LIGAND PHARMACEUTICALS INC
Form 10-K
February 26, 2016
Table of Contents

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

FORM 10-K

Mark One

x ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the Fiscal Year Ended December 31, 2015

OR

o TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from to .

Commission File No. 001-33093

LIGAND PHARMACEUTICALS INCORPORATED
(Exact name of registrant as specified in its charter)

Delaware	77-0160744
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)
11119 North Torrey Pines Rd., Suite 200 La Jolla, CA	92037
(Address of Principal Executive Offices)	(Zip Code)

Registrant's telephone number, including area code: (858) 550-7500

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

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, par value $.001 per share	The NASDAQ Global Market of The NASDAQ Stock Market LLC
Preferred Share Purchase Rights	The NASDAQ Global Market of The NASDAQ Stock Market LLC

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

None

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes x No o

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Securities Exchange Act of 1934. Yes o No x

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

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 x No o

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. x

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

Large Accelerated Filer x	Accelerated Filer o (Do not check if a smaller reporting company)	Non-accelerated Filer o	Smaller reporting company o

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

The aggregate market value of the Registrant’s voting and non-voting stock held by non-affiliates was approximately $1.9 billion based on the last sales price of the Registrant’s Common Stock on the NASDAQ Global Market of the NASDAQ Stock Market LLC on June 30, 2015. For purposes of this calculation, shares of Common Stock held by directors, officers and 10% stockholders known to the Registrant have been deemed to be owned by affiliates which should not be construed to indicate that any such person possesses the power, direct or indirect, to direct or cause the direction of the management or policies of the Registrant or that such person is controlled by or under common control with the Registrant.

Table of Contents

As of February 17, 2016, the Registrant had 20,773,073 shares of Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the Registrant's 2015 Annual Meeting of Stockholders to be filed with the Commission on or before April 29, 2016 are incorporated by reference in Part III of this Annual Report on Form 10-K. With the exception of those portions that are specifically incorporated by reference in this Annual Report on Form 10-K, such Proxy Statement shall not be deemed filed as part of this Report or incorporated by reference herein.

Table of Contents

Table of Contents

Table of Contents

GLOSSARY OF TERMS AND ABBREVIATIONS

Abbreviation	Definition
2019 Convertible Senior Notes	$245.0 million aggregate principal amount of convertible senior unsecured notes due 2019
ABSSSI	Acute bacterial skin and skin structure infections
ADHF	Acute decompensated heart failure
Amended ESPP	Employee Stock Purchase Plan, as amended and restated
Amgen	Amgen, Inc.
AML	Acute myeloid leukemia
ANDA	Abbreviated New Drug Application
AOCI	Accumulated Other Comprehensive Income
API	Active pharmaceutical ingredient
ASU	Accounting Standards Update
Azure	Azure Biotech, Inc.
BACE	Beta-secretase
Baxter	Baxter International, Inc.
BMS	Bristol Myers Squibb
Cardioxyl	Cardioxyl Pharmaceuticals, Inc.
CIT	Chemotherapy-induced thrombocytopenia
CMC	Chemistry, Manufacturing and Controls
Coherus Biosciences	Coherus Biosciences, Inc.
CoM	Composition of Matter
Company	Ligand Pharmaceuticals Incorporated, including subsidiaries
COSO	Committee of Sponsoring Organizations of the Treadway Commission
CRO	Contract Research Organization
CURx	CURx Pharmaceuticals, Inc.
CVR	Contingent value right
CyDex	CyDex Pharmaceuticals, Inc.
Deciphera	Deciphera Pharmaceuticals, LLC
DMF	Drug Master File
EC	European Commission
Eli Lilly	Eli Lilly and Company
EPOR	Erythropoietin receptor
Ethicor	Ethicor Pharmaceuticals, Ltd
EU	European Union
FASB	Financial Accounting Standards Board
FDA	Food and Drug Administration
FSGS	Focal segmental glomerulosclerosis
GCSF	Granulocyte-colony stimulating factor
Hovione	Hovione FarmCiencia
IND	Investigational New Drug
IPR&D	In-Process Research and Development
IRAK-4	Interleukin-1 Receptor Associated Kinase-4
ITP	Chronic immune (idiopathic) thrombocytopenic purpura
IV	Intravenous
Ligand	Ligand Pharmaceuticals Incorporated, including subsidiaries
LSA	Loan and Security Agreement

Table of Contents

LTP	Liver-targeted prodrug
Lundbeck	Lundbeck A/S
MDS	Myelodysplastic syndromes
Melinta	Melinta Therapeutics, Inc.
Merck	Merck & Co., Inc.
Merrimack	Merrimack Pharmaceuticals, Inc.
Millenium	Millenium Pharmaceuticals, Inc.
MLA	Master License Agreement
MRSA	Methicillin-resistant Staphylococcus aureu
NASH	Non-alcoholic steatohepatitis
NDA	New Drug Application
NOLs	Net Operating Losses
OMT	OMT, Inc. or Open Monoclonal Technology, Inc.
Omthera	Omthera Pharmaceuticals, Inc.
Orange Book	Publication identifying drug products approved by the FDA based on safety and effectiveness
Par	Par Pharmaceutical, Inc.
Pfizer	Pfizer Inc.
Retrophin	Retrophin Inc.
SAA	Severe Aplastic Anemia
SAGE	Sage Therapeutics, Inc.
SARM	Selective Androgen Receptor Modulator
Sedor	Sedor Pharmaceuticals, Inc., or RODES, Inc.
Selexis	Selexis, SA
Sermonix	Sermonix Pharmaceuticals, LLC
Spectrum	Spectrum Pharmaceuticals, Inc.
SRSE	Super-refractory status epilepticus
Takeda	Takeda Pharmaceuticals Company Limited
TG Therapeutics	TG Therapeutics, Inc.
TPE	Third-party evidence
TR-	Thyroid hormone receptor beta
VentiRx	VentiRx Pharmaceuticals Inc.
VIE	Variable interest entity
Viking	Viking Therapeutics
Viking IPO	Viking's initial public offering
VSOE	Vendor-specific objective evidence
X-ALD	X-linked adrenoleukodystrophy
Zydus Cadila	Zydus Cadila Healthcare Ltd

Table of Contents

PART I

Cautionary Note Regarding Forward-Looking Statements:

You should read the following together with the more detailed information regarding our company, our common stock and our financial statements and notes to those statements appearing elsewhere in this document or incorporated by reference.

This report contains forward-looking statements that involve a number of risks and uncertainties. Although our forward-looking statements reflect the good faith judgment of our management, these statements can only be based on facts and factors currently known by us. Consequently, these forward-looking statements are inherently subject to risks and uncertainties, and actual results and outcomes may differ materially from results and outcomes discussed in the forward-looking statements.

Forward-looking statements can be identified by the use of forward-looking words such as “believes,” “expects,” “may,” “will,” “plan,” “intends,” “estimates,” “would,” “continue,” “seeks,” “pro forma,” or “anticipates,” or other similar words (incl use in the negative), or by discussions of future matters such as those related to our royalties and milestones under license agreements, Capitsol materials sales, and product development, as well as other statements that are not historical. You should be aware that the occurrence of any of the events discussed under the caption “Risk Factors” could negatively affect our results of operations and financial condition and the trading price of our stock.

The cautionary statements made in this report are intended to be applicable to all related forward-looking statements wherever they may appear in this report. We urge you not to place undue reliance on these forward-looking statements, which speak only as of the date of this report. Except as required by law, we assume no obligation to update our forward-looking statements, even if new information becomes available in the future. This caution is made under the safe harbor provisions of Section 21E of the Securities Exchange Act of 1934, as amended.

References to “Ligand Pharmaceuticals Incorporated,” “Ligand,” the “Company,” “we,” “our” and “us” include Ligand Pharmaceuticals Incorporated and our wholly-owned subsidiaries.

Trademarks

Our trademarks, trade names and service marks referenced herein include Ligand®, Captisol®, Captisol-enabled,™ LTP technology,™ OmniAb®, OmniMouse®, OmniRat® and OmniFlic®. All other trademarks, trade names and service marks including Conbriza®, Duavee®, Kyprolis®, Premarin®, Promacta®, Revolade®, SUREtechnology Platform,™ and Viviant® are the property of their respective owners. Use or display by us of other parties’ trademarks, trade dress or products is not intended to and does not imply a relationship with, or endorsement or sponsorship of, us by the trademark or trade dress owners.

Table of Contents

Item 1. Business

Overview

We are a biopharmaceutical company focused on developing and acquiring technologies that help pharmaceutical companies discover and develop medicines. Over our more than 25 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 85 pharmaceutical and biotechnology companies, and over 140 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 300 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.

