Translate Bio Provides Updates on Cystic Fibrosis (CF) and Ornithine Transcarbamylase (OTC) Deficiency Programs

February 27, 2019

-- Initiated multiple-ascending dose portion of the Phase 1/2 clinical trial of MRT5005 in patients with cystic fibrosis --

-- Received FDA communication related to previously announced IND clinical hold for MRT5201; additional preclinical data required --

LEXINGTON, Mass., Feb. 27, 2019 (GLOBE NEWSWIRE) -- Translate Bio (Nasdaq: TBIO), a clinical-stage messenger RNA (mRNA) therapeutics company developing a new class of potentially transformative medicines to treat diseases caused by protein or gene dysfunction, today provided an update on its lead clinical candidate, MRT5005, currently in development for the treatment of cystic fibrosis (CF), and on its second product candidate, MRT5201, in development for the treatment of ornithine transcarbamylase (OTC) deficiency.

MRT5005: in development for the treatment of cystic fibrosis
MRT5005, the Company's lead mRNA product candidate, is designed to treat patients with CF by addressing the underlying cause of the disease regardless of the genetic mutation. The ongoing Phase 1/2 clinical trial of MRT5005 consists of both a single-ascending dose (SAD) and multiple-ascending dose (MAD) part. Based on previous approval by the Protocol Review Safety Committee, the trial has now advanced to dosing patients in the MAD portion of the trial while continuing to progress through increasing doses in the SAD portion of the trial. The Company remains on track to report interim data from the clinical trial in the second half of 2019.

"The initiation of the multiple-dose portion of the Phase 1/2 clinical trial of MRT5005 is an important milestone as it represents the first time that multiple doses of an mRNA therapeutic have been given to patients for the treatment of a genetic disease," said Ronald Renaud, chief executive officer, Translate Bio. "We look forward to expanding our knowledge of the safety profile of MRT5005 with multiple doses and believe that this progress underscores its potential to make an impact in the treatment of patients with cystic fibrosis."

MRT5201: in development for the treatment of OTC Deficiency
MRT5201, the Company's second product candidate, is designed to treat patients with OTC deficiency, the most common urea cycle disorder. Regarding the previously announced clinical hold on the Investigational New Drug (IND) Application of MRT5201, the Company has received formal written communication from the U.S. Food and Drug Administration (FDA). Prior to the initiation of the Company's planned Phase 1/2 clinical trial, the FDA is requiring additional preclinical toxicology data to assess the potential for adverse effects related to the clearance time of MRT5201. The Company has identified the additional preclinical studies required, and plans to complete these studies and submit a response to the FDA in the fourth quarter of 2019.

"We are committed to our goal of developing MRT5201 for patients with OTC deficiency and are therefore focused on obtaining the additional data necessary and providing a complete response to the FDA," added Renaud. "OTC deficiency remains a serious disease with limited therapeutic options and we believe that MRT5201 represents a novel approach to potentially treating this genetic disorder."

About MRT5005
MRT5005 is the first clinical-stage mRNA product candidate designed to address the underlying cause of cystic fibrosis (CF) by delivering mRNA encoding fully functional cystic fibrosis transmembrane conductance regulator (CFTR) protein to the lung epithelial cells through nebulization. MRT5005 is being developed to treat all patients with CF, regardless of the underlying genetic mutation, including those with limited or no CFTR protein. In 2015, the FDA granted orphan drug designation to MRT5005 for the treatment of CF. In 2017, the Company submitted an Investigational New Drug (IND) application to initiate the first Phase 1/2 clinical trial of MRT5005, which began in mid-2018.

The randomized, double-blind, placebo-controlled Phase 1/2 clinical trial of MRT5005 is designed to enroll at least 32 adult patients with CF who have two Class I and/or Class II mutations. The primary endpoint of the trial will be the safety and tolerability of single and multiple escalating doses of MRT5005 administered by nebulization. Forced expiratory volume in one second (FEV1), which is a well-defined measure of lung function in CF, will also be measured at pre-defined timepoints throughout the trial. The Phase 1/2 clinical trial of MRT5005 for the treatment of CF is being conducted in collaboration with the Cystic Fibrosis Foundation Therapeutics Development Network.

