



## Moderna Announces First Participants in Each Age Cohort Dosed in Phase 2 Study of mRNA Vaccine (mRNA-1273) Against Novel Coronavirus

May 29, 2020

*Phase 2 study expected to enroll 600 participants*

*Finalizing protocol for Phase 3 study, expected to begin in July 2020*

CAMBRIDGE, Mass.--(BUSINESS WIRE)--May 29, 2020-- Moderna, Inc., (Nasdaq: MRNA) a clinical stage biotechnology company pioneering messenger RNA (mRNA) therapeutics and vaccines to create a new generation of transformative medicines for patients, today announced that the first participants in each age cohort have been dosed in the Company's [Phase 2 study](#) of its mRNA vaccine candidate (mRNA-1273) against the novel coronavirus (SARS-CoV-2).

This Phase 2 study, being conducted by Moderna under its own Investigational New Drug (IND) application, will evaluate the safety, reactogenicity and immunogenicity of two vaccinations of mRNA-1273 given 28 days apart. The Company intends to enroll 600 healthy participants across two cohorts of adults ages 18-55 years (n=300) and older adults ages 55 years and above (n=300). Each participant will be assigned to receive placebo, a 50 µg or a 100 µg dose at both vaccinations. Participants will be followed through 12 months after the second vaccination. Given the 25 µg and 100 µg dose levels in the Phase 1 study showed neutralizing antibody titers at or above convalescent sera and were generally well tolerated, the Company has decided not to pursue the 250 µg dose level in the Phase 2 study.

On May 6, the U.S. Food and Drug Administration (FDA) [completed](#) its review of the Company's Investigational New Drug (IND) application for mRNA-1273 and on May 12, the FDA granted it [Fast Track](#) designation. On May 18, Moderna [announced](#) initial data from the Phase 1 study of mRNA-1273 led by the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health (NIH). The NIH will be submitting the Phase 1 data to a peer-reviewed clinical publication. Moderna anticipates collaborating with NIAID to implement the Phase 3 study. The dose for the Phase 3 study is expected to be between 25 µg and 100 µg and expects Phase 3 trial initiation in July, subject to finalization of the clinical trial protocol.

[Funding](#) from the Biomedical Advanced Research and Development Authority (BARDA), a division of the Office of the Assistant Secretary for Preparedness and Response ([ASPR](#)) within the U.S. Department of Health and Human Services (HHS), supported the planning for these studies and will also support the late-stage clinical development programs, as well as the scale-up of mRNA-1273 manufacturing both at the Company's facilities and that of its strategic collaborator, Lonza Ltd. A summary of the company's work to date on SARS-CoV-2 can be found [here](#).

### About mRNA-1273

mRNA-1273 is an mRNA vaccine against SARS-CoV-2 encoding for a [prefusion stabilized](#) form of the Spike (S) protein, which was selected by Moderna in collaboration with investigators from Vaccine Research Center (VRC) at NIAID, a part of the NIH. The first clinical batch, which was funded by CEPI, was completed on February 7, 2020 and underwent analytical testing; it was shipped to NIH on February 24, 42 days from sequence selection. The first participant in the NIAID-led Phase 1 study of mRNA-1273 was dosed on March 16, 63 days from sequence selection to Phase 1 study dosing.

### About Moderna's Prophylactic Vaccines Modality

Moderna scientists designed the company's prophylactic vaccines modality to prevent infectious diseases. More than 1,500 participants have been enrolled in Moderna's infectious disease vaccine clinical studies under health authorities in the U.S., Europe and Australia. Clinical data demonstrate that Moderna's proprietary vaccine technology has been generally well-tolerated and can elicit durable immune responses to viral antigens. Based on clinical experience across Phase 1 studies, the company designated prophylactic vaccines a core modality and is working to accelerate the development of its vaccine pipeline.

The potential advantages of an mRNA approach to prophylactic vaccines include the ability to combine multiple mRNAs into a single vaccine, rapid discovery to respond to emerging pandemic threats and manufacturing agility derived from the platform nature of mRNA vaccine design and production. Moderna has built a fully integrated manufacturing plant which enables the promise of the technology platform.

