

# 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	<a href="https://phrma.org/coronavirus">https://phrma.org/coronavirus</a>	<a href="https://www.wsj.com/articles/drugmaker-takeda-is-working-on-coronavirus-drug-11583301660?mod=article_inline">https://www.wsj.com/articles/drugmaker-takeda-is-working-on-coronavirus-drug-11583301660?mod=article_inline</a>			
Treatment (antibodies from mice; REGN3048-3051)	Regeneron	Pre-clinical	BARDA	Start phase 1 late summer	Clinical late summer	Stat	<a href="https://www.statnews.com/2020/03/02/coronavirus-drugs-and-vaccines-in-development/">https://www.statnews.com/2020/03/02/coronavirus-drugs-and-vaccines-in-development/</a>	<a href="https://www.marketwatch.com/story/these-nine-companies-are-working-on-coronavirus-treatments-or-vaccines-heres-where-things-stand-2020-03-06">https://www.marketwatch.com/story/these-nine-companies-are-working-on-coronavirus-treatments-or-vaccines-heres-where-things-stand-2020-03-06</a>	<a href="https://uk.reuters.com/article/uk-china-health-treatments-factbox/factbox-global-efforts-to-develop-vaccines-drugs-to-fight-the-coronavirus-idUKKBN20D2MD?rpc=401&amp;">https://uk.reuters.com/article/uk-china-health-treatments-factbox/factbox-global-efforts-to-develop-vaccines-drugs-to-fight-the-coronavirus-idUKKBN20D2MD?rpc=401&amp;</a>	<a href="https://www.bnnbloomberg.ca/gilead-s-drug-leads-global-race-to-find-coronavirus-treatment-1.1395231">https://www.bnnbloomberg.ca/gilead-s-drug-leads-global-race-to-find-coronavirus-treatment-1.1395231</a>	

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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.		<a href="http://www.koreaherald.com/view.php?ud=20200312000885">http://www.koreaherald.com/view.php?ud=20200312000885</a>				
Treatment (anti-corona (COVID-19) IgG from recovered patients)	Kamada	Pre-clinical					<a href="https://www.biospace.com/article/releases/kamada-provides-update-on-progress-related-to-its-proprietary-hyper-immunoglobulin-iggs-platform-technology-including-its-commercial-anti-rabies-igg-and-its-pipeline-products-anti-corona-covid-19-and-anti-zika-iggs/">https://www.biospace.com/article/releases/kamada-provides-update-on-progress-related-to-its-proprietary-hyper-immunoglobulin-iggs-platform-technology-including-its-commercial-anti-rabies-igg-and-its-pipeline-products-anti-corona-covid-19-and-anti-zika-iggs/</a>	<a href="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">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</a>			
Treatment (antibodies from recovered patients)	Vir Biotech/WuXi Biologics/Biogen	Pre-clinical				Stat	<a href="https://www.statnews.com/2020/03/02/coronavirus-drugs-and-vaccines-in-development/">https://www.statnews.com/2020/03/02/coronavirus-drugs-and-vaccines-in-development/</a>	<a href="https://investors.vir.bio/news-releases/news-release-details/vir-biotechnology-identifies-two-antibodies-bind-spike-protein">https://investors.vir.bio/news-releases/news-release-details/vir-biotechnology-identifies-two-antibodies-bind-spike-protein</a>			
Treatment (antibodies from recovered US patient)	Lilly/Ab-Cellera (NIH Vaccines Research Ctr)	Pre-clinical		Start Phase 1 in late July			<a href="https://endpts.com/eli-lilly-teams-with-nih-antibody-upstart-abcellera-in-coronavirus-hunt/">https://endpts.com/eli-lilly-teams-with-nih-antibody-upstart-abcellera-in-coronavirus-hunt/</a>				
Treatment (Avastin (bevacizumab))	Numerous trials with Chinese research sponsors; Roche	Clinical					<a href="https://www.biocentury.com/article/304658">https://www.biocentury.com/article/304658</a>	<a href="https://clinicaltrials.gov/ct2/show/NCT04275414">https://clinicaltrials.gov/ct2/show/NCT04275414</a>			
Treatment (PD-1 blocking antibody; Thymosin)	Southeast University, China	Clinical		Phase 2 primary trial end April 30, 2020			<a href="https://www.biocentury.com/article/304658">https://www.biocentury.com/article/304658</a>	<a href="https://clinicaltrials.gov/ct2/show/NCT04268537">https://clinicaltrials.gov/ct2/show/NCT04268537</a>	<a href="https://seekingalpha.com/news/3552397-regeneron-advances-covidminus-19-antibody-program-shares-up-10-premarket">https://seekingalpha.com/news/3552397-regeneron-advances-covidminus-19-antibody-program-shares-up-10-premarket</a>	<a href="https://clinicaltrials.gov">https://clinicaltrials.gov</a>	<a href="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">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</a>
Treatment (Ieronlimab (PRO 140), a CCR5 antagonist)	CytoDyn	Pre-clinical					<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				
Treatment (camrelizumab)	Southeast University, China	Clinical		Primary trial ends April 2020			<a href="https://clinicaltrials.gov/ct2/show/NCT04268537">https://clinicaltrials.gov/ct2/show/NCT04268537</a>				
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		<a href="https://www.fiercepharma.com/pharma/could-arthritis-med-kevzara-hold-promise-against-novel-coronavirus-sanofi-regeneron-aim-to">https://www.fiercepharma.com/pharma/could-arthritis-med-kevzara-hold-promise-against-novel-coronavirus-sanofi-regeneron-aim-to</a>	<a href="https://www.wsj.com/articles/regeneron-and-sanofi-planning-to-study-arthritis-drug-kevzara-as-covid-19-treatment-11583872762">https://www.wsj.com/articles/regeneron-and-sanofi-planning-to-study-arthritis-drug-kevzara-as-covid-19-treatment-11583872762</a>	<a href="https://seekingalpha.com/news/3551978-regeneron-and-sanofi-launch-kevzara-clinical-program-for-covidminus-19">https://seekingalpha.com/news/3551978-regeneron-and-sanofi-launch-kevzara-clinical-program-for-covidminus-19</a>		