Cystic fibrosis is the most common fatal inherited disease in the United States, affecting more than 30,000 patients in the U.S. and more than 70,000 patients worldwide. CF is caused by genetic mutations that result in dysfunctional or absent CFTR protein.

About MRT5201
MRT5201 is designed to treat patients with OTC deficiency by intravenous delivery of mRNA encoding fully functional OTC enzyme to the liver to enable the hepatocytes, the predominant type of liver cell, to produce the normal OTC enzyme. MRT5201 has been granted orphan drug designation for the treatment of OTC deficiency in the U.S. and EU.

OTC deficiency is a metabolic liver enzyme disorder that results from a mutation in the OTC gene, and is the most common urea cycle disorder. Based on published research, the incidence of OTC deficiency is estimated to be 1 in 56,500 live births in the United States.

About Translate Bio
Translate Bio is a clinical-stage mRNA therapeutics company developing a new class of potentially transformative medicines to treat diseases caused by protein or gene dysfunction. The Company's MRT platform is designed to develop product candidates that deliver mRNA carrying instructions to produce intracellular, transmembrane and secreted proteins for therapeutic benefit. Translate Bio believes that its MRT platform is applicable to a broad range of diseases caused by insufficient protein production or where production of proteins can modify disease, including diseases that affect the lung, liver, eye, central nervous system and lymphatic system. The Company also believes its MRT platform may be applied to various classes of treatments, such as therapeutic antibodies or vaccines in areas such as infectious disease and oncology. Translate Bio's two lead programs are being developed as treatments for cystic fibrosis (CF) and ornithine transcarbamylase (OTC) deficiency. For more information about the Company, please visit www.translate.bio or on Twitter at @TranslateBio.

Cautionary Note Regarding Forward-Looking Statements

This press release contains forward-looking statements within the meaning of The Private Securities Litigation Reform Act of 1995. Such forward-looking statements include, but are not limited to, those regarding: the potential for MRT5005 to address the underlying cause of CF, Translate Bio's plans to continue to dose patients in its SAD and MAD portions of its Phase 1/2 clinical trial of MRT5005 and its plans to report interim data from the trial in the second half of 2019; Translate Bio's plans to conduct additional preclinical studies for MRT5201and its plan to submit a response to FDA in the fourth quarter of 2019; Translate Bio's plans to provide a complete response to the FDA; Translate Bio's beliefs regarding the broad applicability of its MRT platform; and Translate Bio's plans, strategies and prospects for its business, including its lead development programs. The words "anticipate," "believe," "continue," "could," "estimate," "expect," "intend," "may," "plan," "potential," "predict," "project," "should," "target," "would" and similar expressions are intended to identify forward-looking statements, although not all forward-looking statements contain these identifying words. Such statements are subject to numerous important factors, risks and uncertainties that may cause actual events or results to differ materially from current expectations and beliefs, including but not limited to: Translate Bio's ability to advance the development of its platform and programs under the timelines it projects, demonstrate the requisite safety and efficacy of its product candidates and replicate in clinical trials any positive findings from preclinical studies; Translate Bio's ability to obtain additional preclinical data to support its IND application for MRT5201; the content and timing of decisions made by the U.S. Food and Drug Administration, other regulatory authorities and investigational review boards at clinical trial sites, including as it relates to ongoing and planned clinical trials; Translate Bio's ability to obtain, maintain and enforce necessary patent and other intellectual property protection; the availability of significant cash required to fund operations; competitive factors; general economic and market conditions and other important risk factors set forth under the caption "Risk Factors" in Translate Bio's Quarterly Report on Form 10-Q for the quarterly period ended September 30, 2018 filed with the Securities and Exchange Commission on November 8, 2018 and in any other subsequent filings made by Translate Bio. Any forward-looking statements contained in this press release speak only as of the date hereof, and Translate Bio specifically disclaims any obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.

Contacts for Translate Bio

Investors	**Media**
Teri Dahlman	Maura Gavaghan
tdahlman@translate.bio	mgavaghan@translate.bio
857-242-7792	857-242-7789

Source: Translate Bio, Inc.