Sorrento Therapeutics Announces Discovery of a Potential Non-Dopaminergic Approach to Controlling Parkinson’s Motor Symptoms With Resiniferatoxin (RTX) Intrathecal Administration

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SAN DIEGO, April 10, 2019 (GLOBE NEWSWIRE) -- Sorrento Therapeutics, Inc. (NASDAQ: SRNE, "Sorrento"), announces positive and better than initially hoped for top line results in a discovery study aimed at exploring potential benefits of resiniferatoxin in controlling neuro-inflammatory processes associated with Parkinson’s disease in a rodent model.

Parkinson’s disease (PD) is a chronic neurodegenerative disorder characterized by motor symptoms such as bradykinesia, rest tremor, postural disturbances, and rigidity. Many clinical and pathological studies have shown that the disease extends beyond the substantia nigra and involves non-dopaminergic neurotransmitter systems that mediate both motor and non-motor symptoms.

Several therapeutic strategies have been proposed to treat such symptoms. However, despite the significant morbidity associated with these symptoms, research into and drug development for these problems remain scarce.

Transient receptor potential vanilloid 1 (TRPV1) is involved in pain perception and is highly expressed in sensory neurons. TRPV1 is also present in the brain where it may play a role in modulating neuronal function, controlling motor behaviour and regulating neuroinflammation. TRPV1 receptors are considered an important modulator of basal ganglia functions, and pharmacological changes to cells expressing those receptors might lead to protective therapies in Parkinson-induced motor symptoms.

“We believe from our experience in animal health, that many chronic degenerative disease processes, including neurodegenerative diseases, have an inflammatory component whose importance is often under appreciated," stated Dr. Alexis Nahama, Neuro-Therapeutics Business Unit Leader at Sorrento. “We also know that neurogenic inflammation pathways involve TRPV1 expressing cells, and Resiniferatoxin is uniquely suited to modulate excessive afferent nerve signaling. So we took a chance and set up to test if we would have any beneficial effect on gait and motor deficiencies in a well established disease model of Parkinson’s disease (Sorrento Study C195118. The Effects of Single Intrathecal Administration of Resiniferatoxin on AAV-A53T-induced PD-like Pathology in C57Bl/6J mice) at tested doses that could be translated into human therapies. We feel we hit the jackpot.”

Intrathecal administration of RTX at 7 days after AAV-A53T resulted in profoundly improved motor function analyzed by fine motor kinematic analysis when compared to control mice administered with vehicle for RTX. No significant adverse effects after RTX infusion were observed. However, no significant effects in dopamine and its metabolites levels in striatum were observed. The findings demonstrated activity of intrathecal administration of RTX at the early intervention paradigm to rescue motor deficits in AAV-A53T model. The lack of effect on dopamine levels suggest that behavioral recovery is driven by mechanisms other than direct protection of nigrostriatal dopaminergic neurons, including modulation of neuroinflammation and/or analgesic effect of RTX after IT delivery.

“At Sorrento, I encourage our scientists to be smart and bold when thinking about drug discovery and breakthrough therapies for unmet medical needs. In this case the outcome was unlikely – we were told the idea was unusual … and now we may be on the path to an application of our drug that could help Parkinson’s patients cope better with the debilitating motor effects of their disease,” said Dr. Henry Ji, Chairman and CEO for Sorrento. “This is how this company will become a leader in multiple fields and outperform larger, better funded organizations.”

A provisional patent has been filed for non-dopaminergic therapeutic approach with resiniferatoxin for symptomatic relief of motor symptoms associated with Parkinson’s disease. The full results of the study will be released in publication in a major scientific journal and presented at an upcoming neurosciences conference later this year. Enabling preclinical work will continue with the goal of filing an IND by the end of the year. If results are confirmed, human clinical trials to start soon after.

About Resiniferatoxin (RTX)

A thousand times “hotter” than pure capsaicin (16 Billion Scoville units versus 16M), and with a high affinity for afferent pain nerves, Resiniferatoxin binds to TRPV1 receptors and selectively ablates the nerve endings responsible for pain signals experienced by patients. Delivered peripherally (into the joint space) the transient nerve ending ablation effect can have profound clinical benefits lasting for months to years (as shown in canine joint pain studies). Delivered spinaly the effect can be profound and very long lasting (as shown in intrathecal canine cancer pain studies).

About the AAV-A53T Disease Model (Charles River and Michael J Fox Foundation Collaboration)

Charles River Laboratories and MJFF collaborated through a research agreement and grant to characterize animal models of Parkinson’s — in particular one where mice express the Parkinson’s-associated alpha-synuclein mutant A53T (Knockin). Alpha-synuclein is the major component of Lewy bodies, the characteristic protein clumps of Parkinson's disease. ¹

About Sorrento Therapeutics, Inc.

Sorrento is a clinical stage, antibody-centric, biopharmaceutical company developing new therapies to turn malignant cancers into manageable and possibly curable diseases. Sorrento's multimodal multipronged approach to fighting cancer is made possible by its extensive immuno-oncology platforms, including key assets such as fully human antibodies (“G-MAB™ library”), clinical stage immuno-cellular therapies (“CAR-T”), intracellular targeting antibodies (“iTAbs”), antibody-drug conjugates (“ADC”), and clinical stage oncolytic virus (“Seprehvir®”).

Sorrento's commitment to life-enhancing therapies for patients is also demonstrated by its effort to advance a first-in-class (TRPV1 agonist) non-opioid pain management small molecule, resiniferatoxin (“RTX”), and ZTlido® (lidocaine topical system) 1.8% for the treatment of post-herpetic neuralgia. Resiniferatoxin is completing a phase 1B trial in terminal cancer patients and a phase 1B trial in osteoarthritis patients. ZTlido® was approved by the FDA on February 28, 2018.

For more information visit www.sorrentotherapeutics.com
More information on Sorrento clinical trials can be found at www.clinicaltrials.gov

Forward-Looking Statements

This press release and any statements made for and during any presentation or meeting contain forward-looking statements related to Sorrento Therapeutics, Inc., under the safe harbor provisions of Section 21E of the Private Securities Litigation Reform Act of 1995 and subject to risks and uncertainties that could cause actual results to differ materially from those projected. Forward-looking statements include statements regarding the expectations for Sorrento's and its subsidiaries’ technologies and product candidates, including, but, not limited to, resiniferatoxin (RTX). Risks and uncertainties that could cause our actual results to differ materially and adversely from those expressed in our forward-looking statements, include, but are not limited to: risks related to Sorrento's and its subsidiaries’ technologies and prospects, including, but not limited to, RTX; risks related to seeking regulatory approvals and conducting and obtaining results of clinical trials, including, but not limited to, the PTVA-OA-001 study or trial and any prior RTX studies in animals; the clinical and commercial success of RTX; the viability and success of using RTX for treatments in certain therapeutic areas, including osteoarthritis (OA) and other risks that are described in Sorrento's most recent periodic reports filed with the Securities and Exchange Commission, including Sorrento's Annual Report on Form 10-K for the year ended December 31, 2018, and subsequent Quarterly Reports on Form 10-Q filed with the Securities and Exchange Commission, including the risk factors set forth in those filings. Investors are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date of this release and we undertake no obligation to update any forward-looking statement in this press release except as required by law.

Media and Investor Relations

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