



Ongoing Studies for the Treatment and Prevention of COVID-19

AVAC, 22 May 2020

The table below is a work in progress, as this is an incredibly dynamic landscape. Over the past month, the scientific community has accelerated development of COVID-19 diagnostics, therapeutics and vaccine. There are many resources that are available to track these developments, including:

- [COVID-19: Projected Timeline for Treatment and Prevention](#), from SynBioBeta
- [COVID-19 R&D Tracker](#), from the Global Health Technologies Coalition
- [COVID-19 R&D Tracker](#), from Policy Cures
- [COVID-19 Vaccine Tracker](#), from the Regulatory Affairs Professionals Society (RAPS)
- [COVID-19 diagnostic resources including pipeline & test tracker](#), from FIND
- [COVID-19 Pipeline](#), from the COVID-19 Working Group NY, the PrEP4All Collaboration, and Treatment Action Group
- [Advancing Development of PrEP for COVID-19](#), from PrEP4All Collaboration
- [Every Vaccine and Treatment in Development for COVID-19, So Far](#), from the Visual Capitalist
- [Science article on WHO launch of global megatrial of four coronavirus treatments](#), March 22
- [GAVI's Seth Berkley on the need for a COVID-19 "Manhattan Project"](#), March 27
- [Global coalition to accelerate COVID-19 clinical research in resource-limited settings](#), April 2

Developer	Approach	Funder	Intervention and Products	Trial/Production site	Research stage
Multiple	Vax	Multiple	Live attenuated Bacille Calmette-Guerin (BCG) vaccine against Tuberculosis	Australia, Colombia, India, France, United States, Brazil, Netherlands, Egypt, Denmark	Phase IV trial underway in 2800 participants; multiple Phase III trials enrolling 18,798 participants
Merck	Vax	Kasr El Aini Hospital	Live attenuated Measles, Mumps and Rubella (MMR) vaccine	Cairo, Egypt	Phase III trial enrolling 200 participants
University of Oxford	Vax	University of Oxford; US	ChAdOx1 nCoV-19	Southampton, UK; London, UK; Oxford, UK	Phase II/III trial enrolling 10,260 participants
CanSino Biologics	Vax	Private; People's Republic of China	Ad5-nCoV	Wuhan, China	Phase II virtual enrollment initiated of 500 participants
NIAID and Moderna, Inc.	Vax	NIAID and CEPI	mRNA-1273 preventive vaccine	Seattle, USA; Bethesda, USA; Decatur, USA	Phase II trial approved by FDA, will begin shortly in 600 participants

Developer	Approach	Funder	Intervention and Products	Trial/Production site	Research stage
Inovio and Beijing Advaccine Biotechnology Co.	Vax	CEPI and BMGF	INO-4800 2019-nCoV vaccine. Currently, the only company with a Phase-II vaccine against the coronavirus-related MERS	Philadelphia, USA; Kansas, USA	Phase I testing underway in 40 participants; more sites planned in China and South Korea; Phase II/III trial pending FDA approval
Sinovac Biotech and Dynavax Technologies	Vax	Private	Chemically-inactivated vaccine candidate + CpG 1018 adjuvant	Jiangsu province, China	Phase I/II testing underway in 744 participants
Pfizer and BioNTech	Vax	Private	BNT162 RNA vaccine	USA; Germany	Phase I/II testing underway in 360 participants
Wuhan Institute of Biological Products/Sinopharm	Vax	Ministry of Science and Technology (China)	Inactivated novel coronavirus vaccine	Wuhan, China	Phase I/II testing underway in 1,216 participants
Beijing Institute of Biological Products/Sinopharm	Vax	Ministry of Science and Technology (China)	Inactivated novel coronavirus vaccine	Henan, China	Phase I/II testing underway in 1,216 participants
Shenzhen Geno-Immune Medical Institute	Vax	Shenzhen Geno-Immune Medical Institute	Lentiviral Minigene Vaccine (LV-SMENP)	China	Phase I/II testing underway in 100 participants
Aivita Biomedical Inc.	Vax	Aivita Biomedical Inc.	Autologous dendritic cells	USA	Phase Ib/II trial underway in 180 participants
Novavax	Vax	CEPI; Novavax	Nanoparticle vaccine candidates	Queensland, Australia; Victoria, Australia	Phase I/II testing underway in 131 participants
Symvio Corporation	Vax	Symvio Corporation	Bac-TRL spike 1	Canada	Phase I trial in 84 participants
Altimune	Vax		Intranasal COVID-19 vaccine	Gaithersburg, USA	Preclinical; clinical testing expected for August 2020 or later
Baylor College of Medicine	Vax		Recombinant protein and vaccine for SARS	Houston, USA	Unclear

