

COVID-19 Treatment and Vaccine Tracker

This document contains an aggregation of publicly-available information from validated sources. It is not an endorsement of one approach or treatment over another, but simply a list of all treatments and vaccines currently in development.

Type of Product	Developer Organization	Current Stage of Development	Funding Sources	Anticipated Timing	Comments	Source	Links				
TREATMENTS											
ANTIBODIES											
Treatment (TAK-888; anti-SARS-CoV-2 polyclonal hyperimmune globulin (H-IG), antibodies from recovered patients)	Takeda	Pre-clinical		To patients in 6-18 months	If testing is successful, the company aims to make the therapy available to patients between nine months and 18 months from now (March 2020). The company's experimental drug would be derived from the blood of coronavirus patients who have recovered from the respiratory disease, officials said. Researchers hope the antibodies developed by the recovered patients can bolster the immune systems of new patients and defeat the infections.	PhRMA website/WSJ	https://phrma.org/coronavirus	https://www.wsj.com/articles/drugmaker-takeda-is-working-on-coronavirus-drug-11583301660?mod=article_inline			
Treatment (antibodies from mice; REGN3048-3051)	Regeneron	Pre-clinical	BARDA	Start phase 1 late summer	Clinical late summer	Stat	https://www.statnews.com/2020/03/02/coronavirus-drugs-and-vaccines-in-development/	https://www.marketwatch.com/story/these-nine-companies-are-working-on-coronavirus-treatments-or-vaccines-heres-where-things-stand-2020-03-06	https://uk.reuters.com/article/uk-china-health-treatments-factbox/factbox-global-efforts-to-develop-vaccines-drugs-to-fight-the-coronavirus-idUKKBN20D2MD?rpc=401&	https://www.bnnbloomberg.ca/gilead-s-drug-leads-global-race-to-find-coronavirus-treatment-1.1395231	

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Treatment (antibody from recovered patients)	Celltrion	Pre-clinical		Start Phase 1 ~September 2020	Celltrion had secured the blood sample of a recovered COVID-19 patient from the Seoul National University College of Medicine in February and has been gathering more samples from Chonnam National University and Chosun University in Gwangju. By the end of March, the company will narrow down the antibody candidates and by the end of April, will select the most potent pipeline.		http://www.koreaherald.com/view.php?ud=20200312000885					
Treatment (anti-corona (COVID-19) IgG from recovered patients)	Kamada	Pre-clinical					https://www.biospace.com/article/releases/kamada-provides-update-on-progress-related-to-its-proprietary-hyper-immunoglobulin-igg-platform-technology-including-its-commercial-anti-rabies-igg-and-its-pipeline-products-anti-corona-covid-19-and-anti-zika-iggs/	https://news.abbvie.com/news/press-releases/abbvie-partnering-with-global-authorities-to-determine-efficacy-hiv-drug-in-treating-covid-19.htm?view_id=3438				
Treatment (antibodies from recovered patients)	Vir Biotech/WuXi Biologics/Biogen	Pre-clinical				Stat	https://www.statnews.com/2020/03/02/coronavirus-drugs-and-vaccines-in-development/	https://investors.vir.bio/news-releases/news-release-details/vir-biotechnology-identifies-two-antibodies-bind-spike-protein				
Treatment (antibodies from recovered US patient)	Lilly/Ab-Cellera (NIH Vaccines Research Ctr)	Pre-clinical		Start Phase 1 in late July			https://endpts.com/eli-lilly-teams-with-nih-antibody-upstart-abcclera-in-coronavirus-hunt/					
Treatment (Avastin (bevacizumab))	Numerous trials with Chinese research sponsors; Roche	Clinical					https://www.biocentury.com/article/304658	https://clinicaltrials.gov/ct2/show/NCT04275414				
Treatment (PD-1 blocking antibody; Thymosin)	Southeast University, China	Clinical		Phase 2 primary trial end April 30, 2020			https://www.biocentury.com/article/304658	https://clinicaltrials.gov/ct2/show/NCT04268537	https://seekingalpha.com/news/3552397-regeneron-advances-covidminus-19-antibody-program-shares-up-10-premarket	https://clinicaltrials.gov	https://www.gilead.com/news-and-press/press-room/press-releases/2020/2/gilead-sciences-initiates-two-phase-3-studies-of-investigational-antiviral-remdesivir-for-the-treatment-of-covid-19	
Treatment (Ieronlimab (PRO 140), a CCR5 antagonist)	CytoDyn	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/					
Treatment (camrelizumab)	Southeast University, China	Clinical		Primary trial ends April 2020			https://clinicaltrials.gov/ct2/show/NCT04268537					
Treatment (Kevzara (sarilumab))	Sanofi/Regeneron	Clinical		Start Phase 2/3 in March/April	Regeneron initiated a Phase 2/3 trial in the US, while Sanofi is leading efforts elsewhere		https://www.fiercepharma.com/pharma/could-arthritis-med-kevzara-hold-promise-against-novel-coronavirus-sanofi-regeneron-aim-to	https://www.wsj.com/articles/regeneron-and-sanofi-planning-to-study-arthritis-drug-kevzara-as-covid-19-treatment-11583872762	https://seekingalpha.com/news/3551978-regeneron-and-sanofi-launch-kevzara-clinical-program-for-covidminus-19			

