,         |           |
|                                                                                   | 2017             | 2016      |
| <b>Operating activities</b>                                                       |                  |           |
| Net income                                                                        | \$ 11,137        | \$ 438    |
| Less: income from discontinued operations                                         | —                | 731       |
| Income (loss) from continuing operations                                          | 11,137           | (293)     |
| Adjustments to reconcile net income to net cash provided by operating activities: |                  |           |
| Non-cash change in estimated fair value of contingent liabilities                 | 966              | 1,638     |
| Realized gain on sale of short-term investment                                    | (248)            | (602)     |
| Depreciation and amortization                                                     | 5,564            | 5,388     |
| Amortization of premium (discount) on investments, net                            | (44)             | 331       |
| Amortization of debt discount and issuance fees                                   | 5,720            | 5,378     |
| Stock-based compensation                                                          | 10,669           | 8,766     |
| Deferred income taxes                                                             | 3,224            | 187       |
| Change in fair value of the Viking convertible debt receivable and warrants       | 77               | (310)     |
| Loss from Viking                                                                  | 2,330            | 12,743    |
| Changes in operating assets and liabilities:                                      |                  |           |
| Accounts receivable                                                               | 1,263            | (3,791)   |
| Inventory                                                                         | (4,286)          | (2,202)   |
| Other current assets                                                              | 314              | (629)     |
| Accounts payable and accrued liabilities                                          | (2,153)          | (3,323)   |
| Other                                                                             | 75               | 204       |
| Net cash provided by operating activities                                         | 34,608           | 23,485    |
| <b>Investing activities</b>                                                       |                  |           |
| Purchase of commercial license rights                                             | —                | (17,691)  |
| Payments to CVR holders and other contingency payments                            | (4,998)          | (5,635)   |
| Purchases of property and equipment                                               | (199)            | (1,021)   |
| Cash paid for acquisition, net of cash acquired                                   | —                | (92,504)  |
| Purchase of short-term investments                                                | (124,282)        | (49,892)  |
| Purchase of Viking common stock and warrants                                      | —                | (700)     |
| Proceeds received from repayment of Viking note receivable                        | —                | 300       |
| Proceeds received from repayment of commercial license rights                     | 2,859            | —         |
| Proceeds from sale of short-term investments                                      | 83,268           | 22,077    |
| Proceeds from maturity of short-term investments                                  | 51,887           | 83,523    |
| Net cash provided (used) in investing activities                                  | 8,535            | (61,543)  |
| <b>Financing activities</b>                                                       |                  |           |
| Net proceeds from stock option exercises and ESPP                                 | 2,370            | 2,482     |
| Taxes paid related to net share settlement of equity awards                       | (4,042)          | —         |
| Share repurchase                                                                  | —                | (502)     |
| Net cash (used in) provided by financing activities                               | (1,672)          | 1,980     |
| Net increase (decrease) in cash and cash equivalents                              | 41,471           | (36,078)  |
| Cash and cash equivalents at beginning of period                                  | 18,752           | 97,428    |
| Cash and cash equivalents at end of period                                        | \$ 60,223        | \$ 61,350 |
| <b>Supplemental disclosure of cash flow information</b>                           |                  |           |
| Interest paid                                                                     | \$ 919           | \$ 919    |
| Taxes paid                                                                        | 132              | 36        |
| <b>Supplemental schedule of non-cash activity</b>                                 |                  |           |
| Stock issued for acquisition, net of issuance cost                                | —                | (77,615)  |
| Stock and warrant received for repayment of Viking notes receivable               | —                | 1,200     |
| Unrealized gain (loss) on AFS investments                                         | 24               | (1,198)   |





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

**1. Basis of Presentation and Summary of Significant Accounting Policies**

*Basis of Presentation*

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

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

*Significant Accounting Policies*

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

*Use of Estimates*

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

*Accounting Pronouncements Recently Adopted*

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

*Recent Accounting Pronouncements*

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

We are undertaking a substantial effort to be ready for adoption of ASC 606. Some of our contracts have distinct terms which will need to be evaluated separately. Although we have not completed our assessment and are in the process of reviewing our contracts, we anticipate that this standard will have a material impact on our consolidated financial statements by accelerating the timing of revenue recognition for revenues related to royalties, and potentially certain contingent milestone based payments. We intend to adopt ASC 606 starting as of January 1, 2018 using the modified retrospective method.

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

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

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

### Short-term Investments

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

|                             | June 30, 2017     |                        |                         |                      | December 31, 2016 |                        |                         |                      |
|-----------------------------|-------------------|------------------------|-------------------------|----------------------|-------------------|------------------------|-------------------------|----------------------|
|                             | Amortized cost    | Gross unrealized gains | Gross unrealized losses | Estimated fair value | Amortized cost    | Gross unrealized gains | Gross unrealized losses | Estimated fair value |
| Short-term investments      |                   |                        |                         |                      |                   |                        |                         |                      |
| Bank deposits               | \$ 55,847         | \$ 12                  | \$ (9)                  | \$ 55,850            | \$ 40,715         | \$ 19                  | \$ —                    | \$ 40,734            |
| Corporate bonds             | 30,043            | 2                      | (24)                    | 30,021               | 11,031            | —                      | (5)                     | 11,026               |
| Commercial paper            | 13,948            | —                      | (3)                     | 13,945               | 33,074            | 2                      | (9)                     | 33,067               |
| Agency bonds                | —                 | —                      | —                       | —                    | 7,294             | 1                      | —                       | 7,295                |
| U.S Government Bonds        | 8,474             | —                      | (8)                     | 8,466                | 7,508             | —                      | (1)                     | 7,507                |
| Municipal Bonds             | 1,784             | —                      | —                       | 1,784                | 19,624            | —                      | (11)                    | 19,613               |
| Corporate equity securities | 287               | 2,051                  | —                       | 2,338                | 1,512             | 1,542                  | —                       | 3,054                |
|                             | <u>\$ 110,383</u> | <u>\$ 2,065</u>        | <u>\$ (44)</u>          | <u>\$ 112,404</u>    | <u>\$ 120,758</u> | <u>\$ 1,564</u>        | <u>\$ (26)</u>          | <u>\$ 122,296</u>    |

### Inventory

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

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### Goodwill and Other Identifiable Intangible Assets

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

|                                                              | June 30,<br>2017 | December 31,<br>2016 |
|--------------------------------------------------------------|------------------|----------------------|
| Indefinite lived intangible assets                           |                  |                      |
| IPR&D                                                        | \$ 12,246        | \$ 12,246            |
| Goodwill                                                     | 72,207           | 72,207               |
| Definite lived intangible assets                             |                  |                      |
| Complete technology                                          | 182,577          | 182,577              |
| Less: Accumulated amortization                               | (17,407)         | (12,792)             |
| Trade name                                                   | 2,642            | 2,642                |
| Less: Accumulated amortization                               | (850)            | (784)                |
| Customer relationships                                       | 29,600           | 29,600               |
| Less: Accumulated amortization                               | (9,524)          | (8,784)              |
| Total goodwill and other identifiable intangible assets, net | \$ 271,491       | \$ 276,912           |

### Commercial License Rights

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

|           | June 30,<br>2017 | December 31,<br>2016 |
|-----------|------------------|----------------------|
| CorMatrix | \$ 14,431        | \$ 17,284            |
| Selexis   | 8,531            | 8,537                |
|           | 22,962           | 25,821               |

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

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

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

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

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

The error resulted in an understatement of 2016 and Q1 2017 revenue of \$1.3 million and \$0.4 million respectively, and an understatement of 2016 and Q1 2017 net income of \$0.8 million, or \$0.04 per diluted share, and net income of \$0.3 million, or \$0.01 per diluted share, respectively. The impact of correcting the error in Q2 2017 resulted in an overstatement of revenue of \$1.7 million and \$1.3 million, net income of \$1.1 million or \$0.05 per diluted share, and \$0.8 million or \$0.04 per diluted share for the three and six months ended June 30, 2017, respectively.

### *Equity-Method Investment*

The Company has approximately 22.7% equity ownership in Viking as of June 30, 2017. The Company records its investment in Viking under the equity method of accounting. The investment is subsequently adjusted for the Company's share of Viking's operating results, and if applicable, cash contributions and distributions. The market value of the Company's equity investment in Viking was \$6.8 million as of June 30, 2017. The Company also has outstanding warrants to purchase 1.5 million shares of Viking's common stock at an exercise price of \$1.50 per share at June 30, 2017. The Company recorded the warrants at the fair value of \$0.6 million and \$0.7 million at June 30, 2017 and December 31, 2016, respectively. See *Note 2 Fair Value Measurement* for details.

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

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

### *Accrued Liabilities*

Accrued liabilities consist of the following (in thousands):

|                                  | June 30,<br>2017 | December 31,<br>2016 |
|----------------------------------|------------------|----------------------|
| Compensation                     | \$ 1,878         | \$ 2,603             |
| Professional fees                | 448              | 829                  |
| Amounts owed to former licensees | 853              | 899                  |
| Royalties owed to third parties  | 908              | 942                  |
| Other                            | 1,238            | 1,124                |
| Total accrued liabilities        | <u>\$ 5,325</u>  | <u>\$ 6,397</u>      |

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### Stock-Based Compensation

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

|                                                     | Three months ended |                 | Six months ended |                 |
|-----------------------------------------------------|--------------------|-----------------|------------------|-----------------|
|                                                     | June 30,           |                 | June 30,         |                 |
|                                                     | 2017               | 2016            | 2017             | 2016            |
| Stock-based compensation expense as a component of: |                    |                 |                  |                 |
| Research and development expenses                   | \$ 1,928           | \$ 2,089        | \$ 5,867         | \$ 3,674        |
| General and administrative expenses                 | 2,696              | 2,558           | 4,802            | 5,092           |
|                                                     | <u>\$ 4,624</u>    | <u>\$ 4,647</u> | <u>\$ 10,669</u> | <u>\$ 8,766</u> |

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 |      | Six months ended |      |
|-------------------------|--------------------|------|------------------|------|
|                         | June 30,           |      | June 30,         |      |
|                         | 2017               | 2016 | 2017             | 2016 |
| Risk-free interest rate | 2.1%               | 1.7% | 2.1%             | 1.5% |
| Dividend yield          | —                  | —    | —                | —    |
| Expected volatility     | 47%                | 49%  | 47%              | 50%  |
| Expected term           | 6.5                | 6.7  | 6.8              | 6.6  |

### Lease Obligations

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

### Convertible Debt

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

Upon the occurrence of certain circumstances, holders of the 2019 Convertible Senior Notes may redeem all or a portion of their notes, which may require the use of a substantial amount of cash. At June 30, 2017, we had a working capital deficit of \$28.7 million, which includes the 2019 Convertible Senior notes that are currently redeemable as of June 30, 2017 but excludes another \$24.3 million that is classified as mezzanine equity. As noted in Note 3, the debt may change from current to non-current period over period, primarily as a result of changes in the Company's stock price. Management believes that it is remote that holders of the notes would choose to convert their notes early because the fair value of the security that a noteholder can currently realize in an active market is greater than the conversion value the noteholder would realize upon early conversion. In the unlikely event that all the debt was converted, we have three business days following a 50 trading day observation period from the convert date to pay the principal in cash. We have positive operating income and positive cash flow from operations since December 31, 2013 and, accordingly, while there can be no assurance, we believe we have the ability to raise additional capital through an S-3 registration or via alternative financing arrangements such as convertible or straight debt.

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### Income Per Share

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

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

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

|                                                                                   | Three months ended |            | Six months ended |            |
|-----------------------------------------------------------------------------------|--------------------|------------|------------------|------------|
|                                                                                   | June 30,           |            | June 30,         |            |
|                                                                                   | 2017               | 2016       | 2017             | 2016       |
| Weighted average shares outstanding:                                              | 21,012,611         | 20,831,809 | 20,974,738       | 20,765,053 |
| Dilutive potential common shares:                                                 |                    |            |                  |            |
| Restricted stock                                                                  | 156,054            | —          | 170,900          | —          |
| Stock options                                                                     | 967,533            | —          | 961,021          | —          |
| 2019 Convertible Senior Notes                                                     | 1,079,702          | —          | 1,010,505        | —          |
| Shares used to compute diluted income per share                                   | 23,215,900         | 20,831,809 | 23,117,164       | 20,765,053 |
| Potentially dilutive shares excluded from calculation due to anti-dilutive effect | 3,811,813          | —          | 3,761,440        | —          |

## 2. Fair Value Measurements

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

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|                                                               | June 30, 2017   |                   |                 |                   | December 31, 2016 |                   |                 |                   |
|---------------------------------------------------------------|-----------------|-------------------|-----------------|-------------------|-------------------|-------------------|-----------------|-------------------|
|                                                               | Level 1         | Level 2           | Level 3         | Total             | Level 1           | Level 2           | Level 3         | Total             |
| <b>Assets:</b>                                                |                 |                   |                 |                   |                   |                   |                 |                   |
| Short-term investments <sup>(1)</sup>                         | \$ 2,338        | \$ 110,066        | \$ —            | \$ 112,404        | \$ 3,054          | \$ 119,242        | \$ —            | \$ 122,296        |
| Note receivable Viking <sup>(2)</sup>                         | —               | —                 | 3,207           | 3,207             | —                 | —                 | 3,207           | 3,207             |
| Investment in warrants <sup>(3)</sup>                         | 608             | —                 | —               | 608               | 684               | —                 | —               | 684               |
| <b>Total assets</b>                                           | <b>\$ 2,946</b> | <b>\$ 110,066</b> | <b>\$ 3,207</b> | <b>\$ 116,219</b> | <b>\$ 3,738</b>   | <b>\$ 119,242</b> | <b>\$ 3,207</b> | <b>\$ 126,187</b> |
| <b>Liabilities:</b>                                           |                 |                   |                 |                   |                   |                   |                 |                   |
| Current contingent liabilities-CyDex <sup>(4)</sup>           | \$ —            | \$ —              | \$ 86           | \$ 86             | \$ —              | \$ —              | \$ 101          | \$ 101            |
| Long-term contingent liabilities-CyDex <sup>(4)</sup>         | —               | —                 | 1,503           | 1,503             | —                 | —                 | 1,503           | 1,503             |
| Long-term contingent liabilities-Metabasis <sup>(5)</sup>     | —               | 2,357             | —               | 2,357             | —                 | 1,413             | —               | 1,413             |
| Liability for amounts owed to former licensees <sup>(6)</sup> | 351             | —                 | —               | 351               | 371               | —                 | —               | 371               |
| <b>Total liabilities</b>                                      | <b>\$ 351</b>   | <b>\$ 2,357</b>   | <b>\$ 1,589</b> | <b>\$ 4,297</b>   | <b>\$ 371</b>     | <b>\$ 1,413</b>   | <b>\$ 1,604</b> | <b>\$ 3,388</b>   |

- (1) Investments in equity securities, which the Company received as a result of event-based and upfront payments from licensees, are classified as level 1 as the fair value is determined using quoted market prices in active markets for the same securities. Short-term investments in marketable securities with maturities greater than 90 days are classified as level 2 of the fair value hierarchy, as these investment securities are valued based upon quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market.
- (2) The fair value of the convertible note receivable from Viking was determined using a probability weighted option pricing model using a lattice methodology. The fair value is subjective and is affected by certain significant input to the valuation model such as the estimated volatility of the common stock, which was estimated to be 75% at June 30, 2017. Changes in these assumptions may materially affect the fair value estimate.
- (3) Investment in warrants, which the Company received as a result of Viking's partial repayment of the Viking note receivable and the Company's purchase of Viking common stock and warrants in April 2016, are classified as level 1 as the fair value is determined using quoted market prices in active markets for the same securities. The change of the fair value is recorded in the other income or expenses in the Company's condensed consolidated statement of operations.
- (4) The fair value of the liabilities for CyDex contingent liabilities were determined based on the income approach. To the extent the estimated future income may vary significantly given the long-term nature of the estimate, the Company utilizes a Monte Carlo model. The fair value is subjective and is affected by changes in inputs to the valuation model including management's estimates of timing and probability of achievement of certain revenue thresholds and developmental and regulatory milestones which may be achieved and affect amounts owed to former license holders. Changes in these assumptions can materially affect the fair value estimate.
- (5) The liability for CVRs for Metabasis are determined using quoted prices in a market that is not active for the underlying CVR.
- (6) The liability for amounts owed to former licensees are determined using quoted market prices in active markets for the underlying investment received from a partner, a portion of which is owed to former licensees.

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

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

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There was no significant change in estimated fair value of the Viking note receivable and contingent consideration during the six months ended June 30, 2017.

### *Other Fair Value Measurements*

#### *2019 Convertible Senior Notes*

In August 2014, the Company issued \$245.0 million aggregate principal amount of its 2019 Convertible Senior Notes. The Company uses a quoted rate in a market that is not active, which is classified as a Level 2 input, to estimate the current fair value of its 2019 Convertible Senior Notes. The estimated fair value of the 2019 Senior Convertible Notes was \$405.5 million as of June 30, 2017. The carrying value of the notes does not reflect the market rate. See Note 3 *Convertible Senior Notes* for additional information.

#### *Viking*

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

### 3. Convertible Senior Notes

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

#### *0.75% Convertible Senior Notes Due 2019*

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

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

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

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

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

As of June 30, 2017, the Company's last reported sale price has exceeded the 130% threshold described above and accordingly the Convertible Notes have been classified as a current liability as of June 30, 2017. As a result, the related unamortized discount of \$24.3 million was classified as temporary equity component of currently redeemable convertible notes on the Company's Condensed Consolidated Balance Sheet. The determination of whether or not the Convertible Notes are convertible as described above is made each quarter until maturity, conversion or repurchase. It is possible that the Convertible Notes may not be convertible in future periods, in which case the Convertible Notes would be classified as long-term debt, unless one of the other conversion events described above were to occur.

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

The 2019 Convertible Senior Notes will have a dilutive effect to the extent the average market price per share of the Company's common stock for a given reporting period exceeds the conversion price of \$75.05 per share. As of June 30, 2017, the "if-converted value" exceeded the principal amount of the 2019 Convertible Senior Notes by \$151.3 million.

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

|                                                                 | June 30, 2017     | December 31, 2016 |
|-----------------------------------------------------------------|-------------------|-------------------|
| <i>2019 Convertible Senior Notes</i>                            |                   |                   |
| Principal amount outstanding                                    | \$ 245,000        | \$ 245,000        |
| Unamortized discount (including unamortized debt issuance cost) | (26,370)          | (32,090)          |
| <b>Total current portion of notes payable</b>                   | <b>\$ 218,630</b> | <b>\$ 212,910</b> |

### 4. Income Tax

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The Company's effective tax rate may vary from the U.S. federal statutory tax rate due to the change in the mix of earnings in various state jurisdictions with different statutory rates, benefits related to tax credits, and the tax impact of non-deductible expenses, stock award activities and other permanent differences between income before income taxes and taxable income. The effective tax rate for the three and six months ended June 30, 2017 was 27% and 23%. The variance from the U.S. federal statutory tax rate of 35% was primarily attributable to tax deductions related to stock award activities which were recorded as discrete items in the quarter. For the three and six months ended June 30, 2016, the variance from the U.S. federal statutory rate of 35% was primarily as a result of significant permanent book-to-tax differences and state taxes. The permanent differences include non-taxable contingent consideration income (expense) recorded related to the change in market value of contingent liabilities.

## 5. Stockholders' Equity

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

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

|                                 | Stock Options |                                 | Restricted Stock Awards |                                        |
|---------------------------------|---------------|---------------------------------|-------------------------|----------------------------------------|
|                                 | Shares        | Weighted-Average Exercise Price | Shares                  | Weighted-Average Grant Date Fair Value |
| Balance as of December 31, 2016 | 1,754,275     | \$ 42.12                        | 308,700                 | \$ 86.61                               |
| Granted                         | 198,101       | 101.93                          | 68,151                  | 101.64                                 |
| Options exercised/RSSUs vested  | (80,872)      | 29.11                           | (100,476)               | 81.15                                  |
| Forfeited                       | —             | —                               | (300)                   | 97.92                                  |
| Balance as of June 30, 2017     | 1,871,504     | \$ 49.02                        | 276,075                 | \$ 92.30                               |

As of June 30, 2017, outstanding options to purchase 1.4 million shares were exercisable with a weighted average exercise price per share of \$35.12.

### Employee Stock Purchase Plan

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

## 6. Litigation

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

### Securities Litigation

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

### Class Action Lawsuit

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

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

*Caution:* This discussion and analysis may contain predictions, estimates and other forward-looking statements that involve a number of risks and uncertainties, including those discussed in Part II, Item 1A: "Risk Factors." This outlook represents our current judgment on the future direction of our business. These statements include those related to our Captisol-related revenues, our Promacta,

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

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

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

### Overview

We are a biopharmaceutical company focused on developing and acquiring technologies that help pharmaceutical companies discover and develop medicines. Over our 30 year history, we have employed research technologies such as nuclear receptor assays, high throughput computer screening, formulation science, liver targeted pro-drug technologies and antibody discovery technologies to assist companies in their work toward securing prescription drug approvals. We currently have partnerships and license agreements with over 92 pharmaceutical and biotechnology companies, and over 155 different programs under license with us are currently in various stages of commercialization and development. We have contributed novel research and technologies for approved medicines that treat cancer, osteoporosis, fungal infections and low blood platelets, among others. Our partners have programs currently in clinical development targeting seizure, coma, cancer, diabetes, cardiovascular disease, muscle wasting, liver disease, and kidney disease, among others. We have over 500 issued patents worldwide and over 200 currently pending patent applications.

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

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

### Portfolio Program Updates

#### ***Promacta®/Revolade®***

- Novartis reported second quarter 2017 net sales of Promacta/Revolade (eltrombopag) of \$210 million, a \$52 million or 33% increase over the same period in 2016.
- Novartis reported Revolade (eltrombopag) was approved in Canada for the treatment of pediatric ( $\geq 1$  years to  $< 18$  years) chronic immune thrombocytopenia purpura to increase platelet counts in patients who have had an insufficient response to corticosteroids or immunoglobulins.
- Novartis announced the publication of a study conducted by the National Institutes of Health demonstrating that 58% of patients with treatment-naïve severe aplastic anemia achieved complete response at six months when treated with eltrombopag at the initiation of and concurrent with standard immunosuppressive treatment. The data are published in the latest issue of *The New England Journal of Medicine*.