2015 Major Business Highlights for Ligand

Late-Stage Clinical Data

- On December 5, 2015, Amgen announced The Lancet Oncology published results from the Phase 3 ENDEAVOR clinical trial evaluating Kyprolis plus dexamethasone versus Velcade (bortezomib) plus dexamethasone showing that patients with relapsed multiple myeloma treated with Kyprolis lived twice as long without their disease worsening.
- Melinta announced positive results from a Phase 3 study to evaluate delafloxacin against vancomycin + aztreonam for the treatment of patients with ABSSSI.
- SAGE announced initiation of a Phase 3 study designed to evaluate the safety of SAGE-547 in patients with SRSE.
- SAGE also announced SAGE-547 demonstrated a 77% response rate in evaluable patients with SRSE in a Phase 1/2 clinical trial.
- Spectrum published results from the pivotal clinical study for EVOMELA in the journal Biology of Blood and Marrow Transplantation.

NDA Submissions, Approvals or Label Expansion for Products Ligand is Entitled to Royalties

- FDA approved Promacta for the treatment of children six years and older with chronic immune thrombocytopenia who have had an insufficient response to corticosteroids, immunoglobulins or splenectomy.

Table of Contents

- The European Commission approved Revolade (Promacta) for the treatment of adults with acquired SAA who were either refractory to prior immunosuppressive therapy or heavily pretreated and are unsuitable for hematopoietic stem cell transplantation.
- On January 21, 2016, Amgen announced that the FDA approved Kyprolis in combination with dexamethasone for the treatment of patients with relapsed or refractory multiple myeloma who have received one to three lines of therapy. The FDA also approved Kyprolis as a single agent for the treatment of patients with relapsed or refractory multiple myeloma who have received one or more lines of therapy, converting to full approval the initial accelerated approval Kyprolis received in July 2012 as a single agent.
- On November 19, 2015, Amgen announced the EC approval of Kyprolis in combination with lenalidomide and dexamethasone for the treatment of adult patients with multiple myeloma who have received at least one prior therapy.
- Zydus Cadila announced the approval and launch of Exemptia, a biosimilar of adalimumab, in India. Ligand gained rights to royalties on sales of Exemptia in the April 2013 Selexis royalty acquisition.

Licensing Deals Ligand Entered into or Expanded in 2015

- Worldwide agreement with Sanofi for SAR-125844, a Captisol-enabled program.
- Clinical-stage agreement with AiCuris GmbH & Co for an undisclosed anti-infective Captisol-enabled program.
- Expanded global license and supply agreements with SAGE to cover the use of Captisol in the development and commercialization of SAGE-689.
- License and supply agreement with Vireo Health for use of Captisol in the development and commercialization of cannabinoid-based medications.
- Global license and supply agreements with RODES, Inc. (now known as Sedor) for intramuscular (IM)/IV meloxicam, IM/IV fosphenytoin, and intranasal budesonide.
- Commercial supply agreement with Gilead Sciences to supply Captisol for use in developing a Captisol-enabled program directed against Ebola virus disease.
- Clinical use agreement with XTL Biopharmaceuticals to supply Captisol for use in in the formulation of its lead drug, hCDR1, for the treatment of systemic lupus erythematosus.
- License agreement with Sermonix Pharmaceuticals for the development and commercialization of oral lasofoxifene in the U.S. and additional territories.

Acquisitions

- Ligand acquired OMT in January 2016, conferring ownership of a large portfolio of licenses and the OmniAb platform, for $178 million in cash and stock.
- Ligand acquired financial rights to more than 15 additional development stage programs from Selexis for $4 million in cash.

Other Highlights

- Ligand announced results from a Phase 1b trial of LGD-6972 that demonstrated favorable safety, tolerability and pharmacokinetics in normal healthy volunteers and in subjects with type 2 diabetes mellitus. The trial results also demonstrated a robust, dose-dependent reduction of fasting plasma glucose.
- In connection with the Viking IPO, Ligand received an equity milestone of 3.4 million shares and invested an additional $9.0 million in the offering. Key programs licensed to Viking include VK5211 (SARM), VK2809/VK0214 (TR), VK0612 (FBPase), EPOR and DGAT-1.

Technologies

A variety of technology platforms that enable elements of drug discovery or development form the basis of our portfolio of fully-funded shots on goal. Platform technologies or individual drugs discovered by Ligand are related to a broad estate of intellectual property that includes over 500 issued patents and over 300 pending patent applications.

Table of Contents

Captisol Technology

Captisol is Ligand's patented, uniquely-modified cyclodextrin that is specifically designed to maximize safety, while improving the solubility, stability and bioavailability of APIs. Captisol can enable faster and more efficient development paths for our partners, given its known regulatory acceptance. Ligand maintains both Type IV and Type V DMFs with the FDA. These DMFs contain manufacturing and safety information relating to Captisol that our licensees can reference when developing Captisol-enabled drugs. Ligand also filed a DMF in Japan in 2015. Captisol-enabled drugs are marketed in more than 60 countries, and over 45 partners have Captisol-enabled drugs in development.

OmniAb Technologies (OMT)

In January of 2016, Ligand acquired OMT and the OmniAb Technologies. OmniAb includes three complementary and globally-branded platforms named OmniRat, OmniMouse and OmniFlic. The OmniAb platforms consist of genetically-engineered transgenic rodents that produce a broadly diversified repertoire of antibodies and enable novel fully-human antibody drug discovery and development by our OmniAb partners. Fully-human OmniAb antibodies provide advantages to our partners in that fully-human antibodies have reduced immunogenicity, streamline development timelines and costs, and accelerate novel antibody discovery. Currently, more than 18 partners are utilizing OmniAb animals in their drug discovery and development efforts.

LTP Technology Platform

The LTP Technology platform is a novel prodrug technology designed to selectively deliver a broad range of pharmaceutical agents to the liver. A prodrug is a biologically inactive compound that can be metabolized in the body to produce an active drug. The LTP Technology works by chemically modifying biologically active molecules into an inactive prodrug, which will be administered to a patient and later activated by specific enzymes in the liver. The technology can be used to improve the safety and/or activity of existing drugs, develop new agents to treat certain liver-relayed diseases, and treat diseases caused by imbalances of circulating molecules that are controlled by the liver. The technology is especially applicable to metabolic and cardiovascular indications, among others. Currently 3 partners are utilizing the LTP Technology or related platform(s).

SUREtechnology Platform (owned by Selexis)

Ligand acquired economic rights to over 30 SUREtechnology Platform programs from Selexis in two separate transactions in 2013 and 2015, granting Ligand rights to downstream economics on novel biologics and biosimilars programs. The SUREtechnology Platform, developed and owned by Selexis, is a novel technology that improves the way that cells are utilized in the development and manufacturing of recombinant proteins and drugs. The technology is based on novel DNA-based elements that control the dynamic organization of chromatin within mammalian cells and allow for higher and more stable expression of recombinant proteins. The technology creates advantages over traditional approaches including accelerated development and manufacturing times, high yields and increased compound stability.

Table of Contents

Partners and Licensees

The following table lists our disclosed partners and licensees. In addition to these 70 Companies, we have over 15 additional undisclosed partners and licensees, mostly biotech companies.

Big Pharma	Ticker
AstraZeneca	AZN
Baxter	BAX
BMS	BMY
Daiichi Sankyo	DSKY
Eli Lilly	LLY
GSK	GSK
Janssen	JNJ
Merck	MRK
Merck KGaA	MRK
Novartis	NVS
Otsuka	4768
Pfizer	PFZ
Sanofi	SNY
Takeda	4502

Specialty Pharmaceutical	Ticker
Cuda	Private
Ethicor	Private
Lundbeck	LUN
Sedor	Private
Sermonix	Private
Spectrum	SPPI
Vireo Health	Private
Upsher-Smith	Private

Generics	Ticker
Alvogen	Private
Avion	Private
BioCad	Private
Coherus	Private
Gedeon Richter	Private
IBC Generium	Private
Oncobiologics	Private
Zydus Cadila	CADILAHC

Biotech	Ticker
AiCuris	Private
Aldeyra	ALDX
Amgen	AMGN
ARMO	Private
Azure	Private
bluebird bio	BLUE
Cantex	Private
Celgene	CELG
Chiva	Private
CURx	Private
Deciphera	Private
Emergent Biosolutions	EBS
Exelixis	EXC
Five Prime	FRPX
ForSight Vision	Private
F-Star	Private

Biotech, continued	Ticker
Genmab	Private
Gilead Sciences	GILD
Hanall	Private
Harpoon	Private
Lubris	Private
Marinus	MRNS
MEI	MEIP
Melinta	Private
Meridian Labs	Private
Millennium	Private
Merrimack	MACK
Novogen	NVGN
Opthea	Private
Precision Biologics	Private
Retrophin	RTRX
ROAR	Private
SAGE	SAGE
Seattle Genetics	SGEN
Stemcentrx	Private
Symphogen	Private
TG Therapeutics	TGTX
Tizona	Private
VentiRx	Private
Viking	VKTX
XTL Bio	XTLB
WuXi	Private

Table of Contents

Portfolio

We have a large portfolio of current and future potential revenue-generating programs, over 140 of which are fully-funded by our partners. In addition to the table below, we also have more than 40 undisclosed programs.

