February 21, 2018

Ligand Reports Fourth Quarter and Full Year 2017 Financial Results

Introduces 2018 guidance

SAN DIEGO--(BUSINESS WIRE)-- **Ligand Pharmaceuticals Incorporated (NASDAQ: LGND)** today reported financial results for the three and 12 months ended December 31, 2017, and provided an operating forecast and program updates. Ligand management will host a conference call today beginning at 4:30 p.m. Eastern time to discuss this announcement and answer questions.

"Coming off a strong fourth quarter for our top two royalty assets, Ligand entered 2018 with economic rights to two drugs each on a run rate to exceed $1 billion in sales this year," said John Higgins, Chief Executive Officer of Ligand. "Of particular importance for our investors is that the strong financial momentum of these programs parallels all-time-high demand for our two leading technology platforms, OmniAb® and Captisol®. The integration of Crystal Bioscience, the company we acquired at the end of 2017, is going extremely well and there is strong interest by our antibody partners for the new OmniChicken™ platform. In addition to our robust fundamental performance, the new tax law meaningfully increases our long-term outlook for profits and cash flow as our projected tax rate has been reduced by more than a third from what we had been projecting."

Fourth Quarter 2017 Financial Results

Total revenues for the fourth quarter of 2017 were $50.5 million, compared with $38.2 million for the same period in 2016. Royalties were $28.3 million, compared with $19.6 million for the same period in 2016, an increase of 45% primarily due to higher royalties from Promacta®, Kyprolis® and EVOMELA®. Material sales were $7.7 million, compared with $9.1 million for the same period in 2016 due to the timing of Captisol purchases for use in clinical trials and commercial products. License fees, milestones and other revenues were $14.4 million, compared with $9.5 million for the same period in 2016.

Cost of goods sold was $1.7 million for the fourth quarter of 2017, compared with $2.9 million for the same period in 2016. Amortization of intangibles was $4.0 million, compared with $2.7 million for the same period in 2016. Research and development expense was $8.6 million, compared with $6.4 million for the same period of 2016 due to non-cash stock-based compensation expense. General and administrative expense was $7.7 million, compared with $6.8 million for the same period in 2016.

GAAP net loss for the fourth quarter of 2017 was $7.0 million, or $0.33 per diluted share, compared with a GAAP net loss of $3.1 million, or $0.15 per diluted share, for the same period in 2016. GAAP net loss for the fourth quarter of 2017 includes a one-time non-cash

charge of $32.8 million due to a reduction in Ligand's tax assets, which primarily comprise accumulated net operating losses, driven by the lower tax rates of the Tax Cuts and Jobs Act. Adjusted net income for the fourth quarter of 2017 was $29.6 million, or $1.31 per diluted share, compared with adjusted net income of $16.1 million, or $0.74 per diluted share, for the same period in 2016.

As of December 31, 2017, Ligand had cash, cash equivalents and short-term investments of $201.7 million. Cash generated from operations was $31.3 million for the fourth quarter of 2017.

Full Year 2017 Financial Results

Total revenues for 2017 were $141.1 million, compared with $109.0 million for 2016. Royalties were $88.7 million, compared with $59.4 million for 2016, an increase of 49% primarily due to higher royalties from Promacta, Kyprolis and EVOMELA. Material sales were $22.1 million, compared with $22.5 million for 2016 due to the timing of Captisol purchases for use in clinical trials and commercial products. License fees, milestones and other revenues were $30.3 million, compared with $27.0 million for 2016.

Cost of goods sold was $5.4 million for 2017, compared with $5.6 million for 2016 due to the timing and mix of Captisol sales. Amortization of intangibles was $12.1 million, compared with $10.6 million for 2016. Research and development expense was $26.9 million, compared with $21.2 million for 2016 due to costs of our Phase 2 GRA trial and non-cash stock-based compensation expense. General and administrative expense was $28.7 million, compared with $27.7 million for 2016.

GAAP net income for 2017 was $12.6 million, or $0.53 per diluted share, compared with a GAAP net loss of $1.6 million, or $0.08 per diluted share, for 2016. Adjusted net income for 2017 was $72.5 million, or $3.26 per diluted share, compared with adjusted net income of $46.7 million, or $2.15 per diluted share, for 2016.

