TransCode Therapeutics Announces FDA Authorization to Proceed with First-In-Human Clinical Trial

December 29, 2022

BOSTON, Dec. 29, 2022 (GLOBE NEWSWIRE) -- TransCode Therapeutics, Inc. (NASDAQ: RNAZ), the RNA Oncology Company™ committed to more effectively treating cancer using RNA therapeutics, announced today that it has received written authorization from the U.S. Food and Drug Administration (FDA) that it may proceed with its First-in-Human (FIH) Phase 0 clinical trial. The planned clinical trial is to evaluate TransCode's lead therapeutic candidate, TTX-MC138, in up to 12 cancer patients with advanced solid tumors. TTX-MC138 is designed to inhibit the pro-metastatic RNA, microRNA-10b, described as the master regulator of metastasis in a number of advanced solid tumors. TransCode believes that TTX-MC138 could be used as a treatment for many of these cancers.

"We are pleased to have received written authorization from FDA to proceed with our FIH clinical trial," said TransCode's Chief Executive Officer and co-founder, Michael Dudley. "We are hopeful that this trial will demonstrate successful delivery of our lead therapeutic candidate to metastatic lesions in patients with advanced solid tumors. The delivery of RNA therapeutics to sites other than the liver has remained a significant challenge for decades. Overcoming this challenge would represent an unprecedented step in unlocking therapeutic access to a variety of well documented genetic targets involved in a range of cancers and beyond."

The Company believes that TTX-MC138 has the potential to dramatically improve clinical outcomes in a range of cancers, including breast, pancreatic, ovarian and colon cancer, glioblastomas and others. In a preclinical murine model of triple-negative breast cancer (TNBC) model, treatment with low-dose chemotherapy and TTX-MC138 eliminated pre-existing local metastases in 100% of treated animals representative of stage II/III metastatic cancer. In a more aggressive murine model representative of stage IV metastatic cancer, treatment with low-dose chemotherapy and TTX-MC138 resulted in elimination of distant metastases in 65% of animals treated. In a murine model of pancreatic adenocarcinoma, administration of TTX-MC138 as monotherapy resulted in complete responses, manifested as regression without recurrence, in 40% of treated animals. In addition to murine models of cancer, TTX-MC138 was successfully delivered and demonstrated preliminary efficacy in a case study of spontaneous feline mammary carcinoma.

TransCode's Chief Technology Officer and co-founder, Dr. Zdravka Medarova, said, "Demonstrating the feasibility of delivering TTX-MC138 to malignant lesions in humans could unlock the potential of a wide array of RNA-targeted therapeutics, since the TTX platform permits a modular drug design, centered around the same delivery vehicle but with different payloads in terms of the sequence, design, and mechanism of action of the nucleic acid that is being delivered."

A Phase 0 clinical trial is an exploratory study conducted under an Investigational New Drug application. In TransCode's planned clinical trial, up to 12 patients will be given a single dose of radiolabeled TTX-MC138 followed by noninvasive positron emission tomography-magnetic resonance imaging (PET-MRI). The trial is intended to quantify the amount of radiolabeled TTX-MC138 delivered to metastatic lesions and the pharmacokinetics of the therapeutic candidate in cancer patients. The trial could yield critical data regarding therapeutic dose, timing, and potential safety that could inform later stage clinical trials. This trial is not intended to demonstrate any therapeutic effect.

"We are pleased that the FDA completed their safety review of our extensive eIND application which included data, reports and overview summaries of numerous studies that characterize the pharmacology, pharmacokinetics, and toxicology of the clinical trial version of TTX-MC138 both *in vitro* and *in vivo*, most of which will be useful for the next IND filing," said Susan Duggan, Vice President of Clinical Operations. "The approval of our IND application represents a turning point in the history of TransCode Therapeutics because it characterizes us as a clinical-stage oncology company."

About TransCode Therapeutics

TransCode is an RNA oncology company created on the belief that cancer can be more effectively treated using RNA therapeutics. The Company has created a platform of drug candidates designed to target a variety of tumor types with the objective of significantly improving patient outcomes. The Company's lead therapeutic candidate, TTX-MC138, is focused on treating metastatic cancer, which is believed to cause approximately 90% of all cancer deaths totaling over nine million per year worldwide. The Company believes that TTX-MC138 has the potential to dramatically improve clinical outcomes in a range of cancers, including breast, pancreatic, ovarian and colon cancer, glioblastomas and others. Two of the Company's other drug candidates, TTX-siPDL1 and TTX-siLIN28B, focus on treating tumors by targeting PD-L1 and LIN28B, respectively. TransCode also has three cancer-agnostic programs: TTX-RIGA, an RNA–based agonist of the retinoic acid-inducible gene I designed to drive an immune response in the tumor microenvironment; TTX-CRISPR, a CRISPR/Cas9–based therapy platform for the repair or elimination of cancer-causing genes inside tumor cells; and TTX-mRNA, an mRNA-based platform for the development of cancer vaccines designed to activate cytotoxic immune responses against tumor cells.

Forward-Looking Statements

This release contains "forward-looking statements" within the meaning of the Private Securities Litigation Reform Act of 1995, including, without limitation, statements concerning the occurrence or the timing and outcome of expected regulatory filings, statements concerning the occurrence or expected timing and outcome of the Phase 0 clinical trial, including whether this trial will demonstrate proof-of-mechanism, statements concerning the effects any of our treatments may deliver in the future and whether they will successfully deliver certain outcomes where other treatments have failed, statements concerning preclinical studies and the outcomes of those studies, statements about what early trials may indicate about the effects of any of our drug candidates, statements about TransCode's goals to advance its drug portfolio, and statements concerning TransCode's development programs and its TTX technology platform generally. Of note, a Phase 0 clinical trial is an exploratory study, conducted under an exploratory Investigational New Drug (eIND) application. Exploratory IND studies usually involve very limited human exposure to evaluate mechanism of action in order to inform potential clinical evaluation in future clinical studies, but otherwise have no therapeutic intent. Any forward-looking statements in this press release are based on management's current expectations of future events and are subject to a number of risks and uncertainties that could

cause actual results to differ materially and adversely from those set forth in or implied by such forward-looking statements. These risks and uncertainties include, but are not limited to: the risk associated with drug discovery and development; the risk that the results of our planned clinical trials will not be consistent with our pre-clinical studies or expectations; risks associated with the timing and outcome of TransCode's planned regulatory submissions; risks associated with TransCode's planned clinical trials for its product candidates; risks associated with obtaining, maintaining and protecting intellectual property; risks associated with TransCode's ability to enforce its patents against infringers and defend its patent portfolio against challenges from third parties; the risk of competition from other companies developing products for similar uses; risks associated with TransCode's financial condition and its need to obtain additional funding to support its business activities, including TransCode's ability to continue as a going concern; risks associated with TransCode's dependence on third parties; and risks associated with the COVID-19 coronavirus. For a discussion of these and other risks and uncertainties, and other important factors, any of which could cause TransCode's actual results to differ from those contained in or implied by the forward-looking statements, see the section entitled "Risk Factors" in TransCode's Annual Report on Form 10-K for the period ended December 31, 2021, as well as discussions of potential risks, uncertainties and other important factors in any subsequent TransCode filings with the Securities and Exchange Commission. All information in this press release is as of the date of the release; TransCode undertakes no duty to update this information unless required by law.

For more information, please contact:

TransCode Therapeutics, Inc.
Alan Freidman, VP Investor Relations
alan.freidman@transcodetherapeutics.com