

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.

TREATMENTS

Number	Type of Product - Treatment	FDA-Approved Indications*	Clinical Trials for Other Diseases*	Developer/Researcher	Current Stage of Development	Funding Sources	Anticipated Next Steps Timing*	Sources
ANTIBODII	ES				•			
1	TAK-888, antibodies from recovered COVID-19 patients	N/A		Takeda	Pre-clinical		To patients between September 2020 and September 2021	PhRMA Wall Street Journal
2	Antibodies from mice, REGN3048-3051, against the spike protein	N/A		Regeneron	Pre-clinical	Biomedical Advanced Research and Development Authority (BARDA)	Start Phase 1 June 2020	Stat News MarketWatch Reuters Bloomberg News FierceBiotech FiercePharma
3	Antibodies from recovered COVID-19 patients	N/A		Celltrion	Pre-clinical		Start Phase 1 September 2020	Korea Herald
4	Antibodies from recovered COVID-19 patients	N/A		Kamada	Pre-clinical			BioSpace AbbVie
5	Antibodies from recovered COVID-19 patients	N/A		Vir Biotech/WuXi Biologics/Biogen	Pre-clinical		Start Phase 1 ~ July 2020*	Stat News Vir Biotech
6	Antibodies from recovered COVID-19 patients	N/A		Lilly/Ab-Cellera (NIH Vaccines Research Center)	Pre-clinical		Start Phase 1 in late July 2020	Endpoints News
7	Avastin (bevacizumab), vascular endothelial growth factor inhibitor	FDA-approved since 2004, approved to treat certain types of cancer		Numerous trials with Chinese research sponsors; Roche	Clinical			BioCentury ClinicalTrials.gov
8	PD-1 blocking antibody; Thymosin	Unknown		Numerous trials with Chinese research sponsors*	Clinical		Phase 2 primary trial ends April 30, 2020	BioCentury ClinicalTrials.gov



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9	leronlimab (PRO 140), a CCR5 antagonist	N/A	Treatment of HIV/ AIDS, Graft versus Host Disease, Non-Alcoholic Steatohepatitis, and numerous cancers	CytoDyn	Clinical			Clinical Trials Arena CytoDyn CytoDyn CytoDyn CytoDyn CytoDyn
10	AiRuiKa (camrelizumab), anti-programmed cell death protein (PD-1) antibody	N/A	Treatment of certain cancers	Wuhan Jinyintan Hospital*	Clinical		*	Hengrui Medicine
11	Kevzara (sarilumab), interleukin-6 receptor antagonist	FDA-approved since 2017, approved to treat rheumatoid arthritis		Sanofi/Regeneron	Clinical		Started Phase 2/3 in March 2020	FiercePharma Wall Street Journal Seeking Alpha
12	Actemra (tocilizumab), interleukin-6 receptor antagonist	FDA-approved since 2010, approved to treat various type of arthritis, including rheumatoid arthritis, and cytokine release syndrome		Numerous trials with global research sponsors; Roche*	Clinical		Roche studies begin April 2020	Wall Street Journal FiercePharma Genentech
13	Gimsilumab, anti- granulocyte-macrophage colony stimulating factor monoclonal	N/A		Roivant Sciences	Clinical			Roivant
14	TJM2 (TJ003234), antigranulocyte-macrophage colony stimulating factor antibody	N/A		I-Mab Biopharma	Clinical			i-Mab Biopharma
15	Sylvant (siltuximab), interleukin-6 targeted monoclonal	FDA-approved since 2014, approved to treat multicentric Castleman disease		EUSA Pharma/The Papa Giovanni XXII Hospital	Clinical		Initial data March 2020	EUSA Pharma
16*	Soliris (eculizumaab), complement inhibitor*	FDA-approved since 2007, approved to treat Paroxysmal Nocturnal Hemoglobinuria, Atypical Hemolytic Uremic Syndrome, Generalized Myasthenia Gravis, and Neuromyelitis Optica Spectrum Disorder*		Alexion*	Expanded access*			Alexion*



