



**H.C. Wainwright  
22<sup>nd</sup> Annual Investor Conference**

**Ligand<sup>®</sup>**

**John Higgins,  
Chief Executive Officer of Ligand**

**September 14th, 2020**

**Nasdaq: LGND**

# Safe Harbor Statement

The following presentation contains forward-looking statements by Ligand that involve risks and uncertainties. Words such as “plans,” “believes,” “expects,” “could,” and “will,” and similar expressions, are intended to identify forward-looking statements. These forward-looking statements include, without limitation, financial projections, expectations regarding research and development programs and manufacturing capacity, the impacts that the COVID-19 pandemic will have on Ligand and its partners timing expectations for preclinical studies and clinical trials by Ligand and its partners and the expected closing of the acquisition of Pfenex Inc. Actual events or results may differ from Ligand’s expectations due to risks and uncertainties inherent in Ligand’s business, including: any failure to develop or commercialize products as expected; additional disruptions to Ligand’s or its partners’ business as a result of the COVID-19 pandemic; the risk that the conditions to the closing of the transaction are not satisfied including the risk that Ligand may not receive sufficient number of shares tendered from Pfenex’s stockholders to complete the tender offer; the possibility that Ligand may not successfully implement its strategic growth plan or achieve its guidance for 2020 or thereafter and other risks and uncertainties described in its public filings with the Securities and Exchange Commission, available at [www.sec.gov](http://www.sec.gov).

Information regarding partnered products and programs comes from information publicly released by our partners. Our trademarks, trade names and service marks referenced herein include Ligand, Captisol, OmniAb and OmniChicken. Each other trademark, trade name or service mark appearing in this presentation belongs to its owner. The process for reconciliation between the non-GAAP adjusted financial numbers presented on slides 5, 26 and 28 and the corresponding GAAP figures is shown in the Q4’19 and Q2’20 press releases available at <https://investor.ligand.com/press-releases>.

Readers are cautioned not to place undue reliance on these forward-looking statements, which reflect our good faith beliefs and judgements (or those of the indicated third parties) as of the date hereof. All forward-looking statements are qualified in their entirety by this cautionary statement, and Ligand undertakes no obligation to revise or update this presentation to reflect events or circumstances after the date hereof. This caution is made under the safe harbor provisions of Section 21E of the Securities Exchange Act of 1934.

# About Pfenex Inc. Acquisition – Important Information and Where to Find it



On August 31, 2020, Ligand Pharmaceuticals Incorporated (“Ligand”) and Pelican Acquisition Sub, Inc. (“Acquisition Sub”), a wholly owned subsidiary of Ligand, filed a Schedule TO (as amended, the “Schedule TO”) with the Securities and Exchange Commission (the “SEC”) and commenced a tender offer for all of the outstanding shares of Pfenex Inc. (“Pfenex”) at a price per share of \$12.00, in cash (the “Cash Amount”), plus one non-transferable contractual contingent value right per share (each, a “CVR”), which CVR represents the right to receive a contingent payment of \$2.00 in cash, without interest, if a certain regulatory predefined regulatory milestone is achieved by December 31, 2021 (the Cash Amount plus one CVR, collectively the “Offer Price”), subject to any applicable withholding taxes (the “Offer”). In addition, in connection with the commencement of the tender offer, Pfenex file a Solicitation/Recommendation Statement on Schedule 14D-9 with the SEC with respect to the Offer.

The Offer and withdrawal rights will expire at midnight (New York City time) at the end of the day on September 29, 2020, unless the Offer is extended or terminated.

The Agreement and Plan of Merger Agreement, dated August 10, 2020, by and between Ligand, Acquisition Sub and Pfenex (the “Merger Agreement”), provides that Ligand will extend the Offer: (i) for successive periods of 10 business days each (or such longer period as may be approved by Pfenex), if on or prior to any then scheduled expiration date, all conditions to the Offer (other than the minimum condition set forth in the Schedule TO) have been satisfied or waived (where permitted by applicable law or the Merger Agreement); provided, in no event will Ligand be required to extend the Offer on more than two occasions (but may elect to do so in its sole and absolute discretion); and (ii) for any period or periods required by any applicable law or applicable rules, regulations, interpretations or positions of the SEC or its staff or the NYSE American stock exchange.

The Merger Agreement also provides that we may (and if requested by Pfenex shall) extend the Offer for successive periods of up to 10 business days each (or such longer period as may be approved by Pfenex), if on or prior to any then scheduled expiration date, any of the conditions to the Offer (other than the minimum condition) has not been satisfied or waived (where permitted by applicable law or the Merger Agreement).

If Ligand extends the Offer, Ligand will inform American Stock Transfer & Trust Company, LLC, the depository for the Offer, of that fact and will make a public announcement of the extension no later than 9:00 a.m., New York City time, on the next business day after the previously scheduled expiration date.

