November 9, 2015

Cerulean Announces Data at the 2015 AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics

For the First Time in Humans, Data Demonstrate that CRLX101 Targets Tumors and Spares Healthy Tissue

CAMBRIDGE, Mass.--(BUSINESS WIRE)-- Cerulean Pharma Inc. (NASDAQ:CERU), a clinical-stage company developing nanoparticle-drug conjugates (NDCs), today announced that data from an investigator-sponsored trial (IST) with its lead compound, CRLX101, in patients with advanced gastric cancers was presented at the 2015 AACR-NCI-EORTC International Conference on Molecular Targets and Cancer Therapeutics on November 7. In this study, pre- and post-tumor treatment biopsies show the presence of CRLX101 and its anti-cancer payload in tumors and an almost exclusive absence of both from surrounding normal tissue. Importantly, inhibition of the molecular targets of CRLX101 was demonstrated in post-treatment biopsies. These data represent the first demonstration in humans that CRLX101 localizes in tumor tissue with corresponding expected molecular effects and that it spares surrounding healthy tissue.

"For the first time, we have clinical evidence that Cerulean's Dynamic Tumor Targeting™ Platform creates NDCs that preferentially target tumors, while sparing neighboring normal tissues," stated Mark Davis, Ph.D., Warren and Katharine Schlinger Professor of Chemical Engineering at California Institute of Technology and a member of the City of Hope Comprehensive Cancer Center (*for more on Dr. Davis, see below*). "We have previously published tumor targeting of CRLX101 in animals, but we now have shown convincingly that this phenomenon is equally applicable in people."

In addition, Cerulean presented preclinical posters at the meeting describing selective tumor localization of CRLX101 in mice and *in vitro* and *in vivo* studies demonstrating sustained drug release for multiple anti-cancer payloads and improved anti-cancer effects.

Highlights from Dr. Davis' AACR-NCI-EORTC poster include:

CRLX101, an investigational nanoparticle-drug conjugate, localizes in human tumors and not in adjacent healthy tissue after intravenous dosing

- Phase 1 IST sponsored by City of Hope Medical Comprehensive Cancer Center in patients with advanced or metastatic stomach, gastroesophageal or esophageal cancer
- In 9 of 9 patients evaluated, CRLX101's anti-cancer payload, camptothecin, was detected in patient tumor tissue by fluorescent microscopy examination
- In contrast, in 8 of 9 patients, neither CRLX101 nor camptothecin was detected in post-treatment healthy tissue samples adjacent to tumors
- Immunohistochemistry in patient tumors demonstrated that CRLX101 inhibits its intended molecular targets, topoisomerase-1 and hypoxia inducible factor 1α

Highlights from the two other AACR-NCI-EORTC posters include:

Selective tumor localization of CRLX101, a novel nanoparticle-drug conjugate

- Preclinical data support the three major steps of our Dynamic Tumor Targeting Platform: (i) selective entry into tumor tissue via large pores in blood vessel cell wall; (ii) active transport into tumor cells via macropinocytosis; and (iii) sustained payload release via chemical hydrolysis
- Demonstrated accumulation in tumor tissue and prolonged tumor pharmacokinetics
- Demonstrated CRLX101 entry in tumor cells via macropinocytosis
- Demonstrated co-localization of camptothecin fluorescence and intact NDCs inside tumor cells, both *in vitro* and *in vivo*
- Quantified and observed sustained intracellular release of camptothecin payload from CRLX101
- These data support the hypothesis that prolonged accumulation in tumor tissue and sustained intracellular payload release may lead to enhanced antitumor activity of CRLX101

***In vitro* and *in vivo* studies demonstrating sustained drug release for multiple anticancer payloads and improved anticancer effects of a cabazitaxel β-cyclodextrin-PEG copolymer-based nanoparticle-drug conjugate (NDC)**

- Demonstrated ability to generate NDCs with tunable and diverse *in vitro* and *in vivo* drug release kinetics by the conjugation of multiple anti-cancer agents (docetaxel, cabazitaxel, and gemcitabine) in an NDC through a variety of linker strategies
- *In vitro* release profiles demonstrated that release kinetics can be varied through selection of linker molecules and that NDC linker chemistry is customizable with respect to drug payload
- *In vivo* pharmacokinetic studies with cabazitaxel NDCs demonstrated high and sustained levels of released drug in tumor tissues (> 72 hours)
- Two cabazitaxel NDCs were chosen for *in vivo* efficacy studies in mouse tumor models, and both demonstrated vastly improved efficacy (and survival) over cabazitaxel at similar doses including efficacy in a docetaxel-resistant UISO-BCA-1 tumor model
- One cabazitaxel NDC showed a greater therapeutic index compared to cabazitaxel

Electronic copies of all three posters are available upon request by emailing ir@ceruleanrx.com.