Moderna currently has [nine development candidates](#) in its prophylactic vaccines modality, including:

#### *Vaccines against respiratory infections*

- Respiratory syncytial virus (RSV) vaccine for older adults (mRNA-1777 and mRNA-1172 or V172 with Merck)
- RSV vaccine for young children (mRNA-1345)
- Human metapneumovirus (hMPV) and parainfluenza virus type 3 (PIV3) vaccine (mRNA-1653)
- Novel coronavirus (SARS-CoV-2) vaccine (mRNA-1273)
- Influenza H7N9 (mRNA-1851)

#### *Vaccines against infections transmitted from mother to baby*

- Cytomegalovirus (CMV) vaccine (mRNA-1647)
- Zika vaccine (mRNA-1893 with BARDA)

#### *Vaccines against highly prevalent viral infections*

- Epstein-Barr virus (EBV) vaccine (mRNA-1189)

To date, Moderna has demonstrated positive Phase 1 data readouts for seven prophylactic vaccines (H10N8, H7N9, RSV, chikungunya virus, hMPV/PIV3, CMV and Zika). Moderna's CMV vaccine is currently in a Phase 2 dose-confirmation study. Moderna's investigational Zika vaccine (mRNA-1893), currently in a Phase 1 study, was granted FDA Fast Track designation in August 2019.

#### **About Moderna**

Moderna is advancing messenger RNA (mRNA) science to create a new class of transformative medicines for patients. mRNA medicines are designed to direct the body's cells to produce intracellular, membrane or secreted proteins that can have a therapeutic or preventive benefit and have the potential to address a broad spectrum of diseases. The company's platform builds on continuous advances in basic and applied mRNA science, delivery technology and manufacturing, providing Moderna the capability to pursue in parallel a robust pipeline of new development candidates. Moderna is developing therapeutics and vaccines for infectious diseases, immuno-oncology, rare diseases, cardiovascular diseases, and autoimmune and inflammatory diseases, independently and with strategic collaborators.

Headquartered in Cambridge, Mass., Moderna currently has strategic alliances for development programs with AstraZeneca PLC and Merck & Co., Inc., as well as the Defense Advanced Research Projects Agency (DARPA), an agency of the U.S. Department of Defense, and BARDA. Moderna has been named a top biopharmaceutical employer by *Science* for the past five years. To learn more, visit [www.modernatx.com](http://www.modernatx.com).

#### **Forward Looking Statement**

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as amended, including regarding the Company's development of a potential vaccine against the novel coronavirus, the potential benefits of mRNA based vaccines, the benefits of Fast Track designation, the parameters and timing of the planned Phase 2 study of mRNA-1273, the parameters of, timing of and planned dosing in the planned Phase 3 study of mRNA-1273, and BARDA funding for clinical studies and manufacturing activities. 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: the fact that there has never been a commercial product utilizing mRNA technology approved for use; the fact that the rapid response technology in use by Moderna is still being developed and implemented; the fact that the safety and efficacy of mRNA-1273 has not yet been established; potential adverse impacts on the Company's programs due to the global COVID-19 pandemic such as delays in regulatory review, manufacturing and supply chain interruptions, adverse effects on healthcare systems and disruption of the global economy; and those other risks and uncertainties described under the heading "Risk Factors" in Moderna's most recent Quarterly Report on Form 10-Q 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](http://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 hereof.

View source version on [businesswire.com](https://www.businesswire.com/news/home/20200529005628/en/): <https://www.businesswire.com/news/home/20200529005628/en/>

#### **Moderna**

##### **Media:**

Colleen Hussey  
Senior Manager, Corporate Communications  
203-470-5620  
[Colleen.Hussey@modernatx.com](mailto:Colleen.Hussey@modernatx.com)

Dan Budwick  
1AB  
973-271-6085  
[Dan@1abmedia.com](mailto:Dan@1abmedia.com)

##### **Investors:**

Lavina Talukdar  
Head of Investor Relations  
617-209-5834  
[Lavina.Talukdar@modernatx.com](mailto:Lavina.Talukdar@modernatx.com)

Source: Moderna, Inc.