THE TENDER OFFER MATERIALS (INCLUDING AN OFFER TO PURCHASE, A RELATED LETTER OF TRANSMITTAL AND CERTAIN OTHER TENDER OFFER DOCUMENTS) AND THE SOLICITATION/RECOMMENDATION STATEMENT CONTAIN IMPORTANT INFORMATION THAT SHOULD BE READ CAREFULLY AND CONSIDERED BY PFENEX’S STOCKHOLDERS BEFORE ANY DECISION IS MADE WITH RESPECT TO THE TENDER OFFER. Both the tender offer materials and the solicitation/recommendation statement are available to Pfenex’s stockholders free of charge. A free copy of the tender offer materials and the solicitation/recommendation statement will also be made available to all of Pfenex’s stockholders by contacting Pfenex at [InvestorRelations@pfenex.com](mailto:InvestorRelations@pfenex.com) or by phone at (858) 352-4400, or by visiting Pfenex’s website ([www.pfenex.com](http://www.pfenex.com)). In addition, the tender offer materials and the solicitation/recommendation statement (and all other documents filed by Pfenex with the SEC) will be available at no charge on the SEC’s website ([www.sec.gov](http://www.sec.gov)) upon filing with the SEC.

# Ligand: Innovation Driving Value



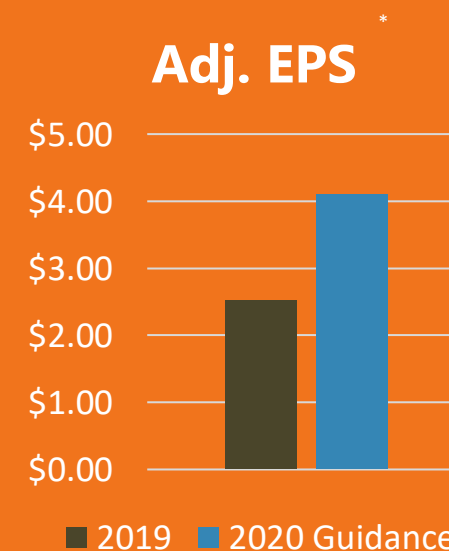
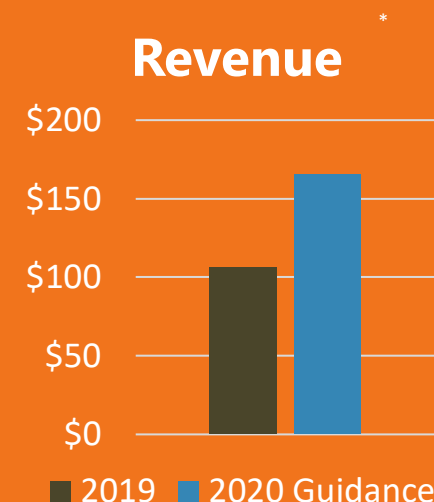
**Providing technology to make drugs possible. An integral partner to major companies in the pharma industry**

**Delivering outstanding service to partners. Sharing in their scientific and financial success to drive our value**

**Highly experienced, scientifically focused. Diverse Board committed to strong culture and operational excellence**

# Recent Developments

- **Outstanding execution** and financial performance first half of 2020, increased financial outlook for rest of year
- **Major OmniAb<sup>®</sup> advancements** past three months illustrate the strength of the platform and indicate that programs are advancing faster to market than expected
- **Significant growth of Captisol<sup>®</sup> sales.** Expected large volume sales going forward into next year and beyond based on need to solubilize anti-viral medicines to treat COVID-19
- **Robust business development,** multiple major new deals signed in 2020
- Strong balance sheet, **growing operating cash flows**
- **4 acquisitions year-to-date,** diversifying and increasing financial outlook



\* 2019 Figures exclude Q1 2019 Promacta contribution. Please see our Q4 19 and Q2 20 press releases for a reconciliation

# Ligand to Acquire Pfenex



- August 10, signed agreement to acquire Pfenex Biopharmaceuticals for \$438 million cash plus a CVR earnout tied to one product

## Provides Ligand:

- 1) **Major revenue and earnings contribution** - starting immediately in 2021 and growing significantly over the next few years
  - 2) **Leading Technology Platform** – Protein Expression Technology<sup>®</sup>, a robust, validated, cost-effective and scalable approach to recombinant protein production, and is well-suited for complex, large-scale protein production that cannot be made by more traditional systems
  - 3) **Attractive partner portfolio** - Numerous major collaborations with leading pharmaceutical companies for treatments and vaccines, including Merck, Jazz Pharmaceuticals, Serum Institute of India and Alvogen
- Acquisition currently expected to close in October

# THREE MAJOR TECHNOLOGY PLATFORMS

*CUTTING-EDGE, ROYALTY-BEARING TECHNOLOGY MAKING MAJOR DRUGS POSSIBLE*

**Drug Discovery**



*Delivering fully human antibodies*

**Drug Formulation**



*Enabling the creation of new products*

**Process  
Development**






















*Proprietary protein expression technology*

Ligand's business model is based on doing what Ligand does best: drug discovery, early-stage drug development, product reformulation and partnering.