Commercialized	
Novartis	Promacta
Amgen	Kyprolis
Pfizer	Viviant/Conbriza
Pfizer	Duavee
Baxter	Nexterone
Merck	Noxafil-IV
Zydus Cadila	Exemptia
Zydus Cadila	Vivitra
Pfizer	Vfend

Regulatory Submission Stage	
Lundbeck	Carbella
Alvogen	Voriconazole
Spectrum	Evomela
Sermonix	Lasofoxifene
Ethicor	Fablyn
Sedor	CE-Fosphenytoin

Phase 3	
Melinta	Baxdela
Merck	Verubecestat
Coherus	CHS-0214
Oncobiologics	ONS-3010
Oncobiologics	ONS-1045
SAGE	SAGE-547
Merrimack	MM-302

Phase 2	
Retrophin	Sparsentan
Eli Lilly	LY2606368
VentiRx	VTX-2337
CURx	IV Topiramate
Millennium/Takeda	MLN-4924
Viking	VK0612
Cantex	ODSH
Merrimack	MM-121
Merrimack	MM-141
Lubris	Lubricin
Cardioxyl / BMS	CXL-1427
Exelixis/Daiichi	CS-3150
Precision Biologics	NPC-1C
Viking	VK5211
Viking	TR Beta
Aldeyra	NS-2
Novartis	5921
Baxter	BAX-69
Biocad	BCD-066
Sanofi	SAR125844

Phase 1	
Sedor	CE-Budesonide
MEI	ME-344
MEI	ME-143
Merrimack	MM-151
Gedeon Richter	RGB-03
Gedeon Richter	Bevacizumab
Gedeon Richter	Trastuzumab
Biocad	Interferon beta-1a
Biocad	EPOR Agonist
Chiva	Pradefovir
Chiva	MB07133
Deciphera	Altiratinib
VentiRx	VTX-1463
Takeda	TAK-020
Otsuka	OPC-269
ROAR	UC-961
Opthea	OPT-302
F-Star	F-102
IBC Generium	GNR-008
IBC Generium	Deplera
Gilead	GS-5734

Pre-Clinical	
Viking	EPOR Agonist
Viking	DGAT-1 Inhibitor
Sedor	CE-Meloxicam
Meridian Labs	ML-061
Upsher Smith	CXCR4
Azure	Lasofoxifene
SAGE	SAGE-689
TG Therapeutics	IRAK4
Marinus	Ganaxalone IV
Cuda	CE-Propofol
CURx	IV Lamotrigine
Exelixis (BMS)	XL652
Omthera/AZ	LTP-O3FA
Novogen	Cantrixil
Oncobiologics	Rituximab
Oncobiologics	ONS4010
AiCuris GmBH	Undisclosed
Vireo Health	CE-Cannabinoids
XTL Bio	hCDR1
Amgen	OmniAb
ARMO	OmniAb
Celgene	OmniAb
Emergent Bio	OmniAb
Five Prime	OmniAb
Genmab	OmniAb
Hanall	OmniAb
Janssen	OmniAb
Merck KGaA	OmniAb
Pfizer	OmniAb
Seattle Genetics	OmniAb
Stemcentrx	OmniAb
Symphogen	OmniAb
Tizona	OmniAb
WuXi	OmniAb

Color Legend

Blood Disorders

Cardiovascular

Central Nervous System

Infectious Disease

Inflammation/Metabolic

Severe and Rare

Cancer

Other / Undisclosed

6

Table of Contents

Commercial Programs

We have multiple programs under license with other companies that have products that are already being commercialized. The following programs represent components of our current portfolio of revenue-generating assets and potential for near-term growth in royalty and other revenue. For information about the royalties owed to Ligand for these programs, see “Royalties” later in this business section.

Promacta (Novartis)

We are party to a license agreement with Novartis related to Promacta, which is an oral medicine that increases the number of platelets in the blood. Platelets are one of the three components of blood and facilitate clotting in the blood. Individuals with low platelets can be at significant risk of bleeding or death. Because of the importance of having a sufficient number of platelets, Promacta has broad potential applicability to a number of medical situations where low platelets exist.

Promacta is currently approved for three indications: (1) the treatment of thrombocytopenia in patients with ITP who have had an insufficient response to corticosteroids, immunoglobulins or splenectomy, (2) Hepatitis-C associated thrombocytopenia and (3) SAA. Promacta was initially approved in 2008, and the product has been generating royalty revenue for Ligand since 2009. Promacta is known as Revolade in the EU and other non-US markets.

Novartis has been and continues to pursue globalization of the brand and currently markets Promacta in multiple countries for the three approved indications. Specifically, ITP is currently approved in more than 100 countries, the Hepatitis C-related indication is currently approved in more than 50 countries, and the SAA indication is approved in more than 30 counties.

Beyond the currently-approved indications, Novartis is also performing development activities to expand the brand into new indications, including a number of oncology-related indications including MDS, AML and CIT. As of February 2016, there are 42 open clinical trials related to Promacta (listed as recruiting or open, and not yet recruiting) on the clinicaltrials.gov website.

We are entitled to receive royalties related to Promacta during the life of the relevant patents or at a reduced rate for ten years from the first commercial sale, whichever is longer, on a country-by-country basis. Novartis has listed a patent in the FDA’s, Orange Book for Promacta with an expiration date in 2027, and absent early termination for bankruptcy or material breach, the term of the agreement expires upon expiration of the obligation to pay royalties. There are no remaining milestones to be paid under the agreement.

Kyprolis (Amgen)

Ligand supplies Captisol to Amgen for use with carfilzomib, and granted an exclusive product-specific license under our patent rights with respect to Captisol. Kyprolis is formulated with Ligand’s Captisol technology and is approved in the U.S. for the following:

- In combination with dexamethasone or with lenalidomide plus dexamethasone for the treatment of patients with relapsed or refractory multiple myeloma who have received one to three lines of therapy.
- As a single agent for the treatment of patients with relapsed or refractory multiple myeloma who have received one or more lines of therapy.

Kyprolis is also approved in Argentina, Israel, Kuwait, Mexico, Thailand, Columbia, Korea, Canada and the European Union. Kyprolis was initially approved in the U.S. in 2012, and Amgen continues to invest significantly in Kyprolis to further expand its label and geography.

Amgen’s obligation to pay royalties does not expire until four years after the expiration of the last-to-expire patent covering Captisol. Our patents and applications relating to the Captisol component of Kyprolis are not expected to expire until 2033. Our agreement with Amgen may be terminated by either party in the event of material breach or bankruptcy, or unilaterally by Amgen with prior written notice, subject to certain surviving obligations. Absent early termination, the agreement will terminate upon expiration of the obligation to pay royalties. Under this agreement, we are entitled to receive remaining milestones of up to $2.3 million, revenue from clinical and commercial Captisol material sales and royalties on annual net sales of Kyprolis.

7

Table of Contents

Duavee or Duavive (bazedoxifene/conjugated estrogens) and Viviant/Conbriza (Pfizer)

Pfizer is marketing bazedoxifene under the brand names Viviant and Conbriza in various territories for the treatment of postmenopausal osteoporosis. Pfizer is responsible for the registration and worldwide marketing of bazedoxifene, a synthetic drug specifically designed to reduce the risk of osteoporotic fractures while also protecting uterine tissue. Pfizer has combined bazedoxifene with the active ingredient in Premarin to create Duavee, a combination therapy for the treatment of post-menopausal symptoms in women. Duavee is approved in the United States and it is anticipated that it will be marketed under the brand name Duavive in the EU. Net royalties on annual net sales of Viviant/Conbriza and Duavee/Duavive are each payable to us through the life of the relevant patents or ten years from the first commercial sale, whichever is longer, on a country by country basis.