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Treatment (Actemra (tocilizumab))	First People's Hospital of University of Science and Technology of China	Clinical					https://www.wsj.com/articles/regeneron-and-sanofi-planning-to-study-arthritis-drug-kevzara-as-covid-19-treatment-11583872762				
Treatment (antibodies)	ImmunoPrecise Antibodies	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/				
Treatment (antibodies)	AstraZeneca	Pre-clinical					https://catalyst.phrma.org/helping-those-affected-by-the-coronavirus				
ANTIVIRALS											
Treatment (Favilavir/ Favipiravir/T-705/Avigan, licensed in Japan to treat influenza)	Fujifilm Toyama Chemical/Zhejiang Hisun Pharmaceuticals/ numerous trials with Chinese research sponsors	Clinical			Shown early signs of efficacy in a 70-patient test	WHO list (those in trials)	https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/	https://www.pharmaceutical-technology.com/news/china-favilavir-testing-approval/	http://www.chictr.org.cn/showproj.aspx?proj=49015 http://www.chictr.org.cn/showproj.aspx?proj=49013 http://www.chictr.org.cn/showproj.aspx?proj=49042	https://www.biocentury.com/article/304658	https://www.theguardian.com/world/2020/mar/18/japanese-flu-drug-clearly-effective-in-treating-coronavirus-says-china
Treatment (Kaletra (lopinavir/ritonavir) and Aluvia)	AbbVie/Chinese hospital testing	Clinical			Trials in China	PhRMA website/ WHO list (clinical only)	https://phrma.org/coronavirus	https://www.wsj.com/articles/drugmaker-takeda-is-working-on-coronavirus-drug-11583301660?mod=article_inline	https://www.wsj.com/articles/u-s-drugmakers-seeking-to-treat-coronavirus-11580166592?mod=article_inline	https://www.wsj.com/articles/first-u-s-testing-begins-for-potential-coronavirus-treatment-11582670674?mod=article_inline	
Treatment (remdesivir; investigational drug)	Gilead	Clinical and expanded access		Phase 3 trial results expected April 27	Two trials in China recruiting; NIH running a clinical trial in Nebraska (University of Nebraska, started in March) and Washington; Gilead said it would conduct two studies with a total of 1,000 patients across mainly Asian countries, as well as other nations with high numbers of diagnosed patients; hopes to have an initial set of data results in May; China plans to release results from a 761-patient study of the drug candidate on April 27, Bloomberg reports.	PhRMA website	https://phrma.org/coronavirus	https://www.wsj.com/articles/gilead-to-kick-off-its-own-studies-of-potential-coronavirus-drug-11582755624?mod=article_inline	https://www.linkedin.com/pulse/pursuit-coronavirus-treatments-vaccines-stephen-ub-l/?trackingId=RYtuhlzmSK2inDpXdLWANw%3D%3D		