\*Pending deal closing

# Partnered Pipeline Snapshot (September 2020)

Partner	Program	Therapy Area	Technology	Preclinical	Phase 1	Phase 2	Phase 3	Marketed
 AMGEN	Kyprolis®	Oncology	Captisol					
 ACROTECH BIOPHARMA	EVOMELA®	Oncology	Captisol					
 GILEAD	Veklury®	Infection	Captisol	Emergency Use Authorization by FDA in US				
Multiple	Multiple	Multiple	Multiple	Includes: ZULRESSO (Sage), MINNEBRO (Daiichi-Sankyo), NEXTERONE (Baxter), DUAVEE (Pfizer), Others				
 ESTONE PHARMACEUTICALS	CS1001	Oncology	OmniAb					
 palvella THERAPEUTICS	PTX-022	Dermatology	Proj. Finance					
 Retrophin	Sparsentan	Kidney Disease	NCE					
 Takeda	Pevonedistat	Oncology	Captisol					
 SANTOANGELI PHARMACEUTICALS	Pradefovir	Infection	HepDirect					
Multiple	Multiple	Multiple	Multiple	Pipeline includes 15 additional Phase 3 or Pivotal assets				
 GLORIA PHARMACEUTICALS	Zimberelimab	Oncology	OmniAb	NMPA filed in China				
 Verona Pharma	Ensifentrine	Respiratory	VDP					
 MARINUS PHARMACEUTICALS	Ganaxolone	CNS	Captisol					
Multiple	Multiple	Multiple	Multiple	Pipeline includes 15 additional Phase 2 assets				
 VIKING THERAPEUTICS	VK2809	NASH	HepDirect					
 Bristol-Myers Squibb	Cimlanod	Cardiovascular	Captisol					
 SANTOANGELI PHARMACEUTICALS	Lasofoxifene	Oncology	NCE					
 Eisai	Parempanel	CNS	Captisol					
 IMMUNOVANT	IMVT-1401	Autoimmune	OmniAb					
 CORVUS PHARMACEUTICALS	Ciforadenant	Oncology	VDP					
 ARCUS BIOSCIENCES	Zimberelimab	Oncology	OmniAb					
 Johnson & Johnson	Teclistamab	Oncology	OmniAb					
 Aptevo Therapeutics	APVO436	Oncology	OmniAb					
 AMGEN	AMG-330	Oncology	Captisol					
Multiple	Multiple	Multiple	Multiple	17 additional Phase 1 assets				

Status of partnered programs from information released by our partners and from clinicaltrials.gov

Partnered pipeline also includes >100 preclinical programs

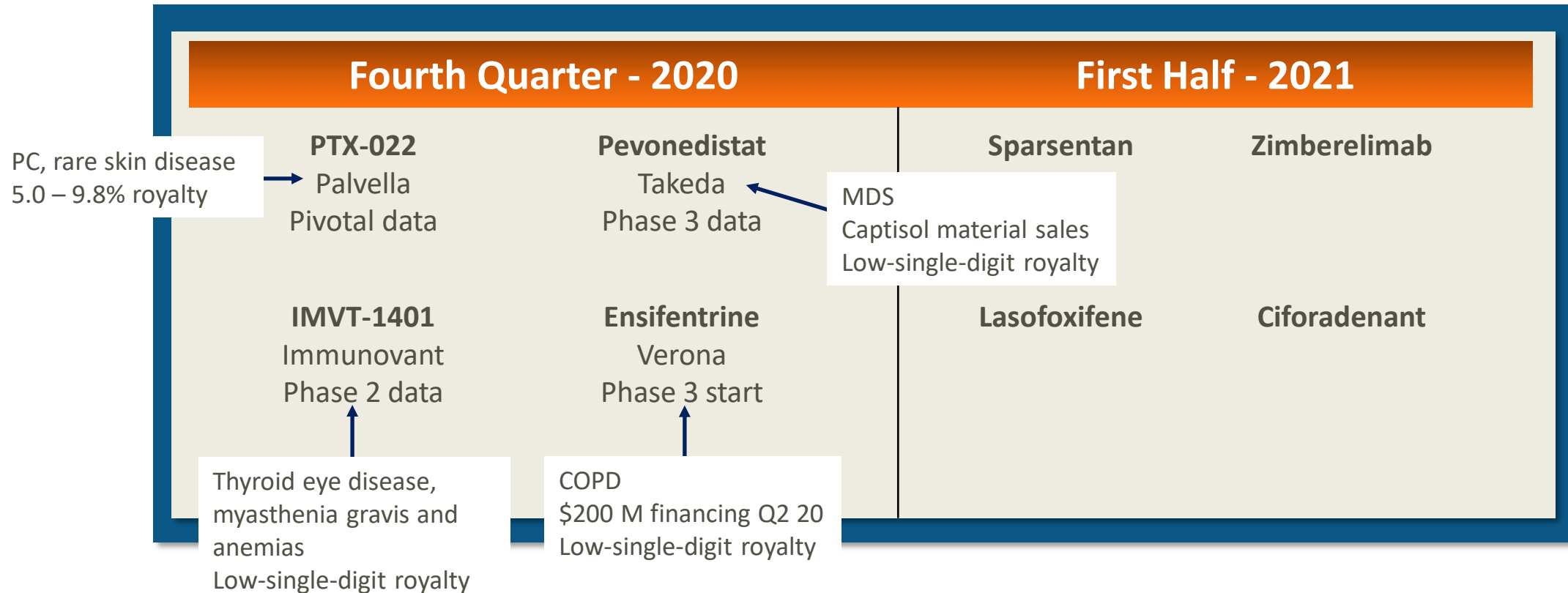
# Major Potential Pipeline Events

*Substantial calendar of events over next 12 months*

Fourth Quarter - 2020		First Half - 2021	
<b>PTX-022</b> Palvella Pivotal data	<b>Pevonedistat</b> Takeda Phase 3 data	<b>Sparsentan</b> Retrophin Phase 3 data	<b>Zimberelimab</b> Gloria NMPA approval
<b>IMVT-1401</b> Immunovant Phase 2 data	<b>Ensifentrine</b> Verona Phase 3 start	<b>Lasofoxifene</b> Sermonix Phase 2 data	<b>Ciforadenant</b> Corvus Phase 2 data