#### ***Kyprolis® (carfilzomib), an Amgen Product Utilizing Captisol***

- On July 25, 2017, Amgen reported second quarter 2017 net sales of Kyprolis (carfilzomib) of \$211 million, a \$39 million or 23% increase over the same period in 2016. On August 2, 2017, Ono Pharmaceutical Company reported Kyprolis sales in Japan of approximately \$10.8 million for the most recent quarter.

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- On July 14, 2017, Amgen announced the submission of a supplemental New Drug Application to the FDA and a variation to the marketing application to the EMA to include overall survival data from the Phase 3 head-to-head ENDEAVOR trial in the product information for Kyprolis (carfilzomib).
- On July 12, 2017, Amgen announced positive results from the final analysis of the Phase 3 ASPIRE trial, showing the study met the key secondary endpoint of overall survival, demonstrating that Kyprolis (carfilzomib), lenalidomide and dexamethasone (KRd) reduced the risk of death by 21% over lenalidomide and dexamethasone alone.
- On June 4, 2017, a Phase 1b study involving daratumumab in combination with KRd in patients with newly diagnosed multiple myeloma was highlighted in an Oral Abstract Session at the 2017 ASCO Annual Meeting.

### *Additional Pipeline and Partner Developments*

- Spectrum Pharmaceuticals reported second quarter 2017 net sales of EVOMELA of \$10 million.
- Melinta Therapeutics announced that the FDA approved both IV and oral Baxdela™ (delafloxacin) for the treatment of adults with acute bacterial skin and skin structure infections (ABSSSI) caused by susceptible bacteria. As a result of the approval, Ligand earned a \$1.5 million milestone payment and will earn a 2.5% royalty on Baxdela IV sales. Following approval, Melinta Therapeutics entered into a \$90 million loan and securities financing agreement with Oberland Capital Management, LLC to fund commercialization activities and indication expansion of Baxdela.
- CorMatrix sold the rights to its commercial pericardial repair and CanGaroo® Envelope extracellular matrix (ECM) products to Aziyo Biologics. The transaction included a \$10 million payment to Ligand to buy-down the royalty rate and also provided Ligand with an additional \$10 million of sales-based milestones tied to the commercial success of the two products.
- Retrophin announced that the United States Patent and Trademark Office and the European Patent Office each issued patents covering sparsentan for the treatment of focal segmental glomerulosclerosis.
- Sage Therapeutics announced that *The Lancet* published results from a Phase 2, double-blind, randomized and placebo-controlled study of brexanolone in women with severe postpartum depression.
- Aldeyra announced the last patient had completed dosing in their multicenter, double-blind, randomized Phase 2b clinical trial of ADX-102 in allergic conjunctivitis.
- Aldeyra announced that it enrolled the first patient into a Phase 2a clinical trial of topical ocular ADX-102 for the treatment of Dry Eye Disease.
- Novartis announced that it had exercised an option to in-license ECF843 (Lubricin) for ophthalmic indications from Lubris Biopharma. Ligand acquired economic rights to the Lubricin program from Selexis, SA in 2015.
- Merrimack announced that it had enrolled the last patient in the ongoing CARRIE study, a Phase 2, double-blind, placebo-controlled, randomized trial evaluating MM-141 (istiratumab) in combination with standard of care in previously untreated patients with metastatic pancreatic cancer.
- Viking Therapeutics announced enrollment completion in the ongoing Phase 2 clinical trial of VK5211 in patients who recently suffered a hip fracture.
- Viking Therapeutics announced positive topline results from a preclinical study of VK2809 in an *in vivo* model of non-alcoholic steatohepatitis (NASH).
- CStone Pharmaceuticals announced that it received Clinical Trial Application approval from the China Food and Drug Administration to conduct clinical trials in China with CS1001, an OmniAb-derived full-length anti-PDL1 monoclonal antibody.
- Marinus Pharmaceuticals announced that it had initiated a Phase 2 double-blind, placebo-controlled clinical trial to evaluate the safety, efficacy and pharmacokinetics of ganaxolone IV in women diagnosed with severe postpartum depression.
- Marinus Pharmaceuticals presented Phase 1 clinical data showing the safety and tolerability of ganaxolone IV at the 6<sup>th</sup> London-Innsbruck Colloquium on Status Epilepticus and Acute Seizures.
- Aptevo Therapeutics announced that aspects of its ADAPTIR™ protein therapeutic platform, including APVO436, an OmniAb-discovered antibody, were showcased at the Americas Antibody Congress 2017 and at the 2017 Next Generation Protein Therapeutics Summit.
- XTL Biopharmaceuticals announced the receipt of additional preclinical data regarding the role of hCDR1 as a potential treatment for Sjögren's syndrome from Prof. Edna Mozes of The Weizmann Institute of Science and the developer of hCDR1.
- Opthea Limited announced positive results from its Phase 1/2a clinical trial of OPT-302 for wet age-related macular degeneration (wet AMD). Opthea is planning to initiate a Phase 2b trial in wet AMD and a Phase 2a trial in diabetic macular edema in the second half of 2017.

### **New Licensing Deals**

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- Ligand announced worldwide license agreements with Surface Oncology and xCella Biosciences to use the OmniAb platform technologies to discover fully human antibodies. Ligand is eligible to receive annual access payments, milestone payments and royalties on future net sales of any antibodies discovered under these licenses.
- Ligand announced a commercial license and supply agreement with Marinus Pharmaceuticals, granting rights to use Captisol in the formulation of IV ganaxolone. Ligand is eligible to receive milestone payments, royalties and revenue from Captisol material sales related to IV ganaxolone.
- Ligand announced a commercial license and supply agreement with Amgen granting rights to use Captisol in the formulation of AMG 330, an anti-CD33 x anti-CD3 (BiTE®) bispecific antibody construct. Ligand is eligible to receive milestone payments, royalties and revenue from Captisol material sales related to AMG 330.
- Ligand announced a commercial license and supply agreement with Interventional AnalgesiX granting rights to use Captisol in the formulation of an undisclosed compound. Ligand is eligible to receive milestone payments, tiered royalties of 5%-10% and revenue from Captisol material sales.

## Internal Glucagon Receptor Antagonist (GRA) Program

- Ligand continues to expect to report topline data from the Phase 2 clinical trial with its novel, small-molecule GRA program (LGD-6972) for the treatment of type 2 diabetes mellitus in September 2017.

## Results of Operations

### Revenue

| (Dollars in thousands)                     | Q2 2017   | Q2 2016   | Change   | % Change | YTD 2017  | YTD 2016  | Change    | % Change |
|--------------------------------------------|-----------|-----------|----------|----------|-----------|-----------|-----------|----------|
| Royalties                                  | \$ 14,211 | \$ 9,754  | \$ 4,457 | 46 %     | \$ 38,441 | \$ 24,144 | \$ 14,297 | 59 %     |
| Material sales                             | 5,550     | 3,886     | 1,664    | 43 %     | 6,672     | 9,227     | (2,555)   | (28)%    |
| License fees, milestones and other revenue | 8,234     | 5,881     | 2,353    | 40 %     | 12,151    | 15,798    | (3,647)   | (23)%    |
| Total revenue                              | \$ 27,995 | \$ 19,521 | \$ 8,474 | 43 %     | \$ 57,264 | \$ 49,169 | \$ 8,095  | 16 %     |

### Q2 2017 vs Q2 2016

Total revenue increased \$8.5 million, or 43%, to \$28.0 million in Q2 2017 compared to \$19.5 million in Q2 2016. Royalty revenue increased \$4.5 million, or 46%, primarily due to an increase in Promacta, Kyprolis and Evomela royalties. Material sales increased due to timing of customer purchases of Captisol for use in clinical trials and in commercialized products. The increase in license fees, milestones and other revenue is due primarily to the timing of recognition for individual milestones.

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### YTD 2017 vs YTD 2016

Total revenue increased \$8.1 million, or 16%, to \$57.3 million in the first half of 2017 compared to \$49.2 million in the first half of 2016. Royalty revenue increased \$14.3 million, or 59%, primarily due to an increase in Promacta, Kyprolis and Evomela royalties. Material sales decreased due to timing of customer purchases of Captisol for use in clinical trials and in commercialized products. License fees, milestones and other revenue decreased primarily due to the receipt of a \$6.0 million FDA approval milestone in the first quarter of 2016.

### Operating Costs and Expenses

| (Dollars in thousands)             | Q2 2017          | % of Revenue | Q2 2016          | % of Revenue | YTD 2017         | % of Revenue | YTD 2016         | % of Revenue |
|------------------------------------|------------------|--------------|------------------|--------------|------------------|--------------|------------------|--------------|
| Costs of sales                     | \$ 903           |              | \$ 720           |              | \$ 1,244         |              | \$ 1,675         |              |
| Amortization of intangibles        | 2,706            |              | 2,681            |              | 5,420            |              | 5,206            |              |
| Research and development           | 4,822            |              | 4,914            |              | 13,495           |              | 8,915            |              |
| General and administrative         | 6,549            |              | 7,237            |              | 13,872           |              | 14,309           |              |
| Total operating costs and expenses | <u>\$ 14,980</u> | 54%          | <u>\$ 15,552</u> | 80%          | <u>\$ 34,031</u> | 59%          | <u>\$ 30,105</u> | 61%          |

### Q2 2017 vs. Q2 2016

Total operating costs and expenses as a percentage of total revenue decreased in Q2 2017 compared to Q2 2016. Total revenue for Q2 2017 increased \$8.5 million or 43% and total operating costs and expenses for that quarter decreased \$0.6 million. Research and development expenses decreased due to timing of internal development costs offset by an increase in headcount related expenses including stock-based compensation. General and administrative expenses decreased due to lower lease related costs and lower legal expenses.

### YTD 2017 vs. YTD 2016

Total operating costs and expenses as a percentage of total revenue decreased slightly in the first half of 2017 compared to the same period in 2016. Total revenue for the first half of 2017 increased \$8.1 million or 16% and total operating costs and expenses for that period increased \$3.9 million. Research and development expenses increased due to timing of internal development costs as well as an increase in headcount related expenses including stock based compensation. General and administrative expenses decreased due to lower lease related costs and lower legal expenses.

### Other Income (Expense)

| (Dollars in thousands)             | Q2 2017           | Q2 2016            | Change          | YTD 2017          | YTD 2016           | Change           |
|------------------------------------|-------------------|--------------------|-----------------|-------------------|--------------------|------------------|
| Interest expense, net              | \$ (2,860)        | \$ (3,051)         | \$ 191          | \$ (5,803)        | \$ (6,055)         | \$ 252           |
| Increase in contingent liabilities | (825)             | (332)              | (493)           | (966)             | (1,638)            | 672              |
| Loss from Viking                   | (1,248)           | (11,138)           | 9,890           | (2,330)           | (12,743)           | 10,413           |
| Other income, net                  | 218               | 501                | (283)           | 359               | 892                | (533)            |
| Total other expense, net           | <u>\$ (4,715)</u> | <u>\$ (14,020)</u> | <u>\$ 9,305</u> | <u>\$ (8,740)</u> | <u>\$ (19,544)</u> | <u>\$ 10,804</u> |

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

### Income Tax Expense

| (Dollars in thousands)     | Q2 2017  | Q2 2016     | Change    | YTD 2017  | YTD 2016 | Change    |
|----------------------------|----------|-------------|-----------|-----------|----------|-----------|
| Income before income taxes | \$ 8,300 | \$ (10,051) | \$ 18,351 | \$ 14,493 | \$ (480) | \$ 14,973 |
| Income tax expense         | (2,242)  | 3,881       | (6,123)   | (3,356)   | 187      | (3,543)   |
| Income from operations     | \$ 6,058 | \$ (6,170)  | \$ 12,228 | 11,137    | (293)    | 11,430    |
| Effective tax rate         | 27.0%    | 38.6%       |           | 23.2%     | 39.0%    |           |

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

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

Our effective tax rate for the second quarter of fiscal 2017 was approximately 27%. Excluding discrete tax items primarily related to stock-based compensation tax benefits resulting from the adoption of ASU 2016-09, our effective tax rate for the period was 37% and did not differ significantly from the federal statutory rate of 35%.

### Liquidity and Capital Resources

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

We had net income of \$6.1 million for the quarter ended June 30, 2017. As of June 30, 2017, our cash, cash equivalents and marketable securities totaled \$172.6 million, and we had a working capital deficit of \$28.7 million. We believe that our currently available funds, cash generated from operations as well as existing sources of and access to financing will be sufficient to fund our anticipated operating, capital requirements and debt service requirement. We expect to build cash in future months as we continue to generate significant cash flow from royalty, license and milestone revenue and Captisol material sales primarily driven by continued increases in Promacta and Kyprolis sales, recent product approvals and regulatory developments, as well as revenue from anticipated new licenses and milestones. In addition, we anticipate that our liquidity needs can be met through other sources, including sales of marketable securities, borrowings through commercial paper and/or syndicated credit facilities and access to other domestic and foreign debt and equity markets.

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

### Investments

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

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### ***Borrowings and Other Liabilities***

#### *2019 Convertible Senior Notes*

We have convertible debt outstanding as of June 30, 2017 related to our 2019 Convertible Senior Notes. In August 2014, we issued \$245.0 million aggregate principal amount of convertible senior unsecured notes. The 2019 Convertible Senior Notes are convertible into common stock upon satisfaction of certain conditions. Interest of 0.75% per year is payable semi-annually on August 15th and February 15th through the maturity of the notes in August 2019.

#### ***Repurchases of Common Stock***

In September 2015, our Board of Directors authorized us to repurchase up to \$200.0 million of our common stock from time to time over a period of up to three years. We did not repurchase any shares of common stock during Q2 2017. As of June 30, 2017, \$195.6 million remains available for repurchase under the authorized program.

### ***Contingent Liabilities***

#### *Metabasis*

In connection with the acquisition of Metabasis in January 2010, we entered into four CVR agreements with Metabasis shareholders. The CVRs entitle the holders to cash payments upon the sale or licensing of certain assets and upon the achievement of specified milestones. The fair value of the liability at June 30, 2017 was \$2.4 million, and as of December 31, 2016 was \$1.4 million.

### ***Leases and Off-Balance Sheet Arrangements***

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

### ***Cash Flows***

| (Dollars in thousands)                               | YTD 2017  | YTD 2016    |
|------------------------------------------------------|-----------|-------------|
| Net cash provided by (used in):                      |           |             |
| Operating activities                                 | \$ 34,608 | \$ 23,485   |
| Investing activities                                 | 8,535     | (61,543)    |
| Financing activities                                 | (1,672)   | 1,980       |
| Net increase (decrease) in cash and cash equivalents | \$ 41,471 | \$ (36,078) |

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

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

### ***Critical Accounting Policies***

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

**ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

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

***Investment Portfolio Risk***

At June 30, 2017, our investment portfolio included investments in available-for-sale equity securities of \$112.4 million. These securities are subject to market risk and may decline in value based on market conditions. Due to the short-term duration of our investment portfolio and low risk profile of our investments, a 10% increase in interest rates would not have material effect on the fair value of our portfolio.

***Equity Price Risk***

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

***Foreign currency risk***

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

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

***Interest rate risk***

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

**ITEM 4. CONTROLS AND PROCEDURES**

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

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

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

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

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

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

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

**PART II.        OTHER  
                 INFORMATION**

**ITEM 1.   Legal Proceedings**

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

*Securities Litigation*

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

*Class Action Lawsuit*

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

**ITEM 1A. RISK  
FACTORS**

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

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

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

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

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

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

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

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

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

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

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

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

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

Any conflicts with the patent rights of others could significantly reduce the coverage of our patents or limit our ability to obtain meaningful patent protection. For example, our European patent related to Agglomerated forms of Captisol was limited during an opposition proceeding, and the rejection of our European patent application related to High Purity Captisol is currently being appealed. In addition, any determination that our patent rights are invalid may result in early termination of our agreements with our license partners and could adversely affect our ability to enter into new license agreements. We also rely on unpatented trade secrets and know-how to protect and maintain our competitive position. We require our employees, consultants, licensees and others to sign confidentiality agreements when they begin their relationship with us. These agreements may be breached, and we may not have adequate remedies for any breach. In addition, our competitors may independently discover our trade secrets.

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

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

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

Our existing collaborations may not continue or be successful, and we may be unable to enter into future collaborative arrangements to develop and commercialize our unpartnered assets. Generally, our current collaborative partners also have the right to terminate their collaborations at will or under specified circumstances. If any of our collaborative partners breach or terminate their agreements with us or otherwise fail to conduct their collaborative activities successfully (for example, by not making required payments when due, or at all), our product development under these agreements will be delayed or terminated. Disputes or litigation may also arise with our collaborators (with us and/or with one or more third parties), including those over

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ownership rights to intellectual property, know-how or technologies developed with our collaborators. For example, we are asserting our rights to receive payment against one of our collaborative partners which could harm our relationship with such partner. Such disputes or litigation could adversely affect our rights to one or more of our product candidates and could delay, interrupt or terminate the collaborative research, development and commercialization of certain potential products, create uncertainty as to ownership rights of intellectual property, or could result in litigation or arbitration. In addition, a significant downturn or deterioration in the business or financial condition of our collaborators or partners could result in a loss of expected revenue and our expected returns on investment. The occurrence of any of these problems could be time-consuming and expensive and could adversely affect our business.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

owed on the net taxable income that we earn in the event that we attain profitability. Any such limitations on the ability to use our NOLs and other tax assets could adversely impact our business, financial condition and operating results.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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**ITEM 5. Other Information**

**ITEM 6. EXHIBITS**

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

**SIGNATURES**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Date: August 8, 2017

By: /s/ Matthew Korenberg

Matthew Korenberg

Vice President, Finance and Chief Financial Officer

Duly Authorized Officer and Principal Financial Officer

## EXHIBIT INDEX

| <b><u>Exhibit Number</u></b> | <b><u>Description</u></b>                                                                                                                                                                |
|------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 10.1                         | Royalty Agreement, dated May 31, 2017, by and between Ligand Pharmaceuticals Incorporated and Aziyo Med, LLC                                                                             |
| 10.2                         | Amended and Restated Interest Purchase Agreement, dated May 31, 2017, by and between Ligand Pharmaceuticals Incorporated and Cormatrix Cardiovascular, Inc.                              |
| 31.1                         | Certification by Principal Executive Officer, Pursuant to Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.                           |
| 31.2                         | Certification by Principal Financial Officer, Pursuant to Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.                           |
| 32.1                         | Certifications by Principal Executive Officer and Principal Financial Officer, Pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. |
| 101.INS                      | XBRL Instance Document                                                                                                                                                                   |
| 101.SCH                      | XBRL Taxonomy Extension Schema Document                                                                                                                                                  |
| 101.CAL                      | XBRL Taxonomy Extension Calculation Linkbase Document                                                                                                                                    |
| 101.DEF                      | XBRL Taxonomy Extension Definition Linkbase Document                                                                                                                                     |
| 101.LAB                      | XBRL Taxonomy Extension Label Linkbase Document                                                                                                                                          |
| 101.PRE                      | XBRL Taxonomy Extension Presentation Linkbase Document                                                                                                                                   |

**EXECUTION VERSION**

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ROYALTY AGREEMENT

dated as of

May 31, 2017

by and between

AZIYO MED, LLC

and

LIGAND PHARMACEUTICALS INCORPORATED

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## ROYALTY AGREEMENT

This ROYALTY AGREEMENT (as amended, supplemented or otherwise modified from time to time, this “*Agreement*”) is dated as of May 31, 2017, by and between AZIYO MED, LLC, a Delaware limited liability company (the “*Company*”); and LIGAND PHARMACEUTICALS INCORPORATED, a Delaware corporation (“*Ligand*”).

### RECITALS

WHEREAS, the Company wishes (i) to acquire from CorMatrix Cardiovascular, Inc. (the “*Seller*”) all of its assets related or applicable to, or used in connection with, its business of developing, manufacturing and commercializing the Products described herein (the “*Sale Transaction*”), and (ii) in connection with such Sale Transaction, to obtain the consent of Ligand to the Sale Transaction and enter into an agreement with Ligand setting forth the obligations of the Company to Ligand with respect to such acquired interests and the sale of the Products; and

WHEREAS, as a condition precedent to Ligand’s entering into this Agreement, Aziyo Biologics, Inc., a Delaware corporation and the parent of the Company (the “*Guarantor*”), has agreed to enter into a Guaranty Agreement guarantying the obligations of the Company under Section 2.01, in substantially the form attached hereto as Exhibit A;

NOW, THEREFORE, in consideration of the mutual covenants, agreements and representations and warranties set forth herein, the parties hereto agree as follows:

### **ARTICLE I - Definitions**

SECTION 1.01. **Defined Terms.** As used in this Agreement, the following terms shall have the meanings specified below:

“*Affiliate*” shall mean any Person that controls, is controlled by, or is under common control with another Person. For purposes of this definition, “control” shall mean direct or indirect ownership of a majority of the stock or other equity interests having the right to vote for the election of directors or other members of the governing body of the entity.

“*Applicable Royalty Percentage*” shall mean (i) prior to the first \$5,000,000 payment of the Buydown Payment, twenty percent (20.0%) or (ii) following such payment, five percent (5.0%), *provided* that if the second \$5,000,000 installment of the Buydown Payment is not made on or before December 15, 2017, then the Applicable Royalty Percentage shall be twenty percent (20.0%) from December 15, 2017, until such second payment is made.

“*Asset Purchase Agreement*” shall mean that certain Asset Purchase Agreement, dated as of May 31, 2017, by and among the Seller, the Company and the Guarantor setting forth the terms and conditions of the Sale Transaction.

“*Audit Costs*” shall mean, with respect to any audit of the books and records of the Company or its Subsidiaries with respect to amounts payable or paid under this Agreement, the reasonable out-of-pocket cost of such audit, including all fees, costs and expenses incurred

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in connection therewith.

**"Bankruptcy Event"** shall mean the occurrence of any proceeding being instituted by or against the Company seeking to adjudicate it bankrupt or insolvent, or seeking liquidation, winding up, reorganization, arrangement, adjustment, protection, relief or composition of it or its debts under any law relating to bankruptcy, insolvency or reorganization or relief of debtors, or seeking the entry of an order for relief or the appointment of a receiver, trustee or other similar official for it or any substantial part of its property, or the Company taking any action to authorize any of the actions set forth above. Notwithstanding the foregoing, if such proceeding is instituted against the Company, no Bankruptcy Event shall have occurred unless such proceeding remains undismissed, undischarged or unbonded for a period of sixty (60) days.