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Treatment (Prezcobix (darunavir/cobicistat); Janssen)	Chinese hospital testing	Clinical		Primary study ends August 2020		WHO list (those in trials)/WSJ	https://www.wsj.com/articles/u-s-drugmakers-ship-therapies-to-china-seeking-to-treat-coronavirus-11580166592?mod=article_inline Chinese Clinical Trial Register (ChiCTR) - The world health organization international clinical trials registered organization registered platform. http://www.chictr.org.cn/showprojen.aspx?proj=48992 (accessed Feb 14, 2020). Efficacy and Safety of Darunavir and Cobicistat for Treatment of Pneumonia Caused by 2019-nCoV - Full Text View - ClinicalTrials.gov. https://clinicaltrials.gov/ct2/show/NCT04252274 (accessed Feb 14, 2020).			
Treatment (galidesivir)	BioCryst Pharmaceuticals	Pre-clinical	BARDA				https://uk.reuters.com/article/uk-china-health-treatments-factbox/factbox-global-efforts-to-develop-vaccines-drugs-to-fight-the-coronavirus-idUKKBN20D2MD?pc=401&			
Treatment (ebastine; lopinavir; interferon alpha)	Wuhan Red Cross Hospital	Clinical		Primary trial ends March 31, 2020			https://www.biocentury.com/article/304658 http://www.chictr.org.cn/showprojen.aspx?proj=49790			
Treatment (Ganovo (danoprevir); ritonavir; interferon)	Numerous trials with Chinese research sponsors	Clinical					https://www.biocentury.com/article/304658 https://clinicaltrials.gov/ct2/show/NCT04291729			
Treatment (Truvada; emtricitabine and tenofovir)	Sichuan Academy of Medical Sciences & Sichuan Provincial People's Hospital	Clinical				WHO list (those in trials)	Chinese Clinical Trial Register (ChiCTR) - The world health organization international clinical trials registered organization registered platform. http://www.chictr.org.cn/showprojen.aspx?proj=48919 (accessed Feb 14, 2020).			
Treatment (Arbidol; umifenovir) licensed in Russia and China for treatment of respiratory viral infections	Numerous trials with Chinese research sponsors	Clinical				WHO list (those in trials)	http://www.chictr.org.cn/showprojen.aspx?proj=49069 http://www.chictr.org.cn/showprojen.aspx?proj=49065 https://clinicaltrials.gov/ct2/show/NCT04252885 https://www.biocentury.com/article/304658			
Treatment (Xofluza (baloxavir marboxil), Roche)	The First Hospital Affiliated to Zhejiang University's Medical School	Clinical				WHO list (those in trials)	http://www.chictr.org.cn/showprojen.aspx?proj=49013			
Treatment (azvudine)	Henan Provincial People's Hospital	Clinical					http://apps.who.int/trialsearch/Trial2.aspx?TrialID=ChiCTR2000030424			
CELL-BASED THERAPIES										
Treatment (PLX cell product, placenta-based cell therapy)	Pluristem Therapeutics/ BIH Ctr for Regenerative Therapy/ Berlin Ctr for Advanced Therapies	Pre-clinical					https://www.pharmaceutical-technology.com/news/pluristem-covid-19-drug-development/ https://www.pharmaceutical-technology.com/news/pluristem-covid-19-drug-development/			
Treatment (mesenchymal stem cells)	Numerous trials with Chinese research sponsors	Clinical					https://www.biocentury.com/article/304658 http://www.chictr.org.cn/showprojen.aspx?proj=49674			
Treatment (Ryoncil (remestemcel-L), allogenic mesenchymal stem cells)	Mesoblast	Pre-clinical					https://www.fiercebiotech.com			