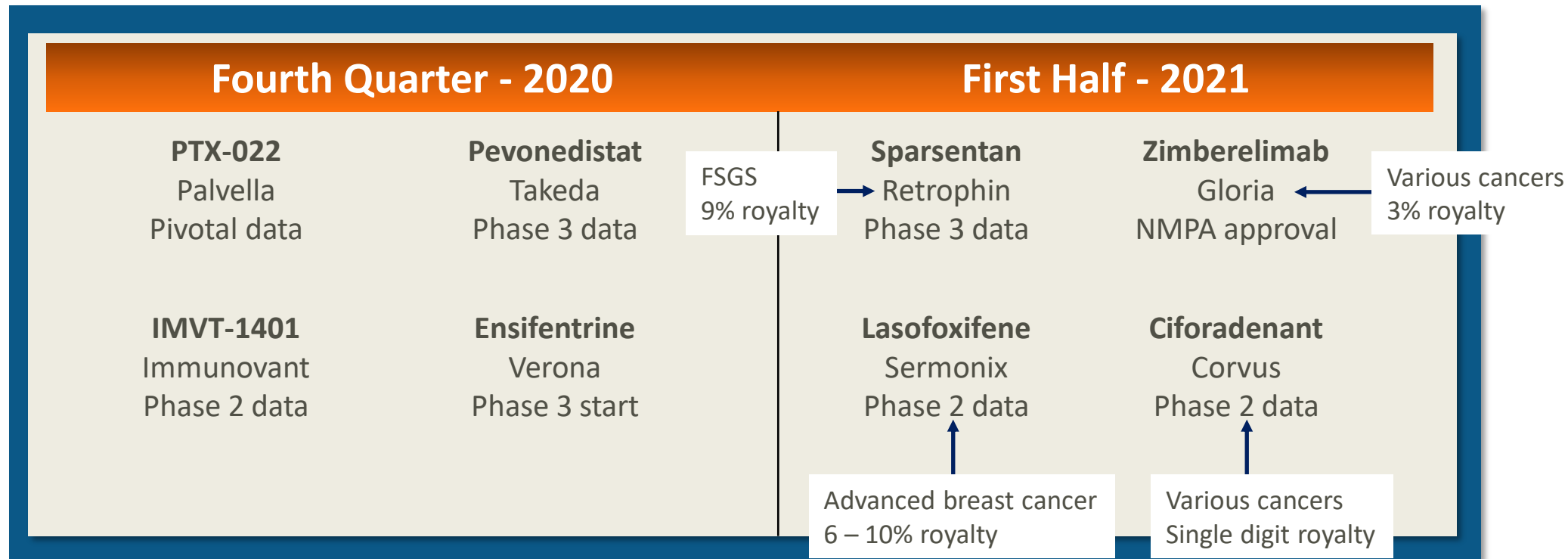
# Major Potential Pipeline Events

## Substantial calendar of events over next 12 months



# Major Potential Pipeline Events

## Substantial calendar of events over next 12 months





# Captisol

Ligand<sup>®</sup>

# Captisol Business Update

- Major commercial assets driving royalties are Kyprolis (Amgen and Ono) and Evomela (CASI and Acrotech);
- Five other Captisol products in development that could launch or expand into major geographies in next three years
  - Kyprolis-China (BeiGene)
  - Parempanel IV (Eisai)
  - Pevonedistat (Takeda)
  - Fosphenytoin IV (Sedor)
  - Carnexiv (Lundbeck)
- Captisol used to solubilize remdesivir, Gilead's anti-viral treatment for COVID-19. Supplying major quantities to Gilead and partners participating in the global consortium for remdesivir
- Initiating potentially pivotal trial for CE-lohexol as potential participant in \$1.5 billion existing U.S. contrast agent market
- Forecasting strong, growing demand for Captisol over next few years

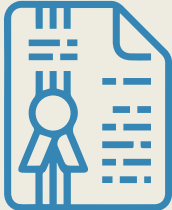
# Captisol: Essential technology, investing for future expansion

## **CAPTISOL**® Key Technology Features



### Global Reach

Captisol-enabled drugs are marketed in >70 countries  
>40 partners have Captisol-enabled drugs in development



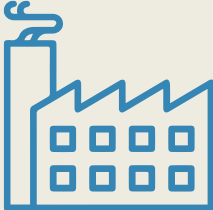
### Intellectual Property

Substantial know-how  
Patents extend until 2033



### Drug Master Files

Type 4 and 5 DMFs in U.S. with >20,000 pages containing manufacturing, safety data (IV, inhaled, SubQ, oral, etc.)  
Also have DMFs in Japan, China and Canada



### Manufacturing, Quality & Scale

Manufacturing is conducted in two cGMP plants via a validated process, with distribution out of five facilities  
Current scale-up work and addition of sites for certain manufacturing steps