Developer	Approach	Funder	Intervention and Products	Trial/Production site	Research stage
Codagenix Inc. and Serum Institute of India	Vax	Serum Institute	Live attenuated vaccine	Farmingdale, USA	Unclear
CureVac	Vax	CEPI	mRNA-based preventive vaccine	Tubingen, Germany	Preclinical; clinical testing expected in June 2020
University of Pittsburgh	Vax	NIAID	SARS-CoV-2 subunit vaccine delivered intracutaneously using microneedle arrays	Pittsburgh, USA	Preclinical; clinical testing expected in Q2/3 2020
Generex Biotechnology	Vax	Numerous Chinese funders	Li-key peptide vaccine	Miramar, USA	Developing a vaccine that could be tested in humans in 90 days
GeoVax and BravoVax	Vax	Private	Modified Vaccinia Ankara- Virus-like Particles (MVA-LP) platform	Atlanta, USA; Wuhan, China	Preclinical
Greffex	Vax	NIAID	Adenovirus-based vector vaccine	Houston, USA	Preclinical
IAVI	Vax	Pursuing funds	SARA Coronavirus 2	New York, USA	Preclinical
IAVI	Vax	Pursuing funds	Ebola Sudan Virus	New York, USA	Preclinical
IAVI	Vax	CEPI	Lassa Fever Virus	New York, USA	Preclinical
IAVI	Vax	US Department of Defense	Marburg Virus	New York, USA	Preclinical
iBio and CC-Pharming	Vax	Initial support from DARPA	Plant-based vaccine with FastPharming system for product scale-up	Texas, USA; Beijing, China	Unclear
Imperial College London	Vax	CEPI	Self-amplifying RNA vaccine	London, England	Preclinical; clinical testing expected summer 2020
Janssen and BARDA	Vax	Private	Recombinant adenovirus (rAdV) platform	Belgium	Preclinical; clinical testing expected between October 2020 and February 2021

Developer	Approach	Funder	Intervention and Products	Trial/Production site	Research stage
Medicago	Vax		Plant-based vaccine	Quebec, Canada	Preclinical testing; clinical testing August 2020
Pfizer and BioNTech	Vax	Private	BNT162 RNA vaccine	USA; Germany	Phase I/II testing underway in 360 participants
Takis and Applied DNA Sciences, Inc.	Vax	Private	Four linear DNA-based vaccine candidates	Stony Brook, USA; Roma, Italy	Preclinical testing in Q2 2020
Takis and EviVax	Vax	Private	Genome-based vaccine	Rome, Italy	Unclear
University of Queensland and GSK	Vax	CEPI	GSK to provide its vaccine adjuvant platform for development of 2019-nCoV vaccine. The Antigen-sparing effect makes a given vaccine supply go further. University of Queensland is relying on its molecular clamp technology that provides stability to the viral epitope	London, UK; Queensland, Australia	Preclinical
Vaxart Inc.	Vax	Has requested funding	Oral recombinant vaccine through adenovirus type 5 vector (Ad5)	San Francisco, USA	Preclinical; clinical testing in second half of 2020
Walter Reed Army Institute of Research	Vax		Several vaccine candidates against Infectious Bronchitis Virus	Silver Spring, USA	Preclinical
Regeneron Pharmaceuticals and HHS	bNAbs tx		Monoclonal antibodies for treatment of 2019-nCoV	Tarrytown, USA	Preclinical
AbbVie	Tx	AbbVie	Kaletra (current anti-HIV ARV) being trialed for COVID19 tx	Hong Kong, China	Phase IV trial in China; Phase IV ELACOI trial; Phase II trial in South Korea; WHO Solidarity trial; RECOVERY trial

Developer	Approach	Funder	Intervention and Products	Trial/Production site	Research stage
Sanofi, Mylan, Teva, Novartis, Bayer, Rising Pharmaceuticals (generic)	Px	University of Oxford	Chloroquine and Hydroxychloroquine	Asia, North America, Africa and Europe	Placebo-controlled prophylactic trial ongoing in 40,000 healthcare workers; COVID-19 PEP Trial
Sanofi, Mylan, Teva, Novartis, Bayer, Rising Pharmaceuticals (generic)	Tx	Asan Medical Center; Rajavithi Hospital	Chloroquine and Hydroxychloroquine	Thailand, South Korea, France, Australia	Fifth arm of the WHO SOLIDARITY trial; Phase III trial in France; Phase III ORCHID trial in the US; Phase III HyAzOUT trial; Phase II HAHPS trial; Phase III CROWN CORONA trial; Phase II trial in New Jersey; Phase III trial by Novartis; RECOVERY ; Phase II trial in Korea; Phase III trial in Thailand; and over 20 trials in China
Sanofi and Regeneron	Tx	Regeneron	Kevzara	New York, USA	Phase II/III trial enrolling up to 400 participants
Discovery by Inserm / SOLIDARITY by WHO	Tx		<ul style="list-style-type: none"> • Remdesivir • Lopinavir and ritonavir; • Lopinavir, ritonavir and interferon beta • Hydroxychloroquine or chloroquine 	Ongoing in over 70 countries	Discovery ongoing in 3200 people
General research	Tx		Convalescent plasma	China	Eight trials recruiting/ready to recruit in China

Developer	Approach	Funder	Intervention and Products	Trial/Production site	Research stage
Gilead	Tx	Gilead; NIAID	Remdesivir for treatment of 2019-nCoV. Preclinical studies also displayed potency as prophylactic.	Ongoing in over 70 countries	Phase III ACTT trial from NIAID; treatment arm of the SOLIDARITY trial; and two separate Phase III trials in patients with moderate and severe coronavirus disease
Roche	Tx	The Ninth Hospital of Nanchang	Ganovo (Danoprevir)	China	Phase IV

This is a work in progress. Please do share any updates via avac@avac.org.