NEWS RELEASE

Phase 1/2 Interim Data on Moderna's mRNA-3927, an Investigational mRNA Therapy for Propionic Acidemia (PA), Presented at the 2023 ASGCT Annual Meeting

5/19/2023

First clinical trial reporting results of an mRNA therapeutic for intracellular protein replacement

To date, mRNA-3927 has been generally well-tolerated at the doses administered, with encouraging early signs of dose-dependent pharmacology and potential clinical benefits

No occurrence of dose-limiting toxicities or study discontinuations due to drug-related treatment-emergent adverse events (TEAEs)

More than 280 doses of mRNA-3927 were administered. Five patients have more than a year of dosing

Phase 1/2 trial advances to the dose-expansion phase

CAMBRIDGE, MA / ACCESSWIRE / May 19, 2023 / Moderna,Inc. (NASDAQ:MRNA), a biotechnology company pioneering messenger RNA (mRNA) therapeutics and vaccines, reported on **interim data** from the Phase 1/2 trial of mRNA-3927, an investigational mRNA therapy for propionic acidemia (PA), presented at the 2023 American Society of Gene + Cell Therapy (ASGCT) Annual Meeting.

The ongoing global Phase 1/2 clinical trial (**ClinicalTrials.gov** Identifier: **NCT04159103**) is a multicenter, open-label study designed to assess the safety, pharmacodynamics, and pharmacokinetics of mRNA-3927 in participants aged 1 year and older with genetically confirmed PA. The trial utilized a dose-escalation approach to evaluate the

intravenous administration of mRNA-3927.The initial dosing regimen was 0.3 mg/kg administered intravenously every three weeks; subsequent doses were administered every two weeks. Participants who complete the dose optimization trial (10 doses) are eligible to continue treatment in an open-label extension study (**NCT05130437**). The primary outcomes of the trial are safety and tolerability, while secondary and exploratory outcomes include pharmacology, evaluation of potential plasma biomarkers, and the frequency and duration of metabolic decompensation events (MDEs). mRNA-3927 has been well-tolerated at the doses administered, with encouraging early signs of dose-dependent pharmacology and potential clinical benefit.

To date, a total of 16 participants have received doses of mRNA-3927 across five dose cohorts. Of these, 11 participants completed the study and enrolled in the open-label extension study, and five participants were treated with mRNA-3927 for over one year. Following treatment initiation with mRNA-3927, most participants who had reported MDEs in the 12 months prior to dosing had either a lower incidence or no MDEs post-treatment.

In total, more than 280 doses of mRNA-3927 were administered across both studies, which is more than 13 patient-years' treatment experience. No dose-limiting toxicities or study discontinuations due to drug-related TEAEs have occurred. Fifteen participants reported TEAEs, while nine participants experienced drug-related TEAEs. Serious adverse events (SAEs) were reported in eight participants. Most SAEs were related to PA and unrelated to mRNA-3927. Six participants had mild infusion-related (IRR) TEAEs; however, most events occurred at the first doses.

"We continue to observe encouraging results with mRNA-3927 as we enter the dose-expansion phase, where we will further assess safety, efficacy, and determine the recommended dose for future clinical studies. This is the first clinical trial reporting results of an mRNA therapeutic for intracellular protein replacement, and we currently have more than 13 patient-years of experience to date," said Kyle Holen, M.D., Moderna's Senior Vice President and Head of Development, Therapeutics and Oncology. "We express our immense gratitude to the patients, families, and researchers who have contributed to our research efforts, and we look forward to continuing our efforts to explore the therapeutic potential of our mRNA platform for propionic acidemia and other rare diseases."

About Propionic Acidemia (PA) and mRNA-3927

Propionic acidemia is a rare, serious, inherited metabolic disorder with significant morbidity and mortality, affecting one in 100,000-150,000 individuals worldwide. PA is caused by pathogenic variants in the propionyl-coenzyme A carboxylase (PCC) α or β subunits (PCCA and PCCB genes, respectively), leading to PCC deficiency and subsequent accumulation of toxic metabolites. PA is characterized by recurrent life-threatening MDEs and multisystemic complications. Multisystemic complications include neurological manifestations, cardiomyopathy, arrythmias, growth retardation, recurrent pancreatitis, bone marrow suppression, and predisposition to infection. Long-term, insults by toxic metabolites cause complications in various organs, and cognitive outcome is negatively correlated with the number of MDEs.

Currently, there are no effective therapies for PA that target the underlying root cause of the disease.

mRNA-3927 is a novel, IV-administered, lipid nanoparticle (LNP)-encapsulated dual mRNA therapy that encodes for PCCA and PCCB subunit proteins to restore functional PCC enzyme activity in the liver. By encoding for intracellular proteins, mRNA therapy has a potential role in preventing and treating acute metabolic decompensations.

About Moderna

In over 10 years since its inception, Moderna has transformed from a research-stage company advancing programs in the field of messenger RNA (mRNA), to an enterprise with a diverse clinical portfolio of vaccines and therapeutics across seven modalities, a broad intellectual property portfolio and integrated manufacturing facilities that allow for rapid clinical and commercial production at scale. Moderna maintains alliances with a broad range of domestic and overseas government and commercial collaborators, which has allowed for the pursuit of both groundbreaking science and rapid scaling of manufacturing. Most recently, Moderna's capabilities have come together to allow the authorized use and approval of one of the earliest and most effective vaccines against the COVID pandemic.

Moderna's mRNA platform builds on continuous advances in basic and applied mRNA science, delivery technology and manufacturing, and has allowed the development of therapeutics and vaccines for infectious diseases, immuno-oncology, rare diseases, cardiovascular diseases and auto-immune diseases. Moderna has been officially recognized as a Great Place to Work in the U.S. by Great Place to Work®. To learn more, visit **www.modernatx.com**.

Forward-Looking Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including statements regarding: signs of dose-dependent pharmacology and potential clinical benefits associated with mRNA-3927; the potential role of mRNA therapy in preventing and treating acute metabolic decompensations; and clinical plans and progress for mRNA-3927. In some cases, forward-looking statements can be identified by terminology such as "will," "may," "should," "could," "expects," "intends," "plans," "aims," "anticipates," "believes," "estimates," "predicts," "potential," "continue," or the negative of these terms or other comparable terminology, although not all forward-looking statements contain these words. The forward-looking statements in this press release are neither promises nor guarantees, and you should not place undue reliance on these forward-looking statements because they involve known and unknown risks, uncertainties, and other factors, many of which are beyond Moderna's control and which could cause actual results to differ materially from those expressed or implied by these forward-looking statements. These risks, uncertainties, and other factors include, among others, those risks and uncertainties described under the heading "Risk Factors" in Moderna's Annual Report on Form 10-K for the fiscal year ended December 31, 2022, filed with the U.S. Securities and Exchange Commission (SEC), and in subsequent filings made by Moderna with the SEC, which are available on the SEC's website at **www.sec.gov**. Except as required by law, Moderna disclaims any intention or responsibility for

updating or revising any forward-looking statements contained in this press release in the event of new information, future developments or otherwise. These forward-looking statements are based on Moderna's current expectations and speak only as of the date of this press release.

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