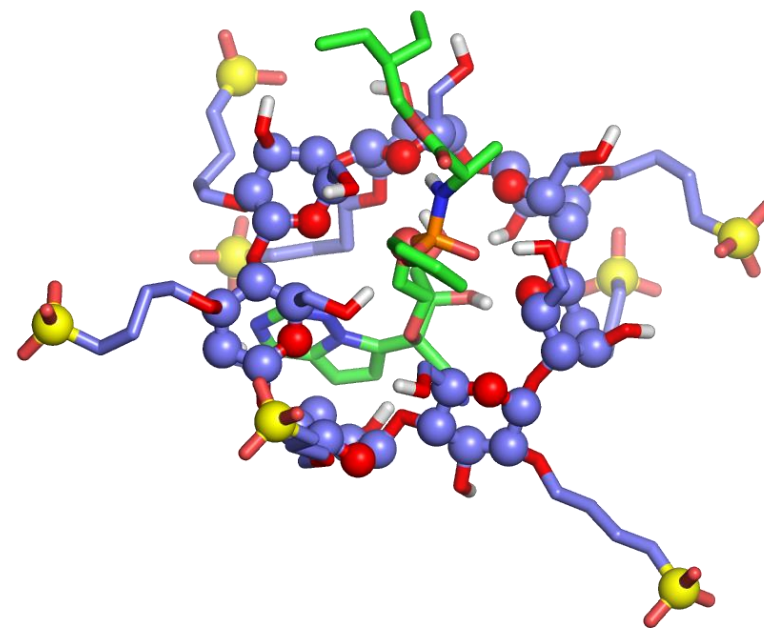
# FDA Approved KYPROLIS<sup>®</sup> Combination with DARZALEX<sup>®</sup> In Both Once- And Twice-Weekly Dosing Regimens

*KYPROLIS is an Amgen product that utilizes Captisol<sup>®</sup> in its formulation*

- KYPROLIS<sup>®</sup> label expansion includes use in combination with DARZALEX<sup>®</sup> plus dexamethasone (DKd) for treatment of patients with relapsed/refractory multiple myeloma (R/R MM) who have received 1 - 3 previous lines of therapy
- Pivotal CANDOR trial met primary endpoint and resulted in a 37% reduction in the risk of disease progression or death in patients receiving DKd (HR=0.63; 95% CI: 0.464, 0.854; p-value [1-sided]=0.0014) compared to Kd alone
- Amgen has submitted marketing applications globally
- Expected launch in China in 2021, commercialized by BeiGene

# Captisol and Remdesivir

- Ligand scientists and collaborators published molecular dynamics simulations illustrating the role of Captisol, and showing insertion of remdesivir in the Captisol cavity<sup>1</sup>
  - Recent peer-reviewed publication also highlighted key elements and differentiating features of Captisol<sup>2</sup>
- Gilead's remdesivir-IV (Veklury<sup>®</sup>) available via emergency use or provisional authorizations in the U.S., Europe, Canada, Japan, Australia, India, others<sup>3</sup>
- Gilead investing in ongoing work to reach additional patient populations and care settings, including outpatient treatment with IV form, inhaled solution clinical trials, SubQ form evaluation and drug combination studies<sup>3</sup>



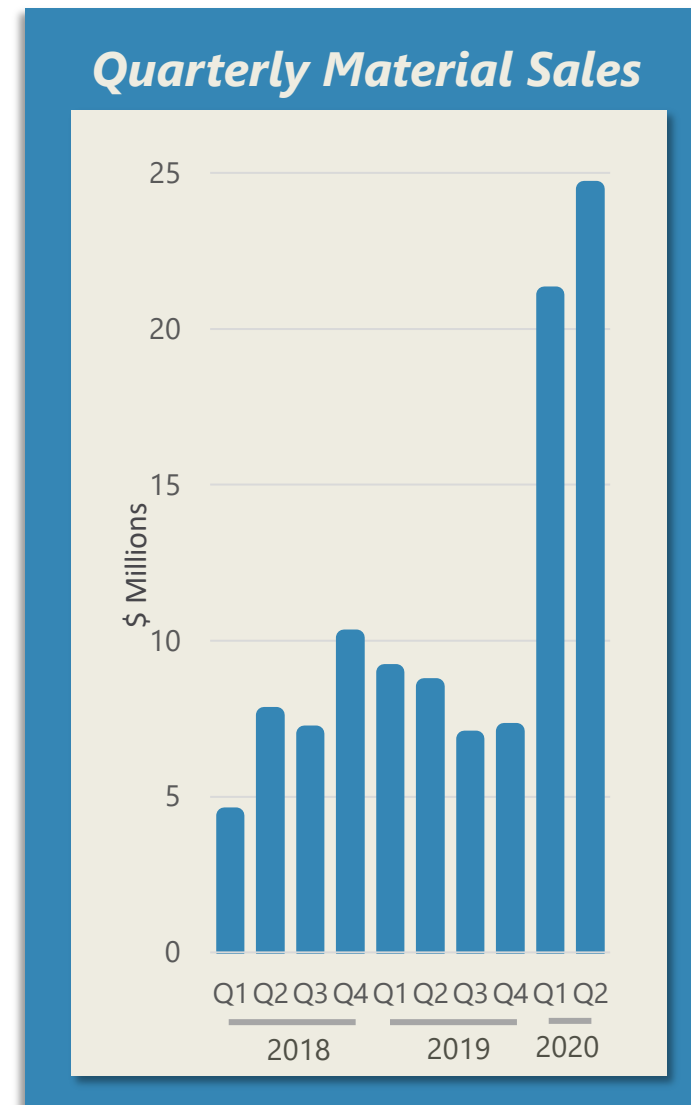
<sup>1</sup> Pipkin, et al., *Drug Development and Delivery*, June 2020, Vol. 20, No. 5, p 42-47

