



Industry Partnerships on COVID-19 Vaccines, Therapeutics and Diagnostics

Vaccines

- **CureVac**
 - Celonic will manufacture at 100 million doses of CureVac's vaccine at its plant in Heidelberg, Germany, providing bulk substance for 50 million doses by the end of 2021. ([press release](#))
 - Novartis will manufacture CureVac's vaccine. ([press release](#))
 - GlaxoSmithKline plc and CureVac N.V. announced a new €150m collaboration, building on their existing relationship, to jointly develop next generation mRNA vaccines for COVID-19 with the potential for a multi-valent approach to address multiple emerging variants in one vaccine. ([press release](#))
 - Rentschler Biopharma SE will manufacture CureVac's vaccine. ([press release](#))
 - Bayer will support the further development, supply and key territory operations of CureVac's vaccine candidate. ([press release](#))
 - Fareva will dedicate a manufacturing plant in France to the fill and finish of CureVac's vaccine. ([press release](#))
 - Wacker Chemie AG will manufacture CureVac's vaccine candidate at its Amsterdam site. ([press release](#))
 - CureVac will collaborate with Tesla Grohmann Automation to develop an RNA printer that works like a mini-factory and can produce such drugs automatically. ([press release](#))
- **Moderna**
 - Rovi will produce bulk substance for Moderna's COVID-19 vaccine, expanding an agreement between the companies. Rovi currently provides fill-finish for the vaccine, receiving substance from a Lonza plant in Switzerland. A new production line at Rovi's plant in Granada, Spain, will make ingredients for up to 100 million vaccine doses a year. ([news release](#))
 - Moderna collaborates with Catalent for vial filling and packaging capacity ([press release](#))
 - Lonza's site in Valais, Switzerland, will manufacture Moderna's vaccine ([press release](#))
 - Recipharm will support formulation and fill-finish for Moderna's vaccine at their site in France. ([press release](#))
 - Laboratorios Farmacéuticos Rovi will support large-scale, commercial fill-finish manufacturing of Moderna's vaccine at their site in Madrid, Spain. ([press release](#))
 - CordenPharma will manufacture large-scale volumes of Moderna's lipid excipients to be used in the manufacture of Moderna's vaccine. ([press release](#))
- **Novavax**
 - Novavax partners with SK Bioscience of South Korea to manufacture Novavax's protein antigen, supply of Matrix MTM adjuvant, and support to SK Bioscience as needed to secure regulatory approval. ([press release](#))
 - Biologics Manufacturing Centre of Canada is partnered with Novavax to produce its vaccine. ([press release](#))



- FUJIFILM Diosynth Biotechnologies will produce bulk drug substance of NVX-CoV2373, Novavax' vaccine candidate. ([press release](#))
- Baxter International Inc will provide sterile manufacturing services for NVX-CoV2373, Novavax' COVID-19 recombinant nanoparticle vaccine candidate with Matrix-M™ adjuvant. ([press release](#))
- Novavax collaborates with Takeda for local production and commercialization of Novavax' vaccine in Japan ([press release](#))
- AGC Biologics is preparing to manufacture Matrix-M™, the adjuvant component^{*2} of Novavax' COVID-19 vaccine candidate, NVX-CoV2373 in its Copenhagen facility. ([press release](#))
- Novavax bought a Czech company (Praha Vaccines) to further expand COVID-19 manufacturing capacity ([press release](#))
- Novavax partnered with Serum Institute of India, increasing Novavax' global production capacity to over 2 billion doses annually. Novavax committed 1 billion doses to COVAX made possible through their partnership with the Serum Institute of India. ([press release](#))
- **Medicago**
 - Medicago has partnered with GSK to develop and evaluate a COVID-19 candidate vaccine combining Medicago's recombinant Coronavirus Virus-Like Particles (CoVLP) with GSK's pandemic adjuvant system. ([press release](#))
 - Medicago partnered with Dynavax to evaluate Medicago's Coronavirus Virus-Like Particle (CoVLP) with Dynavax's CpG 1018 adjuvant to support the rapid development of a COVID-19 vaccine candidate. ([press release](#))
- **Tonix Pharmaceuticals** - FUJIFILM Diosynth Biotechnologies to manufacture Tonix's vaccine. Collaboration includes development of manufacturing processes and supply of clinical trial material to support Tonix's development of TNX-1800 ([press release](#))
- **Valneva** – Dynavax to produce adjuvant for Valneva vaccine ([press release](#))
- **Geovax** – collaboration with BravoVax (Wuhan, China) on development of COVID vaccine ([press release](#))
- **Inovio Inc.**
 - Inovio has partnered with Kaneka Eurogentec (Japan), Thermo Fisher Scientific (USA), Richter-Helm BioLogics (Hungary) and Ology Biosciences (USA) to help manufacture their vaccine candidate. ([Kaneka press release](#)) ([Thermo Fischer press release](#)) ([Ology press release](#))
 - Inovio collaborates with Beijing Advaccine (Chinese company) to facilitate clinical trial translations in China ([press release](#))
- **AstraZeneca**
 - AstraZeneca reached a licensing and technology transfer agreement with Serum Institute of India to supply one billion doses to low and middle-income countries ([press release](#))
 - CSL Behring is manufacturing approximately 50 million doses of AstraZeneca's vaccine in Australia for supply to the country. First doses were rolled out in March 2021. ([press release](#))