2018 Financial Guidance

Ligand today announced financial guidance for 2018. At this time, Ligand estimates 2018 revenue will be approximately $164 million and will include royalties of approximately $116 million, material sales of approximately $23 million and license fees and milestones of at least $25 million. During 2018, Ligand estimates it could potentially receive up to an additional $20 million of license fees and milestones; however, such payments are based on external events that are out of Ligand's control so the Company will provide more information about the timing and probability for any additional license fees and milestone revenue expected to be booked in 2018 as the year progresses. These estimates exclude revenue from a partnership, if any, on the GRA diabetes program.

Ligand estimates that cash expenses for 2018 will be in the range of $34 million to $35 million, including additional expenses in 2018 related to the recent acquisition of Crystal Bioscience. Ligand notes that with revenue of $164 million, adjusted earnings per diluted share would be approximately $4.22. The adjusted EPS figure reflects the Company's fully-taxed adjusted EPS methodology, including a 22% to 24% tax rate, but the Company continues to pay less than 1% cash taxes as it utilizes its over $400 million of remaining

net operating losses (NOLs).

Fourth Quarter 2017 and Recent Business Highlights

Promacta®/Revolade®

- Novartis reported fourth quarter 2017 net sales of Promacta/Revolade (eltrombopag) of $255 million, a $77 million or 43% increase over the same period in 2016.
- Novartis announced that the FDA granted Breakthrough Therapy designation to Promacta for use in combination with standard immunosuppressive therapy for the treatment of patients with severe aplastic anemia as a first-line therapy.
- Novartis announced long-term study results supporting the positive safety and efficacy of Promacta in adults with chronic/persistent (6 or more months from diagnosis) immune (idiopathic) thrombocytopenia (ITP) were published in *Blood*. The study found that a majority of patients maintained a substantial clinical response and many no longer needed concomitant ITP medications.
- The U.S. Department of Health and Human Services announced a partnership with Novartis to study Promacta for potential use post-radiation injury affecting platelets.

Kyprolis® (carfilzomib), an Amgen Product Utilizing Captisol

- On February 1, 2018, Amgen reported fourth quarter net sales of Kyprolis of $227 million, a $44 million or 24% increase over the same period in 2016. On February 2, 2018, Ono Pharmaceutical Company reported Kyprolis sales in Japan of approximately $16.4 million for the most recent quarter.
- On January 17, 2018, Amgen announced that the FDA approved the supplemental New Drug Application to add overall survival (OS) data from the Phase 3 head-to-head ENDEAVOR trial to the Prescribing Information for Kyprolis.
- On January 30, 2018, Amgen announced that the Committee for Medicinal Products for Human Use (CHMP) of the European Medicines Agency (EMA) adopted a positive opinion recommending a label variation for Kyprolis to include updated OS data from the Phase 3 head-to-head ENDEAVOR trial in patients with relapsed or refractory multiple myeloma.
- On December 11, 2017, Amgen announced new results at ASH 2017 showing the positive OS findings from the final analysis of the Phase 3 ASPIRE trial. The study met the key secondary endpoint of OS, demonstrating that the addition of Kyprolis to lenalidomide and dexamethasone (KRd) reduced the risk of death by 21% versus lenalidomide and dexamethasone alone (Rd) and extended survival by 7.9 months in patients with relapsed or refractory multiple myeloma (median OS 48.3 months for KRd versus 40.4 months for Rd, HR = 0.79, 95 percent CI, 0.67 – 0.95; p = 0.0045).
- On January 17, 2018, Amgen announced that the *Journal of Clinical Oncology* published the positive OS findings from the final analysis of the Phase 3 ASPIRE trial.
- On October 23, 2017, Amgen announced top-line results of the Phase 3 ARROW

trial, which showed Kyprolis administered once-weekly at the 70 mg/m^2 dose with dexamethasone allowed relapsed and refractory multiple myeloma patients to live 3.6 months longer without their disease worsening than Kyprolis administered twice-weekly at the 27 mg/m^2 dose with dexamethasone.