<sup>2</sup> Stella and Rajewski, *Intl Journal of Pharmaceutics*, June 2020, Vol. 583, 119396

<sup>3</sup> Reference Gilead disclosures, July 30, 2020

# Captisol Business

- Shipped Captisol to more than 40 partners in Q2 with substantial increase in material sales
- Significant annual growth projected in 2020, with materials sales estimated at \$90 million
  - 2019 Captisol sales were \$31.5 million





# OmniAb

Ligand<sup>®</sup>

# OmniAb Business Update

## *Major Antibody Discovery Platform*

- Today, Ligand has over 45 OmniAb partners
  - 80 OmniAb programs
  - 50 ongoing or completed clinical trials
- Past several months has been a period of major developments for OmniAb with late-stage clinical data, regulatory advancements and new program initiations
- Over next 12 months, potential for:
  - First approvals to occur (three years earlier than original forecast)
  - Four major clinical data events
- OmniAb expected to drive substantial value for Ligand over the long term with significant growth over next decade and beyond

# OmniAb Technology Updates



- Viewed as *best-in-class* technology for antibody discovery
- OmniAb-derived antibodies were highlighted in clinical presentations at *ASCO 2020*:



**Tiragolumab (TIGIT)\***



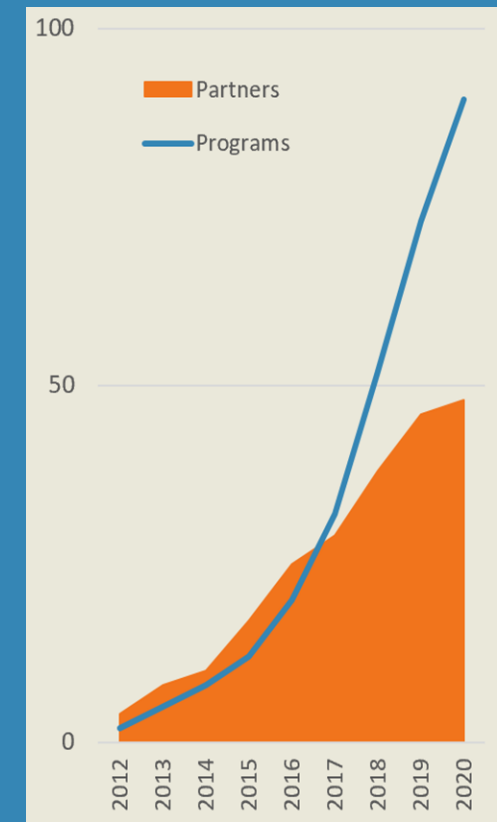
**Teclistamab (BCMA/CD3)**



**Zimberelimab (PD-1)**

- Innovation and investment continues, with launch of new tools and acquisition of bolt-on technologies
  - Developing an OmniRat expressing human ACE-2 protein, a potentially valuable tool for SARS-CoV-2 research
- Multiple OmniAb programs now in late-stage development

## Partners and Programs



\* Genentech paid OMT Inc. for royalty-free access rights to OmniRat prior to Ligand's 2016 acquisition of OMT.

# Recent Acquisitions to Expand OmniAb



- Technology based on the discovery and development of antibodies from immunized cows and libraries. Leveraging that cow antibodies have the longest CRD3s of any species, which confer unique genetic properties and structural diversity
- This type of antibody is of growing interest for partners with interest in difficult targets, including ion channels and antiviral antibodies
- Ultralong H3 could potentially be featured in a “next-gen” OmniChicken and further expand our animal offerings



- xPloration™ platform is a proprietary microcapillary platform that can screen single B cells for specificity and bioactivity
- Technology can create flexibility and substantial efficiencies in discovery, and xCella have completed proof-of-concept work with OmniChicken® with impressive results
- Potential to drive new partnerships, significantly increase speed, and allow discovery of rare antibody sequences in a variety of screens

# OmniAb Portfolio Updates

## Cstone and Immunovant Announce Positive Results



### CStone Announced Topline Phase 3 Trial Results for CS1001 in First Line NSCLC OmniAb-derived anti-PD-L1 Antibody

- CS1001 met primary endpoint of progression-free survival (PFS) as first-line treatment in stage IV squamous and non-squamous NSCLC
- CS1001 combined with platinum-based chemotherapy had a significant ( $p < 0.0001$ ) prolongation of PFS compared with placebo and chemotherapy, reducing the risk of disease progression or death by 50%
- CStone plans to submit an NDA to the NMPA for CS1001 by year-end

### Immunovant Announced Positive Topline Phase 2a Trial Results in Myasthenia Gravis OmniAb-derived anti-FcRn mAb IMVT-1401