Nexterone (Baxter)

We have a license agreement with Baxter, related to Baxter's Nexterone, a Captisol-enabled formulation of amiodarone, which is marketed in the United States and Canada. We supply Captisol to Baxter for use in accordance with the terms of the license agreement under a separate supply agreement. Under the terms of the license agreement we will continue to earn milestone payments, royalties, and revenue from Captisol material sales. We are entitled to earn royalties on sales of Nexterone through early 2033.

Noxafil-IV (Merck)

We have a supply agreement with Merck related to Merck’s NOXAFIL-IV, a Captisol-enabled formulation of posaconazole for IV use. NOXAFIL-IV is marketed in the United States, EU and Canada. We receive our commercial compensation for this program through the sale of Captisol, and we do not receive a royalty on this program.

Exemptia (Zydus Cadila)

Our partner, Zydus Cadila’s Exemptia (adalimumab biosimilar) is marketed in India for autoimmune diseases. Zydus Cadila uses the Selexis technology platform for Exemptia. We are entitled to earn royalties on sales by Zydus Cadila through at least 2026.

Vivitra (Zydus Cadila)

Our partner, Zydus Cadila’s Vivitra (trastuzumab biosimilar) is marketed in India for breast cancer. Zydus Cadila uses the Selexis technology platform for Vivitra. We are entitled to earn royalties on sales by Zydus Cadila through at least 2026.

Summary of Selected Development-stage Programs

We have multiple fully-funded partnered programs that are either in or nearing the regulatory approval process, or given the area of research or value of the license terms are considered particularly noteworthy. We are eligible to receive milestone payments and royalties off of these programs. For information about the royalties owed to Ligand for these programs, see “Royalties” later in this Business Overview section. In the case of Captisol-related programs, we are also eligible to receive revenue for the sale of Captisol material supply.

Evomela (Spectrum)

We have a license agreement with Spectrum related to Evomela, which is a Captisol-enabled melphalan IV formulation. In December 2014, Spectrum submitted a NDA to the FDA. In October 2015, Spectrum announced that it had received a complete response letter from the FDA requiring additional information regarding its contract manufacturers. Spectrum has indicated that next FDA action date is May 2016. Evomela is intended for use in the multiple myeloma stem cell transplant setting, and has been granted Orphan Designation by the FDA. The Evomela formulation avoids the use of propylene glycol, which has been reported to cause renal and cardiac side-effects that limit the ability to deliver higher quantities of therapeutic compounds. The use of the Captisol technology to reformulate melphalan is anticipated to allow for longer administration durations and slower infusion rates, potentially enabling clinicians to safely achieve a higher dose intensity of pre-transplant chemotherapy.

Under the terms of the license agreement, we granted an exclusive license to Spectrum under our patent rights to Captisol relating to the product. We are eligible to receive over $50 million in potential milestone payments under this

Table of Contents

agreement and royalties on future net sales of the Captisol-enabled melphalan product. Spectrum's obligation to pay royalties will expire at the end of the life of the relevant patents or when a competing product is launched, whichever is earlier, but in no event within ten years of the commercial launch. Our patents and applications relating to the Captisol component of melphalan are not expected to expire until 2033. Absent early termination, the agreement will terminate upon expiration of the obligation to pay royalties. The agreement may be terminated by either party for an uncured material breach or unilaterally by Spectrum by prior written notice.

Verubecestat (Merck)

Our partner, Merck is conducting two Phase 3 trials for Verubecestat (MK-8931), a BACE inhibitor for the treatment of Alzheimer's disease. Alzheimer's disease is characterized by plaques of amyloid-beta protein within the brain. BACE is believed to be a key enzyme in the production of amyloid-beta protein. Amyloid-beta is formed when the larger amyloid precursor protein is cleaved by two enzymes, BACE and gamma-secretase, which releases the amyloid-beta fragment. A BACE inhibitor is expected to reduce amyloid-beta generation in Alzheimer's disease patients. Merck expects initial data from Phase 3 trials in mid-2017. We are entitled to a royalty on potential future sales by Merck. Merck is responsible for all development costs related to the program.

SAGE-547 (SAGE)

Our partner, SAGE, is conducting a Phase 3 clinical trial for the development of Captisol-enabled therapeutics for a broad range of debilitating central nervous system conditions. SAGE's lead clinical program, Captisol-enabled SAGE-547 is an allosteric modulator of both synaptic and extra-synaptic $GABA_A$ receptors that is in clinical development as an adjunctive therapy, a therapy combined with current therapeutic approaches, for the treatment of SRSE. SAGE-547 was granted Fast Track designation, which is intended to facilitate the development and expedite the review of drug candidates that are intended to treat serious or life-threatening conditions and demonstrate the potential to address unmet medical needs, and orphan drug designation, which is intended to facilitate drug development for rare diseases, by the FDA for SRSE. Ligand has the potential to receive milestone payments, royalties and revenue from Captisol material sales for Captisol-enabled programs. SAGE is responsible for all development costs related to the program.

Sparsentan (Retrophin)

Our partner Retrophin is currently conducting a Phase 2 clinical trial for the development of Sparsentan for orphan indications of severe kidney diseases including FSGS. Certain patient groups with severely compromised renal function exhibit extreme proteinuria resulting in progression to dialysis and a high mortality rate. Sparsentan, with its unique dual blockade of angiotensin and endothelin receptors, is expected to provide meaningful clinical benefits in mitigating proteinuria in indications where there are no approved therapies. In January 2015, the FDA granted Sparsentan orphan drug designation.

Under our license agreement with Retrophin we are entitled to receive potential net milestones of over $75 million in the future and net royalties on future worldwide sales by Retrophin through the life of the relevant patents, which we currently expect to be through at least 2019 and may be extended until 2024. Retrophin is responsible for all development costs related to the program.

Baxdela (Melinta)

Our partner Melinta is currently completing Phase 3 clinical trials for the development of Baxdela, a Captisol-enabled delafloxacin-IV. Delafloxacin is a novel hospital-focused fluoroquinolone antibiotic candidate with potency against a variety of quinolone-resistant Gram-positive and Gram-negative bacteria, including quinolone-resistant MRSA. In 2015, Melinta reported positive top-line results on the first of two planned Phase 3 clinical trials of delafoxacin for the treatment of ABSSSI, including infections caused by MRSA. Under the terms of the agreement, we may be entitled to up to $3.6 million of development and regulatory milestones, a royalty on potential future sales by Melinta, and revenue from Captisol material sales. Melinta is responsible for all development costs related to the program.

Carbamazepine-IV (Lundbeck)

Lundbeck's Carbella is a Captisol-enabled carbamazepine-IV currently under review by the FDA. Carbella is for the management of acute seizure disorder for hospital or emergency settings. Lundbeck is in the process of responding

Table of Contents

to a request of CMC data from the FDA's Complete Response Letter received in late 2014. Under the terms of our agreement with Lundbeck, we may be entitled to development and regulatory milestones, royalties on potential future sales by Lundbeck and revenue from Captisol material sales. Lundbeck is responsible for all development costs related to the program.

SARM - VK5211 (Viking)

Our partner Viking is developing VK5211, a novel, potentially best-in-class SARM for patients recovering from hip-fracture. SARMs retain the beneficial properties of androgens without undesired side-effects of steroids or other less selective androgens. Viking initiated a Phase 2 trial in hip fracture in 2015. Under the terms of the agreement with Viking, we may be entitled to up to $270 million of development, regulatory and commercial milestones and tiered royalties on potential future sales.

TR- - VK2809 (Viking)

Viking is developing VK2809, a novel selective TR- agonist with potential in multiple indications, including hypercholesterolemia, dyslipidemia, NASH, and X-ALD. Viking intends to initiate a Phase 2 trial for VK2809 in hypercholesterolemia and fatty liver disease in 2016. Under the terms of the agreement with Viking, we may be entitled to up to $375 million of development, regulatory and commercial milestones and tiered royalties on potential future sales.

IRAK4 Inhibitor Program (TG Therapeutics)

Our partner, TG Therapeutics is developing our IRAK-4 inhibitors. The IRAK-4 program is in preclinical development for potential use in certain cancers and autoimmune diseases. Under the terms of the agreement we are eligible to receive $207 million in potential milestone payments. We are also eligible to receive royalties on future net sales of licensed products containing patented IRAK-4 inhibitors. TG Therapeutics will be responsible for all development costs related to the program.

Topiramate IV (CURx)

The FDA granted our partner, CURx, orphan-drug designation for a proprietary Captisol-enabled Topiramate Injection formulation for the treatment of partial onset or primary generalized tonic-clonic seizures in hospitalized epilepsy patients who are unable to take oral topiramate. Under the terms of our agreement, CURx may be required to pay us an aggregate of $19.6 million, net of amounts owed to third parties upon the achievement of specified milestones. Additionally, we are owed net royalties on future sales. CURx will be responsible for all development costs related to the program.