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17	Antibody	N/A		Erasmus MC/Utrecht University	Pre-clinical			Erasmus Magazine bioRxiv
18	Antibodies	Unknown		ImmunoPrecise Antibodies	Pre-clinical			Clinical Trials Arena
19	Antibody	N/A		Harbour BioMed/Mount Sinai Health System	Pre-clinical			Mount Sinai and Harbour BioMed press release
20	Antibodies	Unknown		AstraZeneca	Pre-clinical			<u>PhRMA</u>
21	Antibody	Unknown		Distributed Bio	Pre-clinical			Distributed Bio
22*	Antibodies*	Unknown*		Chelsea and Westminster Hospital, Imperial College London*	Pre-clinical*	UK Government*		UK Government*
23*	Convalescent plasma (blood plasma from recovered patients)*	N/A*		Multiple global research sponsors, including New York State Department of Health*	Clinical*		New York State Department of Health trial begins March 2020*	Politico*
ANTIVIRAL	S							
24*	Favilavir/Favipiravir/T-705/ Avigan, licensed in Japan to treat influenza	N/A		Fujifilm Toyama Chemical/Zhejiang Hisun Pharmaceuticals/numerous trials with Chinese research sponsors	Clinical			World Health Organization Clinical Trials Arena Pharmaceutical Technology Chinese Clinical Trial Registry ClinicalTrials.gov BioCentury Guardian Chinese Clinical Trial Registry



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25*	Kaletra/Aluvia (lopinavir/ ritonavir), HIV-1 protease inhibitor	FDA-approved since 2000, approved to treat HIV-1 infection		Global hospital testing (AbbVie); World Health Organization SOLIDARITY trial (studying lopinavir/ ritonavir with and without interferon beta); University of Oxford*	Clinical	UK Government (University of Oxford RECOVERY trial)*		PhRMA Wall Street Journal Wall Street Journal Wall Street Journal Stat News
26*	remdesivir, nucleotide analog	N/A	Treatment of Ebola	Gilead; World Health Organization SOLIDARITY trial	Clinical*		Gilead Phase 3 trial results expected April 2020	PhRMA Wall Street Journal PhRMA post on LinkedIn Stat News
27*	Prezcobix (darunavir, HIV-1 protease inhibitor/cobicistat, CYP3A inhibitor)	FDA-approved since 2015, approved to treat HIV-1 infection		Chinese hospital testing (Janssen)	Clinical		Primary study ends August 2020	World Health Organization Wall Street Journal Chinese Clinical Trial Registry ClinicalTrials.gov
28*	galidesivir	N/A	Treatment of yellow fever	BioCryst Pharmaceuticals	Pre-clinical			Reuters BioCryst
29*	Combination of ebastine, lopinavir, and interferon alpha	N/A		Mianyang Central Hospital*	Clinical		Primary trial ends March 31, 2020	BioCentury Chinese Clinical Trial Registry
30*	Ganovo (danoprevir), hepatitis C virus NS3 protease inhibitor; ritonavir; interferon, approved in China to treat Hepatitis C	N/A		Ascletis/Numerous trials with Chinese research sponsors	Clinical			BioCentury ClinicalTrials.gov
31*	ASC09, HIV protease inhibitor	N/A	Treatment of HIV/AIDS	Ascletis Pharma	Clinical		Primary trial ends May 2020	ClinicalTrials.gov Nature Biotechnology Ascletis Pharma
32*	Truvada (emtricitabine and tenofovir, both HIV-1 nucleoside analog reverse transcriptase inhibitors)	FDA-approved since 2004, approved to treat and prevent HIV-1 infection		Gilead/Sichuan Academy of Medical Sciences & Sichuan Provincial People's Hospital	Clinical			World Health Organization Chinese Clinical Trial Registry



