Development tracker: The drugs and vaccines in development for COVID-19

The pharmaceutical and biopharmaceutical industry is scrambling to put products into development to potentially treat, cure or prevent COVID-19 infections.

Based on a review by AgencyIQ of ClinicalTrials.gov, company announcements and media reports, there are at least 170 medical product candidates in various stages of testing to assess their potential effects against COVID-19 or SARS-CoV-2, the virus which causes the condition. Some have already been approved and are being assessed for their potential to treat COVID, while others are being repurposed from other late-stage development pipelines. Others are still in the very early stages of development and have not yet been tested in humans.

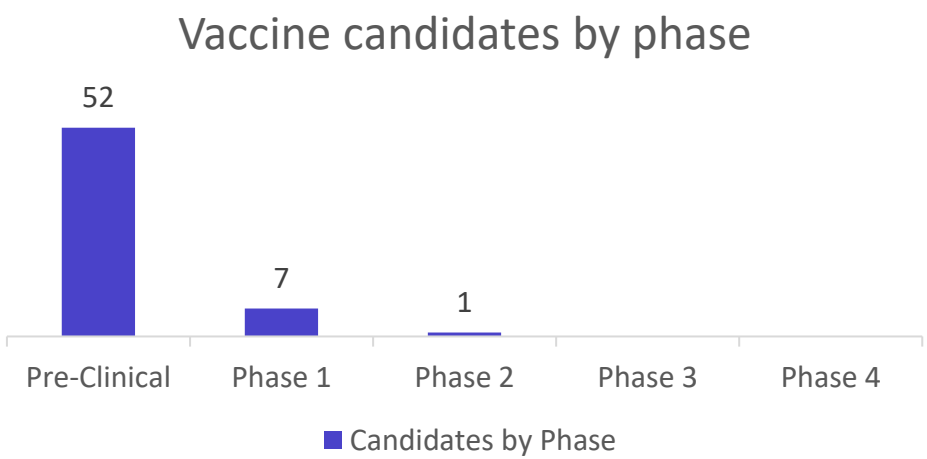
Based on evidence from recent studies, the chances of clinical success are low. Of all drugs for infectious diseases that enter Phase 1 testing, just 26.7% go on to obtain approval. Just 31.6% of vaccines that enter Phase 1 testing go on to obtain approval. The size of the development pipeline and interest in COVID-19 may indicate that several of these products will go on to obtain approval, but the safety and efficacy of these products is far from guaranteed. As companies try to bring whatever compounds they have into clinical testing, it's possible that few, if any, of these products will ultimately prove safe or effective.

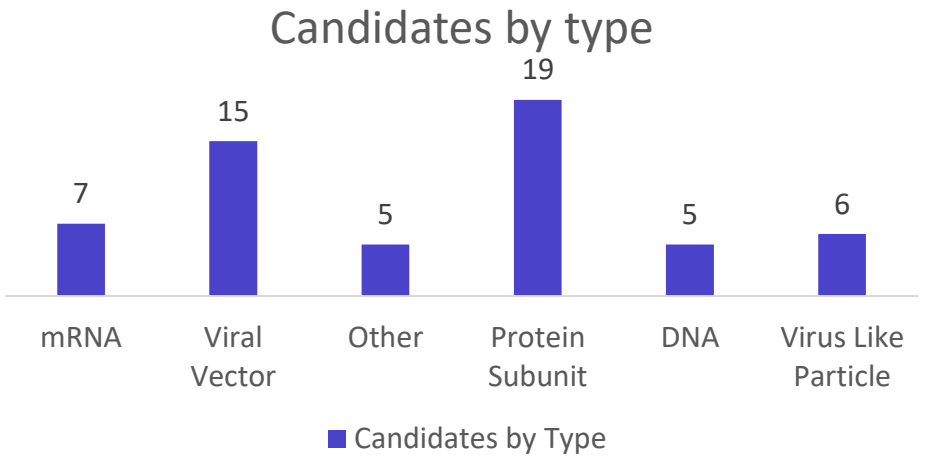
Highlights:

115+	55+	36+	64+
Therapeutic medical products in development	Vaccines in development	Products already approved for other indications	Products already in clinical development (7 vaccines, 57 therapies)

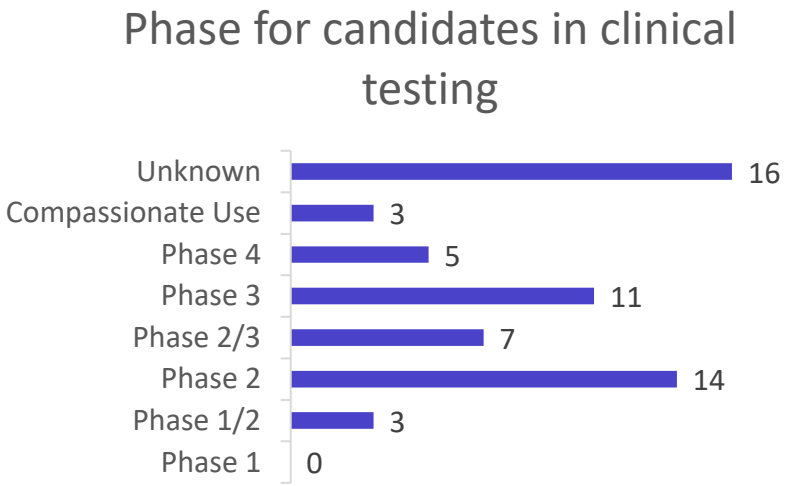
Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

