

Kura Oncology First Patient Dosed in Phase 2 Study of Tipifarnib in Advanced Cancers with HRAS Mutations

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First of Two Planned Phase 2 Studies of Tipifarnib

LA JOLLA, May 18, 2015 – Kura Oncology, Inc. ("Kura Oncology" or the "Company"), a clinical stage biopharmaceutical company advancing a pipeline of precision medicines for the treatment of solid tumors and blood cancers, announced that the first patient has been dosed in the Phase 2 clinical trial of tipifarnib in patients with locally advanced tumors that carry HRAS mutations. Tipifarnib is an inhibitor of farnesylation, a key cell signaling process implicated in cancer initiation and development.

"There are no approved treatments that target HRAS mutations specifically," said Alan Ho, M.D., Ph.D., a medical oncologist at Memorial Sloan Kettering Cancer Center and a lead investigator on the Phase 2 trial. "We look forward to investigating whether tipifarnib can inhibit HRAS-mediated activation of the MAPK pathway to produce therapeutic responses."

"Tipifarnib has previously demonstrated durable responses in subsets of patients with cancer," said Antonio Gualberto, M.D., Ph.D., Chief Medical Officer of Kura Oncology. "The selection of patients with tumors characterized by HRAS mutations represents a promising strategy to identify those patients most likely to benefit from tipifarnib."

The HRAS protein is involved in regulating cell division in response to growth factor stimulation and other signals that instruct cells to grow or divide. HRAS is an early player in many signal transduction pathways and acts as a molecular on/off switch – once HRAS is turned on, it recruits and activates proteins necessary for the propagation of the signal. In certain tumors, mutations in the HRAS gene cause the HRAS protein to be permanently on, resulting in persistent activation of downstream growth and proliferation signals that drive tumor cell growth.

Farnesyl transferase inhibitors such as tipifarnib prevent protein farnesylation, a key cell signaling process implicated in cancer initiation and development. In preclinical studies, tipifarnib has been shown to block HRAS farnesylation and membrane localization, thereby inhibiting the growth and proliferation of HRAS mutant tumors. Collectively, cancers that have an HRAS mutation are estimated to have an annual incidence of approximately 8,000 patients in the U.S. and, in general, patients with these cancers have poor prognosis and limited options for treatment.

The primary objective of the Phase 2 study will be to investigate the antitumor activity, in terms of objective response rate, of tipifarnib in patients with locally advanced, unresectable or metastatic, relapsed and/or refractory tumors that carry HRAS mutations. Secondary objectives include evaluation of progression-free survival, duration of response and safety. A total of 36 patients are planned to be enrolled into two non-randomized cohorts: malignant thyroid tumors with HRAS mutations; and non-hematological malignancies with HRAS mutations.

Additional information about this clinical trial of tipifarnib is available at clinicaltrials.gov using identifier: NCT02383927.

ABOUT TIPIFARNIB

Kura Oncology's lead program, tipifarnib, is an inhibitor of farnesylation, a key cell signaling process implicated in cancer initiation and development. In extensive clinical trials, tipifarnib has shown compelling and durable anti-cancer activity in certain patient subsets and a well-established safety profile. Preclinical and clinical data suggest that, in the right genetic context, tipifarnib has the potential to provide significant benefit to cancer patients with limited treatment options. Leveraging advances in next-generation sequencing as well as emerging information about cancer genetics,

Kura Oncology will seek to identify patients most likely to benefit from tipifarnib. In addition to the Phase 2 clinical trial of tipifarnib in patients with tumors characterized by HRAS mutations, Kura Oncology intends to initiate a Phase 2 clinical trial in patients with peripheral T-cell lymphomas in the third quarter of 2015.

Kura Oncology holds an exclusive license to develop and commercialize tipifarnib in the field of oncology, under an agreement with Janssen Pharmaceutica NV.

ABOUT KURA ONCOLOGY

Kura Oncology is a clinical-stage biopharmaceutical company focused on the discovery and development of precision medicines for the treatment of solid tumors and blood cancers. Kura Oncology's diverse pipeline consists of small molecules that target cancer signaling pathways where there is a strong scientific and clinical rationale to improve outcomes by identifying those patients most likely to benefit from treatment. Kura Oncology's approach to drug development is focused on rapidly translating novel science into life-saving medicines. More information is available at www.kuraoncology.com.

FORWARD LOOKING STATEMENTS

This news release contains certain forward-looking statements that involve risks and uncertainties that could cause actual results to be materially different from historical results or from any future results expressed or implied by such forward-looking statements. Such forward-looking statements include statements regarding, among other things, the potential utility of Kura Oncology's compounds and product candidates, and plans regarding future research and development. Factors that may cause actual results to differ materially include the risk that compounds that appeared promising in early research do not demonstrate safety and/or efficacy in later pre-clinical studies or clinical trials, the risk that Kura Oncology may not obtain approval to market its product candidates, uncertainties associated with regulatory filings and applications, the risks associated with reliance on outside financing to meet capital requirements, and the risks associated with reliance on collaborative partners for further research, clinical trials, development and commercialization of product candidates. You are urged to consider statements that include the words "may," "will," "would," "could," "should," "believes," "estimates," "projects," "potential," "expects," "plans," "anticipates," "intends," "continues," "designed," "goal," or the negative of those words or other comparable words to be uncertain and forwardlooking. For a further list and description of the risks and uncertainties the Company faces, please refer to the Company's periodic and other filings with the Securities and Exchange Commission, which are available at www.sec.gov. Such forward-looking statements are current only as of the date they are made, and Kura Oncology assumes no obligation to update any forward-looking statements, whether as a result of new information, future events or otherwise.

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