

Sorrento Provides Updates on CD38 Immunotherapies and Implementation of Disruptive GMP Manufacturing for “Off-The-Shelf” Cell Therapy

June 19, 2019

- “CD38 Therapeutics” Business Unit formed to focus on development of CD38-directed immunotherapies for potential out-licensing, collaboration and/or other strategic considerations
 - Clinical “Proof-of-Concept” CD38 CAR-T Phase 1 trial progressing and to be concluded in 2019
 - Next-Gen “Off-the-Shelf” CD38 Dimeric Antigen Receptor (“DAR”)-T cell therapy with IND submission targeted for second half of 2019
 - CD38 Antibody-Drug Conjugate (“ADC”) IND to be submitted in Q4 2019
 - CD38-directed immunotherapies demonstrate potent cytotoxicity in preclinical models and against Daratumumab-resistant multiple myeloma patients’ tumor cells in vitro
- State-of-the-Art cGMP Facility in San Diego fully operational with manufacturing capacity for thousands of allogeneic cell therapy doses per year thus, drastically reducing treatment cost

SAN DIEGO, June 19, 2019 (GLOBE NEWSWIRE) -- Sorrento Therapeutics, Inc. (NASDAQ: SRNE, "Sorrento") announces today that its Chairman and CEO, Dr. Henry Ji will be discussing the progress made, including innovative higher potency Dimeric Antigen Receptor (“DAR”) technology and allogeneic knock-out/knock-in (“KOKI”) cell therapy manufacturing advances related to its CD38 immunotherapies at upcoming industry conferences, investor conferences and investor meetings. The reference presentation in support of those update discussions has been uploaded to the Sorrento investor relations website and was filed today with the Securities and Exchange Commission (“SEC”) on a Current Report on Form 8-K.

Key progress update areas that will be discussed include:

Clinical Proof-of-concept Study for Anti-CD38 Autologous CAR-T Cell Therapy

The Sorrento suite of anti-CD38 immunotherapies is based on a fully human anti-CD38 antibody mined from the Sorrento G-MAB™ antibody library. This antibody has demonstrated unique functional binding properties, which make it a promising candidate for therapeutic applications.

Dr. Evren Alici’s research team at the Karolinska Institutet and Hospital in Stockholm, Sweden, has generated preclinical data demonstrating that this anti-CD38 antibody can be effectively used in chimeric antigen receptors (“CAR-T”) and antibody-drug conjugates (“ADC”) retaining its anti-tumor activity against multiple myeloma cells obtained from patients who had previously failed anti-CD38 therapy with daratumumab (Darzalex®).

The current anti-CD38 CAR construct has also enabled successful manufacturing of autologous CAR-T cells using retrovirus-based cGMP manufacturing processes. The CAR-T cells obtained in this traditional approach have been successfully administered to multiple myeloma patients. Patient recruitment is currently ongoing at two clinical sites and additional sites will be opened in the second half of 2019.

“Our CD38 CAR-T program remains an active clinical stage trial with relapsed or refractory multiple myeloma (“RRMM”) patients being dosed and recruitment proceeding as expected. We are particularly proud of our production site at Sorrento in San Diego producing the clinical CD38-CAR-T cells used in our study,” stated Dr. Jerome Zeldis, Chief Medical Officer of Sorrento. “Given the high level of interest in our program, we look forward to publicly discussing our study data later this year.”

Next-Generation Anti-CD38 Non-viral KOKI Allogeneic DAR-T Cell Therapy

The key components/steps of current state-of-the-art CAR-T cell therapy programs are: a) CAR architecture; b) viral-based transduction of the CAR construct into the T cells; and c) using the patients as their own source for these autologous T cells. Sorrento has developed disruptive next-gen technology platforms to address each of these components/steps. The research and development team at Sorrento has pioneered an allogeneic (“off-the-shelf”) cell therapy technology (KOKI DAR-T) that utilizes healthy donor T cells and genetically (“non-virally”) modifies them with a novel DAR construct (see the public presentation accompanying this press release).

Our proprietary design of the dimeric antigen receptor (“DAR”) is based on utilizing the complete antigen-binding fragment (Fab) of the parental antibody. It is generally accepted that Fabs more closely mimic the functional and biophysical properties of natural antibodies. Utilizing the same antibody binding domain sequence, we have compared CAR constructs to their corresponding DAR constructs. Our data showed that the DAR-T cells exhibited a higher cytotoxicity against target-expressing tumor cells as compared to CAR-T cells. In preclinical mouse models, the DAR-T cells demonstrated increased anti-tumor potency as well.

Our non-viral KOKI technology may offer several potential benefits over existing virus-based technology, such as transgene-encoding lentiviruses or retrovirus, to introduce antigen receptor constructs into pre-screened healthy donor (allogeneic) T cells. These potential advantages of our non-viral KOKI technology include: a) site-specific integration of transgenes into a pre-selected locus in the T cell genome; b) enhanced clonal expansion of the DAR-T cells; and c) streamlined method for transgene construct production without need for laborious and time-consuming virus production, release and validation processes, resulting in a shorter research and development timelines for IND-enabling activities.