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Treatment (Actemra (tocilizumab))	First People's Hospital of University of Science and Technology of China	Clinical					<a href="https://www.wsj.com/articles/regeneron-and-sanofi-planning-to-study-arthritis-drug-kevsara-as-covid-19-treatment-11583872762">https://www.wsj.com/articles/regeneron-and-sanofi-planning-to-study-arthritis-drug-kevsara-as-covid-19-treatment-11583872762</a>				
Treatment (antibodies)	ImmunoPrecise Antibodies	Pre-clinical					<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				
Treatment (antibodies)	AstraZeneca	Pre-clinical					<a href="https://catalyst.phrma.org/helping-those-affected-by-the-coronavirus">https://catalyst.phrma.org/helping-those-affected-by-the-coronavirus</a>				
<b>ANTIVIRALS</b>											
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)	<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>	<a href="https://www.pharmaceutical-technology.com/news/china-favilavir-testing-approval/">https://www.pharmaceutical-technology.com/news/china-favilavir-testing-approval/</a>	<a href="http://www.chictr.org.cn/showproj.aspx?proj=49015">http://www.chictr.org.cn/showproj.aspx?proj=49015</a> <a href="http://www.chictr.org.cn/showproj.aspx?proj=49013">http://www.chictr.org.cn/showproj.aspx?proj=49013</a> <a href="http://www.chictr.org.cn/showproj.aspx?proj=49042">http://www.chictr.org.cn/showproj.aspx?proj=49042</a>	<a href="https://www.biocentury.com/article/304658">https://www.biocentury.com/article/304658</a>	<a href="https://www.theguardian.com/world/2020/mar/18/japanese-flu-drug-clearly-effective-in-treating-coronavirus-says-china">https://www.theguardian.com/world/2020/mar/18/japanese-flu-drug-clearly-effective-in-treating-coronavirus-says-china</a>
Treatment (Kaletra (lopinavir/ritonavir) and Aluvia)	AbbVie/Chinese hospital testing	Clinical			Trials in China	PhRMA website/ WHO list (clinical only)	<a href="https://phrma.org/coronavirus">https://phrma.org/coronavirus</a>	<a href="https://www.wsj.com/articles/drugmaker-takeda-is-working-on-coronavirus-drug-11583301660?mod=article_inline">https://www.wsj.com/articles/drugmaker-takeda-is-working-on-coronavirus-drug-11583301660?mod=article_inline</a>	<a href="https://www.wsj.com/articles/u-s-drugmakers-ship-therapies-to-china-seeking-to-treat-coronavirus-11580166592?mod=article_inline">https://www.wsj.com/articles/u-s-drugmakers-ship-therapies-to-china-seeking-to-treat-coronavirus-11580166592?mod=article_inline</a>	<a href="https://www.wsj.com/articles/first-u-s-testing-begins-for-potential-coronavirus-treatment-11582670674?mod=article_inline">https://www.wsj.com/articles/first-u-s-testing-begins-for-potential-coronavirus-treatment-11582670674?mod=article_inline</a>	
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	<a href="https://phrma.org/coronavirus">https://phrma.org/coronavirus</a>	<a href="https://www.wsj.com/articles/gilead-to-kick-off-its-own-studies-of-potential-coronavirus-drug-11582755624?mod=article_inline">https://www.wsj.com/articles/gilead-to-kick-off-its-own-studies-of-potential-coronavirus-drug-11582755624?mod=article_inline</a>	<a href="https://www.linkedin.com/pulse/pursuit-coronavirus-treatments-vaccines-stephen-ub/?trackingId=RYtuhlzmSK2inDpxdLWANw%3D%3D">https://www.linkedin.com/pulse/pursuit-coronavirus-treatments-vaccines-stephen-ub/?trackingId=RYtuhlzmSK2inDpxdLWANw%3D%3D</a>		

