# Trevena Granted Key U.S. Composition of Matter Patent for TRV130 9/16/14

## Expansion of Intellectual Property Estate Strengthens Pain Program

KING OF PRUSSIA, Pa. Trevena, Inc. (NASDAQ: TRVN), a clinical stage biopharmaceutical company focused on the discovery and development of G protein coupled receptor (GPCR) biased ligands, today announced that the U.S. Patent and Trademark Office (USPTO) has granted U.S. Patent No. 8,835,488, "Opioid receptor ligands and methods of using and making same." The patent covers TRV130, compositions comprising TRV130, and methods of using TRV130 and is expected to provide patent coverage for TRV130 until at least 2032. Trevena currently is testing TRV130 for the treatment of postoperative pain in a Phase 2a/b clinical trial.

"This patent provides a solid foundation in the United States for the long-term protection of both the TRV130 molecule and its use in treating pain," said Maxine Gowen, Ph.D., chief executive officer. "With pending patent applications directed to TRV130 in key international markets and this newly issued US patent, we believe we are on track to establish a comprehensive global patent portfolio for this key asset."

### About TRV130 and Acute Pain

Trevena anticipates that the initial market opportunity for TRV130 will be in the acute care hospital setting, with a focus on postoperative pain. Dosing of mu-opioid agonists, the most effective class of analgesics currently available, is limited by severe side effects such as respiratory depression, nausea and vomiting, constipation, and postoperative ileus, with the result that approximately 40% of surgical patients report moderate or severe pain while in the hospital despite the use of analgesics. Trevena believes that TRV130 may offer improved analgesia with reduced incidence and severity of these on-target adverse effects, which could help ease the suffering and burden of care for post-surgical pain, as well as the estimated \$5 billion annual financial impact of opioid-related adverse effects in US hospitals.

TRV130 is a biased ligand targeting the mu-opioid receptor, the molecular target of analgesics such as fentanyl and morphine. Like these drugs, in preclinical studies TRV130 activates the mu-opioid G protein pathway, which is associated with analgesia; unlike these drugs, TRV130 inhibits the beta-arrestin pathway, the activation of which is associated with respiratory depression and constipation. In an experimental medicine study in healthy volunteers, published in the journal Pain in June 2014, TRV130 elicited superior analgesia, less respiratory depression, less vomiting, and less severe nausea than morphine. Earlier clinical and preclinical data were published in the Journal of Clinical Pharmacology and the Journal of Pharmacology and Experimental Therapeutics.

## **About Trevena**

Trevena, Inc. is a clinical stage biopharmaceutical company that discovers, develops and intends to commercialize therapeutics that use a novel approach to target G protein coupled receptors, or GPCRs. Using its proprietary product platform, Trevena has identified and advanced three differentiated biased ligand product candidates into the clinic – TRV027 to treat acute heart failure, TRV130 to treat moderate-to-severe acute pain intravenously, and TRV734 to treat moderate-to-severe acute and chronic pain

orally. Trevena also is advancing additional product candidates in its portfolio, including a preclinical program focused on central nervous system indications.

#### **Cautionary Note on Forward Looking Statements**

Any statements in this press release about future expectations, plans and prospects for the Company, including statements about the Company's strategy, future operations, clinical development of its therapeutic candidates, plans for potential future product candidates and other statements containing the words "anticipate," "believe," "estimate," "expect," "intend," "may," "plan," "predict," "project," "suggest," "target," "potential," "will," "would," "could," "should," "continue," and similar expressions, constitute forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Actual results may differ materially from those indicated by such forward-looking statements as a result of various important factors, including: uncertainties related to the Company's intellectual property, including the strength, extent of coverage and enforceability of the TRV130 patent portfolio and whether pending patents related to TRV130 will issue; the status, timing, costs, results and interpretation of the Company's clinical trials; the uncertainties inherent in conducting clinical trials; whether interim results from a clinical trial will be predictive of the final results of the trial or results of early clinical trials will be indicative of the results of future trials, including the experimental medicine study of TRV130 noted above; expectations for regulatory approvals; availability of funding sufficient for the Company's foreseeable and unforeseeable operating expenses and capital expenditure requirements; other matters that could affect the availability or commercial potential of the Company's therapeutic candidates, including whether TRV130 may offer improved analgesia with reduced incidence and severity of adverse events; and other factors discussed in the Risk Factors set forth in the Company's Annual Report on Form 10-K and Quarterly Reports on Form 10-Q filed with the Securities and Exchange Commission (SEC) and in other filings the Company makes with the SEC from time to time. In addition, the forward-looking statements included in this press release represent the Company's views only as of the date hereof. The Company anticipates that subsequent events and developments may cause the Company's views to change. However, while the Company may elect to update these forward-looking statements at some point in the future, it specifically disclaims any obligation to do so, except as may be required by law.

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