Another major drawback of current CAR-T therapy is the reliance on patients’ own T cells (autologous therapy). This leads to delays in treatment (vein-to-vein time of several weeks) and substantial manufacturing costs due to the individual processing of each patient sample. By utilizing healthy donor T cells as the starting point in our KOKI DAR-T cell technology these concerns can be effectively addressed.

Sorrento has developed a robust manufacturing process in which these donor-derived KOKI DAR-T cells are expanded and purified resulting in the production of hundreds of KOKI allogeneic DAR-T cell doses per manufacturing run from a single healthy donor in about 2 weeks. This has the potential to substantially reduce cost of goods sold (“COGS”) and expand access to cell therapy to patients. This KOKI DAR-T manufacturing process

will enable Sorrento with its current manufacturing staff to produce in its existing San Diego cGMP facilities the non-viral CD38 DAR-T cells for “off-the-shelf” treatments for thousands of cancer patients per year. Notably, allogeneic cell therapies will enable the execution of global trials and potential commercialization as the shipping logistics and distribution will be simplified. In addition, certain countries’ restrictions on patient cell shipping and processing currently hampering CAR-T cell therapy studies will not prevent patients from receiving KOKI DAR-T cell treatments.

“Our first clinical program will be KOKI allogeneic CD38 DAR-T cell therapy. Preclinical data and clinical trial designs will be shared and discussed with the clinical and scientific community as well as investors once the IND has been accepted and the clinical study initiated”, said Dr. Henry Ji, Chairman and CEO of Sorrento. “We are currently applying our KOKI allogeneic DAR technology to our cell therapy program pipeline for multiple hematological and solid tumor indications, including: multiple myeloma, lymphoma, liver cancer, sarcoma, pancreatic cancer and glioma.”

Anti-CD38 Antibody-Drug Conjugate STI-6129

In keeping with off-the-shelf immunotherapy strategy, Sorrento is developing STI-6129 (or LNDS1001 for China), an anti-CD38 ADC, for which we plan the IND submission in the second half of 2019. Preclinical studies have demonstrated strong anti-tumor activity. Notably, the toxin payload of the ADC is based on our proprietary tubulin inhibitor Duostatin5. The required toxicology studies of the ADC showed a promising safety profile. The manufacturing of the GMP drug substance of the ADC was successfully completed at our facility in Suzhou, China. The clinical drug product will be manufactured at Bioserv, our wholly-owned San Diego-based fill/finish service provider. We anticipate initiation of clinical studies in hematological malignancies and potentially non-oncology indications by the end of 2019.

“In total, all of our anti-CD38 immunotherapies have been discovered, developed and manufactured in-house by our outstanding R&D and manufacturing team members. This demonstrates the unique and efficient “turn-key” approach as we are able to perform with our immunotherapy R&D teams utilizing internal expertise and capabilities without being dependent on external service providers,” said Dr. Henry Ji, Chairman and CEO of Sorrento. “We believe that this anti-CD38 therapy suite illustrates the depth and breadth of the disruptive technology platforms we have to attack diseases with high unmet medical need from different angles. Each modality has its unique strengths but when properly sequenced in the clinic by our outstanding clinical development team, we believe substantial benefit potential can be provided to patients, their caretakers and the medical community. We see our CD38 Therapeutics business unit as a model for our vision and will apply this approach to a variety of therapeutic targets, including CD19, BCMA, and CEA.”

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 array of immuno-oncology platforms, including key assets such as fully human antibodies (“G-MAB™ library”), clinical-stage immuno-cellular therapies (“CAR-T”), antibody-drug conjugates (“ADC”), and clinical-stage oncolytic virus (“Sephrevir®”).

Sorrento’s commitment to life-enhancing therapies for cancer patients is also demonstrated by our effort to advance a first-in-class (TRPV1 agonist) non-opioid pain management small molecule in Resiniferatoxin (“RTX”) and ZTlido®. Resiniferatoxin is completing a Phase 1b trial in terminal cancer patients. ZTlido was approved by US FDA on 02/28/18.

For more information visit www.sorrentotherapeutics.com

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 the Company’s anti-CD38 cell therapy and CAR, CAR-T, DAR-T and KOKI DAR-T programs and drug products, expected timing for clinical studies and trials and the timing for submitting an IND. 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 Sorrento’s anti-CD38 cell therapy and CAR, CAR-T, DAR-T and KOKI DAR-T programs and drug products; risks related to seeking regulatory approvals and conducting clinical trials; 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

Contact: Alexis Nahama, SVP Corporate Development

Telephone: 1.858.203.4120

Email: mediarelations@sorrentotherapeutics.com

Sorrento® and the Sorrento logo are registered trademarks of Sorrento Therapeutics, Inc.

ZTlido® and G-MAB™ are trademarks owned by Scilex Pharmaceuticals Inc. and Sorrento, respectively.

Sephrevir®, is a registered trademark of Virttu Biologics Limited, a wholly-owned subsidiary of TNK Therapeutics, Inc. and part of the group of companies owned by Sorrento Therapeutics, Inc.

All other trademarks are the property of their respective owners.

© 2019 Sorrento Therapeutics, Inc. All Rights Reserved.



Source: Sorrento Therapeutics, Inc.