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

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

Type of Product	Developer Organization	Current Stage of Development	Funding Sources	Anticipated Timing	Comments	Source	Links				
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)	<a href="https://www.biocentury.com/article/304658">https://www.biocentury.com/article/304658</a>	<a href="https://endpts.com/covid-19-roundup-pandemic-halts-first-clinical-trial-pfizer-forms-fast-alliance-with-biotech-biogen-vertex-chip-in-on-relief-funds/">https://endpts.com/covid-19-roundup-pandemic-halts-first-clinical-trial-pfizer-forms-fast-alliance-with-biotech-biogen-vertex-chip-in-on-relief-funds/</a>		
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. <a href="http://www.chictr.org.cn/showprojen.aspx?proj=49088">http://www.chictr.org.cn/showprojen.aspx?proj=49088</a> (accessed Feb 14, 2020).				
Treatment (PegIntron, Sylatron, IntronA)	Wuhan Jinyintan Hospital (Wuhan Infectious Diseases Hospital)	Clinical				WHO list (those in trials)	<a href="http://www.chictr.org.cn/showprojen.aspx?proj=48684">http://www.chictr.org.cn/showprojen.aspx?proj=48684</a>				
Treatment (Novaferon, Nova) licensed in China for Hep B	The First Affiliated Hospital of Medical College of Zhejiang University	Clinical				WHO list (those in trials)	<a href="http://www.chictr.org.cn/showproj.aspx?proj=49065">http://www.chictr.org.cn/showproj.aspx?proj=49065</a> <a href="http://www.chictr.org.cn/showprojen.aspx?proj=48809">http://www.chictr.org.cn/showprojen.aspx?proj=48809</a>				
Treatment (recombinant ACE2)	The First Affiliated Hospital of Guangzhou Medical University	Clinical		Primary trial ends April 1, 2020			<a href="https://www.biocentury.com/article/304658">https://www.biocentury.com/article/304658</a>	<a href="https://clinicaltrials.gov/ct2/show/NCT04287686">https://clinicaltrials.gov/ct2/show/NCT04287686</a>			
Treatment (Cerocal (ifenprodil), NP-120)	Algernon Pharmaceuticals	Pre-clinical					<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				
Treatment (APN01; recombinant soluble human Angiotensin Converting Enzyme 2)	University of British Columbia/Apeiron Biologics	Clinical		In Phase 1 pilot in China			<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>	<a href="https://clinicaltrials.gov/ct2/show/NCT00886353">https://clinicaltrials.gov/ct2/show/NCT00886353</a>			
Treatment (Brilacidin, a defensin mimetic)	Innovation Pharmaceuticals	Pre-clinical					<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				
Treatment (BXT-25; glycoprotein)	Bioxytran	Pre-clinical					<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				
Treatment (peptides)	CEL-SCI	Pre-clinical					<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				
Treatment (ASC09)	Ascletis	Clinical		Primary trial ends May 2020			<a href="https://clinicaltrials.gov/ct2/show/NCT04261907">https://clinicaltrials.gov/ct2/show/NCT04261907</a>				
Treatment (Gilenya (fingolimod); Novartis)	First Affiliated Hospital of Fujian Medical University	Clinical		Primary trial ends July 2020			<a href="https://clinicaltrials.gov/ct2/show/NCT04280588">https://clinicaltrials.gov/ct2/show/NCT04280588</a>				
Treatment (unknown)	Mateon Therapeutics	Pre-clinical				using AI platforms	<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				
Treatment (unknown)	NanoViricides	Pre-clinical					<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				