Lasofoxifene (Azure Biotech, Ethicor, and Sermonix)

Our partner Azure is developing a novel formulation of lasofoxifene. Under the terms of our agreement with Azure, we are entitled to receive up to $2.6 million in potential development and regulatory milestones as well as royalties on future net sales through the later of the life of the relevant patents (currently expected to be at least until 2027) or 10 years after regulatory approval. Azure may terminate the license agreement at any time upon six months' prior notice. Lasofoxifene is an estrogen partial agonist for osteoporosis treatment and other diseases, discovered through the research collaboration between us and Pfizer. Under the terms of the license agreement with Azure, we retained the rights to the oral formulation of lasofoxifene originally developed by Pfizer.

Our partner, Ethicor has an agreement with us for the manufacture and distribution of the oral formulation of lasofoxifene in the European Economic Area, Switzerland and the Indian Subcontinent. Under the terms of the agreement, we are entitled to receive potential sales milestones of up to $16 million and royalties on future net sales. Ethicor plans to supply oral lasofoxifene as an unlicensed medicinal product, which may be requested by healthcare professionals to meet the clinical needs of patients when authorized medicines are unsuitable or contraindicated.

Our partner, Sermonix has a license for the development of oral lasofoxifene for the United States and additional territories. Under the terms of the agreement, we are entitled to receive up to $45 million in potential regulatory and commercial milestone payments and royalties on future net sales.

Table of Contents

SAR-125844 (Sanofi)

Our partner, Sanofi licensed Captisol for use in the development of Captisol-enabled SAR-125844, a potent MET kinase inhibitor. Under the terms of the agreement, we are eligible to receive potential milestone payments, royalties on future net sales and revenue from Captisol material sales. Sanofi will be responsible for all development costs related to the program. SAR-125844 is a potent, selective and reversible ATP-competitive MET tyrosine kinase inhibitor for IV administration. SAR-125844 recently completed a first-in-human, open-label, non-randomized, single agent, Phase 1 study in advanced/refractory solid tumor patients.

CHS-0214 (Coherus Biosciences)

Our partner, Coherus Biosciences is conducting Phase 3 / BLA-enabling clinical trials for CHS-0214 (etanercept biosimilar) for rheumatoid arthritis. Coherus uses the Selexis' technology platform for CHS-0214. We are entitled to earn regulatory and sales milestones, and royalties on potential future sales through at least 2026.

CXL-1427 (Cardioxyl /BMS)

Our partner, Cardioxyl (acquired by BMS in 2015) is conducting Phase 2 clinical trials for Captisol-enabled CXL-1427 (nitroxyl donor prodrug) for ADHF. Under the terms of the agreement, we may be entitled to development and regulatory milestones, and royalties on potential future sales by BMS and revenue from Captisol material sales.

LY2606368 (Eli Lilly)

Our partner, Eli Lilly is conducting Phase 2 clinical trials for Captisol-enabled LY2606368 (Chk 1/2 inhibitor) for solid tumors. Under the terms of the agreement, we may be entitled to regulatory milestones, royalties on potential future sales by Eli Lilly and revenue from Captisol material sales.

Altiratinib (Deciphera Pharmaceuticals)

Our partner, Deciphera Pharmaceuticals is currently conducting Phase 1 trials for the development of Altiratinib for the treatment of solid tumors. Altiratinib is a Captisol-enabled MET/TIE2/VEGF2/TRK (A,B,C) kinase inhibitor. Under the terms of the clinical-stage agreement, we may be entitled to development milestones from Deciphera and revenue from Captisol material sales.

MM-302 (Merrimack Pharmaceuticals)

Our partner, Merrimack Pharmaceuticals is currently conducting a Phase 2/3 trial for the treatment of advanced metastatic HER2-positive breast cancer. MM-302 is an antibody-drug conjugated liposomal doxorubicin that was developed using the Selexis SUREtechnology Platform. Under the terms of the agreement, we may be entitled to development and commercial milestones, royalties on potential future sales.

Motolimod - VTX-2337 (VentiRx Pharmaceuticals/Celgene)

Our partner, VentiRx is currently conducting Phase 2 trials for the development of Motolimod for the treatment of ovarian cancer and head and neck cancer. Motolimod is a Captisol-enabled Toll-like Receptor 8 agonist. Motolimod was granted Fast Track and Orphan Designations by the FDA for the treatment of recurrent or persistent ovarian cancer. VentiRx has an exclusive worldwide collaboration with Celgene to develop VTX-2337. Under the terms of the clinical-stage agreement, we have earned development milestones from VentiRx and revenue from Captisol material sales.

Pevonedistat - MLN-4924 (Millennium/Takeda)

Our partner, Millennium/Takeda is currently conducting Phase 2 trials for the development of Pevonedistat for the treatment of hematological malignancies and solid tumors. Pevonedistat is a Captisol-enabled Nedd8-Activating Enzyme Inhibitor. Under the terms of the clinical-stage agreement, we may be entitled to development milestones from Millennium/Takeda and revenue from Captisol material sales.

Table of Contents

Royalty Table

Ligand Licenses With Tiered Royalties, Tiers Disclosed*

Promacta (Novartis)		Kyprolis (Amgen)		Duavee (Pfizer)		Viviant/Conbriza (Pfizer)	
< $100 million	4.7%	< $250 million	1.5%	<$400 million	0.5%	<$400 million	0.5%
$100 to $200 million	6.6%	$250 to $500 million	2.0%	$400 million to $1.0 billion	1.5%	$400 million to $1.0 billion	1.5%
$200 to $400 million	7.5%	$500 to $750 million	2.5%	>$1.0 billion	2.5%	>$1.0 billion	2.5%
$400 million to $1.5 billion	9.4%	>$750 million	3.0%				
>$1.5 billion	9.3%						

CE-Topiramate (CURx)		CE-Budesonide (Sedor)		CE-Meloxicam (Sedor)	
<$50 million	6%	< $25 million	8%	< $25 million	8%
$50 to $100 million	6.75%	>$25 million	10%	>$25 million	10%
>$100 million	7.5%				

Ligand Licenses With Tiered Royalties, Tiers Undisclosed*

Program	Licensee	Royalty Rate
IRAK4	TG Therapeutics	6.0% - 9.5%
CE-Lamotrigine	CURx	4.0% - 7.0%
Lasofoxifene	Sermonix	6.0% - 10.0%
FBPase Inhibitor	Viking	7.5% - 9.5%
SARM	Viking	7.25% - 9.25%
TR Beta	Viking	3.5% - 7.5%
Oral EPO	Viking	4.5% - 8.5%
DGAT-1	Viking	3.0% - 7.0%
LTP-O3FA	Omthera/AstraZeneca	Tiered mid-to-high single digit royalties

Ligand Licenses With Fixed Royalties*

Program	Licensee	Royalty Rate
EVOMELA	Spectrum Pharma	20.0%
Baxdela	Melinta	2.5%
SAGE-547	SAGE	3.0%
Sparsentan (RE-021)	Retrophin	9.0%
CE-Fosphenytoin	Sedor	11.0%
Pradefovir	Chiva Pharma	9.0%
MB07133	Chiva Pharma	6.0%
Fablyn	Ethicor	25.0%
'5921	Novartis	14.5% (6.5% in year one)
Topical lasofoxifene	Azure Biotech	5.0%
MM-121	Merrimack Pharma	<1.0%
MM-302	Merrimack Pharma	<1.0%
MM-151	Merrimack Pharma	<1.0%
MM-141	Merrimack Pharma	<1.0%
ME-143	MEI Pharma	Low single digit royalty
ME-344	MEI Pharma	Low single digit royalty
NS-2	Aldeyra Therapeutics	Low single digit royalty

*Royalty rates are shown net of sublicense payments. Royalty tier references for specific rates notated in the table are for up to and including the dollar amount referenced. Higher tiers are only applicable for the dollar ranges specified in the table.

12

Table of Contents

Primary Internal Development Program - Glucagon Receptor Antagonist Program

We are currently developing a small molecule glucagon receptor antagonist for the treatment of Type 2 diabetes mellitus. Compounds that block the action of glucagon may reduce the hyperglycemia that is characteristic of the disease. Glucagon stimulates the production of glucose by the liver and its release into the blood stream. In diabetic patients, glucagon secretion is abnormally elevated and contributes to hyperglycemia in these patients. We conducted a Phase 1b trial showing robust effects throughout multiple ascending dosing, and plan to initiate a Phase 2 clinical trial in 2016.

