TransCode Therapeutics Announces IRB Approval for FDA Cleared First-In-Human Clinical Trial

April 27, 2023

BOSTON, April 27, 2023 (GLOBE NEWSWIRE) -- TransCode Therapeutics, Inc. (NASDAQ: RNAZ), a leading clinical-stage oncology company committed to using its proprietary delivery system platform to defeat cancer, announced today that it has received written approval from the Dana Farber Cancer Institute Institutional Review Board (IRB) to proceed with its First-in-Human (FIH) Phase 0 clinical trial. The planned clinical trial is to evaluate delivery of TransCode's lead therapeutic candidate, TTX-MC138, to metastatic lesions 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 become a treatment for many of these cancers.

"We are very pleased to have received IRB Approval for 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, 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 was well tolerated 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 being delivered."

The Phase 0 clinical trial will be conducted under an exploratory Investigational New Drug (eIND) application. In TransCode's planned clinical trial, up to 12 patients will be given a single microdose 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 at a subtherapeutic dose in cancer patients. The trial could yield critical data regarding future therapeutic dose levels, dose schedule, and potential safety that could inform later stage clinical trials. This trial is not intended to demonstrate therapeutic effect.

"We are pleased that the FDA and IRB have completed their reviews of the Phase 0 clinical trial application and authorized commencement of the trial," said Susan Duggan, TransCode's Senior Vice President of Operations. "The FDA authorization and IRB approval to initiate this trial mark the development of TransCode Therapeutics into 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 produce regression without recurrence 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 two indication-agnostic programs: TTX-RIGA, an RNA–based agonist of the retinoic acid-inducible gene I designed to activate an innate immune response in cancer; and TTX-CRISPR, a CRISPR/Cas9–based therapeutic platform for the repair or elimination of cancer-causing genes. TransCode is also developing 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 potential of TransCode's TTX platform, 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 may 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 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, 2022, 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