- Emergent BioSolutions, Daiichi Sankyo to expand manufacturing of AZ's vaccine ([Emergent BioSolutions press release](#)) ([Daiichi press release](#))
- AstraZeneca also reached a \$750m agreement with CEPI and Gavi to support the manufacturing, procurement and distribution of 300 million doses of the vaccine. ([press release](#))
- **CSL Behring**
 - CSL Behring is manufacturing approximately 50 million doses of AstraZeneca's vaccine in Australia for supply to the country. First doses were rolled out in March 2021. ([press release](#))
 - Seqirus, which is part of the CSL Group, has donated its well-established adjuvant technology – MF59® – to the vaccine efforts of multiple entities, including the University of Queensland vaccine development program. ([press release](#))
- **Johnson & Johnson**
 - J&J partnered with Merck to manufacture their vaccine. ([press release](#))
 - J&J partnered with Aspen Institute, Emergent biosolutions in South Africa to manufacture their vaccine. ([Aspen press release](#)) ([Emergent press release](#))
- **Pfizer - BioNtech** co-developed COVID-19 vaccine ([press release](#))
 - Delpharm will start to manufacture Pfizer-BioNtech's vaccine in Normandy, France. Delpharm will also produce Johnson and Johnson and Moderna's vaccine. ([news release](#))
 - Thermo Fisher is working with Pfizer and BioNtech to manufacture their COVID-19 vaccine in Italy. ([news release](#))
 - In order to scale up manufacturing as quickly as possible, the companies have entered multiple manufacturing agreements with Sanofi, Novartis, and Fosun Pharma. ([Sanofi press release](#)) ([Novartis press release](#)) ([Fosun press release](#))
- **Sanofi**
 - Sanofi will spend \$476 million over the next five years to create a vaccine production plant in Singapore. The facility will have more flexibility than Sanofi's current sites, with the capability to produce three to four different vaccines simultaneously. ([press release](#))

Therapeutics/Diagnostics Partnerships

- **Eli Lilly**
 - Collaboration with Samsung BioLogics' to mass produce Lilly's COVID-19 antibody therapies. Lilly hopes to make up to 1 million doses this year and many more in 2021 ([press release](#) and [here](#))
 - Manufacturing collaboration with Amgen for COVID-19 antibody therapies ([press release](#))
- **Avacta** – BBI Solutions (based in South Wales, UK) to manufacture Avacta's saliva-based rapid SARS-CoV-2 antigen test, that is being developed by Affimer® biotherapeutics and reagents developer Avacta Group plc in conjunction with Cytiva ([press release](#))
- **BeiGene** – collaboration with Singlomics (China) and Peking University for the use of monoclonal antibodies (mAbs) against COVID-19 ([press release](#); a more scientific, but good, article is available [here](#))



- **Vir Biotechnology** -collaboration with GlaxoSmithKline (UK) on monoclonal antibody (mAbs) treatment for COVID-19 ([press release](#))
- **CSL Behring**
 - CSL Behring is partnering with SAB Biotherapeutics, a clinical-stage biopharmaceutical company, to advance and deliver a novel immunotherapy targeting COVID-19. The potential therapy would be produced without the need for blood plasma donations from recovered COVID-19 patients. ([press release](#))
 - CSL Behring has launched a clinical trial into the use of CSL312 (garadacimab, Factor XIIa antagonist monoclonal antibody) to treat patients suffering from severe respiratory distress, a leading cause of death in patients with COVID-19 related pneumonia. ([press release](#))