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33*	Arbidol (umifenovir), licensed in Russia and China for treatment of respiratory viral infections	N/A		Pharmstandard/numerous trials with Chinese research sponsors	Clinical			World Health Organization BioCentury ClinicalTrials.gov Chinese Clinical Trial Registry Chinese Clinical Trial Registry
34*	Xofluza (baloxavir marboxil), polymerase acidic endonuclease inhibitor	FDA-approved since 2018, approved to treat influenza		Roche/The First Affiliated Hospital of Zhejiang University Medical School	Clinical			World Health Organization Chinese Clinical Trial Registry
35*	azvudine, reverse transcriptase inhibitor	N/A		Numerous trials with Chinese research sponsors	Clinical			World Health Organization Chinese Clinical Trial Registry
36*	ISR-50	N/A		ISR Immune System Regulation	Pre-clinical			ISR Immune System Regulation
37*	Antiviral compounds	N/A		Cocrystal Pharma	Pre-clinical			Cocrystal Pharma
CELL-BASE	D THERAPIES							
38*	PLX cell product, placenta- based cell therapy	Unknown		Pluristem Therapeutics/BIH Center for Regenerative Therapy/Berlin Center for Advanced Therapies	Pre-clinical			Pharmaceutical Technology Pluristem Therapeutics
39*	Mesenchymal stem cells	Unknown		Numerous trials with global research sponsors*	Clinical			BioCentury Chinese Clinical Trial Registry
40*	Ryoncil (remestemcel-L), allogenic mesenchymal stem cells	N/A		Mesoblast	Pre-clinical			FierceBiotech
41*	MultiStem, bone marrow stem cells		Acute Respiratory Distress Syndrome; Stroke	Athersys	Clinical			BioSpace
42*	Allogeneic T-cell therapies	N/A		AlloVir/Baylor College of Medicine	Pre-clinical			AlloVir FierceBiotech
RNA-BASE	D TREATMENTS							
43*	RNAi - testing 150 RNAis	N/A		Sirnaomics	Pre-clinical			NPR
44*	siRNA candidates	N/A		Vir Biotech/Alnylam Pharmaceuticals	Pre-clinical			Clinical Trials Arena
45*	Ampligen; (rintatolimod)	N/A		AIM ImmunoTech/National Institute of Infectious Diseases in Japan	Pre-clinical			AIM Immunotech press release



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46*	OT-101, a TGF-Beta antisense drug candidate	N/A	Various cancers	Mateon Therapeutics	Pre-clinical			Clinical Trials Arena Mateon Therapeutics		
SCANNING	CANNING COMPOUNDS TO REPURPOSE									
47*	Scanning library of antiviral compounds	N/A	N/A	Janssen Pharmaceutical Companies	Pre-clinical	Biomedical Advanced Research and Development Authority (BARDA)		Johnson & Johnson PhRMA		
48*	Scanning compounds to repurpose	N/A	N/A	Novartis	Pre-clinical			<u>PhRMA</u>		
49*	Scanning antiviral compounds previously in development	N/A	N/A	Pfizer	Pre-clinical		Screening completed March 2020, start Phase 1 by end of 2020	Pfizer PhRMA		
50*	Scanning compounds to repurpose	N/A	N/A	Merck	Pre-clinical			Wall Street Journal		
51*	Repurposing antiviral drug candidates	N/A	N/A	Materia Medica/Cyclica	Pre-clinical			Cyclica press release		
52*	Screening new drugs + library of antiviral compounds	N/A	N/A	Enanta Pharmaceuticals	Pre-clinical			FierceBiotech Enanta Pharmaceuticals		
53*	Screening drug compounds	N/A	N/A	Southwest Research Institute	Pre-clinical			Clinical Trials Arena		
54*	Scanning compounds to repurpose	N/A	N/A	Takeda	Pre-clinical			<u>PhRMA</u>		
55*	Scanning compounds to repurpose*	N/A*	N/A*	Queens University Belfast*	Pre-clinical*	UK Government*				
OTHERS										
56*	Methylprednisolone / corticosteroids	FDA-approved since at least the 1950s, approved to treat many diseases, including anti-inflammatory conditions and some cancers		Numerous trials with research sponsors in China; University of Oxford*	Clinical	UK Government (University of Oxford RECOVERY trial)*	Primary study ends April 2020 (Peking) / June 2020 (Tongji)	World Health Organization ClinicalTrials.gov ClinicalTrials.gov		