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RNA BASED TREATMENTS											
Treatment (RNAi - testing 150 RNAs)	Sirnaomics	Pre-clinical					https://www.npr.org/sections/health-shots/2020/02/19/807338329/hunt-for-new-coronavirus-treatments-includes-gene-silencing-and-monoclonal-antib				
Treatment (siRNA candidates)	Vir Biotech/Alnylam Pharmaceuticals	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/				
Treatment (Ampligen; (rintatolimod))	AIM ImmunoTech/ National Institute of Infectious Diseases in Japan	Pre-clinical					https://finance.yahoo.com/news/aim-immunotech-drug-ampligen-tested-103000673.html				
SCANNING COMPOUNDS TO REPURPOSE											
Treatment (scanning library of anti-viral compounds)	Janssen Pharmaceutical Companies	Pre-clinical	BARDA			JNJ website/PhRMA website	https://www.jnj.com/johnson-johnson-launches-multi-pronged-response-to-coronavirus-global-public-health-threat				
Treatment (scanning compounds to repurpose)	Novartis	Pre-clinical				PhRMA website	https://phrma.org/coronavirus				
Treatment (scanning anti-viral compounds previously in development)	Pfizer	Pre-clinical		Screening completed March, start Phase 1 by end of 2020	Expects results of screening by end of March; hopes to be in clinic by the end of 2020	PhRMA website/Pfizer press release	https://pfe-pfizercom-prod.s3.amazonaws.com/news/Pfizer_Comment_on_COVID-19_WH_Mtg_0.pdf				
Treatment (scanning compounds to repurpose)	Merck	Pre-clinical				WSJ	https://www.wsj.com/articles/u-s-drugmakers-ship-therapies-to-china-seeking-to-treat-coronavirus-11580166592?mod=article_inline				
Treatment (repurposing antiviral drug candidates)	Materia Medica/Cyclica	Pre-clinical			Using AI to help identify repurposing candidates		https://www.businesswire.com/news/home/20200305005764/en/China%E2%80%99s-Institute-Materia-Medica-Partners-Cyclica-Innovative				
Treatment (screening new drugs + library of antiviral compounds)	Enanta Pharmaceuticals	Pre-clinical					https://www.fiercebitech.com/	https://www.businesswire.com/news/home/20200313005144/en/Enanta-Pharmaceuticals-Announces-Efforts-Discover-Treatment-Coronavirus			
Treatment (screening drug compounds)	Southwest Research Institute	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/				
Treatment (scanning compounds to repurpose)	Takeda	Pre-clinical				PhRMA website	https://phrma.org/coronavirus				
OTHERS											
Treatment (washed microbiota transplantation)	The Second Hospital of Nanjing Medical University	Clinical		Primary trial ends April 2, 2020			https://www.biocentury.com/article/304658	https://clinicaltrials.gov/ct2/show/NCT04251767			
Treatment (corticosteroids)	Peking Union Medical College Hospital	Clinical		Primary study ends April 25, 2020		WHO list (those in trials)	Glucocorticoid Therapy for Novel Coronavirus Critically Ill Patients With Severe Acute Respiratory Failure - Full Text View - ClinicalTrials.gov. https://clinicaltrials.gov/ct2/show/NCT04244591?draw=3 (accessed Feb 14, 2020).				

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Treatment (hydroxychloroquine), antimalarial	Numerous trials with research sponsors in China; University of Minnesota; University of Oxford	Clinical				WHO list (those in trials)	Efficacy and Safety of Hydroxychloroquine for Treatment of Pneumonia Caused by 2019-nCoV (HC-nCoV) - Full Text View - ClinicalTrials.gov. (accessed Feb 14, 2020)	https://www.biocentury.com/article/304658	https://endpts.com/covid-19-roundup-pandemic-halts-first-clinical-trial-pfizer-forms-fast-alliance-with-biotech-biogen-vertex-chip-in-on-relief-funds/		
Treatment (Jakafi/jakavi (ruxolitinib))	Department of Hematology, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology	Clinical				WHO list (those in trials)	Chinese Clinical Trial Register (ChiCTR) - The world health organization international clinical trials registered organization registered platform. http://www.chictr.org.cn/showproj.aspx?proj=49088 (accessed Feb 14, 2020).				
Treatment (PegIntron, Sylatron, IntronA)	Wuhan Jinyintan Hospital (Wuhan Infectious Diseases Hospital)	Clinical				WHO list (those in trials)	http://www.chictr.org.cn/showproj.aspx?proj=48684				
Treatment (Novaféron, Nova) licensed in China for Hep B	The First Affiliated Hospital of Medical College of Zhejiang University	Clinical				WHO list (those in trials)	http://www.chictr.org.cn/showproj.aspx?proj=49065 http://www.chictr.org.cn/showproj.aspx?proj=48809				
Treatment (recombinant ACE2)	The First Affiliated Hospital of Guangzhou Medical University	Clinical		Primary trial ends April 1, 2020			https://www.biocentury.com/article/304658	https://clinicaltrials.gov/ct2/show/NCT04287686			
Treatment (Cerocal (ifenprodil), NP-120)	Algernon Pharmaceuticals	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/				
Treatment (APN01; recombinant soluble human Angiotensin Converting Enzyme 2)	University of British Columbia/Apeiron Biologics	Clinical		In Phase 1 pilot in China			https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/	https://clinicaltrials.gov/ct2/show/NCT00886353			
Treatment (Brilacidin, a defensin mimetic)	Innovation Pharmaceuticals	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/				
Treatment (BXT-25; glycoprotein)	Bioxytran	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/				
Treatment (peptides)	CEL-SCI	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/				
Treatment (ASC09)	Asclētis	Clinical		Primary trial ends May 2020			https://clinicaltrials.gov/ct2/show/NCT04261907				
Treatment (Gilenya (fingolimod); Novartis)	First Affiliated Hospital of Fujian Medical University	Clinical		Primary trial ends July 2020			https://clinicaltrials.gov/ct2/show/NCT04280588				
Treatment (unknown)	Mateon Therapeutics	Pre-clinical				using AI platforms	https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/				
Treatment (unknown)	NanoViricides	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/				