**"Books"** shall mean all of the books and records of a Person, including ledgers, federal and state tax returns, records regarding the Person's assets or liabilities, the General Collateral, business operations or financial condition, and all computer programs or storage or any equipment containing such information.

**"Business Day"** shall mean any day other than a Saturday, a Sunday, any day which is a legal holiday under the laws of the State of New York, or any day on which banking institutions located in the State of New York are required by law or other governmental action to close.

**"Buydown Payment"** shall have the meaning set forth in Section 2.01(a).

**"CanGaroo Product Change of Control"** shall mean the first to occur of any Product Change of Control in respect of the CanGaroo Products.

**"Collateral"** means the Royalty Related Collateral and the General Collateral.

**"Company"** shall have the meaning set forth in the preamble.

**"Company Change of Control"** shall mean, with respect to the Company, the first to occur of any of the following transactions:

(a) the acquisition by any Person or group (within the meaning of Sections 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934, as amended) of beneficial ownership of any capital stock of the Company, if after such acquisition, such Person or group would be the "beneficial owner" (as defined in Rule 13d-3 under the Securities Exchange Act of 1934, as amended, but assuming that any convertible securities owned by such Person or group or any controlled affiliates thereof are immediately exercisable), directly or indirectly, of securities of the Company representing a majority of the voting power of the Company;

(b) a merger or consolidation of the Company, with any other Person, other than a merger or consolidation which would result in the Company's voting securities outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) a majority of voting power of the Company immediately after such merger or consolidation; or

(c) the bona fide sale, lease, transfer, exclusive license or other disposition, in a single transaction or series of related transactions, by the Company or any of its Subsidiaries of all or substantially all the assets of the Company and its Subsidiaries, taken as a whole.

***“Confidential Information”*** shall mean, as it relates to the Company and its Affiliates and any of the Products, the Intellectual Property related to any of the Products, confidential business information, financial data and other like information (including ideas, research and development, know-how, formulas, schematics, compositions, technical data, specifications, customer and supplier lists, pricing and cost information, and business and marketing plans and proposals), inventory, ideas, algorithms, processes, computer software programs or applications (in both source code and object code form), client lists and tangible or intangible proprietary information or material, or such other information that either Party identifies to the other as confidential or the nature of which or the circumstances of the disclosure of which would reasonably indicate that such information is confidential or proprietary. Notwithstanding the foregoing definition, Confidential Information shall not include information that (a) is already in the public domain at the time the information is disclosed, (b) thereafter becomes lawfully obtainable from other sources who, to the knowledge of the recipient, have no obligation of confidentiality, (c) can be shown to have been independently developed by the recipient or its representatives without reference to any Confidential Information of the other Party or (d) is required to be disclosed under laws, rules and regulations of any Governmental Authority applicable to the Company or its Affiliates or Ligand or its Affiliates, as the case may be, or pursuant to the rules and regulations of any securities exchange or trading system or pursuant to any other laws, rules or regulations of any Governmental Authority having jurisdiction over the Company and its Affiliates or Ligand and its Affiliates.

***“Depository Bank”*** shall mean Silicon Valley Bank.

***“Effective Date”*** shall mean the date of the closing of the Sale Transaction.

***“Excluded Assets”*** shall mean (i) any deposit accounts exclusively used by the Company for payroll, payroll taxes and other employee wage and benefit payments to or for the benefit of the Company’s employees, (ii) the Permitted CD Collateral Accounts (as defined in the MidCap Credit Facility), (iii) any fee interest in owned or leased real property (including fixtures related thereto), (iv) any “intent to use” trademark application for which a statement of use has not been filed with the United States Patent and Trademark Office, (v) any motor vehicles or other assets subject to certificates of title, (vi) any equity interests of subsidiaries that are not wholly-owned subsidiaries to the extent a security interest on such equity interests is prohibited by the organizational or joint venture documents relating to such equity interests, (vii) any voting equity interests of foreign subsidiaries in excess of 65% of the outstanding voting equity interests of such subsidiaries and (viii) any assets over which the granting of a security interest in such assets would be prohibited by applicable law or contract or that would require governmental consent, approval, license or authorization, in each case after giving effect to Section 9-406, 9-407, 9-408 or 9-409 of the Uniform Commercial Code in the applicable jurisdiction or any other applicable law or principle of equity.

***“Excluded Costs”*** shall mean the following items to the extent permitted by generally accepted accounting principles: (i) value added or any other similar transaction taxes accrued on sales invoices, (ii) sales discounts and all kinds of rebates, (iii) any orders or parts thereof which are subsequently returned to the Company (or an Affiliate, agent or sublicensee thereof, as applicable) and refunded to the customer or wholesaler, (iv) charges for late payment collected from customers, registration charges and other service charges and (v) applicable shipping charges.

***“Existing Liens”*** shall mean (i) any liens or other security interests upon any assets of the Company for the benefit of the lenders and other secured parties under the MidCap Credit Facility, and (ii) the rights of the Seller and Cook Biotech Incorporation, an Indiana corporation, under the respective cross license agreements entered into by the Company and each of them in connection with the Sale Transaction, as they may be amended or modified from time to time.

***“Fiscal Quarter”*** shall mean each three (3) month period commencing January 1, April 1, July 1 or October 1, *provided* however that (a) the first Fiscal Quarter after the Effective Date shall commence on the day after the Effective Date and continue to the end of the first full Fiscal Quarter thereafter and (b) the last Fiscal Quarter of the Term shall end upon the expiration or termination of this Agreement.

***“Fiscal Year”*** shall mean the calendar year.

***“General Collateral”*** shall have the meaning set forth in Section 8.02.

***“Governmental Authority”*** shall mean any government, court, regulatory or administrative agency or commission, or other governmental authority, agency or instrumentality, whether foreign, federal, state or local (domestic or foreign).

***“Guarantor”*** shall have the meaning set forth in the Recitals.

***“Intellectual Property”*** shall mean all proprietary information; technical data; laboratory notebooks; clinical data; priority rights; trade secrets; know-how; confidential information; inventions (whether patentable or unpatentable and whether or not reduced to practice or claimed in a pending patent application); Patents; registered or unregistered trademarks, trade names, service marks, including all goodwill associated therewith; registered and unregistered copyrights and all applications thereof; in each case that are owned, controlled by, generated by, issued to, licensed to, licensed by or hereafter acquired by or licensed by the Company or any of its Subsidiaries.

***“Intercreditor Agreement”*** shall mean that certain Intercreditor Agreement, by and among the MidCap Credit Facility Agent, Ligand and the Company, dated as of May 31, 2017, as it may be amended, supplemented or otherwise modified from time to time.

***“Knowledge of the Company”*** shall mean the current actual knowledge, information or belief held by Lode Debrabandere, Kevin Rakin and Michelle LeRoux Williams after reasonable inquiry by such person into the relevant subject matter.

**“Ligand”** shall have the meaning set forth in the preamble.

**“Ligand Account”** shall mean the following account (or such other account as Ligand may designate in writing (such designation to be made at least two (2) Business Days prior to any payment owing to Ligand under this Agreement)):

Ligand Pharmaceuticals, Inc.  
Bank of America Merrill Lynch  
Account No. 1453127240  
Routing No. 026009593

**“Ligand Purchase Agreement”** shall mean the Interest Purchase Agreement, dated as of May 3, 2016, between the Seller and Ligand.

**“Losses”** shall mean collectively, any and all claims, damages, losses, judgments, awards, penalties, liabilities, costs and expenses (including reasonable attorneys' fees and expenses) incurred in connection with defending any action, suit or proceeding.

**“Main Account”** shall mean the deposit account maintained by the Company at the Depository Bank with account number 3302165408.

**“Material Adverse Change”** shall mean, with respect to the Company and its Subsidiaries, any event, change, circumstance, occurrence, effect or state of facts that has caused or is reasonably likely to cause a material adverse change in the business, operations, assets or financial condition of the Company and its Subsidiaries, taken as a whole.

**“Material Adverse Effect”** shall mean (a) the effect of a Material Adverse Change, (b) a material adverse effect on the validity or enforceability of this Agreement, (c) the inability or failure of the Company to make the payments provided in this Agreement, (d) a material adverse effect on the ability of the Company to perform any of its other material obligations under this Agreement or (e) any material adverse effect on the Products or the ability of the Company and its Subsidiaries to distribute, market and/or sell the Products.

**“MidCap Credit Facility”** shall mean that certain Credit and Security Agreement (Revolving Loan) and that certain Credit and Security Agreement (Term Loan), as each may be amended, amended and restated, supplemented or otherwise modified as of the date hereof, and as each may be further amended, amended and restated, supplemented or otherwise modified from time to time as permitted by the Intercreditor Agreement, by and among the Company and the Guarantor, as Borrowers (as defined therein), MidCap Credit Facility Agent and the Lenders (as defined therein) party thereto.

**“MidCap Credit Facility Agent”** shall mean MidCap Financial Trust, a Delaware statutory trust, in its capacity as administrative agent under the MidCap Credit Facility or any successor thereto in such capacity.

**“Minimum Annual Royalty”** shall mean with respect to (a) calendar year 2017, zero, (b) calendar year 2018, \$1,250,000, (c) calendar year 2019, \$2,200,000, and (d) calendar year 2020 and each calendar year thereafter during the Term, \$2,750,000; *provided, however,*

that for the final Fiscal Year of the Term, the “Minimum Annual Royalty” shall mean the applicable Minimum Annual Royalty *multiplied* by the fraction of such Fiscal Year that is within the Term; *provided, further*, that if any Product, or any product enumerated in the definition of any Product (or in any Schedule referenced in any such definition), is divested as a result of a Product Change of Control or if any Product is withdrawn from the market for regulatory or safety reasons, the Minimum Annual Royalty shall be reduced by an amount that is the product of (a) the applicable Minimum Annual Royalty for the Fiscal Year in which such Product Change of Control or withdrawal takes place and for each Fiscal Year thereafter *times* (b) the fraction representing (x) the total sales of such Product or enumerated product subject to such Product Change of Control or withdrawal in the twelve (12) calendar months immediately preceding such Product Change of Control or withdrawal over (y) the aggregate total sales of all Products in the twelve (12) calendar months immediately preceding such Product Change of Control or withdrawal. For the avoidance of doubt, the Minimum Annual Royalty shall be adjusted according to the foregoing proviso immediately as of any Product Change of Control or withdrawal.

“**Minimum Quarterly Payment**” shall mean, with respect to any Fiscal Quarter during the Term, an amount equal to the difference between (i) the applicable Minimum Quarterly Royalty and (ii) the aggregate Monthly Royalties paid to Ligand with respect to such Fiscal Quarter.

“**Minimum Quarterly Royalty**” shall mean the applicable Minimum Annual Royalty divided by four; *provided*, however, that for the final Fiscal Quarter of the Term, the “Minimum Quarterly Royalty” shall mean the applicable Minimum Annual Royalty divided by four *multiplied* by the fraction of such Fiscal Quarter that is within the Term.

“**Minimum Quarterly Royalty Overpayment**” shall have the meaning set forth in Section 2.02(b)(ii).

“**Monthly Report**” shall mean, with respect to the relevant Payment Month of the Company, a report showing (a) the gross revenues of the Products for such Payment Month, (b) the Net Sales Proceeds for such Payment Month, (c) the Excluded Costs for such Payment Month, and (d) a reasonable calculation of the amount to which Ligand is entitled for such Payment Month pursuant to Section 2.02(a) of this Agreement.

“**Monthly Royalty**” shall mean, with respect to each Payment Month, the amount due to Ligand pursuant to Section 2.02(a) for such Payment Month.

“**Net Sales Proceeds**” shall mean the aggregate amount of sales proceeds received by the Company (or an Affiliate, agent or sublicensee thereof, as applicable) and its Subsidiaries for Products in any Payment Month during the Term, less Excluded Costs.

“**Obligations**” shall mean any and all payment obligations of the Company under this Agreement.

“**Pari Passu Collateral**” shall have the meaning set forth in the Intercreditor Agreement.

***“Parties”*** shall mean Ligand, the Company and any other Person from time to time made party to this Agreement, each a ***“Party.”***

***“Patent”*** shall mean all patents, patent rights, patent applications, patent disclosures and invention disclosures issued or filed, together with all reissues, divisions, continuations, revisions, term extensions, substitutes, supplementary protection certificates, reexaminations, inter-partes reviews, post-grant oppositions or similar post-grant review proceedings, including the inventions claimed in any of the foregoing and any priority rights arising therefrom, that are issued or filed prior to the date hereof or during the remainder of the Term, which are owned by the Company or any Subsidiary.

***“Payment Month”*** shall mean each month-long period commencing on the first day of each calendar month during the Term, *provided* however that (a) the first Payment Month after the Effective Date shall commence on the day after the Effective Date and continue until the end of the first full Payment Month thereafter and (b) the last Payment Month of the Term shall end upon the expiration or termination of this Agreement.

***“Permitted Liens”*** shall mean (i) the Existing Liens, (ii) the security interests granted to Ligand pursuant to Article VIII, and (iii) any liens for taxes or other governmental charges arising by operation of law in the ordinary course of business for sums which are not yet due and payable.

***“Permitted Transaction”*** shall mean any transaction (a) contemplated by the MidCap Credit Facility, as in effect on the Effective Date, or any refinancing facility with respect thereto and (b) during the Term whereby the Company incurs, creates, assumes or permits to exist any indebtedness for borrowed money; *provided* that such transaction (x) does not, except to the extent expressly contemplated by Section 8.06, result in any security interest granted hereunder ceasing to be a valid and perfected security interest and (y) could not reasonably be expected to impair the ability of the Company to comply with the requirements to make the payments set forth in Section 2.01, Section 2.02 or Section 2.03.

***“Person”*** shall mean an individual, corporation, partnership, limited liability company, association, trust or other entity or organization, but not including a government or political subdivision or any agency or instrumentality of such government or political subdivision.

***“Product Change of Control”*** shall mean, with respect to any Product, or any product enumerated in the definition of any Product (or in any Schedule referenced in any such definition), any sale or other transfer by the Company of substantially all of the assets primarily used to commercialize such Product or such enumerated product or of the exclusive right to commercialize such Product or such enumerated product.

***“Products”*** shall mean (a) SIS tissue sheet products that were (i) marketed or sold by the Seller under the trade name CorMatrix Carotid Repair, CorMatrix Vascular Repair, CorMatrix Pericardial Repair & Reconstruction, Tyke or CorMatrix Cardiac Tissue Repair and (ii) described in a Section 510(k) premarket notification cleared by the FDA on or prior to the Closing Date, (b) SIS encasement structures for encapsulation of any cardiac implantable

electronic device (CIED) that were (i) marketed or sold by the Seller under the trade name CanGaroo or CorMatrix CanGaroo and (ii) described in a Section 510(k) premarket notification cleared by the FDA on or prior to the Closing Date (the “**CanGaroo Products**”), and (c) any products substantially similar in design and application to the Products specified in clauses (a) and (b) commercialized after the Closing Date during the Term, including in each case specified in clauses (a) - (c), any modifications and improvements made to the tissue sheet structures or the encasement structures of such Products that are to be commercialized for the applications in the Aziyo Fields of Use, as defined in the Asset Purchase Agreement. For the purposes hereof, the term “Products” shall also mean and include (x) CanGaroo Products for encasement of neurologic devices and other subcutaneous implantable device applications, and (y) CanGaroo Products composed of SIS plus antibiotics. Schedule A sets forth a complete list of all of the Products at the Closing Date.

“**Recharacterization**” shall have the meaning set forth in the recitals to the Intercreditor Agreement.

“**Regulatory Agency**” shall mean a Governmental Authority with responsibility for the approval of the marketing and sale of surgical implants or other regulation of surgical implants.

“**Regulatory Approvals**” shall mean all approvals (including, without limitation, where applicable, pricing and reimbursement approval and schedule classifications), product and/or establishment licenses, registrations or authorizations of any Governmental Authority necessary for the manufacture, use, storage, import, export, transport, offer for sale, or sale of any of the Products.

“**Remedies Event**” shall mean (x) a Bankruptcy Event, (y) a failure by the Company to make a payment pursuant to Section 2.01, Section 2.02 or Section 2.03, *provided* that no such failure shall constitute a Remedies Event unless such failure shall remain uncured for thirty (30) days or (z) an Event of Default (as defined in the MidCap Credit Facility) under the MidCap Credit Facility.

“**Royalty Interests**” shall mean the right to receive on a monthly basis cash in an amount equal to the product of the Applicable Royalty Percentage multiplied by the Net Sales Proceeds during the Term, pursuant to the terms and conditions of this Agreement. For the avoidance of doubt, Royalty Interests shall not constitute accounts or payment intangibles (as each term is defined in the UCC) giving rise to such cash amounts.

“**Royalty Related Collateral**” means (a) any accounts (as defined in Article 9 of the UCC) with respect to the Products and the proceeds of such accounts, (b) the Special Account, (c) any intellectual property acquired by the Company from the Seller and necessary for the production, marketing or sale of the Products, including those set forth on Schedule B hereto and (c) any Equipment and Inventory (as defined in Article 9 of the UCC) used in connection with the production of any Product.

“**Sale Transaction**” shall have the meaning set forth in the Recitals.

“**SEC**” shall mean the U.S. Securities and Exchange Commission.

“**SIS**” shall mean a solid sheet extracellular matrix composition prepared from intestinal tissue.

“**Special Account**” shall mean the deposit account maintained by the Company at the Depository Bank with account number 3302165412.

“**Subsidiary**” shall mean, with respect to the Company, a corporation, partnership, joint venture, limited liability company or other business entity of which a majority of the voting power (other than securities or interests having such power only by reason of the happening of a contingency) are at the time owned beneficially or of record by the Company.

“**Sweep Event**” shall have the meaning set forth in the Intercreditor Agreement.

“**Term**” shall have the meaning set forth in Section 6.01.

“**Third Party**” shall mean any Person other than Ligand and any Affiliate of Ligand or the Company or any Subsidiary of the Company.

“**Transfer**” shall have the meaning set forth in Section 8.06(c).

“**UCC**” shall mean the Uniform Commercial Code as in effect in the State of New York from time to time.

## **ARTICLE II - Payments by the Company;**

SECTION 2.01. **Buydown Payment.** The Company shall make a payment to Ligand in the amount of \$10,000,000 (the “**Buydown Payment**”) in two (2) installments, the first installment in the amount of \$5,000,000 payable within thirty (30) days after the Effective Date but no later than June 30, 2017, and the second installment in the amount of \$5,000,000 payable on or before December 15, 2017, each of which shall be paid by wire transfer of immediately available funds to the Ligand Account.

### **SECTION 2.02. Periodic Royalties.**

(a) Monthly Royalties. The Company shall pay to Ligand, by wire transfer of immediately available funds (i) within thirty (30) days after the end of each Payment Month, an amount equal to the Applicable Royalty Percentage multiplied by the Net Sales Proceeds (if any) received by the Company during such Payment Month, and (ii) on the Closing Date, the monthly royalty amounts due and owing by Seller under the Ligand Purchase Agreement for the Payment Months of March and April 2017 and when due the monthly royalty amount of Seller thereunder for the Payment Month of May 2017.

(b) Minimum Quarterly Payments.

(i) Subject to clause (b)(ii), if, with respect to any Fiscal Quarter that begins after December 31, 2017, the sum of (1) the aggregate Monthly Royalties paid to Ligand during the Fiscal Year that includes such Fiscal Quarter plus (2) the Minimum Quarterly Payments made to Ligand during such Fiscal Year is less than the Minimum Quarterly Royalty multiplied by the number of completed Fiscal Quarters in such Fiscal Year, then the Company shall pay to Ligand, by wire transfer of immediately available funds within thirty (30) days after the end of such Fiscal Quarter, an amount equal to the difference between (A) the Minimum Quarterly Royalty multiplied by the number of completed Fiscal Quarters in such Fiscal Year and (B) the sum of (1) the aggregate Monthly Royalties paid to Ligand with respect to such Fiscal Year plus (2) the Minimum Quarterly Payments made to Ligand with respect to such Fiscal Year.

(ii) Notwithstanding clause (b)(i), if, with respect to any Fiscal Year that begins after December 31, 2017 in respect of which any Minimum Quarterly Payment was made to Ligand, the aggregate Monthly Royalties paid in respect of such Fiscal Year exceed the applicable Minimum Annual Royalty (the amount of any such Minimum Quarterly Payments made in any such Fiscal Year, the "***Minimum Royalty Overpayment***"), then any subsequent payment obligation owing by the Company pursuant to this Agreement shall be automatically reduced and offset in the amount of such Minimum Royalty Overpayment until such Minimum Royalty Overpayment is extinguished.

(c) Payments to Ligand.

(i) Within thirty (30) days following the end of each Payment Month, the Company shall disburse from the Special Account to the Ligand Account an amount equal to the amount to which Ligand is entitled pursuant to Section 2.02(a) of this Agreement (if any) for such Payment Month.

(ii) Within sixty (60) days following the end of each Fiscal Quarter, the Company shall remit by wire transfer of immediately available funds to the Ligand Account an amount equal to the amount to which Ligand is entitled pursuant to Section 2.02(b) of this Agreement (if any) for such Fiscal Quarter.

(iii) If, after any Sweep Event occurs, the "notice of exclusive control" giving rise to such Sweep Event is revoked prior to a Bankruptcy Event, to the extent any Minimum Quarterly Royalty came due and was not paid pursuant to [Section 2.1(b)] of the Intercreditor Agreement prior to such revocation, the Company shall pay such Minimum Quarterly Royalty within thirty (30) days of such revocation.

SECTION 2.03. ***Milestone Payments.***

(a) If and when the aggregate amount of Net Sales Proceeds received by the Company during the Term equals \$100,000,000, the Company shall pay \$5,000,000 to Ligand, which payment shall be made within forty-five (45) days thereof by wire transfer of immediately

available funds to the Ligand Account.

(b) If and when the aggregate amount of Net Sales Proceeds received by the Company during the Term equals \$300,000,000 or the occurrence of a CanGaroo Product Change of Control during the Term, whichever is sooner, the Company shall pay an additional \$5,000,000 to Ligand, which payment shall be made within forty-five (45) days thereof by wire transfer of immediately available funds to Ligand Account.