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57*	Chloroquine/ Hydroxychloroquine, antimalarial	FDA-approved since 1949, approved to treat malaria (chloroquine), FDA-approved since at least 1955, approved to treat malaria, rheumatoid arthritis, and lupus (hydroxychloroquine)		Numerous trials with global research sponsors; University of Minnesota; University of Oxford; IHU-Méditerranée Infection and others; World Health Organization SOLIDARITY trial (chloroquine); New York State Department of Health (hydroxychloroquine with zithromax)	Clinical			World Health Organization ClinicalTrials.gov BioCentury Endpoints News ClinicalTrials.gov Google Doc Stat News ClinicalTrials.gov
58*	Camostat mesylate, transmembrane protease serine 2 (TMPRSS2) inhibitor, approved in Japan to treat multiple conditions including pancreatitis	N/A		Leibniz Institute for Primate Research/University Göttingen and others	Pre-clinical			Nature Biotechnology bioRxiv Thailand Medical News Cell
59*	Jakafi/jakavi (ruxolitinib)	FDA-approved since 2011, approved to treat myelofibrosis, polycythemia vera, and acute graft- versus-host disease		Department of Hematology, Tongji Hospital, Tongji Medical College, Huazhong University of Science and Technology/Incyte Corp	Clinical			World Health Organization Chinese Clinical Trial Registry
60*	PegIntron, Sylatron, IntronA (peginterferon alfa-2b)	PegIntron - FDA-approved since 2001, approved to treat Hepatitis C; Sylatron - FDA-approved since 2001, approved for the adjuvant treatment of melanoma; Intron A - FDA-approved since 1986, approved to treat Hepatitis C and certain cancers		Wuhan Jinyintan Hospital (Wuhan Infectious Diseases Hospital) (Schering)	Clinical			World Health Organization Chinese Clinical Trial Registry
61*	Novaferon, Nova, interferon, licensed in China for Hepatitis B	N/A		The First Affiliated Hospital of Zhejiang University Medical School	Clinical			World Health Organization Chinese Clinical Trial Registry Chinese Clinical Trial Registry



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62*	Recombinant ACE2 (angiotensin-converting enzyme 2)	Unknown		The First Affiliated Hospital of Guangzhou Medical University	Clinical		Primary trial ends April 1, 2020	BioCentury ClinicalTrials.gov
63*	Cerocal (ifenprodil), NP-120, an NDMA receptor glutamate receptor antagonist targeting Glu2NB	N/A	Idiopathic Pulmonary Fibrosis	Algernon Pharmaceuticals	Pre-clinical			Clinical Trials Arena Algernon Pharmaceuticals
64*	APN01; recombinant soluble human Angiotensin Converting Enzyme 2	N/A	Acute lung injury, Acute respiratory distress syndrome, Pulmonary arterial hypertension	University of British Columbia/ Apeiron Biologics	Clinical		In Phase 1 pilot in China	Clinical Trials Arena Apeiron Biologics ClinicalTrials.gov
65*	Brilacidin, a defensin mimetic	N/A	Oral Mucositis; Ulcerative Proctitis/Ulcerative Proctosigmoiditis; Acute Bacterial Skin and Skin Structure Infection	Innovation Pharmaceuticals	Pre-clinical			Clinical Trials Arena Innovation Pharmaceuticals
66*	BXT-25; glycoprotein	N/A		Bioxytran	Pre-clinical			Clinical Trials Arena
67*	Peptides targeting the NP protein*	Unknown		CEL-SCI/University of Georgia Center for Vaccines and Immunology*	Pre-clinical			Clinical Trials Arena CEL-SCI Corporation press release
68*	BIO-11006, inhaled peptide*	N/A*	Acute Respiratory Distress Syndrome; Non-Small Cell Lung Cancer; Chronic Obstructive Pulmonary Disease (COPD)*	Biomarck Pharmaceuticals*	Clinical*			Biomarck Pharmaceuticals*
69*	Gilenya (fingolimod), sphingosine 1-phosphate receptor modulator	FDA-approved since 2010, approved to treat multiple sclerosis		The First Affiliated Hospital of Fujian Medical University/Novartis	Clinical		Primary trial ends July 2020	ClinicalTrials.gov
70*	WP1122, glucose decoy prodrug (and related drug candidates)	N/A		Moleculin Biotech/University of Texas Medical Branch	Pre-clinical			FierceBiotech Moleculin
71*	Rebif (interferon beta-1a)	FDA-approved since 2002, approved to treat multiple sclerosis		Institut National de la Sante et de la Recherche Medicale (Merck KGaA)	Clinical			Merck KGaA press release