Additional Pipeline and Partner Developments

- Sage Therapeutics announced positive top-line results from two Phase 3 trials of brexanolone in severe postpartum depression (PPD) and in moderate PPD. Sage plans to file a New Drug Application (NDA) with the FDA in 2018.
- Melinta Pharmaceuticals announced the U.S. launch of the Captisol-enabled intravenous (IV) formulation of Baxdela for the treatment of adult patients with acute bacterial skin and skin structure infections (ABSSSI) caused by designated susceptible bacteria.
- HanAll Biopharma successfully out-licensed antibody projects that were discovered using the OmniAb platform, triggering $6 million of payments to Ligand.
- Aptevo Therapeutics announced it presented preclinical data on OmniAb-derived APVO436 at ASH 2017, at the World Bispecific Summit and at the AACR-NCI-EORTC Molecular Targets and Cancer Therapeutics 2017 annual meeting.
- OmniAb partner ARMO BioSciences announced the pricing of an initial public offering with gross proceeds of approximately $147 million.
- Takeda Pharmaceuticals highlighted the Phase 3 initiation of pevonedistat and its TAK-020 program during its presentation at the JP Morgan 36th Annual Healthcare Conference.
- Retrophin announced it presented new data from the open-label extension portion of the Phase 2 DUET study of sparsentan for the treatment of focal segmental glomerulosclerosis (FSGS) at the American Society of Nephrology Kidney Week 2017.
- Aldeyra Therapeutics announced enrollment of the first patient in a Phase 2b clinical trial of topical ocular reproxalap for the treatment of dry eye disease.
- Aldeyra Therapeutics announced it presented data from its Phase 2 clinical trial of reproxalap in noninfectious anterior uveitis at the American Uveitis Society Fall Meeting.
- Viking Therapeutics announced positive results from a 12-week, Phase 2 clinical trial of VK5211 in patients who recently suffered a hip fracture. Top-line data demonstrated statistically significant, dose-dependent increases in lean body mass ranging from 4.8% to 9.1% following treatment with VK5211. Viking intends to present additional results from the study at an upcoming scientific conference.
- Viking Therapeutics announced positive top-line results from a 25-week proof-of-concept study of VK0214 in an *in vivo* model of X-linked adrenoleukodystrophy (X-ALD) and presented data at the 87th Annual Meeting of the American Thyroid Association.

- Viking Therapeutics announced the pricing of a $63.3 million public offering of common stock (including over-allotment exercise) with proceeds to fund continued development of VK5211, VK2809 and VK0214.
- Sermonix Pharmaceuticals announced completion of a financing to advance towards a Phase 2 clinical trial of lasofoxifene in estrogen receptor positive (ER+) metastatic breast cancer.
- Opthea announced the dosing of the first patient in the Phase 2b trial of OPT-302 for wet age-related macular degeneration (AMD) and announced commencing a Phase 1b/2a trial evaluating the safety and efficacy of OPT-302 in patients with center-involved diabetic macular edema.
- Syros Pharmaceuticals announced that new preclinical data on SY-1365, a selective cyclin-dependent kinase 7 (CDK7) inhibitor currently in a Phase 1 clinical trial in advanced solid tumors, showed anti-tumor activity in *in vitro* and *in vivo* models of blood cancers.

Internal Research and Development

- Ligand announced initiation of an internally funded program to develop contrast agents with reduced renal toxicity for diagnostic imaging procedures through proof-of-concept. This development program will leverage Ligand's Captisol technology, as well as intellectual property obtained through its acquisition of Verrow Pharmaceuticals for $2 million in cash plus earn outs.
- A paper by Ligand scientists entitled "Chickens with humanized immunoglobulin genes generate antibodies with high affinity and broad epitope coverage to conserved targets" was published in the journal *MAbs*, highlighting the use of OmniChicken in antibody drug discovery.

Recent Acquisition

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

New Licensing Deals

- Ligand announced worldwide license agreements with Ferring Pharmaceuticals and Glenmark Pharmaceuticals to use the OmniAb platform technologies to discover fully human antibodies. Ligand is eligible to receive annual access payments, milestone payments and royalties on future net sales of any antibodies discovered under these licenses.
- Ligand entered into Captisol Clinical Use Agreements with Syros Pharmaceuticals and with Vaxxas Inc.