**SECTION 2.04. *Consent to Sale Transaction; No Assumed Obligations.***

Ligand hereby consents to the Sale Transaction on the terms and conditions set forth in the Asset Purchase Agreement. Notwithstanding any provision in this Agreement or any other writing to the contrary, Ligand acknowledges and agrees that (i) Ligand does not have any right, title or interest in or to any of the Products or any other assets acquired the Company in the Sales Transaction, except for its interest in and to the Royalty Interests (and the security interests granted to Ligand hereunder) during the Term, all as set forth herein, and (ii) neither the Company nor any of its Affiliates have assumed or agreed to pay any liabilities or other obligations of the Seller or any of its Affiliates to Ligand or its Affiliates of whatever nature, whether presently in existence or arising or asserted hereafter, including without limitation, any obligations or liabilities of the Seller or its Affiliates under the Ligand Purchase Agreement. All such liabilities and obligations shall be retained by and remain obligations and liabilities of the Seller and its Affiliates.

**ARTICLE III - *Representations and Warranties of the Company***

**SECTION 3.01. *Organization.*** The Company is a limited liability company duly organized, validly existing and in good standing under the laws of the State of Delaware and has all limited liability company power and all licenses, authorizations, consents and approvals required to carry on its business as proposed to be conducted in connection with this Agreement. The Company has no Subsidiaries.

**SECTION 3.02. *Authorization.*** The Company has all necessary power and authority to enter into, execute and deliver this Agreement and to perform all of the obligations to be performed by it hereunder and to consummate the transactions contemplated hereunder. This Agreement has been duly authorized, executed and delivered by the Company and constitutes the valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally or general equitable principles.

**SECTION 3.03. *Governmental Authorization.*** The execution and delivery by the Company of this Agreement, and the performance by the Company of its obligations hereunder, does not require any notice to, action or consent by, or in respect of, or filing with, any Governmental Authority.

**SECTION 3.04. *Ownership.***

(a) As of the date hereof, the Company owns or holds a valid license under all of the Intellectual Property and the Regulatory Approvals which it currently purports to own

related to any of the Products, free and clear of all liens, except Permitted Liens. As of the date hereof, the Company has not granted, nor does there exist, any lien on the Products except Permitted Liens.

(b) There is no filed and served on the Company or, to the Knowledge of the Company, threatened against the Company in writing any action, suit, proceeding, investigation or claim by any Person to which the Company is a party that claims that the Intellectual Property or the manufacture, use, marketing, sale, offer for sale, importation or distribution of any Product infringes on any Person's trade secrets or other intellectual property. The Company has not received any written communication containing an offer to license to the Company, or a request that the Company consider whether it wishes to obtain a license, under any intellectual property owned by a third party, in each case, to make, use or sell a Product. To the Knowledge of the Company, without any independent investigation or inquiry, there are no pending unlicensed patent applications owned by any other Person that if a patent were to issue thereon without modification or amendment, would limit or prohibit, in any material respect, the manufacture, use or sale of any Product.

SECTION 3.05. **Litigation.** As of the date hereof, there is no (a) action, suit, arbitration proceeding, claim, investigation or other proceeding pending or, to the Knowledge of the Company, threatened against the Company or (b) any governmental inquiry pending or, to the Knowledge of the Company, threatened against the Company, in each case with respect to clause (a) or (b) above, which, if adversely determined, would question the validity of, or could reasonably be expected to have a material adverse effect on the transactions contemplated by this Agreement or could reasonably be expected to have a Material Adverse Effect. As of the date hereof, there is no action, suit, arbitration proceeding, claim, investigation or other proceeding pending or, to the Knowledge of the Company, threatened in writing against the Company relating to any of the Products, the Intellectual Property related to any of the Products or the Regulatory Approvals.

SECTION 3.06. **Compliance with Laws.** To the Knowledge of the Company, the Company (a) is not in violation of, has not violated and is not under investigation with respect to, and (b) has not been threatened to be charged with or been given written notice of any violation of, any law, rule, ordinance or regulation of, or any judgment, order, writ, decree, permit or license entered by any Governmental Authority applicable to the Company which would reasonably be expected to have a Material Adverse Effect.

SECTION 3.07. **Conflicts.** Neither the execution and delivery of this Agreement nor the performance or consummation of the transactions contemplated hereby by the Company will: (a) contravene, conflict with, result in a breach or violation of, constitute a default under, or accelerate the performance provided by, in any material respects any provision of (i) any law, rule, ordinance or regulation of any Governmental Authority, or any judgment, order, writ, decree, permit or license of any Governmental Authority, to which the Company or any of its assets or properties are subject or bound or (ii) any contract, agreement, commitment or instrument to which the Company is a party or by which the Company, or any of its assets or property's is bound or committed; (b) contravene, conflict with, result in a breach or violation of, constitute a default under, or accelerate the performance provided by, any provisions of the certificate of formation or limited liability company agreement (or

other organizational or constitutional documents) of the Company; (c) require any notification to, filing with, or consent of, any Person or Governmental Authority, except such consents that have been obtained at or prior to the date hereof; or (d) give rise to any right of termination, cancellation or acceleration of any right or obligation of the Company or to a loss of any right of the Company to distribute, market and/or sell any of the Products, except, in the case of clause (a), (c) or (d) above, for any such breaches, defaults or other occurrences that would not, individually or in the aggregate, have a Material Adverse Effect.

SECTION 3.08. ***Current Indebtedness.*** Other than as set forth on Schedule 3.08, there is no indebtedness (other than trade indebtedness in the ordinary course of business) for borrowed money of the Company.

SECTION 3.09. ***Financial Statements.*** All financial statements for the Company and Guarantor delivered to Ligand fairly present, in conformity with generally accepted accounting principles, in all material respects, the consolidated financial condition and consolidated results of operations of the Company and Guarantor.

#### ***ARTICLE IV - Representations and Warranties of Ligand***

SECTION 4.01. ***Organization.*** Ligand is a corporation duly incorporated and validly existing under the laws of the State of Delaware.

SECTION 4.02. ***No Assignment; Authorization.*** Ligand has not assigned, transferred, pledged, granted a security interest in or otherwise disposed of any of its obligations or rights under the Ligand Purchase Agreement, or any right, title or interest in or to the Products, any Intellectual Property related to the Products or any revenues related to the Products, except as provided herein, and has all necessary power and authority to enter into, execute and deliver this Agreement and to perform all of the obligations to be performed by it hereunder and to consummate the transactions contemplated hereunder. This Agreement has been duly authorized, executed and delivered by Ligand and constitutes the valid and binding obligation of Ligand, enforceable against Ligand in accordance with its respective terms, subject, as to enforcement of remedies, to bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally or general equitable principles.

SECTION 4.03. ***Conflicts.*** Neither the execution and delivery of this Agreement nor the performance or consummation of the transactions contemplated hereby by Ligand will: (a) contravene, conflict with, result in a breach or violation of, constitute a default under, or accelerate the performance provided by, in any material respects any provision of (i) any law, rule or regulation of any Governmental Authority, or any judgment, order, writ, decree, permit or license of any Governmental Authority, to which Ligand or any of its assets or properties may be subject or bound or (ii) any contract, agreement, commitment or instrument to which Ligand is a party or by which Ligand or any of its assets or properties is bound or committed; (b) contravene, conflict with, result in a breach or violation of, constitute a default under, or accelerate the performance provided by, any provisions of the certificate of incorporation or bylaws (or other organizational or constitutional documents) of Ligand; or (c) require any notification to, filing with, or consent of, any Person or Governmental Authority,

except, in the case of the foregoing clause (a) or (c), for any such breaches, defaults or other occurrences that would not, individually or in the aggregate, have a material adverse effect on the ability of Ligand to perform any of its obligations under this Agreement.

## ARTICLE V - *Covenants*

### SECTION 5.01. *Access; Information.*

(a) Maintenance of Books and Records. During the Term, the Company shall keep and maintain, or cause to be kept and maintained, at all times books of account and records consistent with good business practices and customary industry standards adequate to correctly reflect all payments paid and/or payable to Ligand with respect to the Products.

(b) Inspection Rights. During the Term, Ligand shall have the right to designate a Third Party independent public accounting firm (the "***Ligand Representative***") to visit the Company's and its Subsidiaries' offices and properties where the Company and its Subsidiaries keep and maintain their books and records relating or pertaining to the Products for the purpose of conducting an audit of such books and records with respect the payments due and payable to Ligand under Section 2.02 or Section 2.03, and to inspect and audit such books and records for such purpose, during normal business hours, and, upon at least ten (10) Business Days' written notice given by Ligand to the Company, the Company will provide such Ligand Representative reasonable access to such books and records; provided, however, such inspection and audit rights may only be exercised by Ligand once in each calendar year.

(c) Audit Costs. In the event any audit of the books and records of the Company and its Subsidiaries relating to the the gross revenues of the Products or Net Sales Proceeds conducted by Ligand and/or any of Ligand's representatives reveals that the amounts paid to Ligand hereunder for the period of such audit have been understated by more than ten percent (10%) of the undisputed amounts due for the period subject to such audit, then the Audit Costs in respect of such audit shall be borne by the Company; and in all other cases, such Audit Costs shall be borne by Ligand.

(d) Monthly Reports. During the Term, the Company shall, promptly after the end of each Payment Month of the Company (but in no event later than thirty (30) days following the end of such Payment Month), produce and deliver to Ligand a Monthly Report for such Payment Month.

(e) Periodic Reports. The Company shall deliver to Ligand the following financial statements:

(i) Within forty-five (45) days after the end of each Fiscal Quarter after the Effective Date, copies of the unaudited financial statements of the Company for such Fiscal Quarter; and

(ii) Within one hundred twenty (120) days after the end of each Fiscal Year after the Effective Date, copies of the audited consolidated financial statements of the Guarantor and the Company for such Fiscal Year.

(f) **Notice of Deposits Following a Sweep Event.** Following a Sweep Event, on the first Business Day of each week, the Company shall provide Ligand with notice of the amount and the source of all deposits made during the preceding week into the Main Account.

**SECTION 5.02. Confidentiality; Press Release.**

(a) All Confidential Information furnished by the Company or Seller to Ligand or by Ligand to the Company in connection with this Agreement and the transactions contemplated hereby, as well as the terms, conditions and provisions of this Agreement, shall be kept confidential by Ligand and the Company. Notwithstanding the foregoing, (i) the Company and Ligand may disclose such Confidential Information to their partners, directors, employees, managers, officers, investors, bankers, advisors, trustees and representatives, (ii) the Company may disclose the terms, conditions and provisions of this Agreement to any Third Party in connection with (and only in connection with) a transaction with such Third Party that could reasonably be expected to result in (X) a Company Change of Control, (Y) a Product Change of Control or (Z) a sale by the Company of a Subsidiary, division, product line, or other significant portion of its business, and (iii) the Company and Ligand may disclose such Confidential Information as may otherwise be required by applicable law, including filing this Agreement with the SEC; *provided*, in the case of the foregoing clauses (i) and (ii) that such Persons and such Third Parties shall be informed of the confidential nature of such information and shall be obligated to keep such information confidential pursuant to the terms of this Section 5.02(a); *provided, further*, that in the case of the foregoing clause (iii) Ligand shall provide at least five (5) Business Days' notice to the Company of any filing with the SEC and consider in good faith a request for confidential treatment of any portion of this Agreement prior to filing with the SEC.

(b) Notwithstanding the foregoing clause (a), Ligand may make a press release or other announcement or public disclosure concerning this Agreement, provided that such press release shall be (x) subject to prior review by the Company and (y) in form and substance reasonably satisfactory to the Company taking into account any commercial sensitivities of the Company.

**SECTION 5.03. Efforts; Further Assurance.** Subject to the terms and conditions of this Agreement, each of Ligand and the Company will use its commercially reasonable efforts to take, or cause to be taken, all actions and to do, or cause to be done, all things necessary under applicable laws and regulations to consummate the transactions contemplated by this Agreement. Ligand and the Company agree to execute and deliver such other documents, certificates, agreements and other writings and to take such other actions as may be reasonably necessary in order to consummate or implement expeditiously the transactions contemplated by this Agreement.

**SECTION 5.04. Remedies Event.** During the Term, if a Remedies Event shall have occurred and be continuing, subject to the Intercreditor Agreement, the Company shall not, without the consent of Ligand, make a distribution to its member or members, or retire any indebtedness for borrowed money, other than in connection with a Permitted Transaction, or engage in any transaction that would result in a Company Change of Control.

SECTION 5.05. *Indebtedness; Sale of Revenue Interests.* Prior to the time that the Buydown Payment is paid in full, unless Ligand shall otherwise consent in writing, the Company shall not, other than in connection with any Permitted Transaction, (x) incur, create, assume or permit to exist any indebtedness for borrowed money of the Company other than indebtedness of the Company as of the Effective Date or (y) sell, assign, transfer or convey any interests in the revenues generated by the Products to any Third Party other than by the terms of this Agreement.

SECTION 5.06. *Remittance of Funds to Accounts.*

(a) Weekly Sweep to Special Account. The Company shall instruct the Depository Bank to sweep any funds arising from the Royalty Interests contained in the Main Account, no less frequently than once every week, into the Special Account, in accordance with further instructions to be provided by the Company on a weekly basis, it being understood that, in respect of the sweep contemplated under this Section 5.06(a), at the end of each Payment Month, the Company may retain from disbursement from the Special Account to Ligand any Excluded Costs deriving from any week covered by such Payment Month so long as such Excluded Costs are reflected in the Monthly Report in respect of such Payment Month.

(b) Special Account. The funds in the Special Account shall be held in trust solely for the benefit of Ligand. The Company shall not take any action with respect to the Special Account other than making (i) the instructions to the Depository Bank necessary to effectuate the sweep contemplated in clause (a) of this Section 5.06, (y) any adjustment (and corresponding withdrawal of excess funds) for Excluded Costs as necessary to reconcile the balance of the Special Account with the amount to which Ligand is entitled pursuant to Section 2.02(a), *provided* that such adjustment shall occur only in accordance with and upon delivery of a Monthly Report calculating such Excluded Costs and (z) any disbursement of funds from the Special Account to the Ligand Account in accordance with Section 2.02(c)(i).

**ARTICLE VI - Term and Termination**

SECTION 6.01. *Term.* This Agreement shall commence on the Effective Date and shall continue through and including the tenth anniversary of the Effective Date (the "*Term*").

SECTION 6.02. *Extension of the Term.* If any payments are accrued hereunder on or prior to the end of the Term and are required to be made by one of the Parties hereunder, this Agreement shall remain in full force and effect until any and all such payments have been made in full. Upon expiration or termination of this Agreement in accordance with its terms, all right, title and interest in and to the Royalty Interests shall automatically revert to the Company (and the security interests granted to Ligand hereunder shall automatically terminate), and Ligand will have no further rights in or with respect to the Royalty Interests or other Collateral and all other rights and interests of Ligand hereunder shall terminate (other than any contingent indemnification obligations with respect to which no claim has been made).

SECTION 6.03. *Effect of Termination.* In the event of the termination of this Agreement pursuant to Section 6.02, this Agreement shall forthwith become void, impose no liability on the part of any Party hereto or its Affiliates, directors, officers, stockholders, partners, managers or members and have no effect other than the provisions of this Section 6.03, and Section 5.02, Section 6.02 and Article VII hereof, which shall survive any such termination.

#### **ARTICLE VII *Miscellaneous***

SECTION 7.01. *Survival.* All representations and warranties made herein or in any other writing delivered pursuant hereto shall survive the execution and delivery of this Agreement and shall continue to survive until the expiration or termination of this Agreement in accordance with Article VI.

SECTION 7.02. *Notices.* All notices, consents, waivers and communications hereunder given by any Party to the other shall be in writing (including facsimile transmission) and delivered personally, by telegraph, telecopy, telex or facsimile, by a recognized overnight courier, or by dispatching the same by certified or registered mail, return receipt requested, with postage prepaid, in each case addressed (with a copy by email):

If to Ligand to:

Ligand Pharmaceuticals Incorporated  
11119 North Torrey Pines Road, Suite 200  
La Jolla, CA 92037  
Attention: Charles Berkman  
Email: [cberkman@ligand.com](mailto:cberkman@ligand.com)

With a copy to:

Latham & Watkins LLP  
12670 High Bluff Drive  
San Diego, CA 92130  
Attention: Steve Chinowsky  
Email: [steven.chinowsky@lw.com](mailto:steven.chinowsky@lw.com)

If to the Company to:

Aziyo Med, LLC  
12510 Prosperity Drive, Suite 370  
Silver Spring, MD 20904  
Attention: Jeffrey Hamet  
Email: [jhamet@aziyo.com](mailto:jhamet@aziyo.com)

With a copy to:

Shipman & Goodwin LLP  
One Constitution Plaza  
Hartford, CT 06103  
Attention: John H. Lawrence, Jr.  
Email: [jlawrence@goodwin.com](mailto:jlawrence@goodwin.com)

or to such other address or addresses as Ligand or the Company may from time to time designate by notice as provided herein, except that notices of changes of address shall be effective only upon receipt. All such notices, consents, waivers and communications shall: (a) when posted by certified or registered mail, postage prepaid, return receipt requested, be effective three (3) Business Days after dispatch, (b) when telegraphed, telecopied, telexed or facsimiled, be effective upon receipt by the transmitting party of confirmation of complete transmission, or (c) when delivered by a recognized overnight courier or in person, be effective upon receipt when hand delivered.

#### SECTION 7.03. *Successors and Assigns.*

(a) The provisions of this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

(b) Upon the consent of Ligand (which consent may not be unreasonably withheld, delayed or conditioned for any proposed assignment to any reasonably creditworthy proposed assignee), the Company may assign all or any applicable part of its rights and obligations under this Agreement in respect of any Product Change of Control, subject to the assumption by such proposed assignee of the obligations set forth in Section 2.01 and Section 2.02 with respect to such Product.

(c) Solely upon the consent of the Company (which consent may not be unreasonably withheld, delayed or conditioned, other than in respect of any proposed assignment to any direct competitor of the Company, in respect of which such consent may be granted or withheld by the Company in its sole discretion), Ligand may assign any of its obligations or rights under this Agreement without restriction; *provided that*, notwithstanding the foregoing, Ligand may assign its rights and/or delegate its obligations under this Agreement to an Affiliate, to any Person in a transaction in which Ligand also assigns all of its right, title and interest in all or substantially all of its assets to the same party contemporaneous with the assignment of this Agreement, or to a successor, whether by way of merger, sale of stock or otherwise, without the Company's prior written consent. In advance of any proposed assignment by Ligand to any proposed assignee, Ligand shall provide to the Company any information concerning such proposed assignment and such proposed assignee as may be reasonably requested by the Company.

#### SECTION 7.04. *Indemnification.*

(a) The Company hereby indemnifies and holds Ligand and its Affiliates and any of their respective partners, directors, managers, members, officers, employees and agents (each, a "**Ligand Indemnified Party**") harmless from and against any

and all Losses incurred or suffered by any Ligand Indemnified Party arising out of any breach of any representation or warranty made by the Company in this Agreement.

(b) Ligand hereby indemnifies and holds the Company, its Affiliates and any of their respective partners, directors, managers, officers, employees and agents (each, a "***Company Indemnified Party***") harmless from and against any and all Losses incurred or suffered by a Company Indemnified Party arising out of any breach of any representation or warranty made by Ligand in this Agreement.

(c) If any claim, demand, action or proceeding (including any investigation by any Governmental Authority) shall be brought or alleged against an indemnified party in respect of which indemnity is to be sought against an indemnifying party pursuant to the preceding paragraphs, the indemnified party shall, promptly after receipt of notice of the commencement of any such claim, demand, action or proceeding, notify the indemnifying party in writing of the commencement of such claim, demand, action or proceeding, enclosing a copy of all papers served, if any; *provided*, that the omission to so notify such indemnifying party will not relieve the indemnifying party from any liability that it may have to any indemnified party under the foregoing provisions of this Section 7.04 unless, and only to the extent that, such omission results in the forfeiture of, or has a material adverse effect on the exercise or prosecution of, substantive rights or defenses by the indemnifying party. In case any such action is brought by a third party against an indemnified party and it notifies the indemnifying party of the commencement thereof, the indemnifying party will be entitled to participate therein and, to the extent that it may wish, jointly with any other indemnifying party similarly notified, to assume the defense thereof, with counsel reasonably satisfactory to such indemnified party (who shall not, except with the consent of the indemnified party, be counsel to the indemnifying party), and after notice from the indemnifying party to such indemnified party of its election so to assume the defense thereof, the indemnifying party will not be liable to such indemnified party under this Section 7.04 for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof other than reasonable costs of investigation. In any such proceeding by a third party, an indemnified party shall have the right to retain its own counsel, but the reasonable fees and expenses of such counsel shall be at the expense of such indemnified party unless the indemnifying party and the indemnified party shall have mutually agreed to the retention of such counsel. It is agreed that the indemnifying party shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees and expenses of more than one separate law firm (in addition to local counsel where necessary) for all such indemnified parties. The indemnifying party shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party from and against any loss or liability by reason of such settlement or judgment. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement of any pending or threatened proceeding in respect of which any indemnified party is or could have been a party and indemnity could have been sought hereunder by such indemnified party, unless such settlement includes an unconditional release of such indemnified party from all liability on claims that are the subject matter of such proceeding.

(d) Ligand's sole remedy shall be to recover any monetary damages associated with a breach of a representation or warranty made by the Company in this Agreement, subject to the other terms and provisions contained in this Agreement.

**SECTION 7.05. *No Implied Representations and Warranties.*** Each Party acknowledges and agrees that, other than the representations and warranties specifically contained in this Agreement, there are no representations or warranties of either Party or any other Person either expressed or implied with respect to the Products or the Sale Transaction or the other transactions contemplated hereby. Without limiting the foregoing, Ligand acknowledges and agrees that (a) Ligand and its Affiliates, together with its and its Affiliates' representatives, have made their own investigation of the Products, the Intellectual Property related to the Products and the Regulatory Approvals and are not relying on any implied warranties or upon any other representation or warranty whatsoever, including any representation or warranty as to the future amount or potential value of the Products or Net Sales Proceeds, the amount of any payments by the Company hereunder or as to the creditworthiness of the Company and (b) except as expressly set forth in any representation or warranty in this Agreement, Ligand shall have no claim or right to indemnification by the Company pursuant to Section 7.04 (or otherwise) with respect to any information, documents or materials furnished by the Company or Seller or any of their respective representatives to Ligand, any of its Affiliates, or any of its or its Affiliates' representatives, including any information, documents or material made available to Ligand, its Affiliates or any of its and its Affiliates' representatives in any data room, presentation, management presentation, interview or any other form relating to the transactions contemplated hereby.

