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Ligand to Acquire Neurogen for Stock and Contingent Value Rights

Acquisition Provides Ligand a Fully Funded Partnership, Research Assets and Cash

SAN DIEGO & BRANFORD, Conn.-- Ligand Pharmaceuticals Incorporated (NASDAQ:LGND) and Neurogen Corporation (NASDAQ:NRGN) announced today they have entered into a definitive merger agreement under which Ligand will acquire Neurogen. Under the transaction, Neurogen stockholders will receive an estimated \$11 million in Ligand common stock and will be granted Contingent Value Rights ("CVRs") under four CVR agreements. The CVRs would entitle Neurogen shareholders to cash payments for the sale or licensing of certain assets and the achievement of a specified clinical milestone. The Ligand and Neurogen Boards of Directors have unanimously voted in favor of this transaction.

"We are very pleased to be combining Neurogen with Ligand and believe this transaction benefits the stockholders of both companies," said John L. Higgins, President and Chief Executive Officer of Ligand Pharmaceuticals. "Ligand stockholders will gain access to an attractive partnership with Merck, additional pipeline assets and drug discovery resources, approximately \$7 million in net cash and NOLs. Neurogen's stockholders will receive equity in a well-capitalized company with royalty streams from approved pharmaceutical products, numerous fully funded partnerships with the world's leading pharmaceutical companies, an expanded internal pipeline and financial liquidity."

"We are committed to running Ligand as a company with a broad array of royalty bearing assets and early stage pipeline programs, backed by a strong balance sheet and staunch spending discipline," added Higgins. "The acquisition of Neurogen will complement our long roster of partnerships, strengthen our research assets and expand our discovery resources."

Details of the Proposed Transaction

- Under the terms of the agreement, Ligand will issue to Neurogen stockholders shares of Ligand common stock with an aggregate market value of approximately \$11 million, subject to certain conditions relating to the price of Ligand's shares and as adjusted to reflect Neurogen's net cash balance, in each case as measured shortly before closing. At the last market price (August 21, 2009) this would result in Ligand issuing approximately 4.0 million shares, or 0.06 shares for each outstanding Neurogen share such that Neurogen stockholders would own approximately 3% of the combined company. This implies a purchase price of \$0.16 per common share of Neurogen, in addition to the potential for cash consideration to be paid under each of four CVR agreements described below.
- In addition to Ligand stock, the Neurogen stockholders will receive Contingent Value Rights payable in cash as follows:
 - o Net proceeds from any sale of Neurogen's real estate within six months of closing.

- o Net proceeds from any sale of Neurogen's Aplindore program within six months of closing. Aplindore is a dopamine D2 partial agonist that Neurogen has developed for the treatment of Parkinson's disease and Restless Legs Syndrome.
- o \$3 million upon Merck initiating a Phase III clinical trial for Neurogen's VR1 antagonist program or 50% of the net proceeds Ligand receives if it sells the program prior to the initiation of Phase III studies.
- o \$4 million if Ligand partners Neurogen's H3 antagonist program or 50% of the net proceeds if it sells the IP related to this program.
- The transaction is expected to close by the fourth quarter of 2009 and is subject to approval by Neurogen's stockholders and other customary closing conditions as well as a closing condition providing that Ligand is not required to deliver more than 4,200,000 shares and that Neurogen can terminate the agreement if that cap is reached and Ligand does not waive the cap.
- Stockholders of Neurogen representing approximately 33% of shares outstanding have signed voting agreements in support of the transaction. Neurogen's financial advisor MTS Securities, LLC, an affiliate of MTS Health Partners, has delivered to Neurogen's Board of Directors their opinion that the transaction is fair to Neurogen stockholders from a financial point of view.

