Onconova Therapeutics Announces Data on Improved Formulation of Rigosertib and Next-Generation CDK4/6 Inhibitor at 2017 American Association of Pharmaceutical Scientists Annual Meeting

November 16, 2017

- Novel formulation of rigosertib with enhanced bioavailability and stability
- Liver microsomal stability of ON 123300, a first-in-class dual inhibitor of CDK4/6 + ARK5
- Formulation approaches to augment bioavailability of ON 123300

NEWTOWN, Pa., Nov. 16, 2017 (GLOBE NEWSWIRE) -- Onconova Therapeutics, Inc. (Nasdaq:ONTX), a Phase 3 stage biopharmaceutical company focused on discovering and developing small molecule drug candidates to treat cancer, with a primary focus on Myelodysplastic Syndromes (MDS), has presented data on a new formulation of rigosertib with enhanced bioavailability, as well as pre-clinical data on metabolism and bioavailability for a first-in-class dual inhibitor of CDK4/6 + ARK5. Three posters were presented at the American Association of Pharmaceutical Scientists (AAPS) Annual Meeting and Exposition, the world's largest pharmaceutical sciences meeting, during November 14-15, 2017.

Enhancement of Oral Absorption of Rigosertib
Poster #: T2070
Abstract #: AM-17-1064
Date: November 14, 2017
Time: 10:00 – 11:00 am PST (1:00 – 2:00 pm EST)
Location: San Diego Convention Center, California
Ren, C.; Fox, D.; Maniar, M.

Oral Rigosertib in combination with azacitidine is currently being evaluated in a Phase 2 clinical trial in patients with higher-risk MDS. The new formulation, which is encapsulated in an enteric polymer, enhanced bioavailability in animal studies by over 75% compared to Onconova's current soft gelatin capsule formulation, which shows good bioavailability of ~35% in MDS patients.

"The improvement in bioavailability resulting from our extensive formulation development efforts far exceeded our expectations, and we look forward to evaluating the bioavailability of the new dosage form in humans," said Dr. Manoj Maniar, Senior Vice President of Product Development, Onconova.

Liver Microsomal Stability of ON 123300 and Identification of Metabolites
Poster #: W4103
Abstract #: AM-17-3113
Date: November 15, 2017
Time: 12:00 – 1:00 pm PST (3:00 – 4:00 pm EST)
Location: San Diego Convention Center, California
Ren, C.; Maniar, M.

Effect of Formulation on Pharmacokinetics of ON 123300 in Rats Following Oral Administration
Poster #: W4101
Abstract #: AM-17-3086
Date: November 15, 2017
Time: 12:00 to 1:00 pm PST (3:00 – 4:00 pm EST)
Location: San Diego Convention Center, California
Mudunuru, J.; Ren, C.; Taft, D.; Maniar, M.

"Identifying animal species that show similar pharmacology and pharmacokinetics to that of humans is critical to understanding the potential long term toxicity of ON 123300, a third-generation potent CDK4/6 inhibitor that also inhibits ARK5 with low nanomolar potency. In addition, our improved understanding of the mechanism of metabolism and the identification of metabolites has advanced our selection of the relevant species for IND enabling toxicological studies. We are also pleased to report that our formulation development efforts resulted in a two to three fold increase in the bioavailability of ON 123300."

"Given the limitations of second-generation compounds that require a combination treatment for therapeutic use, we are excited to advance our next-generation CDK4/6 inhibitors such as ON 123300 toward IND. We are also enthused by the potential of ON 123300 to act as a single agent, dual inhibitor of CDK 4/6 + ARK 5, which is suitable for indications that may not be amenable to Palbociclib-like compounds," concluded Dr. Maniar.

A full copy of the AAPS posters can be accessed by visiting "Scientific Presentations" in the Investors and Media section of Onconova's website.

About Onconova Therapeutics, Inc.