**SECTION 7.06. *Independent Nature of Relationship.*** (a) The relationship between the Company and Ligand is solely that of obligor and obligee, and neither Ligand nor the Company has any fiduciary or other special relationship with the other or any of their respective Affiliates. Nothing contained herein shall be deemed to constitute the Company and Ligand as a partnership, an association, a joint venture or other kind of entity or legal form for any purposes, including any tax purposes.

(b) No officer or employee or agent of Ligand will be located at the premises of the Company or any of its Affiliates, except in connection with an audit performed pursuant to Section 5.01. No officer, manager or employee of Ligand shall engage in any commercial activity with the Company or any of its Affiliates other than as contemplated herein or as otherwise separately agreed in writing.

(c) Ligand and/or any of its Affiliates shall not at any time obligate the Company, or impose on the Company any obligation, in any manner or respect to any Person not a party hereto. The Company and/or any of its Affiliates shall not at any time obligate Ligand, or impose on Ligand any obligation, in any manner or respect to any Person not a party hereto.

**SECTION 7.07. *Entire Agreement.*** This Agreement, together with the Exhibits and Schedules hereto (which are incorporated herein by reference), constitute the entire agreement between the parties with respect to the subject matter hereof and supersede all prior agreements (including any term sheet), understandings and

negotiations, both written and oral, between the Parties with respect to the subject matter of this Agreement. Notwithstanding any other provision set forth herein, neither Seller nor Guarantor is assuming any obligation or liability under the Ligand Purchase Agreement. No representation, inducement, promise, understanding, condition or warranty not set forth herein has been made or relied upon by either Party hereto. Neither this Agreement, nor any provision hereof, is intended to confer upon any Person other than the parties hereto any rights or remedies hereunder or in respect hereof.

**SECTION 7.08. *Amendments; No Waivers.***

(a) Neither this Agreement nor any term or provision hereof may be amended, changed or modified except with the written consent of all Parties. No waiver of any right hereunder shall be effective unless such waiver is signed in writing by the Party against whom such waiver is sought to be enforced.

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

**SECTION 7.09. *Interpretation.*** When a reference is made in this Agreement to an Article, Section, Schedule or Exhibit, such reference shall be to an Article, Section, Schedule or Exhibit to this Agreement unless otherwise indicated. The words “include”, “includes” and “including” when used herein shall be deemed in each case to be followed by the words “without limitation.” Neither Party shall be or be deemed to be the drafter of this Agreement for the purposes of construing this Agreement against one Party or the other.

**SECTION 7.10. *Headings and Captions.*** The headings and captions in this Agreement are for convenience and reference purposes only and shall not be considered a part of or affect the construction or interpretation of any provision of this Agreement.

**SECTION 7.11. *Counterparts; Effectiveness.*** This Agreement may be executed in two or more counterparts, each of which shall be an original, but all of which together shall constitute one and the same instrument. Any counterpart may be executed by facsimile or pdf signature and such facsimile or pdf signature shall be deemed an original.

**SECTION 7.12. *Severability.*** If any provision of this Agreement is held to be invalid or unenforceable, the remaining provisions shall nevertheless be given full force and effect.

**SECTION 7.13. *Expenses.*** Each of Ligand and the Company will pay all of its own fees and expenses in connection with entering into and consummating the transactions contemplated by this Agreement.

**SECTION 7.14. *Governing Law; Jurisdiction.***

(a) This Agreement shall be governed by, and construed, interpreted and enforced in accordance with, the laws of the State of New York, without giving effect to the principles of conflicts of law thereof.

(b) Any legal action or proceeding with respect to this Agreement may be brought in any state or federal court of competent jurisdiction in the State of New York, County of New York. By execution and delivery of this Agreement, each Party hereby irrevocably consents to and accepts, for itself and in respect of its property, generally and unconditionally the exclusive jurisdiction of such courts. Each Party hereby further irrevocably waives any objection, including any objection to the laying of venue or based on the grounds of *forum non conveniens*, which it may now or hereafter have to the bringing of any action or proceeding in such jurisdiction in respect of this Agreement.

(c) Each Party hereby irrevocably consents to the service of process out of any of the courts referred to in clause (b) of this Section 7.14 in any such suit, action or proceeding by the mailing of copies thereof by registered or certified mail, postage prepaid, to it at its address set forth in this Agreement. Each Party hereby irrevocably waives any objection to such service of process and further irrevocably waives and agrees not to plead or claim in any suit, action or proceeding commenced hereunder that service of process was in any way invalid or ineffective. Nothing herein shall affect the right of a party to serve process on the other Party in any other manner permitted by law.

**ARTICLE VIII - *Intercreditor Matters and Guarantee***

**SECTION 8.01. *Ligand Interests; Recharacterization.***

(a) Notwithstanding anything herein to the contrary, it is the intention of the Parties that the Royalty Interests are owned by Ligand, and such Royalty Interests shall be treated as the property of Ligand for all purposes, other than federal and state income tax purposes. The provisions of this Agreement shall be construed to further these intentions of the Parties.

(b) The Royalty Interests and any amounts received by the Company in respect of the Royalty Interests and, without limiting the foregoing, any cash deposited into the Special Account in accordance with the terms hereof and any cash deposited into the Main Account in respect of or consisting of the Royalty Interests (subject to any adjustments for Excluded Costs) is not, and is not intended to be, the property of the Company (or, in the event of a Bankruptcy Event, any estate created thereby by operation of applicable law or otherwise) but is possessed by the Company in trust solely on behalf of Ligand pending disbursement to Ligand or as otherwise provided in Section 5.06, in each case, as contemplated hereby.

(c) If, notwithstanding subparagraph (b), the Royalty Interests are subject to a Recharacterization, the Parties intend that the Company shall be deemed hereunder to have granted, and the Company does hereby grant, to Ligand a first priority security interest in favor of Ligand, to secure the obligations to make the payments under Section 2.01,

Section 2.02, and Section 2.03, including in respect of any acceleration thereof pursuant to Section 9.02, in the Royalty Interests and all proceeds and products thereof, and the Special Account and any cash or other funds, amounts or financial assets held therein or credited thereto.

(d) No other liens or security interests (including any liens or security interests in favor of the MidCap Credit Facility Agent) shall exist on the Special Account or the cash or other funds, amounts or financial assets held therein or credited thereto other than any customary liens of the Depository Bank.

(e) If, notwithstanding clause (b), the conveyance of the Royalty Interests is subject to a Recharacterization, the Parties intend that the Company shall be deemed hereunder to have granted, and the Company does hereby grant (subject to the priorities specified in the Intercreditor Agreement) a security interest in favor of Ligand, to secure the obligations to make payments under Section 2.01, Section 2.02, and Section 2.03, including for the avoidance of doubt any acceleration of any payments pursuant to Section 9.02, in the Pari Passu Collateral.

#### SECTION 8.02. *Other Ligand Security.*

(a) In addition to the special rights and security interests provided in Section 8.01, as security for the Company's payment obligations in respect of any Minimum Quarterly Royalties payable hereunder (including in respect of any acceleration thereof pursuant to Section 9.02), the Company hereby grants (subject to the priorities specified in the Intercreditor Agreement) a security interest in all of the following assets of the Company that constitute "Collateral" under the MidCap Credit Facility (the "**General Collateral**"):

(i) All goods, Accounts (including health-care insurance receivables), Equipment, Inventory, contract rights or rights to payment of money, leases, license agreements, franchise agreements, General Intangibles, commercial tort claims, documents, instruments (including any promissory notes), chattel paper (whether tangible or electronic), cash, deposit accounts, investment accounts, commodity accounts and other Collateral Accounts, all certificates of deposit, fixtures, letters of credit rights (whether or not the letter of credit is evidenced by a writing), securities, and all other investment property, supporting obligations, and financial assets, whether now owned or hereafter acquired, wherever located (each capitalized term in this clause (i) not otherwise defined in this Agreement or the MidCap Credit Facility, as defined in the UCC); and

(ii) all the Company's Books relating to the foregoing, and any and all claims, rights and interests in any of the above and all substitutions for, additions, attachments, accessories, accessions and improvements to and replacements, products, proceeds and insurance proceeds of any or all of the foregoing.

(b) Notwithstanding the foregoing, no security interest is or will be granted pursuant to this Agreement in any right, title or interest of the Company under or in, and "Collateral" shall not include, any Excluded Assets.

SECTION 8.03. **Priority.** (a) Pursuant and subject to the Intercreditor Agreement, the security interest granted in Section 8.01(c) shall be for all purposes senior in right to any other lien other than any customary liens of the Depository Bank.

(b) Pursuant and subject to the Intercreditor Agreement, the security interest granted in Section 8.01(c) shall be *pari passu* with the Existing Liens.

(c) Pursuant and subject to the Intercreditor Agreement, the security interest granted in Section 8.02 shall be for all purposes junior and subordinate (on a "silent second" basis) to the Existing Liens.

SECTION 8.04. **Other Intercreditor Matters.** Ligand acknowledges that, the MidCap Credit Facility Agent will not file any partial UCC-3 termination statement in respect of the liens held by the MidCap Credit Facility Agent or otherwise release any of its Collateral (as such term is defined under the MidCap Credit Facility) under the MidCap Credit Facility. However, the Intercreditor Agreement shall contain an express acknowledgement by the MidCap Credit Facility Agent that it has no security interest in or other rights in respect of the Special Account or any cash held therein.

SECTION 8.05. **Control Agreements.**

(a) The Company agrees, with respect to the Special Account (upon request of Ligand), to use commercially reasonable efforts to cause the Depository Bank to agree to comply at any time with instructions from Ligand to the Depository Bank directing the disposition of funds from time to time credited to the Special Account, without further consent of the Company, pursuant to a customary deposit account control agreement in form and substance satisfactory to Ligand. However, Ligand shall not give any such instructions or withhold any withdrawal rights from the Company, unless a Remedies Event has occurred and is continuing.

(b) Nothing herein is intended to affect or shall be construed as affecting the rights of the MidCap Credit Facility Agent under any deposit account control agreement in favor of it in respect of the Main Account.

SECTION 8.06. **Termination or Release.**

(a) Upon receipt by Ligand of an aggregate amount of \$15,027,342 on or after the Closing Date pursuant to this Agreement, all right, title and interest in and to the Royalty Interest and the Collateral shall automatically revert to the Company, and Ligand will have no further rights in or with respect to the Royalty Interest or the Collateral and all security interests granted hereunder shall terminate and be released; *provided, however*, the other terms and conditions of this Agreement shall remain in full force and effect, including without limitation, the Company's obligation to make the payments described in Article II during the remainder of the Term.

(b) Upon the withdrawal of any Excluded Costs or other amounts from the Special Account in accordance with the terms hereof, Ligand's security interest in such amounts granted pursuant to Section 8.01(c) shall be automatically terminated and released.

(c) Subject to the Intercreditor Agreement, upon the sale, lease, transfer, assignment or other disposition (a "Transfer") of any assets of the Company (other than the Royalty Interests and the Royalty Related Collateral) permitted under the MidCap Credit Facility, all of Ligand's security interests in such assets shall be automatically terminated and released.

(d) Subject to the Intercreditor Agreement, at the Company's request, Ligand shall subordinate its liens and other rights with respect to any such assets or property or terminate and release its liens with respect to any such assets or property (in each case other than the Royalty Interests and the Royalty Related Collateral) in connection with any Permitted Transaction.

(e) Upon the termination of the MidCap Credit Facility (or, if the MidCap Credit Facility is refinanced by another debt facility secured by all Collateral (other than the Royalty Interests and the Royalty Related Collateral), upon the termination of such refinancing debt facility), Ligand's security interest in all Collateral (other than the Royalty Interests and the Royalty Related Collateral) shall automatically be terminated and released.

(f) In connection with any termination or release pursuant to this Section 8.06, Ligand shall execute and deliver to the Company all documents that the Company shall reasonably request to evidence such termination or release. Ligand further agrees that with respect to any deposit account (other than the Special Account) over which it has control, it shall not give any instruction to the applicable bank until a Remedies Event has occurred and is continuing.

#### **ARTICLE IX - Remedies**

SECTION 9.01. **Remedies.** If any Remedies Event shall occur and be continuing, subject to the terms of the Intercreditor Agreement, Ligand may exercise all rights and remedies of a secured party under the UCC or under any other applicable law and in equity, *provided* that Ligand shall exercise any such remedy against the Special Account prior to the exercise of any such remedy against any other Collateral.

SECTION 9.02. **Acceleration.** If any Remedies Event shall occur and be continuing, subject to the terms of the Intercreditor Agreement, upon notice to the Company, Ligand may declare all Minimum Quarterly Royalties required to be paid by the Company from the date of such Remedies Event until the expiration of the Term to be due and payable forthwith, whereupon the same shall immediately become due and payable.

*[Remainder of this page intentionally left blank]*

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

AZIYO MED, LLC

By   
Name: Jeffrey D. Hamet  
Title: Vice President, Finance and Treasurer

*[Signature Page to the Royalty Agreement]*

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

LIGAND PHARMACEUTICALS, INCORPORATED

By   
Name: Charles Berkman  
Title: VP, General Counsel & Secretary

*[Signature Page to the Royalty Agreement]*

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**Exhibit A  
to the Royalty Agreement**

GUARANTY AGREEMENT

GUARANTY AGREEMENT

THIS GUARANTY AGREEMENT (this "Agreement"), is dated as of May 31, 2017, by AZIYO BIOLOGICS, INC., a Delaware corporation (the "Guarantor"), for the benefit of LIGAND PHARMACEUTICALS INCORPORATED, a Delaware corporation ("Ligand") pursuant to a certain Royalty Agreement, dated as of the date hereof, with Aziyo Med, Inc., a Delaware corporation (as such Agreement may be amended from time to time, the "Royalty Agreement"). Unless otherwise defined herein or the context otherwise requires, capitalized terms are used herein with the respective meanings set forth in the Royalty Agreement.

W I T N E S S E T H:

WHEREAS, Aziyo Med, LLC, a Delaware limited liability company (the "Company") is wholly subsidiary of the Guarantor, and the Guarantor acknowledges that it will benefit from the Royalty Agreement and the transactions related thereto; and

WHEREAS, the Guarantor is willing to guaranty the payment by the Company of the Buydown Payment under Section 2.01 of the Royalty Agreement as set forth below;

NOW, THEREFORE, in consideration of the premises and for other good and valuable consideration (the receipt and sufficiency of which are hereby acknowledged), and intending to be legally bound, the Guarantor hereby agrees as follows:

1. The Guarantor hereby absolutely and unconditionally guaranties to Ligand the payment by the Company of the Buydown Payment under Section 2.01 of the Royalty Agreement in accordance with the terms and conditions set forth therein, and the Guarantor covenants and agrees that upon the failure by the Company to pay any installment of the Buydown Payment on or prior to the due date, the Guarantor shall, upon demand by Ligand, pay the same itself, or cause the same to be paid, as if the Guarantor were the obligor under the Royalty Agreement. This Agreement shall terminate and be of no further force or effect upon payment in full of the Buydown Payment.

2. The obligations of the Guarantor hereunder shall be absolute and unconditional, and shall not be impaired, released, modified, stayed, limited, terminated or discharged in whole in part, by any of the following and the Guarantor hereby freely and voluntarily waives any defense based on any of the following: the validity, regularity or enforceability of the Royalty Agreement or any provision thereof, or the absence of any action to enforce the same, the recovery of any judgment against the Guarantor or any other party or any action to enforce the same (other than to the extent that such recovery results in the full satisfaction and performance of any obligations of the Guarantor hereunder), any failure or delay in the enforcement of the obligations of the Company under the Royalty Agreement, all presentments, demands for performance, notices of nonperformance, protests, notices of protest, notices of dishonor, notices of acceptance of this Agreement or other notices to which the Company may be entitled, the benefit or defense of any statute of limitations affecting the liability of the Guarantor hereunder or the liability of the Company, any rights of subrogation, reimbursement, exoneration, contribution and indemnity, and any rights or claims of any kind

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or nature against the Company which arise out of or are caused by this Agreement, and any rights to enforce any remedy which the Guarantor may have against the Company, any duty of Ligand to advise the Guarantor of any information known to Ligand regarding the financial condition of the Company or any setoff, counterclaim, recoupment, limitation or termination, and irrespective of any other circumstances which might otherwise limit recourse against the Guarantor or constitute a legal or equitable discharge or defense of a guarantor or surety, provided that, notwithstanding the foregoing provisions of this Section 2, the Guarantor shall not be required to perform or cause to be performed any obligation as to which the Company would be discharged, released or otherwise excused under the provisions of the Royalty Agreement. Notwithstanding anything set forth in this Agreement to the contrary, this Agreement shall not be interpreted to impose upon the Guarantor any greater obligations than the obligations of the Company under the Royalty Agreement as the terms thereof may be modified, waived or released from time to time.

3. The obligations of the Guarantor hereunder shall not be subject to any requirement that (i) any person first enforce any remedies it may have against the Company or any other person, (ii) any person first seek to recover from the Company under the Royalty Agreement before proceeding against the Guarantor hereunder, (iii) the existence of any matter or circumstance concerning the ability (financial or otherwise) of the Company to perform its obligations under the Royalty Agreement, or (iv) any other requirement, condition or matter, whether or not similar to the foregoing, other than events, conditions or circumstances which, under the express terms and provisions of the Royalty Agreement, discharge, release or otherwise excuse performance by the Company of its obligations under the Royalty Agreement. This is a guaranty of payment and performance and not merely of collection. The obligations of the Guarantor with respect to its obligations hereunder shall not be subject to any claim of the Guarantor against any other person (including, without limitation, Ligand) other than a setoff, reduction, claim or defense expressly authorized under the Royalty Agreement.

4. The Guarantor shall maintain and do or cause to be done all things necessary to preserve and keep in full force and effect its corporate existence. The Guarantor shall not seek or permit the dissolution or liquidation of the Guarantor in whole or in part, merge into, consolidate with, or in any way be acquired by any person, or transfer all or substantially all of its assets to any person or persons, unless the surviving or resulting person (or, in the case of a transfer of assets, the transferee) assumes all of the obligations of the Guarantor hereunder. Neither the Guarantor's obligation to make payment or render performance in accordance with the terms of this Agreement nor any remedy for the enforcement thereof, shall be impaired, modified, stayed, released, limited, terminated or discharged in any manner whatsoever by any impairment, modification, change, release, limitation or stay of the liability of the Company or its estate in bankruptcy or any remedy for the enforcement thereof resulting from the operation of any present or future provision of Title 11 of the United States Code entitled "Bankruptcy," as now and hereafter in effect, or any successor statute or other statute or from the decision of any court interpreting any of the same, and the Guarantor shall remain obligated under this Agreement as if no such impairment, stay, modification, change, release or limitation had occurred.

5. No failure or delay in exercising any right, power or privilege hereunder or under the Royalty Agreement shall operate as a waiver thereof nor shall any single or partial exercise thereof preclude any other right, power or privilege. No waiver, amendment, release or modification of this Agreement shall be established by conduct, custom or course of dealing, but solely by an instrument in writing duly executed by the party against whom such waiver, amendment, release or modification is sought to be enforced.

6. The Guarantor may, upon prior written notice to Ligand, assign all or any portion of its rights and obligations under this Agreement or delegate any of its obligations under this Agreement at any time so long as such assignee or delegee shall be creditworthy and capable of performing the obligations of the Guarantor hereunder; and such assignment or delegation shall relieve the Guarantor of any obligations or liabilities hereunder arising on or after the date of the assignment or delegation so long as Ligand consents in advance to such assignment or delegation, which consent shall not be unreasonably withheld, conditioned or delayed. Any assignment in violation of this Section 6 shall be null and void and of no effect.

7. The invalidity or unenforceability of one or more provisions of this Agreement shall not affect the validity or enforceability of the remaining portions of this Agreement.

8. Notwithstanding any performance by the Guarantor by reason of this Agreement, the Guarantor agrees that it shall not be entitled to any claim whatsoever against the Company in consequence of such performance. The Guarantor hereby irrevocably waives any right to collect from the Company under any right or claim to subrogation (or right in the nature of a right to subrogation) against the Company to which it would be entitled under applicable law in consequence of such performance. If the Guarantor shall nonetheless receive any amount or property in consequence of a right of subrogation or similar right, such amount shall be held in trust by the Guarantor and paid over to, or upon the direction of, the Company without further claim for its return. The foregoing limitation shall not preclude the Company from making any payment to the Guarantor in respect of any performance by the Guarantor of its obligations hereunder.

9. Notices and other communications to be given pursuant to this Agreement shall be in writing and shall be delivered personally or sent by certified mail, return receipt requested, or by facsimile (i) if to the Guarantor, at 12510 Prosperity Drive, Suite 370, Silver Spring, Maryland 20904, Attention: President, with a copy to Shipman & Goodwin LLP, its counsel, at One Constitution Plaza, Hartford, Connecticut 06103, Attention: John H. Lawrence, Jr., and (ii) if to Ligand, at 11119 North Torrey Pines Road, Suite 200, La Jolla, California 92037, with a copy to Latham & Watkins LLP, its counsel, at 12670 High Bluff Drive, San Diego, California 92130, Attention: Steve Chinowsky. Any notice given pursuant to this Section 9 shall be effective upon receipt.

10. This Agreement shall be governed by the laws of the State of Delaware other than its choice of law rules.

11. The Guarantor irrevocably (i) agrees that any suit, action or other legal

proceeding arising out of or relating to this Agreement may be brought in a court of record in the State of Delaware or in the Courts of the United States of America, District of Delaware, (ii) consents to the jurisdiction of each such court in any such suit, action or proceeding, and (iii) waives any objection which the Guarantor may have to the laying of venue of any such suit, action or proceeding in any of such courts and any claim that any such suit, action or proceeding has been brought in an inconvenient forum.

[signature page follows]

IN WITNESS WHEREOF, the Guarantor has caused this Guaranty Agreement to be executed on its behalf by one of its officers thereunto duly authorized on and as of the day and year first above written.

