



## Moderna Announces New Drug Substance Production Agreement with Lonza in the Netherlands

June 2, 2021

*New agreement with Lonza will increase drug substance production in Europe by the fourth quarter 2021*

*Lonza Geleen will support the production of an additional 300 million doses per year*

CAMBRIDGE, Mass.--(BUSINESS WIRE)--Jun. 2, 2021-- Moderna, Inc. (Nasdaq: MRNA), a biotechnology company pioneering messenger RNA (mRNA) therapeutics and vaccines, today announced that it has entered into an additional agreement with Lonza (SIX: LONN) to support drug substance manufacturing for its global supply chain. The agreement will establish a new production line at Lonza's Geleen site in the Netherlands, contributing to the supply of an additional 300 million doses of Moderna's updated booster variant vaccine candidate, if authorized, per year, at a 50 µg dose.

In addition to previously [announced](#) investments in drug substance manufacturing with ROVI in Granada, Spain, the Company now expects to be able to supply the equivalent of 600 million 50 µg doses per year from production within the European Union. Both new drug substance lines in the European Union are expected to be operational before the end of 2021.

"We thank our manufacturing partners for their work and their commitment and are proud to be building on the strong foundations we have established with Lonza to further increase our manufacturing capabilities in Europe," said Juan Andres, Moderna's Chief Technical Operations and Quality Officer. "This additional production will help us continue to scale up our production as we continue to develop best-in-class variant boosters so we can help end this pandemic as fast as possible."

Moderna already works with ROVI and Recipharm (France) for fill/finish of COVID-19 Vaccine Moderna in Europe and recently entered into a Manufacturing Services and Supply Agreement with Samsung Biologics in South Korea to provide additional large scale, commercial fill/finish services. In the U.S., the Company also works with Lonza Portsmouth for drug substance production, and partners with Catalent, Baxter BioPharma Solutions, Sanofi and Thermo Fisher Scientific for fill/finish services. Additional manufacturing investments follow the Company's commitment to increase production in late 2021 and early 2022 to support global supply of its COVID-19 vaccine.

When completed, the increased production, in addition to other investments at its owned and partnered manufacturing facilities, is expected to also result in an increase in safety stock of raw materials and finished product used to deliver committed volumes.

### About the COVID-19 Vaccine Moderna

The COVID-19 Vaccine Moderna (referred to in the U.S. as the Moderna COVID-19 Vaccine) is an mRNA vaccine against COVID-19 encoding for a prefusion stabilized form of the Spike (S) protein, which was co-developed by Moderna and investigators from the National Institute of Allergy and Infectious Diseases' (NIAID) Vaccine Research Center. The first clinical batch, which was funded by the Coalition for Epidemic Preparedness Innovations, was completed on February 7, 2020 and underwent analytical testing; it was shipped to the National Institutes of Health (NIH) on February 24, 42 days from sequence selection. The first participant in the NIAID-led Phase 1 study of the Moderna COVID-19 Vaccine was dosed on March 16, 63 days from sequence selection to Phase 1 study dosing. On May 12, the U.S Food and Drug Administration granted the Moderna COVID-19 Vaccine Fast Track designation. On May 29, the first participants in each age cohort: adults ages 18-55 years (n=300) and older adults ages 55 years and above (n=300) were dosed in the Phase 2 study of the vaccine. On July 8, the Phase 2 study completed enrolment.

Results from the second interim analysis of the NIH-led Phase 1 study of the Moderna COVID-19 Vaccine in the 56-70 and 71+ age groups were published on September 29 in *The New England Journal of Medicine*. On November 30, 2020, Moderna announced the primary efficacy analysis of the Phase 3 study of the vaccine conducted on 196 cases. On November 30, 2020, the Company also announced that it filed for Emergency Use Authorization with the U.S. FDA and a Conditional Marketing Authorization (CMA) application with the European Medicines Agency. On December 18, 2020, the U.S. FDA authorized the emergency use of the Moderna COVID-19 Vaccine in individuals 18 years of age or older. Moderna has also received emergency (or other conditional, interim or provisional) authorization for use of its COVID-19 vaccine from health agencies in Canada, Israel, the European Union, the United Kingdom, Switzerland, Singapore, Qatar, Taiwan, the Philippines, Thailand, Brunei, Paraguay, Japan, South Korea an Emergency Use Listing (EUL) from the World Health Organization (WHO).

Initial data from Moderna's [Phase 2 study](#) in the U.S. showed that a single 50 µg dose of mRNA-1273 or mRNA-1273.351 given as a booster to previously vaccinated individuals increased neutralizing antibody titer responses against SARS-CoV-2 and two variants of concern, B.1.351 (first identified in South Africa) and P.1 (first identified in Brazil). A booster dose of mRNA-1273.351, the Company's strain-matched booster, achieved higher neutralizing antibody titers against the B.1.351 variant of concern than a booster dose of mRNA-1273. Safety and tolerability profiles following third dose booster injections of 50 µg of mRNA-1273 or mRNA-1273.351 were generally comparable to those observed after the second dose of mRNA-1273 in the previously reported Phase 2 and Phase 3 studies. A manuscript describing these preliminary results was submitted as a preprint to [medRxiv](#) and will be submitted for peer-reviewed publication upon completion of the multivalent mRNA-1273.211 booster arm.

### About Moderna

In 10 years since its inception, Moderna has transformed from a science 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 six modalities, a broad intellectual property portfolio in areas including mRNA and lipid nanoparticle formulation, and an integrated manufacturing plant that allows for both clinical and commercial production at scale and at unprecedented speed. 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 of one of the earliest and most-effective vaccines against the COVID-19 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. Today, 24 development programs are underway across these therapeutic areas, with 14 programs having entered the clinic. Moderna has been named a top biopharmaceutical employer by *Science* for the past six years. To learn more, visit [www.modernatx.com](http://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 regarding: the Company's development of a vaccine against the novel coronavirus (the COVID-19 Vaccine Moderna, known as the Moderna COVID-19 Vaccine in the U.S.), the Company's agreement with Lonza to support drug substance manufacturing for the vaccine; the scale and timing for such production; anticipated dosage amounts for booster vaccines; and the scaling of the Company's production efforts with other contract manufacturing organizations. 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 safety, tolerability and efficacy profile of the Moderna COVID-19 Vaccine observed to date may change adversely in ongoing analyses of trial data or subsequent to commercialization; the Moderna COVID-19 Vaccine may prove less effective against variants of the SARS-CoV-2 virus, or the Company may be unsuccessful in developing future versions of its vaccine against these variants; despite having ongoing interactions with the FDA or other regulatory agencies, the FDA or such other regulatory agencies may not agree with the Company's regulatory approval strategies, components of our filings, such as clinical trial designs, conduct and methodologies, or the sufficiency of data submitted; Moderna may encounter delays in meeting manufacturing or supply timelines or disruptions in its distribution plans for the Moderna COVID-19 Vaccine; whether and when any biologics license applications and/or additional emergency use authorization applications may be filed in various jurisdictions and ultimately approved by regulatory authorities; potential adverse impacts due to the global COVID-19 pandemic such as delays in regulatory review, manufacturing and clinical trials, 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 Annual Report on Form 10-K 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.

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### Media:

[ModernaMedia@FTIconsulting.com](mailto:ModernaMedia@FTIconsulting.com)

Colleen Hussey  
Director, Corporate Communications  
617-335-1374  
[Colleen.Hussey@modernatx.com](mailto:Colleen.Hussey@modernatx.com)

### Investors:

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

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