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VACCINES											
Vaccine (DNA plasmid; INO-4800)	Inovio Pharmaceuticals/ Beijing Advaccine Biotechnology	Pre-clinical	CEPI	Start Phase 1 in April	In clinic with 30 patients in April, also trials in China and South Korea with first results in the fall	WHO list March 4, 2020	https://www.marketwatch.com/story/these-nine-companies-are-working-on-coronavirus-treatments-or-vaccines-heres-where-things-stand-2020-03-06				
Vaccine (DNA)	Takis/Applied DNA Sciences/Evvivax	Pre-clinical				WHO list March 4, 2020					
Vaccine (DNA plasmid)	Zydus Cadila	Pre-clinical				WHO list March 4, 2020					
Vaccine (deoptimized live attenuated virus)	Codagenix/Serum Institute of India	Pre-clinical		Animal data in summer 2020		WHO list March 4, 2020	https://indianexpress.com/article/cities/pune/serum-institute-ties-up-with-us-biotech-firm-to-develop-vaccine-against-covid-19-6275051/				
Vaccine (non replicating viral vector; MVA encoded VLP)	GeoVax/BravoVax	Pre-clinical				WHO list March 4, 2020					
Vaccine (non replicating viral vector; Ad26 (alone or with MVA boost))	Janssen Pharmaceutical Companies/Beth Israel Deaconess Medical Center (BIDMC)	Pre-clinical	BARDA	Start Phase 1 by end of 2020	Hopes to enter Phase 1 by 2020	WHO list March 4, 2020/JNJ Website/ PhRMA website	https://www.jnj.com/johnson-johnson-announces-collaboration-with-u-s-department-of-health-human-services-to-accelerate-development-of-a-potential-novel-coronavirus-vaccine	https://www.jnj.com/johnson-johnson-announces-collaboration-with-the-beth-israel-deaconess-medical-center-to-accelerate-covid-19-vaccine-development			
Vaccine (non replicating viral vector; ChAdOx1)	University of Oxford	Pre-clinical	CEPI			WHO list March 4, 2020					
Vaccine (non replicating viral vector; adenovirus based NasoVAX)	Altimune	Pre-clinical				WHO list March 4, 2020					
Vaccine (non replicating viral vector; Ad5 S (GREVAX™ platform))	Greffex	Pre-clinical				WHO list March 4, 2020					
Vaccine (non replicating viral vector; Oral Vaccine platform)	Vaxart	Pre-clinical				WHO list March 4, 2020	https://www.globenewswire.com/news-release/2020/01/31/1978131/0/en/Vaxart-Announces-Initiation-of-Coronavirus-Vaccine-Program.html				
Vaccine (non replicating viral vector; Viral-vectored based)	CanSino Biologics	Pre-clinical				WHO list March 4, 2020					
Vaccine (protein subunit; Drosophila S2 insect cell expression system VLPs)	ExpreS2ion	Pre-clinical				WHO list March 4, 2020					
Vaccine (protein subunit; S protein)	WRAIR/USAMRIID	Pre-clinical				WHO list March 4, 2020					
Vaccine (protein subunit; S trimer)	Clover Biopharmaceuticals Inc./GSK	Pre-clinical				WHO list March 4, 2020					