Neurogen Brings to Ligand the Following:

- Fully Funded Partnership with Merck for Vanilloid Receptor Subtype 1 (VR1) Antagonists - Neurogen entered into an agreement with Merck in 2003 to develop VR1 antagonists for the treatment of acute and chronic pain. Merck is pursuing the lead VR1 antagonist, MK 2295, and a backup compound in preclinical testing to assess the suitability of these compounds for possible future clinical development. Under the terms of the license agreement, Merck will fund 100% of the program costs and will make milestone and royalty payments upon the achievement of certain development events and commercialization of any applicable VR1 compounds covered under the agreement.
- H3 Antagonist Program - Neurogen has developed a significant intellectual property estate and identified multiple clinical candidates for blockade of the histamine H3 receptor. The histamine H3 receptor is a target of significant interest for the potential treatment of sleep disorders (e.g. narcolepsy), attention deficit hyperactivity disorder (ADHD), and cognitive deficits (e.g. schizophrenia and Alzheimer's). Neurogen's lead and backup compounds are potent, inverse agonists of the H3 receptor that demonstrate efficacy in animal models after oral dosing.
- Oral Erythropoietin (EPO) Research Program - Ligand has been conducting internal research on orally active erythropoietin agonists and has made significant progress toward declaring a clinical candidate. Neurogen has conducted its own drug discovery efforts in the area and provides novel chemical scaffolds and additional know-how that could further enhance Ligand's oral EPO program. Neurogen's program also includes technology for the pursuit of granulocyte cell stimulating factor (G-CSF) mimetics for neutropenia.
- Discovery Technology - Neurogen has a drug discovery technology based on AIDD(TM) (Accelerated Intelligent Drug Discovery) virtual library modeling of large, dynamic compound sets to efficiently prioritize chemicals for synthesis and biological assay tests. The AIDD(TM) technology has resulted in the discovery of numerous clinical candidates. The technology fits with Ligand's ultra-high throughput biological assays and 5 million-plus ECLiPS(TM) compound collection acquired in the Pharmacopeia transaction.
- Cash - After taking into account transaction fees and repayment of debt,

Ligand will gain an estimated \$7 million in cash from this transaction. In addition, Ligand projects that its cost to operate Neurogen will be negligible going forward as Neurogen's facilities are to be sold and Neurogen's operations will be shut down. Any investment in Neurogen's research programs are currently projected to be assumed within Ligand's operating forecast.

- Net Operating Loss Carryforwards - Neurogen has more than \$180 million in net operating loss carryforwards. While there will be significant limitation to the utilization of the NOLs over time given the tax laws governing use of acquired NOLs, the NOLs may be usable to some extent by Ligand, should the combined Company become profitable.

Financial Outlook of Combined Companies

With the acquisition of Neurogen, Ligand projects its cash balance to increase by approximately \$7 million taking into account payment of transaction and wind-down costs and the repayment of Neurogen's debt. Accordingly, Ligand believes that if the transaction closes by the end of 2009, Ligand could have nearly \$50 million in cash at year-end. Ligand does not forecast this acquisition to impact the operating expense guidance for 2010 and therefore, consistent with previous guidance, Ligand currently expects expenses for 2010 to be in the range of \$30 million to \$35 million. Given Ligand's revenue outlook for 2010, Ligand currently projects that the business will be cash flow neutral on an operating basis in 2010.

About Neurogen

Based in Branford, CT., Neurogen Corporation is a drug development company historically focusing on small-molecule drugs to improve the lives of patients suffering from psychiatric and neurological disorders with significant unmet medical need. Neurogen has conducted its drug development independently and, when advantageous, collaborated with world-class pharmaceutical companies to access additional resources and expertise.

About Ligand Pharmaceuticals

Ligand discovers and develops new drugs that address critical unmet medical needs of patients with muscle wasting, frailty, hormone-related diseases, osteoporosis, inflammatory diseases, anemia, asthma, rheumatoid arthritis and psoriasis. Ligand's proprietary drug discovery and development programs are based on advanced cell-based assays, gene-expression tools, ultra-high throughput screening and one of the world's largest combinatorial chemical libraries. Ligand has strategic alliances with major pharmaceutical and biotechnology companies, including Bristol-Myers Squibb, Celgene, Cephalon, GlaxoSmithKline, Schering-Plough, Pfizer and Wyeth Pharmaceuticals. With nine pharmaceutical agreements and more than 20 molecules in various stages of development, Ligand utilizes proprietary technologies for identifying drugs with novel receptor and enzyme drug targets.