Type of Product	Developer Organization	Current Stage of Development	Funding Sources	Anticipated Timing	Comments	Source	Links				
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	<a href="https://www.marketwatch.com/story/these-nine-companies-are-working-on-coronavirus-treatments-or-vaccines-heres-where-things-stand-2020-03-06">https://www.marketwatch.com/story/these-nine-companies-are-working-on-coronavirus-treatments-or-vaccines-heres-where-things-stand-2020-03-06</a>				
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	<a href="https://indianexpress.com/article/cities/pune/serum-institute-ties-up-with-us-biotech-firm-to-develop-vaccine-against-covid-19-6275051/">https://indianexpress.com/article/cities/pune/serum-institute-ties-up-with-us-biotech-firm-to-develop-vaccine-against-covid-19-6275051/</a>				
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	<a href="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-u-s-department-of-health-human-services-to-accelerate-development-of-a-potential-novel-coronavirus-vaccine</a>	<a href="https://www.jnj.com/johnson-johnson-announces-collaboration-with-the-beth-israel-deaconess-medical-center-to-accelerate-covid-19-vaccine-development">https://www.jnj.com/johnson-johnson-announces-collaboration-with-the-beth-israel-deaconess-medical-center-to-accelerate-covid-19-vaccine-development</a>			
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)	Altimmune	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	<a href="https://www.globenewswire.com/news-release/2020/01/31/1978131/0/en/Vaxart-Announces-Initiation-of-Coronavirus-Vaccine-Program.html">https://www.globenewswire.com/news-release/2020/01/31/1978131/0/en/Vaxart-Announces-Initiation-of-Coronavirus-Vaccine-Program.html</a>				
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					



Type of Product	Developer Organization	Current Stage of Development	Funding Sources	Anticipated Timing	Comments	Source	Links				
Vaccine (protein subunit; Ii-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	<a href="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">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</a>	<a href="https://www.statnews.com/2020/03/02/coronavirus-drugs-and-vaccines-in-development/">https://www.statnews.com/2020/03/02/coronavirus-drugs-and-vaccines-in-development/</a>	<a href="https://www.marketwatch.com/story/these-nine-companies-are-working-on-coronavirus-treatments-or-vaccines-heres-where-things-stand-2020-03-06">https://www.marketwatch.com/story/these-nine-companies-are-working-on-coronavirus-treatments-or-vaccines-heres-where-things-stand-2020-03-06</a>		
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	<a href="https://ca.finance.yahoo.com/news/tonix-pharmaceuticals-announces-research-collaboration-120010754.html">https://ca.finance.yahoo.com/news/tonix-pharmaceuticals-announces-research-collaboration-120010754.html</a>				
Vaccine (RNA; mRNA)	China CDC/Tongji University/Stermina	Pre-clinical				WHO list March 4, 2020					



Type of Product	Developer Organization	Current Stage of Development	Funding Sources	Anticipated Timing	Comments	Source	Links				
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	<a href="https://www.wsj.com/articles/first-u-s-testing-begins-for-potential-coronavirus-treatment-11582670674?mod=article_inline">https://www.wsj.com/articles/first-u-s-testing-begins-for-potential-coronavirus-treatment-11582670674?mod=article_inline</a>	<a href="https://www.marketwatch.com/story/these-nine-companies-are-working-on-coronavirus-treatments-or-vaccines-heres-where-things-stand-2020-03-06">https://www.marketwatch.com/story/these-nine-companies-are-working-on-coronavirus-treatments-or-vaccines-heres-where-things-stand-2020-03-06</a>			
Vaccine (RNA; mRNA)	Arcturus/Duke-NUS	Pre-clinical				WHO list March 4, 2020	<a href="https://ir.arcturusrx.com/news-releases/news-release-details/arcturus-therapeutics-and-duke-nus-medical-school-partner">https://ir.arcturusrx.com/news-releases/news-release-details/arcturus-therapeutics-and-duke-nus-medical-school-partner</a>				
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					<a href="https://www.who.int/blueprint/priority-diseases/key-action/novel-coronavirus-landscape-ncov.pdf?ua=1">https://www.who.int/blueprint/priority-diseases/key-action/novel-coronavirus-landscape-ncov.pdf?ua=1</a>				
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		<a href="https://www.fiercebitech.com/biotech/weeks-to-go-to-covid-19-vaccine-trial-biontech-lands-135m-deal-and-advances-pfizer-talks">https://www.fiercebitech.com/biotech/weeks-to-go-to-covid-19-vaccine-trial-biontech-lands-135m-deal-and-advances-pfizer-talks</a>	<a href="https://endpts.com/biontech-teams-up-with-fosun-pharma-to-test-covid-19-mrna-vaccine-in-china-and-scores-50m-investment/">https://endpts.com/biontech-teams-up-with-fosun-pharma-to-test-covid-19-mrna-vaccine-in-china-and-scores-50m-investment/</a>			
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	<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				
Vaccine (unknown)	Doherty Institute	Pre-clinical				WHO list March 4, 2020					
Vaccine (unknown)	Heat Biologics	Pre-clinical					<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				
Vaccine (unknown)	Tulane University	Pre-clinical					<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				
Vaccine (unknown)	ImmunoPrecise Antibodies	Pre-clinical					<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				
Vaccine (unknown)	AJ Vaccines	Pre-clinical					<a href="https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/">https://www.clinicaltrialsarena.com/analysis/coronavirus-mers-cov-drugs/</a>				