AZIYO BIOLOGICS, INC.

By: \_\_\_\_\_  
Name: Jeffrey D. Hamet  
Title: Vice President, Finance and Treasurer

[signature page to Ligand Guaranty Agreement]

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**Schedule A  
to the Royalty Agreement**

**PRODUCTS**

| <b>Aziyo Fields of Use</b>                                                                       | <b>Product Applications</b>                                                                                                   |
|--------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| SIS for the repair of the pericardial sac                                                        | CorMatrix <sup>®</sup> ECM <sup>®</sup> for Pericardial Closure                                                               |
| SIS for repair of myocardial tissue                                                              | CorMatrix <sup>®</sup> ECM <sup>®</sup> for Cardiac Tissue Repair                                                             |
| SIS to repair Carotid Arteries                                                                   | CorMatrix <sup>®</sup> ECM <sup>®</sup> for Carotid Repair                                                                    |
| Co-Exclusive Vascular Patch using SIS to repair the wall of peripheral veins and arteries        | CorMatrix <sup>®</sup> ECM <sup>®</sup> for Vascular Repair                                                                   |
| SIS for repair of myocardial tissue                                                              | CorMatrix <sup>®</sup> TYKE <sup>®</sup> Patch, Pledget and Intracardiac or TYKE <sup>®</sup> Patch, Pledget and Intracardiac |
| SIS pouch devices into which implantable cardiac pacemaker or defibrillator devices are inserted | CorMatrix <sup>®</sup> CanGaroo <sup>®</sup> ECM <sup>®</sup> Envelope or CanGaroo <sup>®</sup> ECM <sup>®</sup> Envelope     |

**Schedule B  
to the Royalty Agreement**

ROYALTY RELATED COLLATERAL

US Patents and Patent Applications

| <b>US Patent No.</b> | <b>Application No.</b> | <b>Publication No.</b> | <b>Title</b>                                                               |
|----------------------|------------------------|------------------------|----------------------------------------------------------------------------|
| 8,758,448            | 13/033,102             | US 2012/0016491 A1     | LAMINATE SHEET ARTICLES FOR TISSUE REGENERATION                            |
| 9,066,993            | 13/573,566             | US 2013/0023721 A1     | EXTRACELLULAR MATRIX ENCASEMENT STRUCTURES AND METHODS                     |
| 9,283,302            | 13/896,424             | US 2014/0343673 A1     | EXTRACELLULAR MATRIX ENCASEMENT STRUCTURES AND METHODS                     |
| 9,333,277            | 14/306,368             | US 2014/0336780 A1     | EXTRACELLULAR MATRIX (ECM) STRUCTURES FOR TISSUE REGENERATION              |
| 9,532,943            | 13/328,287             | US 2012/0156255 A1     | DRUG ELUTING PATCH FOR THE TREATMENT OF LOCALIZED TISSUE DISEASE OR DEFECT |
| 9,636,437            | 14/833,340             | US 2015/0349936 A1     | EXTRACELLULAR MATRIX ENCASEMENT STRUCTURES AND METHODS                     |
| 9,662,418            | 14/685,755             | US 2015/0217027 A1     | EXTRACELLULAR MATRIX ENCASEMENT STRUCTURES AND METHODS                     |
| 9,662,419            | 14/833,373             | US 2015/0359938 A1     | EXTRACELLULAR MATRIX ENCASEMENT STRUCTURES AND METHODS                     |
| 9,669,133            | 14/833,404             | US 2015/0349939 A1     | EXTRACELLULAR MATRIX ENCASEMENT STRUCTURES AND METHODS                     |

US Patents and Patent Applications (Cont'd)

| <b>Application No.</b> | <b>Publication No.</b> | <b>Title</b>                                                  |
|------------------------|------------------------|---------------------------------------------------------------|
| 14/685,714             | US 2015/0217026 A1     | EXTRACELLULAR MATRIX (ECM) STRUCTURES FOR TISSUE REGENERATION |
| 14/818,757             | US 2015/0335792 A1     | EXTRACELLULAR MATRIX ENCASEMENT STRUCTURES AND METHODS        |
| 14/819,964             | US 2015/0335787 A1     | EXTRACELLULAR MATRIX ENCASEMENT STRUCTURES AND METHODS        |
| 14/833,327             | US 2015/0359935 A1     | EXTRACELLULAR MATRIX ENCASEMENT STRUCTURES AND METHODS        |
| 14/833,354             | US 2015/0359937 A1     | EXTRACELLULAR MATRIX ENCASEMENT STRUCTURES AND METHODS        |
| 15/496,297             | --                     | EXTRACELLULAR MATRIX (ECM) STRUCTURES FOR TISSUE REGENERATION |
| 15/386,610             | US 2017/0100514 A1     | CARDIOVASCULAR PROSTHESES                                     |
| 15/386,640             | US 2017/0100515 A1     | CARDIOVASCULAR PROSTHESES                                     |
| 15/386,685             | US 2017/0100516 A1     | CARDIOVASCULAR PROSTHESES                                     |
| 15/386,718             | US 2017/0100517 A1     | CARDIOVASCULAR PROSTHESES                                     |
| 15/386,750             | US 2017/0100522 A1     | CARDIOVASCULAR PROSTHESES                                     |
| 15/386,902             | US 2017/0100523 A1     | CARDIOVASCULAR PROSTHESES                                     |
| 15/386,960             | US 2017/0100518 A1     | CARDIOVASCULAR PROSTHESES                                     |
| 15/387,064             | US 2017/0100513 A1     | CARDIOVASCULAR PROSTHESES                                     |
| 15/387,015             | US 2017/0100512 A1     | CARDIOVASCULAR PROSTHESES                                     |

Non-US Patents and Patent Applications

| <b>Application No./<br/>Publication No.</b> | <b>Country/<br/>Filing Date</b> | <b>Title</b>                    |
|---------------------------------------------|---------------------------------|---------------------------------|
| PCT/US2013/041517                           | PCT                             | EXTRACELLULAR MATRIX ENCASEMENT |

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| <b>Application No./<br/>Publication No.</b> | <b>Country/<br/>Filing Date</b>       | <b>Title</b>                                                              |
|---------------------------------------------|---------------------------------------|---------------------------------------------------------------------------|
| (WO 2014/046741 A1)                         | May 17, 2013                          | STRUCTURES AND METHODS<br>REGENERATION                                    |
| 2013318629 A1                               | Australia<br>May 17, 2013             | EXTRACELLULAR MATRIX ENCASEMENT<br>STRUCTURES AND METHODS<br>REGENERATION |
| 1120150037895                               | Brazil<br>March 15, 2015              | EXTRACELLULAR MATRIX ENCASEMENT<br>STRUCTURES AND METHODS                 |
| 2876849 A1                                  | Canada<br>May 17, 2013                | EXTRACELLULAR MATRIX ENCASEMENT<br>STRUCTURES AND METHODS<br>REGENERATION |
| 201380049491                                | China<br>May 23, 2015                 | EXTRACELLULAR MATRIX ENCASEMENT<br>STRUCTURES AND METHODS                 |
| 13838419.3<br>(2897685 A1)                  | European<br>Community<br>May 17, 2013 | EXTRACELLULAR MATRIX ENCASEMENT<br>STRUCTURES AND METHODS<br>REGENERATION |
| 1206667 A1                                  | Hong Kong<br>May 17, 2013             | EXTRACELLULAR MATRIX ENCASEMENT<br>STRUCTURES AND METHODS<br>REGENERATION |
| 622DEN2015 A                                | India<br>May 17, 2013                 | EXTRACELLULAR MATRIX ENCASEMENT<br>STRUCTURES AND METHODS<br>REGENERATION |
| 236276                                      | Israel<br>December 15,<br>2014        | EXTRACELLULAR MATRIX ENCASEMENT<br>STRUCTURES AND METHODS                 |
| 2015165892 A                                | Japan<br>May 17, 2013                 | EXTRACELLULAR MATRIX ENCASEMENT<br>STRUCTURES AND METHODS<br>REGENERATION |
| 2015534477 A                                | Japan<br>May 17, 2013                 | EXTRACELLULAR MATRIX ENCASEMENT<br>STRUCTURES AND METHODS<br>REGENERATION |
| 11201500209T A                              | Singapore<br>May 17, 2013             | EXTRACELLULAR MATRIX ENCASEMENT<br>STRUCTURES AND METHODS                 |
| 1401007937                                  | Thailand                              | EXTRACELLULAR MATRIX ENCASEMENT                                           |

| <b>Application No./<br/>Publication No.</b> | <b>Country/<br/>Filing Date</b>        | <b>Title</b>                                                                     |
|---------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------|
|                                             | December 30,<br>2014                   | STRUCTURES AND METHODS                                                           |
| 2011349853                                  | Australia<br>Jun. 17, 2013             | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |
| 1120130153083                               | Brazil<br>Jun. 18, 2013                | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |
| 2,822,232                                   | Canada<br>Aug. 5, 2013                 | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |
| 11806039.1<br>(EP 2654714)                  | European<br>Community<br>Jul. 18, 2013 | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |
| 11201500209T A                              | Singapore<br>May 17, 2013              | EXTRACELLULAR MATRIX ENCASEMENT<br>STRUCTURES AND METHODS<br>REGENERATION        |
| 1301003425                                  | Thailand<br>Jun. 20, 2013              | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |

Non-US Patents and Patent Applications (Cont'd)

| <b>Application No./<br/>Publication No.</b> | <b>Country/<br/>Filing Date</b>        | <b>Title</b>                                                                     |
|---------------------------------------------|----------------------------------------|----------------------------------------------------------------------------------|
| 2011349853                                  | Australia<br>Jun. 17, 2013             | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |
| 1120130153083                               | Brazil<br>Jun. 18, 2013                | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |
| 2,822,232                                   | Canada<br>Aug. 5, 2013                 | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |
| 11806039.1<br>(EP 2654714)                  | European<br>Community<br>Jul. 18, 2013 | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |
| 5549DELNP2013                               | India<br>Jul. 31, 2013                 | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |
| 2013.546196                                 | Japan<br>Jun. 20, 2013                 | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |
| 20137018954                                 | Korea<br>Jul. 18, 2013                 | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |
| 201304677.6                                 | Singapore<br>Jun. 17, 2013             | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |
| 1301003425                                  | Thailand<br>Jun. 20, 2013              | DRUG ELUTING PATCH FOR THE<br>TREATMENT OF LOCALIZED TISSUE<br>DISEASE OR DEFECT |

**Schedule 3.08  
to the Royalty Agreement**

MidCap Credit Facility:

Credit and Security Agreement (Revolving Loan) providing for a revolving loan in the maximum principal amount of \$8,000,000.

Credit and Security Agreement (Term Loan) providing for a term loan in the maximum principal amount of \$12,000,000.

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AMENDED AND RESTATED  
INTEREST PURCHASE AGREEMENT  
dated as of  
May 31, 2017,  
between  
CORMATRIX CARDIOVASCULAR, INC.  
and  
LIGAND PHARMACEUTICALS INCORPORATED

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This AMENDED AND RESTATED INTEREST PURCHASE AGREEMENT (as amended, supplemented or otherwise modified from time to time, this “*Agreement*”) is made and entered into as of May 31, 2017 (the “*Effective Date*”), by and between CORMATRIX CARDIOVASCULAR, INC., a Georgia corporation (the “*Company*”), and LIGAND PHARMACEUTICALS INCORPORATED, a Delaware corporation (“*Purchaser*”).

## RECITALS

WHEREAS, the Company and the Purchaser previously entered into that certain Interest Purchase Agreement dated as of May 3, 2016 (the “*Prior Agreement*”);

WHEREAS, on the date hereof, the Company is entering into an asset purchase agreement with Aziyo Biologics, Inc., a Delaware corporate (“*Parent*”) and Aziyo Med, LLC, a Delaware limited liability company and wholly-owned subsidiary of Parent (“*Aziyo*”) pursuant to which the Company is selling certain assets related to the Base Products and the CanGaroo Products (as such terms are defined in the Prior Agreement) (the “*Asset Purchase Agreement*”);

WHEREAS, in connection with the Asset Purchase Agreement, Aziyo and the Purchaser are entering into that certain royalty agreement, dated as of the date hereof, with respect to the Base Products and CanGaroo Products (the “*Aziyo Royalty Agreement*”);

WHEREAS, Aziyo will repay in full the Company’s outstanding debt with MidCap Financial SBIC LP, a Delaware limited partnership, at the closing of the sale of such assets; and

WHEREAS, the Company and the Purchaser desire to amend and restate the Prior Agreement, as set forth herein;

NOW, THEREFORE, in consideration of the mutual covenants, agreements and representations and warranties set forth herein, the parties hereto agree as follows:

## ARTICLE I

### *Definitions*

SECTION 1.01. *Defined Terms.* As used in the Agreement, the following terms shall have the meanings specified below:

“*Acquiror*” shall mean, with respect any of the Products, any Person (other than any Affiliate of the Company) who acquires control of the commercialization of any such Product as a result of any Product Change of Control.

“*Affiliate*” shall mean any Person that controls, is controlled by, or is under common control with another Person. For purposes of this definition, “*control*” shall mean

(i) in the case of corporate entities, direct or indirect ownership of at least fifty percent (50%) of the stock or shares having the right to vote for the election of directors, and (ii) in the case of non-corporate entities, direct or indirect ownership of at least fifty percent (50%) of the equity interest with the power to direct the management and policies of such non-corporate entities.

***“Assigned Interest Period”*** shall mean, with respect to each Product, the period from and including the Effective Date through and including the date that is the tenth anniversary of the date of the first commercial sale of such Product.

***“Assigned Interest Related Collateral”*** means any accounts (as defined in Article 9 of the UCC) giving rise to the Assigned Interests and the proceeds of such accounts.

***“Assigned Interests”*** shall mean the Pipeline Product Interests and the Valves Product Interests.

***“Audit Costs”*** shall mean, with respect to any audit of the books and records of the Company or its Subsidiaries with respect to amounts payable or paid under this Agreement, the reasonable out-of-pocket cost of such audit, including all fees, costs and expenses incurred in connection therewith.

***“Bankruptcy Event”*** shall mean the occurrence of any proceeding being instituted by or against the Company seeking to adjudicate it bankrupt or insolvent, or seeking liquidation, winding up, reorganization, arrangement, adjustment, protection, relief or composition of it or its debts under any law relating to bankruptcy, insolvency or reorganization or relief of debtors, or seeking the entry of an order for relief or the appointment of a receiver, trustee or other similar official for it or any substantial part of its property, or the Company taking any action to authorize any of the actions set forth above. Notwithstanding the foregoing, if such proceeding is instituted against the Company, no Bankruptcy Event shall have occurred unless such proceeding remains undismissed, undischarged or unbonded for a period of sixty (60) days.

***“Books”*** shall mean all of the books and records of a Person, including ledgers, federal and state tax returns, records regarding the Person’s assets or liabilities, the Assigned Interest Related Collateral, business operations or financial condition, and all computer programs or storage or any equipment containing such information.

***“Business Day”*** shall mean any day other than a Saturday, a Sunday, any day which is a legal holiday under the laws of the State of New York, or any day on which banking institutions located in the State of New York are required by law or other governmental action to close.

***“Closing”*** shall have the meaning set forth in Section 2.03(a).

***“Closing Date”*** shall mean May 3, 2016.

***“Company”*** shall have the meaning set forth in the preamble.

***“Company Change of Control”*** shall mean, with respect to the Company:

(a) the acquisition by any Person or group (within the meaning of Sections 13(d)(3) or 14(d)(2) of the Securities Exchange Act of 1934, as amended) of beneficial ownership of any capital stock of the Company, if after such acquisition, such Person or group would be the “beneficial owner” (as defined in Rule 13d-3 under the Securities Exchange Act of 1934, as amended, but assuming that any convertible securities owned by such Person or group or any controlled affiliates thereof are immediately exercisable), directly or indirectly, of securities of the Company representing more than fifty percent (50%) of the combined voting power of the Company’s then outstanding securities entitled to vote generally in the election of directors;

(b) a merger or consolidation of the Company, with any other Person, other than a merger or consolidation which would result in the Company’s voting securities outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) more than fifty percent (50%) of the combined voting power of the Company’s voting securities or such surviving entity’s voting securities outstanding immediately after such merger or consolidation; or

(c) the *bona fide* sale, lease, transfer, exclusive license or other disposition, in a single transaction or series of related transactions, by the Company or any of its Subsidiaries of all or substantially all the assets of the Company and its Subsidiaries, taken as a whole.

***“Confidential Information”*** shall mean, as it relates to the Company and its Affiliates and any of the Products, the Intellectual Property related to any of the Products, confidential business information, financial data and other like information (including ideas, research and development, know-how, formulas, schematics, compositions, technical data, specifications, customer and supplier lists, pricing and cost information, and business and marketing plans and proposals), inventory, ideas, algorithms, processes, computer software programs or applications (in both source code and object code form), client lists and tangible or intangible proprietary information or material, or such other information that either party identifies to the other as confidential or the nature of which or the circumstances of the disclosure of which would reasonably indicate that such information is confidential. Notwithstanding the foregoing definition, Confidential Information shall not include information that (a) is already in the public domain at the time the information is disclosed, (b) thereafter becomes lawfully obtainable from other sources who, to the knowledge of the recipient, have no obligation of confidentiality, (c) can be shown to have been independently developed by the recipient or its representatives without reference to any Confidential Information of the other party or (d) is required to be disclosed under laws, rules and regulations of any Governmental Authority applicable to the Company or its Affiliates or Purchaser or its Affiliates, as the case may be, or pursuant to the rules and regulations of any securities exchange or trading system or pursuant to any other laws, rules or regulations of any Governmental Authority having jurisdiction over the Company and its Affiliates or Purchaser and its Affiliates.

***“Excluded Costs”*** shall mean the following items to the extent permitted by generally accepted accounting principles: (i) value added or any other similar transaction taxes accrued on sales invoices, (ii) sales discounts and all kinds of rebates, (iii) any orders or parts thereof which are subsequently returned to the Company (or an Affiliate, agent or sublicensee thereof, as applicable) and refunded to the customer or wholesaler, (iv) charges for late payment collected from customers, registration charges and other service charges and (v) applicable shipping charges.

***“Excluded Liabilities and Obligations”*** shall have the meaning set forth in Section 2.04(a).

***“Final Order”*** shall mean an order of the United States Bankruptcy Court or any other court of competent jurisdiction as to which the time to appeal, petition for certiorari, or move for reargument or rehearing has expired and a to which non appeal, petition for certiorari, or other proceedings for reargument or rehearing shall then be pending, or, in the event that an appeal, writ of certiorari, or reargument or rehearing thereof has been filed or sought, such order of the Bankruptcy Court or other court of competent jurisdiction shall have been affirmed by the highest court to which such order was appealed, or from which certiorari, reargument or rehearing was sought, and the time to take any further appeal, petition for certiorari or move for reargument or rehearing shall have expired; provided that the possibility that a motion under Rule 59 or Rule 60 of the Federal Rules of Civil Procedure or any analogous rule under the Federal Rules of Bankruptcy Procedure or applicable state court rules of civil procedure, may be filed with respect to such order shall not cause such order not to be a Final Order.

***“Fiscal Quarter”*** shall mean each three (3) month period commencing January 1, April 1, July 1 or October 1, provided however that (a) the first Fiscal Quarter of the Term shall extend from the Closing Date to the end of the first full Fiscal Quarter thereafter and (b) the last Fiscal Quarter of the Term shall end upon the expiration or termination of this Agreement.

***“Fiscal Year”*** shall mean the calendar year.

***“Governmental Authority”*** shall mean any government, court, regulatory or administrative agency or commission, or other governmental authority, agency or instrumentality, whether foreign, federal, state or local (domestic or foreign).

***“Intellectual Property”*** shall mean all proprietary information; technical data; laboratory notebooks; clinical data; priority rights; trade secrets; know-how; confidential information; inventions (whether patentable or unpatentable and whether or not reduced to practice or claimed in a pending patent application); Patents; registered or unregistered trademarks, trade names, service marks, including all goodwill associated therewith; registered and unregistered copyrights and all applications thereof; in each case that are owned, controlled by, generated by, issued to, licensed to, licensed by or hereafter acquired by or licensed by the Company or its Subsidiaries.

***“Knowledge of the Company”*** shall mean the current and actual knowledge, information or belief held by David B. Camp, Robert G. Matheny, John C. Thomas, Jr. and/or Andrew M. Green after reasonable inquiry by such person into the relevant subject matter.

***“Losses”*** shall mean collectively, any and all claims, damages, losses, judgments, awards, penalties, liabilities, costs and expenses (including reasonable expenses and reasonable attorneys’ fees) incurred in connection with defending any action, suit or proceeding.

***“Material Adverse Change”*** shall mean, with respect to the Company and its Subsidiaries, any event, change, circumstance, occurrence, effect or state of facts that has caused or is reasonably likely to cause a material adverse change in the business, operations, assets or financial condition of the Company and its Subsidiaries, taken as a whole.

***“Material Adverse Effect”*** shall mean (a) the effect of a Material Adverse Change, (b) a material adverse effect on the validity or enforceability of this Agreement, (c) the inability or failure of the Company to make payments in respect of the Assigned Interests in violation of this Agreement, (d) a material adverse effect on the ability of the Company to perform any of its other material obligations under this Agreement or (e) any material adverse effect on the Products or the ability of the Company and its Subsidiaries to distribute, market and/or sell the Products.

***“MidCap Payoff Letter”*** shall mean the letter from MidCap evidencing payment in full of the MidCap Credit Facility, dated as of the date hereof.

***“MidCap Credit Facility”*** shall mean that certain Credit and Security Agreement, dated as of June 10, 2014 (as amended, amended and restated, supplemented or otherwise modified as of the date hereof), among CorMatrix Cardiovascular, Inc., CorMatrix RE LLC, CorMatrix 1 LLC and CorMatrix 2 LLC, as Borrowers (as defined therein), MidCap Financial Trust, a Delaware statutory trust, as administrative agent, and the Lenders (as defined therein) party thereto.

***“Monthly Report”*** shall mean, with respect to the relevant Payment Month of the Company, a report showing (a) the gross revenues of the Pipeline Products and Valves Products for such Payment Month, (b) the Pipeline Product Net Sales and the Valves Product Net Sales for such Payment Month, (c) the Excluded Costs for such Payment Month and (d) a reasonable calculation of the amount to which Purchaser is entitled for such Payment Month pursuant to Section 2.02(a) of this Agreement.