The following table represents other internal programs eligible for further development funding, either through Ligand or a partner:

Program	Development Stage	Indication
GCSF Receptor Agonist	Preclinical	Blood disorders
Captisol-enabled Clopidogrel	Phase 3	Anti-coagulant
Captisol-enabled Busulfan	Preclinical	Oncology
Captisol-enabled Acetaminophen Injection	Preclinical	Pain
Captisol-enabled Sertraline, Oral Concentrate	Phase 1	Depression
Captisol-enabled Cetirizine Injection	Preclinical	Allergy
Captisol-enabled Silymarin for Topical formulation	Preclinical	Sun damage
Aplindore	Phase 2	Restless Leg/Parkinson's
Histamine H3 Receptor Antagonist	Preclinical	Cognitive Disorders
Liver Specific Glucokinase Activator	Preclinical	Diabetes
CCR1 Antagonist	Preclinical	Oncology
CRTH2 Antagonist	Preclinical	Inflammation
FLT3 Kinase Inhibitors	Preclinical	Oncology

Manufacturing

We currently have no manufacturing facilities and rely on a third party, Hovione, for Captisol production. Hovione is a global supplier with over 50 years of experience in the development and manufacture of APIs and Drug Product Intermediates. Hovione operates FDA-inspected sites in the United States, Macau, Ireland and Portugal. Manufacturing operations for Captisol are currently performed in both of Hovione's Portugal and Ireland sites with distribution operations also performed from Hovione's Portugal and Ireland sites.

We have ongoing minimum purchase commitments under the agreement and are required to pay Hovione an aggregate minimum amount during the agreement term.

In the event of a Captisol supply interruption, we are permitted to designate and, with Hovione’s assistance, qualify one or more alternate suppliers. If the supply interruption continues beyond a designated period, we may terminate the agreement. In addition, if Hovione cannot supply our requirements of Captisol due to an uncured force majeure event or if the unit price of Captisol exceeds a set figure, we may obtain Captisol from a third party.

The current term of the agreement with Hovione is through December 2019. The agreement will automatically renew for successive two year renewal terms unless either party gives written notice of its intention to terminate the agreement no less than two years prior to the expiration of the initial term or renewal term. In addition, either party may terminate the agreement for the uncured material breach or bankruptcy of the other party or an extended force majeure event. We may terminate the agreement for extended supply interruption, regulatory action related to Captisol or other specified events. For further discussion of these items, see below under “Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.”

Table of Contents

Competition

Some of the drugs we and our licensees are developing may compete with existing therapies or other drugs in development by other companies. Furthermore, academic institutions, government agencies and other public and private organizations conducting research may seek patent protection with respect to potentially competing products or technologies and may establish collaborative arrangements with our competitors.

Existing or potential competitors to our licensee's products, particularly large pharmaceutical companies, may have greater financial, technical and human resources than our licensees. Accordingly, these competitors may be better equipped to develop, manufacture and market products. Many of these companies also have extensive experience in preclinical testing and human clinical trials, obtaining FDA and other regulatory approvals and manufacturing and marketing pharmaceutical products.

Our Captisol business may face competition from other suppliers of similar cyclodextrin excipients or other technologies that are aimed to increase solubility or stability of APIs. Our OmniAb antibody technology faces competition from suppliers of other transgenic animal systems that are also available for antibody drug discovery. Our competitive position also depends upon our ability to obtain patent protection or otherwise develop proprietary products or processes. For a discussion of the risks associated with competition, see below under "Item 1A. Risk Factors."

Government Regulation

The research and development, manufacturing and marketing of pharmaceutical products are subject to regulation by numerous governmental authorities in the United States and other countries. We and our partners, depending on specific activities performed, are subject to these regulations. In the United States, pharmaceuticals are subject to regulation by both federal and various state authorities, including the FDA. The Federal Food, Drug and Cosmetic Act and the Public Health Service Act govern the testing, manufacture, safety, efficacy, labeling, storage, record keeping, approval, advertising and promotion of pharmaceutical products and there are often comparable regulations that apply at the state level. There are similar regulations in other countries as well. For both currently marketed and products in development, failure to comply with applicable regulatory requirements can, among other things, result in delays, the suspension of regulatory approvals, as well as possible civil and criminal sanctions. In addition, changes in existing regulations could have a material adverse effect on us or our partners. For a discussion of the risks associated with government regulations, see below under "Item 1A. Risk Factors."

Patents and Proprietary Rights

We believe that patents and other proprietary rights are important to our business. Our policy is to file patent applications to protect technology, inventions and improvements to our inventions that are considered important to the development of our business. We also rely upon trade secrets, know-how, continuing technological innovations and licensing opportunities to develop and maintain our competitive position.

Patents are issued or pending for the following key products or product families. The scope and type of patent protection provided by each patent family is defined by the claims in the various patents. The nominal patent expiration dates have been provided. The actual patent term may vary by jurisdiction and depend on a number of factors including potential patent term adjustments, patent term extensions, and terminal disclaimers. For each product or product family, the patents and/or applications referred to are in force in at least the United States, and for most products and product families, the patents and/or applications are also in force in European jurisdictions, Japan and other jurisdictions.

Promacta

Patents covering Promacta are owned by Novartis. The United States patent listed in the FDA's Orange Book relating to Promacta with the latest expiration date is not expected to expire until 2027. Six months of additional exclusivity has been granted due to pediatric studies conducted by GSK. The type of patent protection (e.g., composition of matter or use) for each patent listed in the Orange Book and the expiration date for each patent listed in the Orange Book are provided in the following table. In addition, certain related patents in the commercially important jurisdictions of Europe and Japan are identified in the following table.

14

Table of Contents

Promacta

United States			Corresponding Foreign		
Type of Protection	U.S. Patent No.	U.S. Expiration Date	Jurisdiction	Patent Number	Expiration Date‡
CoM / Use	6,280,959	10/30/2018	N/A		
			EU	1,864,981	5/24/21
CoM / Use	7,160,870	11/20/2022	EU	1,294,378	5/24/21
			Japan	3,813,875	5/24/21
Use	7,332,481	5/24/2021	EU	1,889,838	5/24/21
			Japan	4,546,919	5/24/21
CoM / Use	7,452,874	5/24/2021	EU	1,889,838	5/24/21
			Japan	4,546,919	5/24/21
CoM / Use	7,473,686	5/24/2021	EU	1,864,981	5/24/21
			EU	1,294,378	5/24/21
			Japan	3,813,875	5/24/21
CoM / Use	7,547,719	7/13/2025	EU	1,534,390	5/21/23
			Japan	4,612,414	5/21/23
Use	7,790,704	5/24/2021	N/A		
Use	7,795,293	5/21/2023	N/A		
			EU	2,152,237	8/1/27
CoM / Use	8,052,993	8/1/2027	Japan	5,419,866	8/1/27
			Japan	5,735,078	8/1/27
			EU	2,152,237	8/1/27
CoM / Use	8,052,994	8/1/2027	Japan	5,419,866	8/1/27
			Japan	5,735,078	8/1/27
			EU	2,152,237	8/1/27
CoM / Use	8,052,995	8/1/2027	Japan	5,419,866	8/1/27
			Japan	5,735,078	8/1/27
			EU	2,152,237	8/1/27
CoM / Use	8,062,665	8/1/2027	Japan	5,419,866	8/1/27
			Japan	5,735,078	8/1/27
			EU	2,152,237	8/1/27
CoM / Use	8,071,129	8/1/2027	Japan	5,419,866	8/1/27
			Japan	5,735,078	8/1/27
			EU	2,152,237	8/1/27
CoM / Use	8,828,430	8/1/2027	Japan	5,419,866	8/1/27
			Japan	5,735,078	8/1/27

‡Expiration dates of European and Japanese patents are calculated as 20 years from the earliest nonprovisional filing date to which priority is claimed, and do not take into account extensions that are or may be available in these jurisdictions.

Kyprolis

Patents protecting Kyprolis include those owned by Amgen and those owned by Ligand. The United States patent listed in the Orange Book relating to Kyprolis with the latest expiration date is not expected to expire until 2027. Patents and applications owned by Ligand relating to the Captisol component of Kyprolis are not expected to expire until 2033. The type of patent protection (e.g., composition of matter or use) for each patent listed in the Orange Book and the

15

Table of Contents

expiration dates for each patent listed in the Orange Book are provided in the following table. In addition, certain related patents in the commercially important jurisdictions of Europe and Japan are identified in the following table.