Adjusted Financial Measures

The Company reports adjusted net income and adjusted net income per diluted share in addition to, and not as a substitute for, or superior to, financial measures calculated in accordance with GAAP. The Company's financial measures under GAAP include stock-based compensation expense, amortization of debt-related costs, amortization related to acquisitions and intangible assets, changes in contingent liabilities, net losses of Viking Therapeutics, mark-to-market adjustment for amounts owed to licensors, fair value adjustments to Viking Therapeutics convertible note receivable and warrants, unissued shares relating to the Senior Convertible Notes and others that are listed in the itemized reconciliations between GAAP and adjusted financial measures included at the end of this press release. However, other than with respect to total revenue, the Company only provides guidance on an adjusted basis and does not provide reconciliations of such forward-looking adjusted measures to GAAP due to the inherent difficulty in forecasting and quantifying certain amounts that are necessary for such reconciliation, including adjustments that could be made for changes in contingent liabilities, net losses of Viking Therapeutics, stock-based compensation expense, mark-to-market adjustments for amounts owed to licensors, effects of any discrete income tax items and fair value adjustments to Viking Therapeutics convertible note receivable. Management has excluded the effects of these items in its adjusted measures to assist investors in analyzing and assessing the Company's past and future core operating performance. Additionally, adjusted earnings per diluted share is a key component of the financial metrics utilized by the Company's board of directors to measure, in part, management's performance and determine significant elements of management's compensation.

About Ligand Pharmaceuticals

Ligand is a biopharmaceutical company focused on developing or acquiring technologies that help pharmaceutical companies discover and develop medicines. 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 affairs and commercialization) to ultimately generate our revenue.

Ligand's Captisol® platform technology is a patent-protected, chemically modified cyclodextrin with a structure designed to optimize the solubility and stability of drugs. OmniAb® is a patent-protected transgenic animal platform used in the discovery of fully human mono- and bispecific therapeutic antibodies. Ligand has established multiple alliances, licenses and other business relationships with the world's leading pharmaceutical companies including Novartis, Amgen, Merck, Pfizer, Celgene, Gilead, Janssen, Baxter International and Eli Lilly.

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Forward-Looking Statements

This news release contains forward-looking statements by Ligand that involve risks and uncertainties and reflect Ligand's judgment as of the date of this release. Words such as “plans,” “believes,” “expects,” “anticipates,” and “will,” and similar expressions, are intended to identify forward-looking statements. These forward-looking statements include, without limitation, statements regarding: Ligand’s future revenue, including the timing, mix and volume of Captisol orders, the timing of the initiation or completion of preclinical studies and clinical trials by Ligand and its partners, the timing of regulatory filings with the FDA and other regulatory agencies, the timing of new product launches by Ligand and its partners and the related royalties Ligand expects to receive from its partners, and guidance regarding the full-year 2018 financial results. Actual events or results may differ from Ligand's expectations due to risks and uncertainties inherent in Ligand’s business, including, without limitation: Ligand may not receive expected revenue from royalties, Captisol material sales and license fees and milestone revenue; Ligand and its partners may not be able to timely or successfully advance any product(s) in its internal or partnered pipeline; Ligand may not achieve its guidance for 2018 or any portion thereof or beyond; Ligand's 2018 revenues may not be at the levels as currently anticipated; Ligand may not be able to create future revenues and cash flows by developing innovative therapeutics; results of any clinical study may not be timely, favorable or confirmed by later studies; products under development by Ligand or its partners may not receive regulatory approval; there may not be a market for the product(s) even if successfully developed and approved; Ligand's partners may terminate any of its agreements or development or commercialization of any of its products; Ligand may not generate expected revenues under its existing license agreements and may experience significant costs as the result of potential delays under its supply agreements; Ligand and its partners may experience delays in the commencement, enrollment, completion or analysis of clinical testing for its product candidates, or significant issues regarding the adequacy of its clinical trial designs or the execution of its clinical trials, which could result in increased costs and delays, or limit Ligand's ability to obtain regulatory approval; unexpected adverse side effects or inadequate therapeutic efficacy of Ligand's product(s) could delay or prevent regulatory approval or commercialization; and Ligand may not be able to successfully implement its strategic growth plan and continue the development of its proprietary programs. The failure to meet expectations with respect to any of the foregoing matters may reduce Ligand's stock price. Additional information concerning these and other risk factors affecting Ligand can be found in prior press releases available at www.ligand.com as well as in Ligand's public periodic filings with the Securities and Exchange Commission available at www.sec.gov. Ligand disclaims any intent or obligation to update these forward-looking statements beyond the date of this release, including the possibility of additional license fees and milestone revenues we may receive. This caution is made under the safe harbor provisions of the Private Securities Litigation Reform Act of 1995.