***“Obligations”*** shall mean any and all payment obligations of the Company under the Agreement.

***“Parties”*** shall mean Purchaser, the Company and any other Person from time to time made party to this Agreement, each a ***“Party.”***

***“Patent”*** shall mean all patents, patent rights, patent applications, patent disclosures and invention disclosures issued or filed, together with all reissues, divisions, continuations, revisions, term extensions, substitutes, supplementary protection certificates, reexaminations, *inter-partes* reviews, post-grant oppositions or similar post-grant review proceedings, including the inventions claimed in any of the foregoing and any priority rights arising therefrom, that are issued or filed as of the date hereof or during the Term, which are owned by the Company, its Subsidiaries or any of its Affiliates.

***“Payment Month”*** shall mean each month-long period commencing on the first day of such month, provided however that (a) the first Payment Month of the Term shall extend from the Closing Date to the end of the first full Payment Month thereafter and (b) the last Payment Month of the Term shall end upon the expiration or termination of this Agreement.

***“Permitted Transaction”*** shall mean any transaction during the Term whereby the Company incurs, creates, assumes or permits to exist any indebtedness for borrowed money or sells, assigns, transfers or conveys any Revenue Interests to any Third Party; *provided* that such transaction (a) does not, except to the extent expressly contemplated by Section 8.04, result in any security interest granted hereunder ceasing to be a valid and perfected security interest or adversely affecting the priority of such interest and (b) could not reasonably be expected to impair the ability of the Company to comply with the requirements to make the payments set forth in Section 2.02.

***“Person”*** shall mean an individual, corporation, partnership, limited liability company, association, trust or other entity or organization, but not including a government or political subdivision or any agency or instrumentality of such government or political subdivision.

***“Pipeline Product Applicable Percentage”*** shall mean 5% with respect to any Pipeline Product Net Sales during the Assigned Interest Period.

***“Pipeline Product Interests”*** shall mean the right to receive on a monthly basis cash in an amount equal to the product of the Pipeline Product Applicable Percentage multiplied by the Pipeline Product Net Sales during the Assigned Interest Period, pursuant to the terms and conditions of this Agreement. For the avoidance of doubt, Pipeline Product Interests shall not constitute any accounts or payment intangibles (as each term is defined in the UCC) giving rise to such cash amounts.

***“Pipeline Product Net Sales”*** shall mean the aggregate amount of sales proceeds received by the Company (or an Affiliate, agent or sublicensee thereof, as applicable) for the Pipeline Products sold on or after the Closing Date, less Excluded Costs.

***“Pipeline Products”*** shall mean the following extracellular matrix technology products, in each case, sold by the Company: (i) the Micronized ECM product, (ii) the Epicardial Infarction Repair product, (iii) the Vascular Graft product, (iv) any other products that were in development as of the Closing Date, and (v) any product substantially

similar in design and application to any product described in the foregoing clauses commercialized by the Company during the Assigned Interest Period.

***“Prior Agreement”*** shall have the meaning set forth in the recitals.

***“Product Change of Control”*** shall mean, with respect to any Product, or any product enumerated in the definition of any Product (or in any Schedule referenced in any such definition), any sale or other transfer by the Company of substantially all of the assets primarily used to commercialize such Product or such enumerated product or of the exclusive right to commercialize such Product or such enumerated product.

***“Products”*** shall mean the Pipeline Products and the Valves Products.

***“Purchase Price”*** shall mean \$17,500,000.

***“Purchaser”*** shall have the meaning set forth in the preamble.

***“Purchaser Account”*** shall mean the following account (or such other account as Purchaser may designate in writing (such designation to be made at least two (2) Business Days prior to any payment owing to Purchaser under this Agreement)):

Ligand Pharmaceuticals, Inc.  
Bank of America Merrill Lynch  
Account No. 1453127240  
Routing No. 026009593

***“Recharacterization”*** shall mean a characterization by a Final Order of the United States Bankruptcy Court or any other court of competent jurisdiction of the purchase of the Assigned Interests as a loan or other financing instrument or that the Purchaser does not have an ownership interest in the Assigned Interests.

***“Regulatory Agency”*** shall mean a Governmental Authority with responsibility for the approval of the marketing and sale of surgical implants or other regulation of surgical implants.

***“Regulatory Approvals”*** shall mean all approvals (including, without limitation, where applicable, pricing and reimbursement approval and schedule classifications), product and/or establishment licenses, registrations or authorizations of any Governmental Authority necessary for the manufacture, use, storage, import, export, transport, offer for sale, or sale of any of the Products.

***“Remedies Event”*** shall mean (a) a Bankruptcy Event or (b) a failure by the Company to make a payment pursuant to Section 2.02, *provided* that no such failure shall constitute a Remedies Event unless such failure shall remain uncured for thirty (30) days.

***“Revenue Interests”*** shall mean all of the interest of the Company and its Subsidiaries in the proceeds of the total sales realized by the Company (or an Affiliate,

agent or sublicensee thereof, as applicable) of the Products sold on or after the Effective Date.

**“SEC”** shall mean the U.S. Securities and Exchange Commission.

**“Special Account”** shall have the meaning set forth in Section 8.03(b).

**“Subsidiary”** shall mean, with respect to any Person, a corporation, partnership, joint venture, limited liability company or other business entity of which (i) a majority of the shares of securities or other interests having ordinary voting power for the election of directors or other governing body (other than securities or interests having such power only by reason of the happening of a contingency) are at the time beneficially owned, (ii) more than half of the issued share capital is at the time beneficially owned or (iii) the management of which is otherwise controlled, directly or indirectly, through one or more intermediaries, or both, by such Person.

**“Term”** shall have the meaning set forth in Section 6.01.

**“Third Party”** shall mean any Person other than Purchaser and any Affiliate of Purchaser or the Company and any Subsidiary of the Company.

**“Transfer”** shall have the meaning set forth in Section 8.05.

**“UCC”** shall mean the Uniform Commercial Code as in effect in the State of New York from time to time.

**“Valves Product Applicable Percentage”** shall mean 5% with respect to any Valves Product Net Sales during the Assigned Interest Period.

**“Valves Product Interests”** shall mean the right to receive on a monthly basis cash in an amount equal to the product of the Valves Product Applicable Percentage multiplied by the Valves Product Net Sales during the Assigned Interest Period, pursuant to the terms and conditions of this Agreement. For the avoidance of doubt, Valves Product Interests shall not constitute any accounts or payment intangibles (as each term is defined in the UCC) giving rise to such cash amounts.

**“Valves Product Net Sales”** shall mean the aggregate amount of sales proceeds received by the Company (or an Affiliate, agent or sublicensee thereof, as applicable) for the Valves Products sold on or after the Closing Date, less Excluded Costs.

**“Valves Products”** shall mean the extracellular matrix technology products sold by the Company for the remodeling, repair or replacement of the tricuspid, pulmonary, mitral or aortic valves and any product substantially similar in design and application to any such product commercialized by the Company during the Assigned Interest Period.

## ARTICLE II

***Purchase of Assigned Interests***

SECTION 2.01. ***Purchase.*** Upon the terms and subject to the conditions set forth in this Agreement, the Company previously sold, assigned, transferred and conveyed to Purchaser, and Purchaser purchased from the Company, free and clear of all liens (except any liens for taxes or other governmental charges arising by operation of law in the ordinary course of business for sums which are not yet due and payable), all of the Company's rights and interests in and to the Assigned Interests on the Closing Date. Purchaser's ownership interest in the Assigned Interests so acquired shall have vested immediately upon the Company's receipt of payment of the Purchase Price for such Assigned Interests pursuant to Section 2.03(b), subject to the termination provisions of Section 6.01.

SECTION 2.02. ***Payments by the Company.***

(a) Monthly Payments in Respect of the Assigned Interests. In connection with the assignment of the Assigned Interests, Purchaser shall be entitled to receive, in respect of each Payment Month during the Assigned Interest Period:

(i) the Pipeline Product Applicable Percentage of Pipeline Product Net Sales (if any) received during such Payment Month; and

(ii) the Valves Product Applicable Percentage of Valves Product Net Sales (if any) received during such Payment Month.

(b) Payments to Purchaser. Within thirty (30) days following the end of each Payment Month during the Assigned Interest Period, the Company shall disburse to the Purchaser Account an amount equal to the amount to which Purchaser is entitled pursuant to Section 2.02(a) of this Agreement (if any) for such Payment Month.

SECTION 2.03. ***Closing; Payment of Purchase Price; Deliveries.***

(a) Closing. The closing of the purchase of the Assigned Interests pursuant to this Agreement (the "***Closing***") occurred as of the Closing Date.

(b) Payment of Purchase Price. At the Closing, Purchaser paid to the Company the Purchase Price by wire transfer of immediately available funds to such account as designated by the Company prior to the Closing Date.

(c) Closing Deliveries. At the Closing, as a condition precedent to the effectiveness of the Prior Agreement:

(i) the Company delivered to Purchaser a duly executed counterpart to this Agreement; and

(ii) Purchaser delivered to the Company (1) payment of the Purchase Price consistent with Section 2.03(b) and (2) a duly executed counterpart to this Agreement.

(d) Effectiveness Date Deliveries. As of the Effective Date, as a condition precedent to the effectiveness of this Agreement:

(i) the Company delivered to Purchaser (1) a duly executed counterpart to this Agreement and (2) the MidCap Payoff Letter duly executed by the Company and MidCap;

(ii) Purchaser delivered to the Company a duly executed counterpart to this Agreement;

(iii) Purchaser and Aziyo shall have entered into the Aziyo Royalty Agreement; and

(iv) the transactions contemplated by the Asset Purchase Agreement shall have been closed.

**SECTION 2.04. *No Assumed Obligations; Acquisition of Assigned Interests Alone.*** (a) Notwithstanding any provision in this Agreement or any other writing to the contrary, Purchaser acquired only the Assigned Interests and has not assumed any liability or obligation of the Company or any of its Affiliates of whatever nature, whether presently in existence or arising or asserted hereafter, whether under this Agreement or otherwise. All such liabilities and obligations shall be retained by and remain obligations and liabilities of the Company or its Affiliates (the “*Excluded Liabilities and Obligations*”).

(b) Purchaser has acquired no rights other than those expressly assigned herein. Notwithstanding any provision in this Agreement or any other writing to the contrary, Purchaser has not acquired any rights whatsoever under any Intellectual Property of the Company.

### ARTICLE III

#### ***Representations and Warranties of the Company***

**SECTION 3.01. *Organization.*** As of the Effective Date, each of the Company and its Subsidiaries is a corporation duly incorporated, validly existing and in good standing under the laws of its respective jurisdiction of formation and has all corporate powers and all licenses, authorizations, consents and approvals required to carry on its respective business as now conducted and as proposed to be conducted in connection with this Agreement.

**SECTION 3.02. *Authorization.*** The Company has all necessary power and authority to enter into, execute and deliver this Agreement and to perform all of the obligations to be performed by it hereunder and to consummate the transactions

contemplated hereunder. The Agreement has been duly authorized, executed and delivered by the Company and constitutes the valid and binding obligation of the Company, enforceable against the Company in accordance with its terms, subject to applicable bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally or general equitable principles.

SECTION 3.03. *Governmental Authorization.* The execution and delivery by the Company of the Agreement, and the performance by the Company of its obligations hereunder, does not require any notice to, action or consent by, or in respect of, or filing with, any Governmental Authority.

SECTION 3.04. *Ownership.* (a) As of the Effective Date, the Company owns or holds a valid license under all of the Intellectual Property and the Regulatory Approvals which it currently purports to own related to any of the Products free and clear of all liens (except any liens for taxes or other governmental charges arising by operation of law in the ordinary course of business for sums which are not yet due and payable). As of the Effective Date, neither the Company nor any of its Subsidiaries has granted, nor does there exist, any lien on the Assigned Interests (except any liens for taxes or other governmental charges arising by operation of law in the ordinary course of business for sums which are not yet due and payable).

(b) The Company and its Subsidiaries, immediately prior to the purchase by Purchaser of the Assigned Interests, owned, and were the sole holders of, all the Revenue Interests and owned, and were the sole holders of, and/or have and held a valid, enforceable and subsisting license to, all of those other assets that are required to produce any of the Products free and clear of any and all liens (other than any liens for taxes or other governmental charges arising by operation of law in the ordinary course of business for sums which are not yet due and payable). The Company and its Subsidiaries have not transferred, sold, or otherwise disposed of, or agreed to transfer, sell, or otherwise dispose of any portion of the Revenue Interests other than as contemplated by this Agreement. By the delivery to Purchaser of the executed Prior Agreement, the Company transferred, conveyed and assigned to Purchaser all of the Company's rights and interests in and to the Assigned Interests being sold, transferred, conveyed and assigned to Purchaser pursuant to this Agreement, free and clear of any liens (other than any liens for taxes or other governmental charges arising by operation of law in the ordinary course of business for sums which are not yet due and payable).

(c) There is no filed and served or, to the Knowledge of the Company, threatened action, suit, proceeding, investigation or claim by any Person to which the Company is a party that claims that the Intellectual Property or the manufacture, use, marketing, sale, offer for sale, importation or distribution of any Product infringes on any intellectual property of any other Person or constitutes misappropriation of any other Person's trade secrets or other intellectual property. The Company has not received any written communication containing an offer to license to the Company, or a request that the Company consider whether it wishes to obtain a license, under any intellectual property owned by a third party, in each case, to make, use or sell a Product. To the Knowledge of the Company, there are no pending unlicensed patent applications owned by any other

Person that, if a patent were to issue thereon without modification or amendment, would limit or prohibit, in any material respect, the manufacture, use or sale of any Product.

SECTION 3.05. *Litigation.* As of the date hereof, there is no (a) action, suit, arbitration proceeding, claim, investigation or other proceeding pending or, to the Knowledge of the Company, threatened against the Company or its Subsidiaries or (b) any governmental inquiry pending or, to the Knowledge of the Company, threatened against the Company or its Subsidiaries, in each case with respect to clauses (a) and (b) above, which, if adversely determined, would question the validity of, or could reasonably be expected to have a material adverse effect on the transactions contemplated by this Agreement or could reasonably be expected to have a Material Adverse Effect. As of the date hereof, there is no action, suit, arbitration proceeding, claim, investigation or other proceeding pending or, to the Knowledge of the Company, threatened against the Company, its Subsidiaries or any other Person relating to any of the Products, the Intellectual Property related to any of the Products, the Regulatory Approvals, the Revenue Interests or the Assigned Interests.

SECTION 3.06. *Compliance with Laws.* To the Knowledge of the Company, neither the Company nor any of its Subsidiaries (a) is in violation of, has violated or is under investigation with respect to, and (b) has been threatened to be charged with or been given notice of any violation of, any law, rule, ordinance or regulation of, or any judgment, order, writ, decree, permit or license entered by any Governmental Authority applicable to the Company, the Assigned Interests or the Revenue Interests which would reasonably be expected to have a Material Adverse Effect.

SECTION 3.07. *Conflicts.* Neither the execution and delivery of this Agreement nor the performance or consummation of the transactions contemplated hereby will: (a) contravene, conflict with, result in a breach or violation of, constitute a default under, or accelerate the performance provided by, in any material respects any provision of (i) any law, rule, ordinance or regulation of any Governmental Authority, or any judgment, order, writ, decree, permit or license of any Governmental Authority, to which the Company or its Subsidiaries or any of their respective assets or properties are subject or bound or (ii) any contract, agreement, commitment or instrument to which the Company or its Subsidiaries is a party or by which the Company or its Subsidiaries or any of their respective assets or properties is bound or committed; (b) contravene, conflict with, result in a breach or violation of, constitute a default under, or accelerate the performance provided by, any provisions of the articles or certificate of incorporation or bylaws (or other organizational or constitutional documents) of the Company; (c) require any notification to, filing with, or consent of, any Person or Governmental Authority, except such consents that are obtained at or prior to Closing; or (d) give rise to any right of termination, cancellation or acceleration of any right or obligation of the Company, its Subsidiaries or any other Person or to a loss of any right to receive the Revenue Interests or the Assigned Interests, except, in the case of the foregoing clauses (a), (c) or (d), for any such breaches, defaults or other occurrences that would not, individually or in the aggregate, have a Material Adverse Effect.

SECTION 3.08. ***Current Indebtedness.*** Other than as set forth on Schedule 3.08, there is no indebtedness (other than trade indebtedness in the ordinary course of business) for borrowed money of the Company.

SECTION 3.09. ***Solvency.*** As of the Effective Date, the fair salable value of the Company's assets (including goodwill minus disposition costs) exceeds the fair value of its liabilities. After giving effect to the transactions described in this Agreement, the Company (a) is not left with unreasonably small capital in relation to its business as presently conducted and (b) is able to pay its debts (including trade debts) as they mature.

SECTION 3.10. ***Financial Statements.*** All financial statements for the Company delivered to Purchaser fairly present, in conformity with generally accepted accounting principles, in all material respects, the consolidated financial condition and consolidated results of operations of the Company.

SECTION 3.11. ***Products.*** As of the Effective Date, the only products that are in development by the Company or any of its Affiliates are Pipeline Products and Valve Products.

#### ARTICLE IV

##### ***Representations and Warranties of Purchaser***

SECTION 4.01. ***Organization.*** Purchaser is a corporation duly incorporated and validly existing under the laws of the State of Delaware.

SECTION 4.02. ***Authorization.*** Purchaser has all necessary power and authority to enter into, execute and deliver this Agreement and to perform all of the obligations to be performed by it hereunder and to consummate the transactions contemplated hereunder. This Agreement has been duly authorized, executed and delivered by Purchaser and constitutes the valid and binding obligation of Purchaser, enforceable against Purchaser in accordance with its respective terms, subject, as to enforcement of remedies, to bankruptcy, insolvency, reorganization, moratorium or similar laws affecting creditors' rights generally or general equitable principles.

SECTION 4.03. ***Conflicts.*** Neither the execution and delivery of this Agreement nor the performance or consummation of the transactions contemplated hereby by Purchaser will: (a) contravene, conflict with, result in a breach or violation of, constitute a default under, or accelerate the performance provided by, in any material respects any provision of (i) any law, rule or regulation of any Governmental Authority, or any judgment, order, writ, decree, permit or license of any Governmental Authority, to which Purchaser or any of its assets or properties may be subject or bound or (ii) any contract, agreement, commitment or instrument to which Purchaser is a party or by which Purchaser or any of its assets or properties is bound or committed; (b) contravene, conflict with, result in a breach or violation of, constitute a default under, or accelerate the performance provided by, any provisions of the organizational or constitutional documents of Purchaser; or (c) require any notification to, filing with, or consent of, any Person or Governmental

Authority, except, in the case of the foregoing clauses (a) or (c), for any such breaches, defaults or other occurrences that would not, individually or in the aggregate, have a material adverse effect on the ability of Purchaser to perform any of its obligations under this Agreement.

## ARTICLE V

### *Covenants*

#### SECTION 5.01. *Access; Information.*

(a) Maintenance of Books and Records. During the Term, the Company shall keep and maintain, or cause to be kept and maintained, at all times books of account and record consistent with good business practices and customary industry standards adequate to correctly reflect all payments paid and/or payable with respect to the Assigned Interests.

(b) Inspection Rights. Purchaser shall have the right, once a year, to designate a Third Party independent public accounting firm (the “*Purchaser Representative*”) to visit the Company and its Subsidiaries’ offices and properties where the Company and its Subsidiaries keep and maintain their books and records relating or pertaining to the Revenue Interests and the Assigned Interests for purposes of conducting an audit of such books and records, and to inspect and audit such books and records, during normal business hours, and, upon five (5) Business Days’ written notice given by Purchaser to the Company, the Company will provide such Purchaser Representative reasonable access to such books and records.

(c) Audit Costs. In the event any audit of the books and records of the Company and its Subsidiaries relating to the Revenue Interests and the Assigned Interests by Purchaser and/or any of Purchaser’s representatives reveals that the amounts paid to Purchaser hereunder for the period of such audit have been understated by more than ten percent (10%) of the amounts determined to be due for the period subject to such audit, then the Audit Costs in respect of such audit shall be borne by the Company; and in all other cases, such Audit Costs shall be borne by Purchaser.

(d) Monthly Reports. Commencing with the Payment Month during which the first commercial sale of any of the Products shall occur and continuing during the Term, the Company shall, promptly after the end of each Payment Month of the Company (but in no event later than thirty (30) days following the end of such Payment Month), produce and deliver to Purchaser a Monthly Report for such Payment Month.

(e) Periodic Reports. Commencing with the Fiscal Quarter or Fiscal Year, as applicable, during which the first commercial sale of any of the Products shall occur and continuing during the Term, the Company shall deliver to Purchaser the following financial statements:

(i) Within forty-five (45) days after the end of each Fiscal Quarter, copies of the unaudited consolidated financial statements of the Company and its Subsidiaries for such Fiscal Quarter; and

(ii) Within ninety (90) days after the end of each Fiscal Year, copies of the audited consolidated financial statements of the Company and its Subsidiaries for such Fiscal Year.

**SECTION 5.02. Confidentiality; Press Release.** (a) All Confidential Information furnished by the Company to Purchaser or by Purchaser to the Company in connection with this Agreement and the transactions contemplated hereby, as well as the terms, conditions and provisions of this Agreement, shall be kept confidential by Purchaser and the Company. Notwithstanding the foregoing, (i) the Company and Purchaser may disclose such Confidential Information to their partners, directors, employees, managers, officers, investors, bankers, advisors, trustees and representatives, (ii) the Company may disclose the terms, conditions and provisions of this Agreement to any Third Party in connection with (and only in connection with) a transaction with such Third Party that could reasonably be expected to result in (X) a Company Change of Control, (Y) a Product Change of Control or (Z) a sale by the Company of a Subsidiary, division, product line, or other significant portion of its business and (iii) the Company and Purchaser may disclose such Confidential Information as may otherwise be required by applicable law, including filing this Agreement with the SEC; *provided*, in the case of the foregoing clauses (i) and (ii), that such Persons and such Third Parties shall be informed of the confidential nature of such information and shall be obligated to keep such information confidential pursuant to the terms of this Section 5.02(a); *provided, further*, that in the case of the foregoing clause (iii), Purchaser shall provide five (5) Business Days' notice to the Company of any filing with the SEC and consider in good faith a request for confidential treatment of any portion of this Agreement prior to filing with the SEC.