Kyprolis

United States			Corresponding Foreign		
Type of Protection	U.S. Patent No.	U.S. Expiration Date	Jurisdiction	Patent Number	Expiration Date‡
CoM	7,232,818	4/14/2025	EU	1,745,064	4/14/25
			Japan	5,394,423	4/14/25
CoM	7,417,042	6/7/2026	EU	1,781,688	8/8/25
			Japan	4,743,720	8/8/25
Use	7,491,704	4/14/2025	EU	1,745,064	4/14/25
			Japan	5,394,423	4/14/25
CoM	7,737,112	12/7/2027	EU	1,819,353	12/7/25
			EU	2,260,835	12/7/25
			EU	2,261,236	12/7/25
			Japan	4,990,155	12/7/25
			Japan	5,108,509	5/9/25
Use	8,129,346	12/25/2026	EU	1,745,064	4/14/25
			Japan	5,394,423	4/14/25
CoM	8,207,125	4/14/2025	EU	1,781,688	8/8/25
			Japan	4,743,720	8/8/25
CoM / Use	8,207,126	4/14/2025	N/A		
Use	8,207,127	4/14/2025	N/A		
CoM / Use	8,207,297	4/14/2025	N/A		

‡Expiration dates of European and Japanese patents are calculated as 20 years from the earliest nonprovisional filing date to which priority is claimed, and do not take into account extensions that are or may be available in these jurisdictions.

Captisol

Patents and pending patent applications covering Captisol are owned by Ligand. Other patents and pending patent applications covering methods of making Captisol are owned by Ligand or by Pfizer. The patents covering the Captisol product, if issued, with the latest expiration date would not be set to expire until 2033 (see, e.g., WO 2013/130666 (contains composition of matter and use claims; filed Feb. 27, 2013)). Ligand also owns several patents and pending patent applications covering drug products containing Captisol as a component. The type of patent protection (e.g., composition of matter or use) and the expiration dates for several issued patents covering Captisol are provided in the following table. In addition, certain related patents and applications in the commercially important jurisdictions of Europe and Japan are listed in the following table.

Table of Contents

Captisol

United States			Corresponding Foreign		
Type of Protection	U.S. Patent No.	U.S. Expiration Date	Jurisdiction	Patent Number	Expiration Date‡
CoM	8,114,438	3/19/28	EU	2,708,225	pending
			Japan	2,015,163,634	pending
			EU	1,945,228	10/26/25
CoM	7,629,331	10/26/25	EU	2,335,707	10/26/25
			EU	2,581,078	10/26/25
Use	8,049,003	12/19/26	EU	2,583,668	10/26/25
			EU	1,945,228	10/26/25
CoM	8,846,901	10/26/25	EU	2,335,707	10/26/25
			EU	2,581,078	10/26/25
			EU	1,945,228	10/26/25
CoM	8,829,182	10/26/25	EU	2,335,707	10/26/25
			EU	2,581,078	10/26/25
			EU	2,268,269	pending
CoM / Use	7,635,773	3/13/29	Japan	4,923,144	4/28/29
			Japan	2,015,110,671	pending
			EU	2,268,269	pending
CoM	8,410,077	3/13/29	Japan	4,923,144	4/28/29
			Japan	2,015,110,671	pending
			EU	2,268,269	pending
CoM	9,200,088	3/13/29	Japan	4,923,144	4/28/29
			Japan	2,015,110,671	pending

‡Expiration date of European and Japanese patents are calculated as 20 years from the earliest nonprovisional filing date to which priority is claimed, and do not take into account extensions that are or may be available in these jurisdictions.

Subject to compliance with the terms of the respective agreements, our rights to receive royalty payments under our licenses with our exclusive licensors typically extend for the life of the patents covering such developments. For a discussion of the risks associated with patent and proprietary rights, see below under “Item 1A. Risk Factors.”

OmniAb

OMT has received patent protection in 27 countries, including the United States, multiple countries throughout Europe, Japan and China (see selected cases listed in the table below) and has 19 patent applications pending worldwide. The patents and applications owned by OMT are expected to expire between 2028 and 2033 and partners are able to use the OMT patented technology to generate novel antibodies, which may be entitled to additional patent protection.

OmniAb

United States			Corresponding Foreign		
Type of Protection	U.S. Patent No.	U.S. Expiration Date	Jurisdiction	Patent Number	Expiration Date‡
			EU	2,152,880	5/30/28
CoM	8,703,485	10/10/31	EU	2,336,329	5/30/28
			Japan	5,823,690	5/30/28
Use	8,907,157	5/30/28	N/A		

Table of Contents

‡Expiration date of European and Japanese patents are calculated as 20 years from the earliest nonprovisional filing date to which priority is claimed, and do not take into account extensions that are or may be available in these jurisdictions.

LTP Technology

Patent applications related to our LTP Technology include three families owned by Ligand and one owned by Omthera. Each of these patent families include claims directed to composition of matter and use. Patents resulting from these applications, if granted, would have a latest expiration date in 2036.

LGD-6972 (Glucagon Receptor Antagonist)

Patents and pending patent applications covering LGD-6972 are owned by Ligand. Patents covering LGD-6972, if issued, with the latest expiration date would not be set to expire until 2035 (see, e.g., WO 2015/191900 (contains composition of matter and use claims; filed June 11, 2015)). The type of patent protection (e.g., composition of matter or use) and the expiration dates for several issued patents covering LGD-6972 are provided in the following table. In addition, certain related patents and applications in the commercially important jurisdictions of Europe and Japan are listed in the following table.

LGD-6972

United States			Corresponding Foreign		
Type of Protection	U.S. Patent No.	U.S. Expiration Date	Jurisdiction	Patent Number	Expiration Date‡
CoM	8,710,236	2/11/28	EU	2,129,654	2/11/28
			EU	2,786,985	pending
			Japan	5,322,951	2/11/28
			Japan	2015-196171	pending
CoM	9,169,201	2/11/28	EU	2,129,654	2/11/28
			EU	2,786,985	pending
			Japan	5,322,951	2/11/28
			Japan	2015-196171	pending
CoM / Use	8,907,103	1/2/31	EU	2,326,618	8/13/29
			EU	2,799,428	pending
			Japan	5,684,126	8/13/29
			Japan	2015-129133	pending

‡Expiration date of European and Japanese patents are calculated as 20 years from the earliest nonprovisional filing date to which priority is claimed, and do not take into account extensions that are or may be available in these jurisdictions.

Human Resources

As of February 1, 2016, we had 21 full-time employees, of whom seven are involved directly in scientific research and development activities.

Investor Information

Financial and other information about us is available on our website at www.ligand.com. We make available on our website copies of our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the U.S. Securities and Exchange Commission (SEC). In addition, we have previously filed registration statements and other documents with the SEC. Any document we file may be inspected, at the SEC's public reference room at 100 F Street NE, Washington, DC 20549, or at the SEC's internet address at www.sec.gov. These website addresses are not intended to function as hyperlinks, and

18

Table of Contents

the information contained in our website and in the SEC's website is not intended to be a part of this filing. Information related to the operation of the SEC's public reference room may be obtained by calling the SEC at 800-SEC-0330.

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.

Future revenue based on Promacta and Kyprolis, 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 Duavee, Conbriza, Noxafil IV and Nexterone. Any setback that may occur with respect to any of our products, and in particular Promacta or Kyprolis, could significantly impair our operating results and/or reduce 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. Any such setback could reduce our revenue.

Future revenue from sales of Captisol material to our collaborative 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, as well as higher than expected total rebates, returns or discounts for such products.

If products or product candidates incorporating Captisol technology 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 market Captisol products 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, whether or not the adverse event was a result of Captisol, we could be required by the FDA to submit to additional regulatory reviews or approvals, including extensive safety testing or clinical testing of products using Captisol, which would be expensive and, even if we were to demonstrate that the adverse event was unrelated to Captisol, would 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 outlicensees to sell products using our Captisol technology. These agreements generally provide that outlicensees may terminate the agreements at will. If our outlicensees discontinue

sales of products using our Captisol technology, fail to obtain regulatory approval for products using our Captisol technology, 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, financial condition, operating results and cash flows could be adversely affected.

Table of Contents

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 high purity patents and foreign equivalents, are not expected to expire until 2029 and our morphology patents and foreign equivalents, are not expected to expire until 2025, but the initially filed patents relating to Captisol expired starting in 2010 in the United States and will expire by 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 outlicensees 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 collaborative partners' 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 us and our partners to obtain and maintain patents and other intellectual property rights for our and their potential products both in the United States and in foreign countries. Our patent position, like that of many biotechnology and pharmaceutical companies, is uncertain and involves complex legal and technical questions for which important 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 January 2016, we received a paragraph IV certification from a subsidiary of Par advising us that it had filed an ANDA with the FDA seeking approval to market a generic version of Merck's NOXAFIL-IV product. The paragraph IV certification alleges that Merck's U.S. Patent No. 9,023,790 related to NOXAFIL-IV and our U.S. Patent No. 8,410,077 related to Captisol, which we refer to as the '077 Patent, are invalid and/or will not be infringed by Par's manufacture, use or sale of the product for which the ANDA was submitted. If Par succeeds in receiving the ANDA, we could lose the revenues related to NOXAFIL-IV or the ability to enter into new licenses using our '077 Patent. For additional information, see "Item 3. Legal Proceedings."