Forward-Looking Statements

This release contains forward-looking statements that involve risks and uncertainties. Ligand and Neurogen caution readers that any forward-looking information is not a guarantee of future performance and actual results could differ materially from those contained in the forward-looking information. Words such as "expect," "estimate," "project," "potential," and similar expressions are intended to identify such forward-looking statements. Such forward-

looking statements include, but are not limited to, the expected timing of closing the merger, statements about the benefits of the transaction between Ligand and Neurogen, including future financial and operating results, expected cash balance of the combined entity as of the closing, the 2010 pro forma operating cash burn rate, the possibility of payments being made under the CVR agreements, the combined entity's plans, objectives, expectations and intentions and other statements that are not historical facts. Among the important factors that could cause actual results to differ materially from those in any forward-looking statements are the risks that Merck may not advance the VR1 program successfully; the risk that Neurogen's real estate or the Aplindore program may not be sold and that the conditions of the H3 and Merck CVR's may not be met in order to produce proceeds for the CVR holders; the anticipated synergies and benefits from the transaction may not be fully realized or may take longer to realize than expected; failure of Neurogen's stockholders to approve the merger; Ligand or Neurogen inability to satisfy the conditions of the merger, or that the merger is otherwise delayed or ultimately not consummated; Neurogen product candidates may have unexpected adverse side effects or inadequate therapeutic efficacy; and positive results in clinical trials may not be sufficient to obtain FDA approval. There can be no assurance that any product in Ligand's, Neurogen's or the projected combined company's product pipeline will be successfully developed or manufactured, that final results of clinical studies will be supportive of regulatory approvals required to market licensed products, or that any of the forward-looking information provided herein will be proven accurate. Additional important factors that may affect future results are detailed in Ligand's and Neurogen's filings with the Securities and Exchange Commission (the "SEC"), including each company's recent filings on Forms 10-K and 10-Q, or in information disclosed in public conference calls, the date and time of which are released beforehand. Each of Ligand and Neurogen disclaims any intent or obligation to update these forward-looking statements beyond the date of this release.

Additional Information and Where to Find It

Ligand intends to file with the SEC a Registration Statement on Form S-4, which will include a proxy statement of Neurogen and other relevant materials in connection with the proposed transaction. The proxy statement which will also constitute a Ligand prospectus, will be mailed to the stockholders of Neurogen. Investors and security holders of Neurogen are urged to read the proxy statement and the other relevant materials when they become available because they will contain important information about Ligand, Neurogen and the proposed transaction. The proxy statement and other relevant materials (when they become available), and any other documents filed by Ligand or Neurogen with the SEC, may be obtained free of charge at the SEC's web site at www.sec.gov. In addition, investors and security holders may obtain free copies of the documents filed with the SEC by Ligand by going to the Investor Relations page on Ligand's corporate website at www.ligand.com. Investors and security holders may obtain free copies of the documents filed with the SEC by Neurogen by going to the Investor Relations page on Neurogen's corporate website at www.neurogen.com. Investors and security holders of Neurogen are urged to read the proxy statement and the other relevant materials when they become available before making any voting or investment decision with respect to the proposed transaction.

Ligand and its respective directors and executive officers may be deemed to be participants in the solicitation of proxies from the stockholders of Neurogen in favor of the proposed transaction. Information concerning Ligand's directors and executive officers is set forth in

Ligand's proxy statement for its 2009 annual meeting of shareholders, which was filed with the SEC on April 29, 2009, and annual report on Form 10-K filed with the SEC on March 16, 2009.

Neurogen and its respective directors and executive officers may be deemed to be participants in the solicitation of proxies from the stockholders of Neurogen in favor of the proposed transaction. Information about Neurogen's executive officers and directors and their ownership of Neurogen common stock is set forth in Neurogen's amended annual report on Form 10-K filed with the SEC on April 30, 2009. Investors and security holders may obtain more detailed information regarding the direct and indirect interests of Neurogen and its executive officers and directors in the acquisition by reading the proxy statement regarding the merger, which will be filed with the SEC.

Source: Ligand Pharmaceuticals Incorporated