About Mark Davis

Mark Davis, Ph.D., is the Warren and Katharine Schlinger Professor of Chemical Engineering at the California Institute of Technology and a member of the City of Hope Comprehensive Cancer Center. Dr. Davis is a pioneer in the field of nanotechnology. He has been elected to the National Academy of Engineering, the Institute of Medicine, and the National Academy of Sciences. He has won a number of awards previously, including the Presidential Young Investigator Award, the Donald Breck Award from the International Zeolite Association, the Alan T. Waterman Award from the National Science Foundation, and in 2014 the Prince of Asturias Award for Technical and Scientific Research from the King of Spain, among others. He sits on the editorial board of Molecular Therapy-Nucleic Acids, Drug Delivery and Translational Research, Proceedings of the National Academy of Science, and Nucleic Acid Therapeutics, among other publications.

About CRLX101

CRLX101 is a nanoparticle-drug conjugate (NDC) designed to concentrate in tumors and slowly release its anti-cancer payload, camptothecin, inside tumor cells. CRLX101 inhibits topoisomerase 1 (topo 1), which is involved in cellular replication, and also inhibits hypoxia-inducible factor-1α (HIF-1α), which research suggests is a master regulator of cancer cell survival mechanisms. CRLX101 has shown activity in four different tumor types, both as monotherapy and in combination with other cancer treatments. CRLX101 is in Phase 2 clinical development and has been dosed in more than 300 patients. The U.S. FDA has granted CRLX101 Orphan Drug designation for the treatment of ovarian cancer and Fast Track designation in combination with Avastin® in metastatic renal cell carcinoma.

About CRLX301

CRLX301 is a dynamically tumor-targeted NDC designed to concentrate in tumors and slowly release its anti-cancer payload, docetaxel, inside tumor cells. In preclinical studies, CRLX301 delivers up to 10 times more docetaxel into tumors, compared to an equivalent milligram dose of commercially available docetaxel and was similar to or better than docetaxel in seven of seven animal models, with a statistically significant survival benefit seen in five of those seven models. In addition, preclinical data show that CRLX301 had lower toxicity than has been reported with docetaxel in similar preclinical studies. CRLX301 is currently in Phase 1/2a clinical development.

About Cerulean Pharma

The Cerulean team is committed to improving treatment for people living with cancer. We apply our Dynamic Tumor Targeting Platform to create a portfolio of NDCs designed to selectively attack tumor cells, reduce toxicity by sparing the body's normal cells, and enable therapeutic combinations. Our first platform-generated candidate, CRLX101, is in multiple clinical trials in combination with other cancer treatments, all of which aim to unlock the power of combination therapy. Our second platform-generated candidate, CRLX301, is in a Phase 1/2a clinical trial. For more information, please visit www.ceruleanrx.com.

About Cerulean's Dynamic Tumor Targeting Platform

Cerulean's Dynamic Tumor Targeting Platform creates NDCs that are designed to provide safer and more effective cancer treatments. We believe our NDCs concentrate their anti-cancer payloads inside tumors while sparing normal tissue because they are small enough to pass through the "leaky" vasculature present in tumors but are too large to pass through the wall of healthy blood vessels. Once inside tumors, our NDCs enter tumor cells where they slowly release anti-cancer payloads from

within the tumor cells.

Cautionary Note on Forward Looking Statements

Any statements in this press release about our future expectations, plans and prospects, including statements about the clinical development of our product candidates, statements about our estimated research and development expenses and sufficiency of cash to fund specified use of cash and other statements containing the words "anticipate," "believe," "continue," "could," "estimate," "expect," "hypothesize," "intend," "may," "plan," "potential," "predict," "project," "should," "target," "would," 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: the uncertainties inherent in the initiation of clinical trials, availability and timing of data from ongoing and future clinical trials and the results of such trials, whether preliminary results from a clinical trial will be predictive of the final results of that trial or whether results of early clinical trials will be indicative of the results of later clinical trials, expectations for regulatory approvals, availability of funding sufficient for our foreseeable and unforeseeable operating expenses and capital expenditure requirements and other factors discussed in the "Risk Factors" section of our Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission on August 6, 2015, and in other filings that we make with the Securities and Exchange Commission. In addition, any forward-looking statements included in this press release represent our views only as of the date of this release and should not be relied upon as representing our views as of any subsequent date. We specifically disclaim any obligation to update any forward-looking statements included in this press release.

Avastin is a registered trademark of Genentech, Inc.

View source version on businesswire.com: http://www.businesswire.com/news/home/20151109005611/en/

Cerulean Pharma Inc.
Nicole P. Jones, 617-551-9606
Director, Investor Relations and Corporate Communications
njones@ceruleanrx.com

Source: Cerulean Pharma Inc.