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72*	nafamostat, approved in Japan to treat pancreatitis and other diseases	N/A		University of Tokyo/ National Center for Global Health and Medicine	Pre-clinical		Trial starts April 2020	Bloomberg News
73*	A number of synthesized nanoviricide drug candidates	N/A		NanoViricides	Pre-clinical			Clinical Trials Arena NanoViricides Inc.
74*	losartan	FDA-approved since 1995, approved to treat hypertension and diabetic nephropathy		University of Minnesota	Clinical			ClinicalTrials.gov KARE TV
75*	Activase (alteplase), tissue plasminogen activator (tPA)*	FDA-approved since 1987, approved to treat stroke, myocardial infarction, and pulmonary embolism*			Compassionate Use*			MIT News*
DORMANT	DORMANT/DISCONTINUED							
1*	Washed microbiota transplantation*	Unknown*		The Second Hospital of Nanjing Medical University*	Clinical*		Primary trial ends April 2, 2020*	BioCentury* ClinicalTrials.gov*



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VACCINES

Number	Type of Vaccine	Related Use/Platform	Developer/Researcher	Current Stage of Development	Funding Sources	Anticipated Next Steps Timing*	Sources
1	DNA plasmid; INO-4800	Same platform as vaccine candidates for Lassa, Nipah, HIV, Filovirus, HPV, cancer indications, Zika, and Hepatitis B	Inovio Pharmaceuticals/Beijing Advaccine Biotechnology	Pre-clinical	Coalition for Epidemic Preparedness (CEPI)	Start Phase 1 in April 2020	World Health Organization MarketWatch
2	DNA		Takis/Applied DNA Sciences/Evvivax	Pre-clinical			World Health Organization
3	DNA plasmid		Zydus Cadila	Pre-clinical			World Health Organization
4	Inactivated (formaldehyde- inactivated + alum)	Same platform as vaccine candidates for SARS*	Sinovac	Pre-clinical			World Health Organization
5	Deoptimized live attenuated virus	Same platform as vaccine candidates for HAV, InfA, ZIKV, FMD, SIV, RSV, DENV	Codagenix/Serum Institute of India	Pre-clinical		Animal data in summer 2020	World Health Organization Indian Express
6*	Live attenuated*	Same platform as vaccine candidates for MERS*	The University of Hong Kong*	Pre-clinical*	Coalition for Epidemic Preparedness (CEPI)*		World Health Organization* Coalition for Epidemic Preparedness*
7	Non-replicating viral vector; MVA encoded VLP	Same platform as vaccine candidates for LASV, EBOV, MARV, HIV	GeoVax/BravoVax	Pre-clinical			World Health Organization
8	Non-replicating viral vector; Ad26 (alone or with MVA boost)	Same platform as vaccine candidates for Ebola, HIV, RSV	Janssen Pharmaceutical Companies/ Beth Israel Deaconess Medical Center	Pre-clinical	Biomedical Advanced Research and Development Authority (BARDA)	Start Phase 1 in November 2020*	World Health Organization Johnson & Johnson Johnson & Johnson FierceBiotech
9	Non-replicating viral vector; ChAdOx1	Same platform as vaccine candidates for influenza, TB, Chikungunya, Zika, MenB, plague	University of Oxford	Pre-clinical	Coalition for Epidemic Preparedness (CEPI)/UK Government*	Animal trials begin March 2020, Phase 1 begins April 2020*	World Health Organization Guardian*

LEGEND

CCHF = Crimean-Congo Haemorrhagic Fever HIV = Human Immunodeficiency Virus CHIKV = Chikungunya Virus HPV = Human Papilloma Virus