Other Disclaimers and Trademarks

The information in this press release regarding certain third-party products and programs, including Promacta, a Novartis product, and Kyprolis, an Amgen product, comes from information publicly released by the owners of such products and programs. Ligand is not

responsible for, and has no role in, the development of such products or programs.

Ligand owns or has rights to trademarks and copyrights that it uses in connection with the operation of its business including its corporate name, logos and websites. Other trademarks and copyrights appearing in this press release are the property of their respective owners. The trademarks Ligand owns include Ligand®, Captisol® and OmniAb®. Solely for convenience, some of the trademarks and copyrights referred to in this press release are listed without the ®, © and ™ symbols, but Ligand will assert, to the fullest extent under applicable law, its rights to its trademarks and copyrights.

LIGAND PHARMACEUTICALS, INCORPORATED
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited, in thousands, excluding per-share data)

	Three Months Ended December 31,		Year Ended December 31,	
	2017	**2016**	**2017**	**2016**
Revenues:				
Royalties	$ 28,313	$ 19,581	$ 88,685	$ 59,423
Material sales	7,734	9,056	22,070	22,502
License fees, milestones and other revenues	14,417	9,548	30,347	27,048
Total revenues	50,464	38,185	141,102	108,973
Operating costs and expenses:				
Cost of goods sold	1,738	2,896	5,366	5,571
Amortization of intangibles	3,994	2,731	12,120	10,643
Research and development	8,633	6,408	26,887	21,221
General and administrative	7,749	6,795	28,653	27,653
Total operating costs and expenses	22,114	18,830	73,026	65,088
Income from operations	28,350	19,355	68,076	43,885
Other income (expense), net	1,291	(2,393)	(6,217)	(9,459)
Increase in contingent liabilities	(278)	(738)	(2,580)	(3,334)
Gain (Loss) from Viking	1,302	(8,994)	(2,048)	(23,132)
Total other expense, net	2,315	(12,125)	(10,845)	(35,925)
Income before income				

taxes	30,665	7,230	57,231	7,960
Income tax expense	(37,675)	(10,355)	(44,675)	(10,327)
(Loss) income from continuing operations	$ (7,010)	$ (3,125)	$ 12,556	$ (2,367)
Discontinued operations:				
Gain on sale of Oncology Product Line, net of tax	—	—	—	731
Net (loss) income:	$ (7,010)	$ (3,125)	$ 12,556	$ (1,636)
Basic per-share amounts:				
(Loss) income from continuing operations	$ (0.33)	$ (0.15)	$ 0.60	$ (0.11)
Discontinued operations	—	—	—	0.04
Net (loss) income	$ (0.33)	$ (0.15)	$ 0.60	$ (0.08)
Diluted per-share amounts:				
(Loss) income from continuing operations	$ (0.33)	$ (0.15)	$ 0.53	$ (0.11)
Discontinued operations	—	—	—	0.04
(Loss) Net income	$ (0.33)	$ (0.15)	$ 0.53	$ (0.08)
Weighted average number of common shares-basic	21,109,367	20,898,453	21,032,400	20,831,454
Weighted average number of common shares-diluted	21,109,367	20,898,453	23,480,537	20,831,454

LIGAND PHARMACEUTICALS, INCORPORATED
CONDENSED CONSOLIDATED BALANCE SHEETS
(unaudited, in thousands)

	December 31, 2017	December 31, 2016
Assets		
Current assets:		
Cash, cash equivalents and short-term investments	$ 201,661	$ 141,048

Accounts receivable, net	25,596	14,700
Note receivable	3,877	3,207
Inventory	4,373	1,923
Other current assets	1,514	2,175
Total current assets	237,021	163,053
Deferred income taxes	84,422	123,891
Goodwill and other identifiable intangible assets	314,543	276,912
Investment in Viking	6,438	8,345
Commercial license rights	19,526	25,821
Property and equipment, net	4,212	1,819
Other assets	4,859	1,744
Total assets	$ 671,021	$ 601,585
Liabilities and Stockholders' Equity		
Current contingent liabilities	$ 4,703	$ 5,088
Accounts payable and accrued liabilities	9,636	9,131
Short-term debt	224,529	212,910
Total current liabilities	238,868	227,129
Long-term portion of contingent liabilities	9,258	2,916
Other long-term liabilities	4,248	687
Total liabilities	252,374	230,732
Equity component of currently redeemable convertible notes	18,859	29,563
Total Ligand Pharmaceuticals stockholders' equity	399,788	341,290
Total liabilities and stockholders' equity	$ 671,021	$ 601,585