- IMVT-1401 only subcutaneous injection anti-FcRn agent in development for myasthenia gravis (MG)
- In an interim analysis from the Phase 2a ASCEND MG study, IMVT-1401 demonstrated:
  - *Robust, dose-dependent, IgG reductions*
  - *Statistically significant improvements in MG-ADL and MGC scales*
  - *High rate of deep responders across MG scales*
- Immunovant plans to initiate a Phase 3 MG trial in the first half of 2021

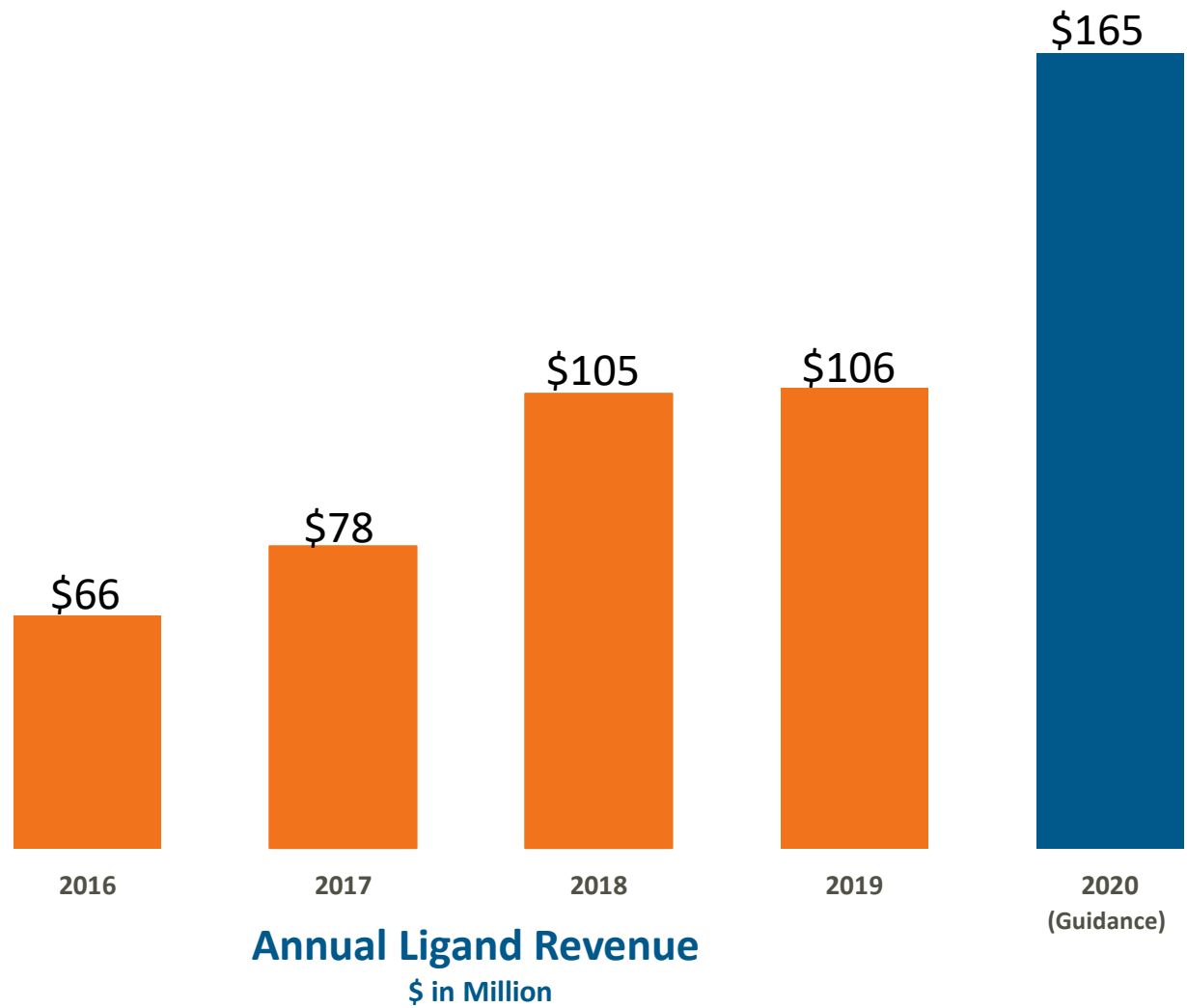


# Financials

Ligand<sup>®</sup>

# 2020 Revenue Guidance

*Strong Revenue Growth Driving Major Increase in Annual Cash Flow*



- Cash operating expenses unchanged with increased revenues
- EBITDA expected to exceed \$80 million with margins approaching 50%

Note: excludes Promacta sales in 2016, 2017, 2018 and 2019. 2018 also excludes a one-time payment of \$47M from Wuxi