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 collaborative partners and could adversely affect our ability to enter into new collaborations. We also rely on unpatented trade secrets and know-how to protect and maintain our competitive position. We require our employees, consultants, collaborative partners 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 collaborative relationships, and any disputes or litigation with our collaborative 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

Table of Contents

ownership rights to intellectual property, know-how or technologies developed with our collaborators. 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. 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 collaborative partners have rights to control product development and clinical programs for products developed under our collaborations. As a result, these collaborative partners may conduct these programs more slowly or in a different manner than expected. Moreover, even if clinical trials are completed, we or our collaborative partners still may not apply for FDA approval in a timely manner or the FDA 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 royalties and milestones from our partners in various past and future collaborations 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 been tested in clinical trials.

None of our collaboration partners using our OmniAb antibody platform have tested drugs based on the platform in 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 and the Trianni mouse. 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.

Table of Contents

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 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. The Obama administration has 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. Yet, there is no guarantee that the current 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.

Table of Contents

If we are unable to maintain the effectiveness of our internal controls, our financial results may not be accurately reported.

The Sarbanes-Oxley Act of 2002 requires, among other things, that we maintain effective internal controls for financial reporting and disclosure controls and procedures. While we anticipate maintaining the integrity of our internal controls over financial reporting and all other aspects of Sarbanes-Oxley Act of 2002, we cannot be certain that a material weakness will not be identified when we test the effectiveness of our control systems in the future. The existence of one or more material weaknesses or significant deficiencies in our internal control over financial reporting could result in errors in our consolidated financial statements. Substantial costs and resources may be required to rectify any internal control deficiencies. If we fail to maintain the adequacy of our internal controls in accordance with applicable standards, we may be unable to conclude on an ongoing basis that we have effective internal controls over financial reporting. If we cannot produce reliable financial reports, our business and financial condition could be harmed, investors could lose confidence in our reported financial information, or the market price of our stock could decline significantly. In addition, our ability to obtain additional financing to operate and expand our business, or obtain additional financing on favorable terms, could be materially and adversely affected, which, in turn, could materially and adversely affect our business, our financial condition and the market value of our securities. Moreover, our reputation with customers, lenders, investors, securities analysts and others may be adversely affected

Our shareholder rights plan, concentration of ownership and charter documents may hinder or prevent change of control transactions.

Our shareholder rights plan and provisions contained in our certificate of incorporation and bylaws may discourage transactions involving an actual or potential change in our ownership. 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. We have in the past granted waivers to investors allowing them to increase their ownership level above the limit set forth in our shareholder rights agreement. Such restrictions, circumstances 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 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 collaborative 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

Table of Contents

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, identifiable intangible assets or other long-lived assets from our mergers and acquisitions 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, and Neurogen 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 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 stock price has been volatile and could experience a sudden decline in value.

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

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

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

Our results of operations could be materially negatively affected by economic conditions generally, both in the United States and elsewhere around the world. Continuing concerns over inflation, energy costs, geopolitical issues, the availability and cost of credit, and the U.S. financial markets have contributed to increased volatility and diminished expectations for the economy and the markets going forward. Domestic and international equity markets periodically

experience heightened volatility and turmoil. These events may have an adverse effect on us. In the event of a market downturn, our results of operations could be adversely affected by those factors in many ways, including making it more difficult for us to raise funds if necessary, and our stock price may further decline. We cannot provide assurance that our investments are not subject to adverse changes in market value. If our investments experience adverse changes in market value, we may have less capital to fund our operations.

Item 1B. Unresolved Staff Comments

None.

Table of Contents

Item 2. Properties

We currently lease premises consisting of approximately 16,500 square feet of office and laboratory space in San Diego, leased through June 2019 which serves as our corporate headquarters. Approximately 6,500 square feet of laboratory space is currently subleased. In 2015, we entered into a lease termination agreement to accelerate the expiration date of the lease to April 30, 2016. In February 2016, we received a notice from our current landlord regarding the termination date of our lease and are currently in discussions to resolve any disputes. The Company requires smaller facility space and accordingly entered into a new lease agreement consisting of approximately 4,000 square feet of office space in San Diego. The new lease has an initial term of approximately 7 years and is expected to commence in May 2016.

We lease approximately 1,500 square feet of laboratory space located at the Bioscience and Technology Business Center in Lawrence, Kansas, leased through December 2017.

We lease approximately 99,000 square feet in three facilities in Cranbury, New Jersey under leases that expire in 2016. We also sublease approximately 11,666 square feet of these facilities with subleases expiring in 2016. We fully vacated these facilities in September 2010.

Item 3. 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.

Paragraph IV Certification by Par Pharmaceuticals

On January 7, 2016, we received a paragraph IV certification from Par Sterile Products, LLC, a subsidiary of Par Pharmaceuticals, Inc., or Par, advising us that it had filed an ANDA with the FDA seeking approval to market a generic version of Merck's NOXAFIL-IV product. The paragraph IV certification states it is Par's position that Merck's U.S. Patent No. 9,023,790 related to NOXAFIL-IV and our U.S. Patent No. 8,410,077 related to Captisol are invalid and/or will not be infringed by Par's manufacture, use or sale of the product for which the ANDA was submitted. On February 19, 2016, Merck filed an action against Par in the United States District Court for the District of New Jersey, asserting that Par's manufacture, use or sale of the product for which the ANDA was submitted would infringe Merck's U.S. Patent No. 9,023,790. The case against Par is captioned Merck Sharpe & Dohme Corp. v. Par Sterile Products, LLC, Par Pharmaceuticals, Inc., Par Pharmaceutical Companies, Inc., and Par Pharmaceutical Holdings, Inc., No.16-cv-00948.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities

Market Information

Our common stock is traded on the NASDAQ Global Market under the symbol "LGND."

Table of Contents

The following table sets forth the high and low intraday sales prices for our common stock on the NASDAQ Global Market for the periods indicated:

	Price Range	
	Low	High
Year Ended December 31, 2015:		
1st Quarter	$51.54	$77.11
2nd Quarter	75.67	100.90
3rd Quarter	82.10	111.25
4th Quarter	84.46	111.85
Year Ended December 31, 2014:		
1st Quarter	$50.73	$80.42
2nd Quarter	55.90	71.44
3rd Quarter	46.32	65.66
4th Quarter	41.99	58.48

As of February 17, 2016, the closing price of our common stock on the NASDAQ Global Market was $90.36

Holders

As of February 17, 2016, there were approximately 604 holders of record of the common stock.

Purchases of Equity Securities By the Issuer and Affiliated Purchasers

The following table presents information regarding repurchases by us of our common stock during the year ended December 31, 2015 under the stock repurchase program approved by our board of directors in September 2015, under which we may acquire up to $200.0 million of our common stock in open market and negotiated purchases for a period of one year.

ISSUER PURCHASES OF EQUITY SECURITIES

	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Dollar Value of Shares that May Yet Be Purchased Under the Program (in thousands)
September 1-September 30, 2015	6,120	$ 79.92	6,120	$ 199,511
Total	6,120			

Table of Contents

Performance Graph

The graph below shows the five-year cumulative total stockholder return assuming the investment of $100 and is based on the returns of the component companies weighted monthly according to their market capitalizations. The graph compares total stockholder returns of our common stock, of all companies traded on the NASDAQ Stock market, as represented by the NASDAQ Composite® Index, and of the NASDAQ Biotechnology Stock Index, as prepared by The NASDAQ Stock Market Inc. The NASDAQ Biotechnology Stock Index tracks approximately 151 domestic biotechnology stocks.

The stockholder return shown on the graph below is not necessarily indicative of future performance and we will not make or endorse any predictions as to future stockholder returns.

	12/31/2010	12/31/2011	12/31/2012	12/31/2013	12/31/2014	12/31/2015
Ligand	100 %	33 %	75 %	154 %	1 %	104 %
NASDAQ Market (U.S. Companies) Index	100 %	(1)%	17 %	40 %	15 %	7 %
NASDAQ Biotechnology Stocks	100 %	12 %	33 %	66 %	34 %	12 %

Table of Contents

Item 6.