Onconova Therapeutics, Inc. is a Phase 3-stage biopharmaceutical company focused on discovering and developing novel small molecule drug candidates to treat cancer, with a primary focus on Myelodysplastic Syndromes (MDS). Rigosertib, Onconova's lead candidate, is a proprietary Phase 3 small molecule agent, which the Company believes blocks cellular signaling by targeting RAS effector pathways. Using a proprietary chemistry platform, Onconova has created a pipeline of targeted agents designed to work against specific cellular pathways that are important in cancer cells. Onconova has three product candidates in the clinical stage and several pre-clinical programs. The advanced clinical trial with the Company's lead compound, rigosertib, is aimed at what the Company believes are unmet medical needs of patients with MDS. For more information, please visit http://www.onconova.com.

About IV Rigosertib

The intravenous form of rigosertib has been employed in Phase 1, 2, and 3 clinical trials involving more than 800 patients, and is currently being evaluated in the randomized Phase 3 international INSPIRE trial for patients with higher-risk (HR) MDS, after failure of hypomethylating agent, or HMA, therapy.

About INSPIRE

The **IN**ternational **S**tudy of **P**hase III **I**V **R**igos**E**rtib, or INSPIRE, trial design was finalized following guidance received from the U.S. Food and Drug Administration and European Medicines Agency. INSPIRE is a multi-center, randomized controlled study to assess the efficacy and safety of IV rigosertib in HR-MDS patients who had progressed on, failed to respond to, or relapsed after previous treatment with an HMA within the first 9 months or nine cycles over the course of one year after initiation of HMA treatment. This time frame optimizes the opportunity to respond to treatment with an HMA prior to declaring treatment failure, as per the National Comprehensive Cancer Network (NCCN) Guidelines. The trial will enroll approximately 225 patients randomized at a 2:1 ratio into two treatment arms: IV rigosertib plus Best Supportive Care versus Physician's Choice plus Best Supportive Care. The primary endpoint of INSPIRE is overall survival and an interim analysis is anticipated. Full details of the INSPIRE trial, such as inclusion and exclusion criteria, as well as secondary endpoints, can be found on clinicaltrials.gov (NCT02562443).

About Oral Rigosertib

The oral form of rigosertib was developed to provide more convenient dosing for use where the duration of treatment may extend to multiple years. This dosage form also supports many combination therapy modalities. To date, 368 patients have been treated with the oral formulation of rigosertib. Initial studies with single-agent oral rigosertib were conducted in hematological malignancies, lower-risk MDS, and solid tumors. Combination therapy of oral rigosertib with azacitidine and chemoradiotherapy has also been explored. Currently, oral rigosertib is being developed as a combination therapy together with azacitidine for patients with higher-risk MDS who require HMA therapy. A Phase 1/2 trial of the combination therapy has been fully enrolled and the preliminary results were presented in 2016. This novel combination is the subject of an issued US patent with earliest expiration in 2028.

Forward Looking Statements

Some of the statements in this release are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, Section 21E of the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995, and involve risks and uncertainties. These statements relate to future events or Onconova Therapeutics, Inc.'s future operations, clinical development of Onconova's product candidates and presentation of data with respect thereto, regulatory approvals, expectations regarding the sufficiency of Onconova's cash and other resources to fund operating expenses and capital expenditures, Onconova's anticipated milestones and future expectations and plans and prospects. Although Onconova believes that the expectations reflected in such forward-looking statements are reasonable as of the date made, expectations may prove to have been materially different from the results expressed or implied by such forward-looking statements. Onconova has attempted to identify forward-looking statements by terminology including "believes," "estimates," "anticipates," "expects," "plans," "intends," "may," "could," "might," "will," "should," "approximately" or other words that convey uncertainty of future events or outcomes. These statements are only predictions and involve known and unknown risks, uncertainties, and other factors, including Onconova's ability to continue as a going concern, the need for additional financing and current plans and future needs to scale back operations if adequate financing is not obtained, the success and timing of Onconova's clinical trials and regulatory approval of protocols, and those discussed under the heading "Risk Factors" in Onconova's most recent Annual Report on Form 10-K and quarterly reports on Form 10-Q.

Any forward-looking statements contained in this release speak only as of its date. Onconova undertakes no obligation to update any forward-looking statements contained in this release to reflect events or circumstances occurring after its date or to reflect the occurrence of unanticipated events.

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