FMD = Foot and Mouth Disease

EBOV = Ebola Virus

MARV = Marburg Virus

HAV = Hepatitis A Virus

MenB = Mengingitis B

HBV = Hepatitis B Virus

MERS = Middle East Respiratory Syndrome

NIPV = Nipah Virus NORV = Norovirus RABV = Rabies Virus

SIV = Simian Immunodeficiency Virus

VEE = Venezuelan Equine Encephalitis Virus VZV = Varicella Vaccine (Chickenpox)

RSV = Respiratory Syncytial Virus YFV = Yellow Fever Virus RVF = Rift Valley Fever ZIKV = Zika Virus

RVF = Rift Valley Fever ZIKV = Zika Virus SARS = Severe Acute Respiratory Syndrome

TB = Tuberculosis

* Indicates updated or new field Updated March 26, 2020, at 11:30 a.m.



Number	Type of Vaccine	Related Use/Platform	Developer/Researcher	Current Stage of Development	Funding Sources	Anticipated Next Steps Timing*	Sources
10	Non-replicating viral vector; adenovirus-based NasoVAX expressing spike protein*	Same platform as vaccine candidates for influenza	Altimmune	Pre-clinical			World Health Organization
11	Non-replicating viral vector; Ad5 S (GREVAX™ platform)	Same platform as vaccine candidates for MERS	Greffex	Pre-clinical			World Health Organization
12	Non-replicating viral vector; Oral Vaccine platform	Same platform as vaccine candidates for InfA, CHIKV, LASV, NORV, EBOV, RVF, HBV, VEE	Vaxart	Pre-clinical			World Health Organization Vaxart press release
13	Non-replicating viral vector; Adenovirus Type 5 vector (Ad5- nCoV)*	Same platform as vaccine candidates for EBOV*	CanSino Biologics/Beijing Institute of Biotechnology*	Clinical*		Phase 1 ends December 2020*	World Health Organization Chinese Clinical Trial Registry FiercePharma ClinicalTrials.gov*
14	Protein subunit; Drosophila S2 insect cell expression system VLPs		ExpreS2ion	Pre-clinical			World Health Organization
15	Protein subunit; S protein		WRAIR/USAMRIID	Pre-clinical			World Health Organization
16	Protein subunit; S trimer	Same platform as vaccine candidates for HIV, RSV, Influenza	Clover Biopharmaceuticals Inc./GSK	Pre-clinical			World Health Organization
17	Protein subunit; peptide		Vaxil Bio	Pre-clinical			World Health Organization
18*	Protein subunit; S protein*		AJ Vaccines*	Pre-clinical*			World Health Organization*
19	Protein subunit; Ii-Key peptide	Same platform as vaccine candidates for HIV, SARS-CoV, Influenza	Generex/EpiVax	Pre-clinical			World Health Organization
20	Protein subunit; S protein	Same platform as vaccine candidates for Inf H7N9	EpiVax/University of Georgia	Pre-clinical			World Health Organization
21	Protein subunit; S protein, baculovirus production	Same platform as vaccine candidates for Influenza, SARS-CoV (FDA-approved vaccine)	Sanofi Pasteur	Pre-clinical	Biomedical Advanced Research and Development Authority (BARDA)	Start Phase 1 March 2021	World Health Organization Sanofi Stat News MarketWatch
22	Protein subunit; Full length S trimers/nanoparticle + Matrix M	Same platform as vaccine candidates for RSV, CCHF, HPV, VZV, EBOV	Novavax	Pre-clinical	Coalition for Epidemic Preparedness (CEPI)		World Health Organization
23	Protein subunit (gp-96 backbone)	Same platform as vaccine candidates for cancer (NSCLC), HIV, malaria, Zika*	Heat Biologics/University of Miami	Pre-clinical			World Health Organization Clinical Trials Arena