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Vaccine (protein subunit; li-Key peptide)	Generex/EpiVax	Pre-clinical				WHO list March 4, 2020					
Vaccine (protein subunit; S protein)	EpiVax/Univ. of Georgia	Pre-clinical				WHO list March 4, 2020					
Vaccine (protein subunit; S protein, baculovirus production)	Sanofi Pasteur	Pre-clinical	BARDA	Start Phase 1 March 2021	A spokesperson said Sanofi aims to put a vaccine into a Phase 1 clinical trial between March 2021 and August 2021; uses same platform as FDA approved SARS vaccine; in people in 12-18 months	WHO list March 4, 2020	http://www.news.sanofi.us/2020-02-18-Sanofi-joins-forces-with-U-S-Department-of-Health-and-Human-Services-to-advance-a-novel-coronavirus-vaccine	https://www.statnews.com/2020/03/02/coronavirus-drugs-and-vaccines-in-development/	https://www.marketwatch.com/story/these-nine-companies-are-working-on-coronavirus-treatments-or-vaccines-heres-where-things-stand-2020-03-06		
Vaccine (protein subunit; Full length S trimers/ nanoparticle + Matrix M)	Novavax	Pre-clinical	CEPI			WHO list March 4, 2020					
Vaccine (protein subunit; S protein clamp)	University of Queensland/GSK	Pre-clinical	CEPI			WHO list March 4, 2020					
Vaccine (protein subunit; S1 or RBD protein)	Baylor, New York Blood Center, Fudan University	Pre-clinical				WHO list March 4, 2020					
Vaccine (protein subunit; Subunit protein, plant produced)	iBio/CC-Pharming	Pre-clinical				WHO list March 4, 2020					
Vaccine (replicating viral vector; measles vector)	Zydus Cadila	Pre-clinical				WHO list March 4, 2020					
Vaccine (replicating viral vector; measles vector)	Institute Pasteur	Pre-clinical				WHO list March 4, 2020					
Vaccine (replicating viral vector; horsepox vector; TNX-1800)	Tonix Pharma/Southern Research	Pre-clinical				WHO list March 4, 2020	https://ca.finance.yahoo.com/news/tonix-pharmaceuticals-announces-research-collaboration-120010754.html				
Vaccine (RNA; mRNA)	China CDC/Tongji University/Stermina	Pre-clinical				WHO list March 4, 2020					

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Vaccine (RNA; mRNA; mRNA 1273)	Moderna/NIAID	Pre-clinical	CEPI	Phase 1 started March 2020 at Kaiser Permanente Washington Health Research Institute in Seattle	On February 21, the NIAID said it would begin enrolling 45 healthy adult patients in an open-label Phase I clinical trial at one location to test mRNA-1273 as a vaccine for COVID-19 on March 19. The trial is expected to conclude June 1, 2021. Participants will be followed for one year. The trial will be conducted at Kaiser Permanente Washington Health Research Institute in Seattle.	WHO list March 4, 2020	https://www.wsj.com/articles/first-u-s-testing-begins-for-potential-coronavirus-treatment-11582670674?mod=article_inline	https://www.marketwatch.com/story/these-nine-companies-are-working-on-coronavirus-treatments-or-vaccines-heres-where-things-stand-2020-03-06				
Vaccine (RNA; mRNA)	Arcturus/Duke-NUS	Pre-clinical				WHO list March 4, 2020	https://ir.arcturusrx.com/news-releases/news-release-details/arcturus-therapeutics-and-duke-nus-medical-school-partner					
Vaccine (RNA; saRNA)	Imperial College London	Pre-clinical				WHO list March 4, 2020						
Vaccine (RNA; mRNA)	Curevac	Pre-clinical	CEPI	Start Phase 1 in a few months	Clinical in a few months from March	WHO list March 4, 2020						
Vaccine (RNA)	RNACure Biopharma	Pre-clinical					https://www.who.int/blueprint/priority-diseases/key-action/novel-coronavirus-landscape-ncov.pdf?ua=1					
Vaccine (RNA; BNT162)	BioNTech/Fosun Pharma/Pfizer	Pre-clinical		Start Phase 1 late April	Global program with studies sites in EU (starting in Germany), the US, and China		https://www.fiercebiontech.com/biontech/weeks-to-go-to-covid-19-vaccine-trial-biontech-lands-135m-deal-and-advances-pfizer-talks	https://endpts.com/biontech-teams-up-with-fosun-pharma-to-test-covid-19-mrna-vaccine-in-china-and-scores-50m-investment/				
Vaccine (unknown)	University of Pittsburgh	Pre-clinical				WHO list March 4, 2020						
Vaccine (unknown)	University of Saskatchewan	Pre-clinical				WHO list March 4, 2020						
Vaccine (unknown)	ImmunoPrecise	Pre-clinical				WHO list March 4, 2020						
Vaccine (modified infectious bronchitis virus vaccine)	MIGAL Galilee Research Institute	Pre-clinical				WHO list March 4, 2020	https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/					
Vaccine (unknown)	Doherty Institute	Pre-clinical				WHO list March 4, 2020						
Vaccine (unknown)	Heat Biologics	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/					
Vaccine (unknown)	Tulane University	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/					
Vaccine (unknown)	ImmunoPrecise Antibodies	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/					
Vaccine (unknown)	AJ Vaccines	Pre-clinical					https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/					