LIGAND PHARMACEUTICALS INCORPORATED
ADJUSTED FINANCIAL MEASURES
(Unaudited, in thousands, excluding per-share data)

	Three months ended December 31,		Year ended December 31,	
	2017	**2016**	**2017**	**2016**
Net (loss) income	$ (7,010)	$ (3,125)	$ 12,556	$ (1,636)
Stock-based compensation expense	8,998	5,204	24,915	18,893
Non-cash interest expense(1)	2,972	2,795	11,619	10,926

Amortization related to acquisitions	8,189	2,895	18,412	11,072
(Gain)/Loss from Viking	(1,302)	8,994	2,048	23,132
Increase in contingent liabilities(2)	278	738	2,580	3,334
Other(3)	(3,658)	(68)	(3,985)	(498)
Income tax effect of adjusted reconciling items above	(5,546)	(7,295)	(19,495)	(23,726)
Deferred tax asset adjustment(4)	32,758	5,939	32,758	5,939
Excess tax benefit from stock-based compensation(5)	(1,878)	—	(4,719)	—
Valuation allowance release	(4,169)	—	(4,169)	—
Discontinued operations, net of tax	—	—	—	(731)
Adjusted net income from continuing operations	$ 29,632	$ 16,077	$ 72,520	$ 46,705
Diluted per-share amounts attributable to common shareholders:				
Net (loss) income	$ (0.33)	$ (0.15)	$ 0.53	$ (0.08)
Stock-based compensation expense	0.43	0.25	1.06	0.91
Non-cash interest expense(1)	0.14	0.13	0.49	0.52
Amortization related to acquisitions	0.39	0.14	0.78	0.53
(Gain)/Loss from Viking	(0.06)	0.43	0.09	1.11
Increase in contingent liabilities(2)	0.01	0.04	0.11	0.16
Other(3)	(0.18)	—	(0.16)	(0.02)
Income tax effect of adjusted reconciling items above	(0.26)	(0.35)	(0.83)	(1.14)
Deferred tax asset adjustment(4)	1.55	0.28	1.40	0.29
Excess tax benefit from stock-based compensation(5)	(0.09)	—	(0.20)	—
Valuation allowance release	(0.20)		(0.18)	
Discontinued operations, net of tax	—	—	—	(0.04)
2019 Senior Convertible Notes share count adjustment	(0.09)	(0.03)	0.17	(0.09)
Adjusted net income from continuing operations	$ 1.31	$ 0.74	$ 3.26	$ 2.15
Weighted average shares used in calculation of GAAP diluted earnings per share	21,109	20,898	23,481	20,831
Shares excluded due to anti-dilutive effect on GAAP net loss	3,025	1,728	—	1,884
Weighted average dilutive potential common shares issuable of 2019 Senior Convertible Notes	(1,501)	(843)	(1,214)	(995)
Weighted average shares used in calculation of adjusted diluted earnings per share	22,633	21,783	22,267	21,720

(1) Non-cash debt related costs is calculated in accordance with the authoritative accounting guidance for convertible debt instruments that may be settled in cash.

(2) Changes in fair value of contingent consideration related to CyDex and Metabasis transactions.

(3) Amounts due to Bristol-Myers Squibb relating to Retrophin license agreement and fair market value adjustment on Viking note and warrants.

(4) Deferred tax asset adjustment for the three and twelve months ended December 31, 2017 relates primarily to the reduction in the U.S. corporate income tax rate from 35% to 21% beginning in 2018. Deferred tax asset adjustment for the three and twelve months ended December 31, 2016 relates to a valuation allowance placed on the deferred tax asset associated with Viking losses including the other than temporary impairment charge of $7.4 million.

(5) Excess tax benefits from stock-based compensation are recorded as a discrete item within the provision for income taxes on the consolidated statement of income pursuant to ASU 2016-09, which was previously recognized in additional paid-in capital on the consolidated statement of stockholders' equity.

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Ligand Pharmaceuticals Incorporated
Todd Pettingill
Email: investors@ligand.com
Phone: (858) 550-7893
Twitter: @Ligand_LGND
or
LHA Investor Relations
Bruce Voss
Email: bvoss@lhai.com
Phone: (310) 691-7100

Source: Ligand Pharmaceuticals Incorporated