Number	Type of Vaccine	Related Use/Platform	Developer/Researcher	Current Stage of Development	Funding Sources	Anticipated Next Steps Timing*	Sources
24	Protein subunit; S protein clamp	Same platform as vaccine candidates for Nipah, influenza, Ebola, Lassa	University of Queensland/GSK/ Dynavax*	Pre-clinical	Coalition for Epidemic Preparedness (CEPI)/ Queensland Government/ Federal Government (Australia)/Paul Ramsay Foundation*		World Health Organization ABC News Australia* Dynavax*
25	Protein subunit; S1 or RBD protein	Same platform as vaccine candidates for SARS	Baylor College of Medicine	Pre-clinical			World Health Organization
26	Protein subunit; Subunit protein, plant produced		iBio/CC-Pharming	Pre-clinical			World Health Organization
27*	Protein subunit*		VIDO-InterVac, University of Saskatchewan*	Pre-clinical*			World Health Organization*
28*	Protein subunit, adjuvanted microsphere peptide*		University of Saskatchewan*	Pre-clinical*			World Health Organization*
29	Replicating viral vector; measles vector		Zydus Cadila	Pre-clinical			World Health Organization
30	Replicating viral vector; measles vector	Same platform as vaccine candidates for West Nile, CHIKV, Ebola, Lassa, Zika, MERS*	Institut Pasteur/Themis/University of Pittsburgh*	Pre-clinical	Coalition for Epidemic Preparedness (CEPI)*	Start animal testing in April 2020*	World Health Organization University of Pittsburgh Medical Center* Coalition for Epidemic Preparedness*
31	Replicating viral vector; horsepox vector; TNX-1800	Same platform as vaccine candidates for smallpox, monkeypox	Tonix Pharma/Southern Research	Pre-clinical			World Health Organization Tonix Pharmaceuticals press release
32	RNA; LNP-encapsulated mRNA cocktail encoding VLP		Fudan University/Shanghai JiaoTong University/RNACure Biopharma	Pre-clinical			World Health Organization
33	RNA; LNP-encapsulated mRNA cocktail encoding RBD		Fudan University/Shanghai JiaoTong University/RNACure Biopharma	Pre-clinical			World Health Organization
34	RNA; mRNA		China CDC/Tongji University/Stermina	Pre-clinical			World Health Organization
35	RNA; LNP-encapsulated mRNA (mRNA 1273)	Same platform as vaccine candidates for multiple candidates	Moderna/NIAID	Clinical	Coalition for Epidemic Preparedness (CEPI)	Phase 1 started March 2020, study ends June 2021*	



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36	RNA; mRNA	Same platform as vaccine candidates for multiple candidates	Arcturus/Duke-NUS	Pre-clinical			World Health Organization Arcturus Therapeutics
37	RNA; saRNA	Same platform as vaccine candidates for EBOV, LASV, MARV, Inf (H7N9), RABV	Imperial College London	Pre-clinical			World Health Organization
38	RNA; mRNA	Same platform as vaccine candidates for RABV, LASV, YFV, MERS, InfA, ZIKV, DengV, NIPV	CureVac	Pre-clinical	Coalition for Epidemic Preparedness (CEPI); European Commission*	Start Phase 1 in June 2020*	World Health Organization Labiotech.eu*
39	RNA; BNT162		BioNTech/Fosun Pharma/Pfizer	Pre-clinical		Start Phase 1 late April 2020	FierceBiotech Endpoints News World Health Organization*
40*	RNA; mRNA*	Same platform as vaccine candidates for cancer*	BIOCAD*	Pre-clinical*		Animal studies begin in April 2020*	BIOCAD*
41*	VLP; plant-derived VLP*	Same platform as vaccine candidates for flu, rotavirus, norovirus, West Nile virus, and cancer*	Medicago Inc.*	Pre-clinical*			World Health Organization*
42	Gene-encoded antibody vaccine, non-viral nanoparticle delivery*		SmartPharm Therapeutics/Sorrento Therapeutics*	Pre-clinical*			SmartPharm Therapeutics*
43	ISR-50*		ISR Immune System Regulation*	Pre-clinical*		Animal study results expected in Q2 2020, Phase 1 begins Q4 2020*	ISR Immune System Regulation*
44	Unknown		ImmunoPrecise	Pre-clinical			World Health Organization
45	Unknown		MIGAL Galilee Research Institute	Pre-clinical			World Health Organization
46	Unknown		Doherty Institute	Pre-clinical			World Health Organization
47	Unknown		Tulane University	Pre-clinical			World Health Organization Clinical Trials Arena