(b) Notwithstanding the foregoing clause (a), Purchaser may make a press release or other announcement or public disclosure concerning this Agreement, *provided* that such press release shall be (x) subject to prior review by the Company and (y) in form and substance reasonably satisfactory to the Company taking into account any commercial sensitivities of the Company.

**SECTION 5.03. Efforts; Further Assurance.** Subject to the terms and conditions of this Agreement, each of Purchaser and the Company will use its commercially reasonable efforts to take, or cause to be taken, all actions and to do, or cause to be done, all things necessary under applicable laws and regulations to consummate the transactions contemplated by this Agreement. Purchaser and the Company agree to execute and deliver such other documents, certificates, agreements and other writings and to take such other actions as may be reasonably necessary in order to consummate or implement expeditiously the transactions contemplated by this Agreement and to vest in Purchaser good, valid and marketable rights and interests in and to the Assigned Interests. Company further agrees to use its commercially reasonable efforts to develop, launch and commercialize the Products.

SECTION 5.04. **Licenses.** During the Term, the Company shall maintain each of the licenses made or entered into with respect to the Products that is required in order to be able to market and sell any of the Products in good standing and shall not take any action, or omit to fail to take any action (including making necessary payments), which would result in a breach or early termination of any license agreements or any rights thereunder, except in each case to the extent the same would not affect Purchaser's rights or license hereunder, and provided that, the Company's obligations with respect to making necessary payments under such licenses shall be contingent upon Purchaser making corresponding payments to the Company pursuant to this Agreement. The Company covenants that it shall not amend, modify or supplement the terms of, or waive any rights under, any such license (except as those that may be entered into between the Company and Purchaser) without the prior written consent of Purchaser where and to the extent that any amendment or waiver would adversely affect the rights and licenses granted to Purchaser pursuant to this Agreement. The Company shall promptly notify Purchaser upon receipt by the Company of any notice from any in-bound licensor of any actual or alleged breach under any license that could result in the termination of such agreement or a material reduction or other material limitation in the Company's rights thereunder to the extent the same would adversely affect Purchaser's rights or license hereunder, and the Company shall promptly cure any such breach within the allotted cure period and if it is unwilling or unable to do so, the Company shall timely notify Purchaser and Purchaser shall have the right to cure such breach on the Company's behalf.

SECTION 5.05. **Remedies Event.** During the Term, if a Remedies Event shall have occurred, the Company shall not, without the consent of Purchaser, distribute any dividend, retire any indebtedness for borrowed money or engage in any transaction that would result in a Company Change of Control.

SECTION 5.06. **Diligence.** During the Assigned Interest Period with respect to the Products, the Company shall use reasonable commercial efforts to develop the Products and obtain Regulatory Approval for at least one (1) Product and, after receiving the applicable Regulatory Approval, to commercialize at least one (1) Product in the United States and in Europe.

SECTION 5.07. **Indebtedness; Sale of Revenue Interests.** Except set forth in Schedule 5.07, during the Term, unless Purchaser shall otherwise consent in writing, the Company shall not, other than in connection with any Permitted Transaction, (x) incur, create, assume or permit to exist any indebtedness for borrowed money of the Company other than indebtedness of the Company as of the Closing Date or (y) sell, assign, transfer, encumber, hypothecate, grant a security interest in or convey the Assigned Interests and any proceeds and products thereof, the Assigned Interest Related Collateral and any Revenue Interests other than by the terms of this Agreement.

## ARTICLE VI

***Termination***

SECTION 6.01. ***Termination.*** Except as provided in this Section 6.01 and in Section 6.02, this Agreement shall terminate upon expiration of the Assigned Interest Period with respect to all Products (the “***Term***”). If any payments are accrued hereunder on or prior to that date and are required to be made by one of the Parties hereunder, this Agreement shall remain in full force and effect until any and all such payments have been made in full. Upon expiration or termination of this Agreement in accordance with its terms, all right, title, and interest in and to the Assigned Interests shall automatically revert to Company, and Purchaser will have no further rights in or with respect to the Assigned Interests.

SECTION 6.02. ***Effect of Termination.*** In the event of the termination of this Agreement pursuant to Section 6.01, this Agreement shall forthwith become void, impose no liability on the part of any Party hereto or its Affiliates, directors, officers, stockholders, partners, managers or members and have no effect other than the provisions of this Section 6.02, Section 5.02 and Article VII hereof, which shall survive any such termination.

## ARTICLE VII

***Miscellaneous***

SECTION 7.01. ***Survival.*** All representations and warranties made herein or in any other writing delivered pursuant hereto shall survive the execution and delivery of this Agreement and shall continue to survive until the expiration or termination of this Agreement in accordance with Article VI.

SECTION 7.02. ***Notices.*** All notices, consents, waivers and communications hereunder given by any party to the other shall be in writing (including facsimile transmission) and delivered personally, by telegraph, telecopy, telex or facsimile, by a recognized overnight courier, or by dispatching the same by certified or registered mail, return receipt requested, with postage prepaid, in each case addressed (with a copy by email):

If to Purchaser to:

Ligand Pharmaceuticals Incorporated  
3911 Sorrento Valley Boulevard, Suite 110  
San Diego, CA 92121  
Attention: Matthew Korenberg  
Email: mkorenberg@ligand.com

With a copy to:

Latham & Watkins LLP

12670 High Bluff Drive  
 San Diego, CA 92130  
 Attention: Scott N. Wolfe  
 Email: scott.wolfe@lw.com

If to the Company to:

CorMatrix Cardiovascular, Inc.  
 1100 Old Ellis Road  
 Roswell, GA 30076  
 Attention: John C. Thomas, Jr.  
 Email: jthomas@cormatrix.com

With a copy to:

Ledbetter Wanamaker Glass LLP  
 1201 Peachtree Street NE, Suite 1501  
 Atlanta, Georgia 30361  
 Attention: Larry D. Ledbetter  
 Email: lledbetter@lwglaw.com

or to such other address or addresses as Purchaser or the Company may from time to time designate by notice as provided herein, except that notices of changes of address shall be effective only upon receipt. All such notices, consents, waivers and communications shall: (a) when posted by certified or registered mail, postage prepaid, return receipt requested, be effective three (3) Business Days after dispatch, (b) when telegraphed, telecopied, telexed or facsimiled, be effective upon receipt by the transmitting party of confirmation of complete transmission, or (c) when delivered by a recognized overnight courier or in person, be effective upon receipt when hand delivered.

**SECTION 7.03. *Successors and Assigns.*** (a) The provisions of this Agreement shall be binding upon and inure to the benefit of the parties hereto and their respective successors and assigns.

(b) Upon the consent of Purchaser (which consent may not be unreasonably withheld, delayed or conditioned for any proposed assignment to any reasonably creditworthy potential Acquiror or other proposed assignee), the Company may assign all or any applicable part of its rights and obligations under this Agreement to any Acquiror in respect of any Product Change of Control, subject to the assumption by such Acquiror of the obligations set forth in Section 2.02 or to any other proposed assignee. For purposes of this Section 7.03(b), any Person the creditworthiness of whom clearly exceeds the creditworthiness of the Company shall be deemed to be reasonably creditworthy.

(c) Solely upon the consent of the Company (which consent may not be unreasonably withheld, delayed or conditioned, other than in respect of any proposed assignment to any direct competitor of the Company, in respect of which such consent may be granted or withheld by the Company in its sole discretion), Purchaser may assign any of its obligations or rights under the Agreement without restriction; *provided that*,

notwithstanding the foregoing, Purchaser may assign its rights and/or delegate its obligations under this Agreement to an Affiliate, to any Person in a transaction in which Purchaser also assigns all of its right, title and interest in all or substantially all of its assets to the same party contemporaneous with the assignment of this Agreement, or to a successor, whether by way of merger, sale of stock or otherwise, without the Company's prior written consent. In advance of any proposed assignment by Purchaser to any proposed assignee, Purchaser shall provide to the Company any information concerning such proposed assignment and such proposed assignee as may be reasonably requested by the Company.

SECTION 7.04. **Indemnification.** (a) The Company hereby indemnifies and holds Purchaser and its Affiliates and any of their respective partners, directors, managers, members, officers, employees and agents (each, a "**Purchaser Indemnified Party**") harmless from and against any and all Losses incurred or suffered by any Purchaser Indemnified Party arising out of any breach of any representation or warranty made by the Company in this Agreement.

(b) Purchaser hereby indemnifies and holds the Company, its Affiliates and any of their respective partners, directors, managers, officers, employees and agents (each, a "**Company Indemnified Party**") harmless from and against any and all Losses incurred or suffered by a Company Indemnified Party arising out of any breach of any representation or warranty made by Purchaser in this Agreement.

(c) If any claim, demand, action or proceeding (including any investigation by any Governmental Authority) shall be brought or alleged against an indemnified party in respect of which indemnity is to be sought against an indemnifying party pursuant to the preceding paragraphs, the indemnified party shall, promptly after receipt of notice of the commencement of any such claim, demand, action or proceeding, notify the indemnifying party in writing of the commencement of such claim, demand, action or proceeding, enclosing a copy of all papers served, if any; *provided*, that the omission to so notify such indemnifying party will not relieve the indemnifying party from any liability that it may have to any indemnified party under the foregoing provisions of this Section 7.04 unless, and only to the extent that, such omission results in the forfeiture of, or has a material adverse effect on the exercise or prosecution of, substantive rights or defenses by the indemnifying party. In case any such action is brought against an indemnified party and it notifies the indemnifying party of the commencement thereof, the indemnifying party will be entitled to participate therein and, to the extent that it may wish, jointly with any other indemnifying party similarly notified, to assume the defense thereof, with counsel reasonably satisfactory to such indemnified party (who shall not, except with the consent of the indemnified party, be counsel to the indemnifying party), and after notice from the indemnifying party to such indemnified party of its election so to assume the defense thereof, the indemnifying party will not be liable to such indemnified party under this Section 7.04 for any legal or other expenses subsequently incurred by such indemnified party in connection with the defense thereof other than reasonable costs of investigation. In any such proceeding, an indemnified party shall have the right to retain its own counsel, but the reasonable fees and expenses of such counsel shall be at the expense of such indemnified party unless the indemnifying party and the indemnified party shall

have mutually agreed to the retention of such counsel. It is agreed that the indemnifying party shall not, in connection with any proceeding or related proceedings in the same jurisdiction, be liable for the reasonable fees and expenses of more than one separate law firm (in addition to local counsel where necessary) for all such indemnified parties. The indemnifying party shall not be liable for any settlement of any proceeding effected without its written consent, but if settled with such consent or if there be a final judgment for the plaintiff, the indemnifying party agrees to indemnify the indemnified party from and against any loss or liability by reason of such settlement or judgment. No indemnifying party shall, without the prior written consent of the indemnified party, effect any settlement of any pending or threatened proceeding in respect of which any indemnified party is or could have been a party and indemnity could have been sought hereunder by such indemnified party, unless such settlement includes an unconditional release of such indemnified party from all liability on claims that are the subject matter of such proceeding.

(d) Purchaser's sole remedy shall be to recover any monetary damages associated with a breach of a representation or warranty made by the Company in this Agreement, subject to the other terms and provisions contained in this Agreement.

**SECTION 7.05. *No Implied Representations and Warranties.*** Each Party acknowledges and agrees that, other than the representations and warranties specifically contained in this Agreement, there are no representations or warranties of either Party or any other Person either expressed or implied with respect to the Assigned Interests or the transactions contemplated hereby. Without limiting the foregoing, Purchaser acknowledges and agrees that (a) Purchaser and its Affiliates, together with its and its Affiliates' representatives, have made their own investigation of the Products, the Intellectual Property related to the Products and the Regulatory Approvals and are not relying on any implied warranties or upon any representation or warranty whatsoever as to the future amount or potential amount of the Assigned Interests or as to the creditworthiness of Company and (b) except as expressly set forth in any representation or warranty in the Agreement, Purchaser shall have no claim or right to indemnification pursuant to Section 7.04 (or otherwise) with respect to any information, documents or materials furnished to Purchaser, any of its Affiliates, or any of its or its Affiliates' representatives, including any information, documents or material made available to Purchaser, its Affiliates or any of its and its Affiliates' representatives in any data room, presentation, management presentation, interview or any other form relating to the transactions contemplated hereby.

**SECTION 7.06. *Independent Nature of Relationship.*** (a) The relationship between the Company and Purchaser is solely that of seller and purchaser, and neither Purchaser nor the Company has any fiduciary or other special relationship with the other or any of their respective Affiliates. Nothing contained herein shall be deemed to constitute the Company and Purchaser as a partnership, an association, a joint venture or other kind of entity or legal form for any purposes, including any tax purposes.

(b) No officer or employee or agent of Purchaser will be located at the premises of the Company or any of its Affiliates, except in connection with an audit

performed pursuant to Section 5.01. No officer, manager or employee of Purchaser shall engage in any commercial activity with the Company or any of its Affiliates other than as contemplated herein or as otherwise separately agreed in writing.

(c) Purchaser and/or any of its Affiliates shall not at any time obligate the Company, or impose on the Company any obligation, in any manner or respect to any Person not a party hereto. The Company and/or any of its Affiliates shall not at any time obligate Purchaser, or impose on Purchaser any obligation, in any manner or respect to any Person not a party hereto.

**SECTION 7.07. *Entire Agreement.*** This Agreement, together with the Exhibits and Schedules hereto (which are incorporated herein by reference), constitute the entire agreement between the parties with respect to the subject matter hereof and supersede all prior agreements (including any term sheet), understandings and negotiations, both written and oral, between the Parties with respect to the subject matter of this Agreement. No representation, inducement, promise, understanding, condition or warranty not set forth herein has been made or relied upon by either Party hereto. None of this Agreement, nor any provision hereof, is intended to confer upon any Person other than the parties hereto any rights or remedies hereunder or in respect hereof.

**SECTION 7.08. *Amendments; No Waivers.*** (a) Neither this Agreement nor any term or provision hereof may be amended, changed or modified except with the written consent of all parties hereto. No waiver of any right hereunder shall be effective unless such waiver is signed in writing by the party against whom such waiver is sought to be enforced.

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

**SECTION 7.09. *Interpretation.*** When a reference is made in this Agreement to Articles, Sections, Schedules or Exhibits, such reference shall be to an Article, Section, Schedule or Exhibit to this Agreement unless otherwise indicated. The words "include", "includes" and "including" when used herein shall be deemed in each case to be followed by the words "without limitation". Neither party hereto shall be or be deemed to be the drafter of this Agreement for the purposes of construing this Agreement against one party or the other.

**SECTION 7.10. *Headings and Captions.*** The headings and captions in this Agreement are for convenience and reference purposes only and shall not be considered a part of or affect the construction or interpretation of any provision of this Agreement.

**SECTION 7.11. *Counterparts; Effectiveness.*** This Agreement may be executed in two or more counterparts, each of which shall be an original, but all of which

together shall constitute one and the same instrument. This Agreement shall become effective when each party hereto shall have received a counterpart hereof signed by the other parties hereto. Any counterpart may be executed by facsimile or pdf signature and such facsimile or pdf signature shall be deemed an original.

SECTION 7.12. **Severability.** If any provision of this Agreement is held to be invalid or unenforceable, the remaining provisions shall nevertheless be given full force and effect.

SECTION 7.13. **Expenses.** Each of Purchaser and the Company will pay all of its own fees and expenses in connection with entering into and consummating the transactions contemplated by this Agreement.

SECTION 7.14. **Governing Law; Jurisdiction.** (a) This Agreement shall be governed by, and construed, interpreted and enforced in accordance with, the laws of the state of New York, without giving effect to the principles of conflicts of law thereof.

(b) Any legal action or proceeding with respect to this Agreement may be brought in any state or federal court of competent jurisdiction in the State of New York, County of New York. By execution and delivery of this Agreement, each party hereto hereby irrevocably consents to and accepts, for itself and in respect of its property, generally and unconditionally the exclusive jurisdiction of such courts. Each party hereto hereby further irrevocably waives any objection, including any objection to the laying of venue or based on the grounds of *forum non conveniens*, which it may now or hereafter have to the bringing of any action or proceeding in such jurisdiction in respect of this Agreement.

(c) Each party hereto hereby irrevocably consents to the service of process out of any of the courts referred to in clause (b) of this Section 7.14 in any such suit, action or proceeding by the mailing of copies thereof by registered or certified mail, postage prepaid, to it at its address set forth in this Agreement. Each party hereto hereby irrevocably waives any objection to such service of process and further irrevocably waives and agrees not to plead or claim in any suit, action or proceeding commenced hereunder that service of process was in any way invalid or ineffective. Nothing herein shall affect the right of a party to serve process on the other party in any other manner permitted by law.

## ARTICLE VIII

### ***Intercreditor Matters***

SECTION 8.01. **Purchase and Sale Treatment; Recharacterization.** (a) It is the intention of the Parties to this Agreement that the conveyance by the Company to Purchaser of the Assigned Interests pursuant to this Agreement shall constitute a purchase and sale, and such purchase and sale of the Assigned Interests hereunder shall be treated as a sale for all purposes, other than federal and state income tax purposes. The provisions of this Agreement shall be construed to further these intentions of the Parties.

(b) The Assigned Interests and any amounts received by the Company in respect of the Assigned Interests (subject to any adjustments for Excluded Costs) are not, and are not intended to be, the property of the Company (or, in the event of a Bankruptcy Event, any estate created thereby by operation of applicable law or otherwise) but is possessed by the Company in trust solely on behalf of Purchaser pending disbursement to Purchaser or as otherwise provided for in Section 5.09(b), in each case, as contemplated hereby.

(c) If, notwithstanding clause (b), the conveyance of the Assigned Interests is subject to a Recharacterization, the Parties intend that the Company shall be deemed hereunder to have granted, and the Company does hereby grant, to Purchaser a first priority security interest in favor of Purchaser, to secure the obligations to make the payments under Section 2.02 in the Assigned Interests and all proceeds and products thereof.

(d) If, notwithstanding clause (b), the conveyance of the Assigned Interests is subject to a Recharacterization, the Parties intend that the Company shall be deemed hereunder to have granted, and the Company does hereby grant a first priority security interest in favor of Purchaser, to secure the obligations to make payments under Section 2.02 in the Assigned Interest Related Collateral.

**SECTION 8.02. *Priority.*** The security interest granted in Section 8.01(c) shall be for all purposes senior in right to any other lien.

**SECTION 8.03. *Control Agreements.*** (a) The Purchaser agrees to terminate on or before ten (10) Business Days after the Effective Date (i) that certain Agreement Regarding Pledged Collateral, dated June 8, 2016, among the Purchaser, the Company and State Bank and Trust and (ii) if requested by the Company, any other control or similar agreements identified by the Company that Purchaser and the Company may have entered into with any bank or financial institution in order to cause such bank or financial institution to comply at any time with instructions from Purchaser to such bank or financial institution directing the disposition of funds in any deposit account of the Company held with such bank or financial institution.

(b) At least ten (10) Business Days prior to the first commercial sale of any Product, the Company shall notify Purchaser of such first commercial sale and shall (i) establish a separate bank account (the “*Special Account*”), (ii) grant Purchaser a first priority security lien in the Special Account, (iii) enter into a depositary account control agreement naming Purchaser as a lien holder, and (iv) transfer the Assigned Interests to the Special Account on a weekly basis.

**SECTION 8.04. *Termination or Release.*** (a) Upon termination of this Agreement in accordance with its terms and payment in full of all Obligations (other than any contingent indemnification obligations with respect to which no claim has been made) owing by the Company to Purchaser, all right, title, and interest in and to the Assigned Interest Related Collateral shall automatically revert to Company and Purchaser will have

no further rights in or with respect to the Assigned Interest Related Collateral and all security interests granted pursuant to this Article VIII shall terminate and be released.

(b) At the Company's request, Purchaser shall subordinate its liens with respect to any of the Assigned Interest Related Collateral or terminate and release its liens with respect to any of the Assigned Interest Related Collateral subject to any Permitted Transaction.

(c) In connection with any termination or release pursuant to this Section 8.04, Purchaser shall execute and deliver to the Company all documents that the Company shall reasonably request to evidence such termination or release.

SECTION 8.05. **Financing Statements.** The Company hereby irrevocably authorizes the Purchaser at any time and from time to time to file in any filing office and/or recording or registration office in any relevant jurisdiction any financing statements and amendments thereto that contain the information required by Article 9 of the UCC of each applicable jurisdiction for the filing of any financing statement or amendment relating to the collateral in which the Purchaser was granted a security interest pursuant to the terms of this Agreement. Purchaser shall provide reasonable notice to the Company of all such financing statement filings made by Purchaser on or about the date hereof, and any subsequent filings or amendments, supplements or terminations of existing filings, made by the Company from time to time thereafter.

## ARTICLE IX

### ***Remedies***

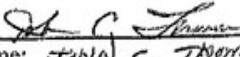
SECTION 9.01. **Remedies.** If any Remedies Event shall occur and be continuing, Purchaser may exercise all rights and remedies of a secured party under the UCC or under any other applicable law and in equity.

*[Remainder of this page intentionally left blank]*

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

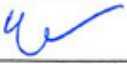
CORMATRIX CARDIOVASCULAR, INC.

By

  
Name: JOHN C. THOMAS  
Title: C. F. O.

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

LIGAND PHARMACEUTICALS  
INCORPORATED

By   
Name: Charles Berkman  
Title: VP, General Counsel & Secretary



**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: August 8, 2017

/s/ John L. Higgins

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John L. Higgins

Chief Executive Officer

(Principal Executive Officer)

**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: August 8, 2017

/s/ Matthew Korenberg

Matthew Korenberg

Vice President, Finance and Chief Financial Officer

(Principal Financial Officer)

**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 June 30, 2017, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, John L. Higgins, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 8, 2017

/s/ John L. Higgins

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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 June 30, 2017, as filed with the Securities and Exchange Commission on the date hereof (the “Report”), I, Matthew Korenberg, Vice President, Finance and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

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

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

Date: August 8, 2017

/s/ Matthew Korenberg

Matthew Korenberg

*Vice President, Finance and Chief Financial Officer*

*(Principal Financial Officer)*

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