# \$41.4 Million Second Quarter Revenue

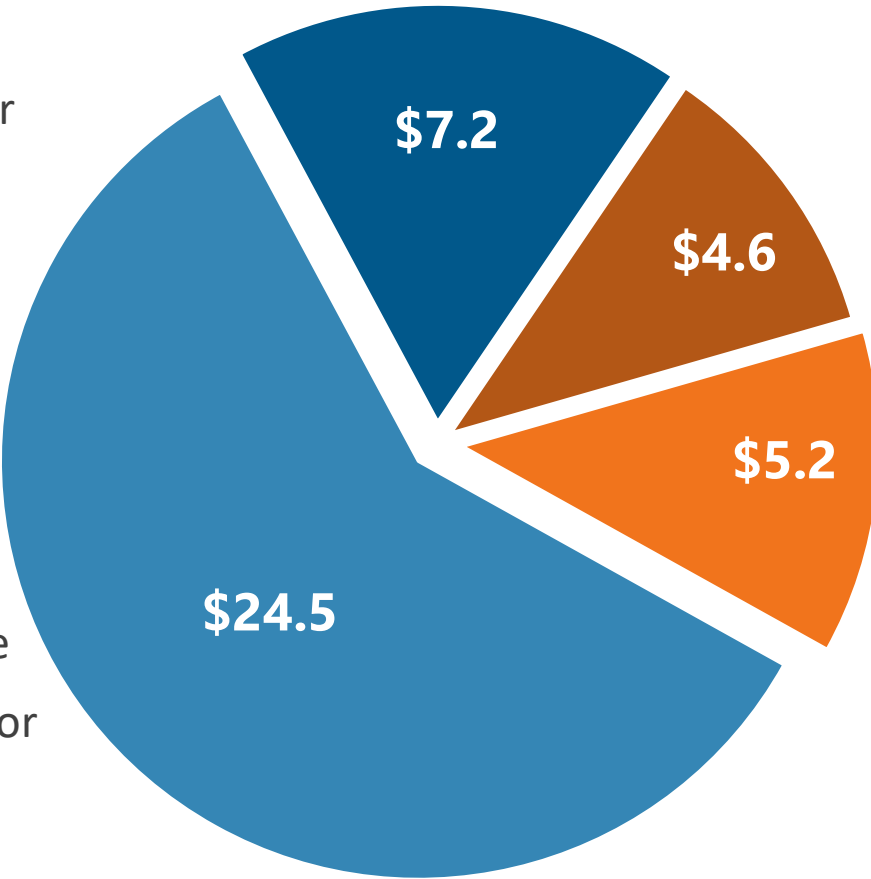
Over 120 partners driving revenue across all major revenue segments

### Royalties

- Solid Q2 year over year growth
- Modest COVID-19 impact due to patient access to medicines

### Captisol

- Record quarterly revenue
- Increased sales outlook for 2020



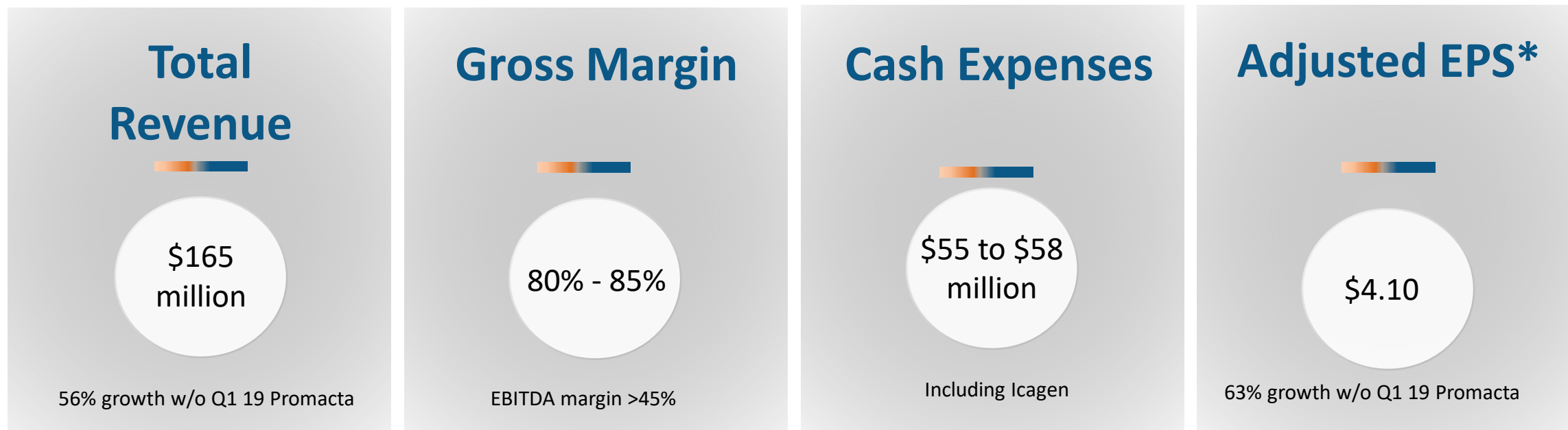
### Service Revenue

- Q2 performance in line with expectations
- Full year limited impact from COVID-19

### Contract Revenue

- Most partners resuming trials
- COVID-19 impact unchanged from Q1 outlook

# 2020 Financial Guidance



- Revenue guidance increased from \$165 million, based on an increase of Captisol sales from \$65 million to \$90 million
- Margins adjusted to account for impact of COGS associated with Captisol
- Cash operating expenses unchanged, higher R&D expenses offset by lower G&A expenses
- Adjusted EPS increased to \$4.10 from previous guidance of \$3.65

Note: EBITDA excludes non-cash stock-based comp.

\*Please see reconciliation to GAAP in Q2 2020 press release available at <https://investor.ligand.com/press-releases>.

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A GREAT SOURCE FOR **LATEST EVENTS AND PARTNERED PROGRAM UPDATES**



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**John Higgins,  
Chief Executive Officer of Ligand**

**September 14th, 2020**

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