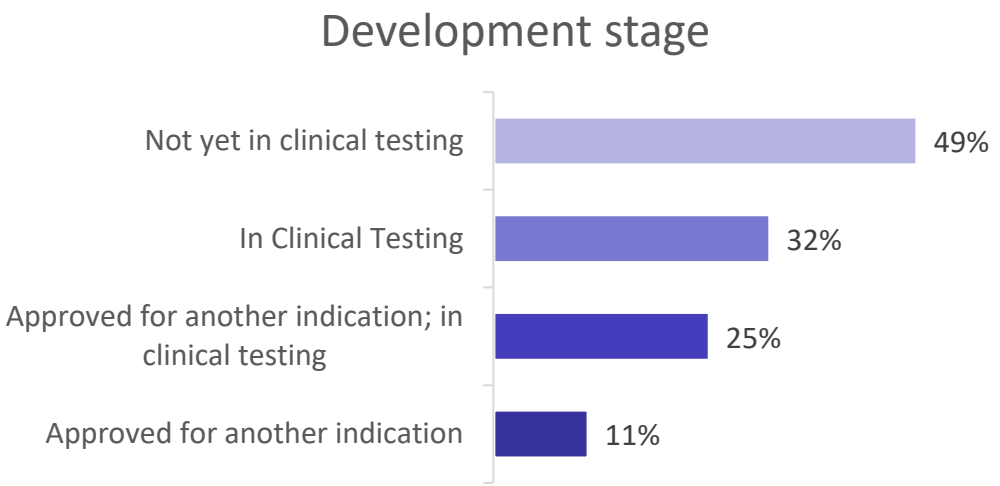
Development Dashboard: Vaccines





Development Dashboard: Therapeutics





Notes on data: Based on AgencyIQ analysis of publicly available data. Not all candidates had information available for each data point. Current as of 23 April 2020.

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Therapeutic Development

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Abbott (HIV approval) AbbVie, Ascletis, Pharmstandard, Gilead, Shionogi, Toyama Chemical, Janssen, Biogen, Merck	Ritonavir	Therapeutic	Ritonavir is an L-valine derivative that is an antiretroviral drug from the protease inhibitor class used to treat HIV infection and prevent or treat AIDS. It is often used as a fixed-dose combination with another protease inhibitor, lopinavir. Ritonavir is also used in combination with dasabuvir sodium hydrate, ombitasvir and paritaprevir (under the trade name Viekira Pak) for treatment of chronic hepatitis C virus genotype 1 infection and cirrhosis of the liver.	Abbott received approval for the treatment of HIV in 1996 under the drug name Norvir. Many trials are looking at combinations of ritonavir and other drugs for treatment of COVID-19.	Approved in 1996 for HIV. Currently a piece of many clinical trials for COVID-19 treatments in combination with other drugs.	Approved for another indication; in clinical testing.	Company announcement / PubChem / Clinical Trial / Trial Results
The First Affiliated Hospital of Fujian Medical University Novartis	Fingolimod	Therapeutics	Testing is taking place in China to assess treatment for COVID-19 pneumonia.	Drug approved for treatment of multiple sclerosis (Novartis)	The estimated study completion date is July 1st.	Approved for another indication; in clinical testing.	Reported in media / Clinical Trials
First Affiliated Hospital of Wenzhou Medical University	Thalidomide	Therapeutic	Testing taking place in China for treatment of severe COVID-19 cases.	Previous studies have shown the drug can treat H1N1 lung injury. Thalidomide is approved in the US, though has a REMS due to causing birth defects.	Currently in Phase II. Estimated study completion date is May 30th.	Approved for another indication; in clinical testing.	Reported in media / Clinical Trial

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Tongji Hospital	Sildenafil citrate	Therapeutic	Testing in China currently.	FDA granted approval to Pfizer under the name Viagra.	Currently in Phase III in China.	Approved for another indication; in clinical testing.	Reported in media / Clinical Trial
Peking Union Medical College Hospital University of Oxford	Cortico-steroid	Therapeutic	Currently being tested in China and under a phase III clinical trial for H1N1	Approved for many indications by the FDA including cancers.	Trial estimated to complete on April 25th	Approved for another indication; in clinical testing	Reported in Media / Clinical Trial / WHO
University of Minnesota University of Oxford Various Chinese research sponsors Novartis Mylan	Chloroquine / Hydroxy-chloroquine	Therapeutic	Many groups are assessing the ability for Chloroquine to treat patients with mild/moderate COVID-19 to reduce the duration of symptoms and decrease viral shedding.	Approved by the FDA for treatment of malaria (Novartis).	Novartis subsidiary Sandoz is donating up to 130 million doses of generic hydroxychloroquine. Some clinical results are already available but are inconclusive. HCQ was able to shorten recovery times in one study. The FDA issued an EUA to allow the drug to be distributed from the national stockpile and used on hospitalized patients.	Approved for another indication; in clinical testing	Company announcement / FDA / HHS / Reported in media / Clinical Trial
Tongji Hospital Incyte Corp.	Ruxolitinib	Therapeutic	Currently being tested in China for COVID-19 treatment.	Prior FDA approval for Incyte's Jakofi to treat "steroid-refractory acute GVHD in adult and pediatric patients 12 years and older."	Study in China set to complete by end of year	Approved for another indication; in clinical testing	Reported in media / WHO / Clinical Trial

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Wuhan Infectious Diseases Hospital Eiger Bio-Pharmaceutic	Peginterferon alfa-2b	Therapeutic	Testing taking place in China. Also studying the effect in MERS treatment.	Merck (Schering) received approval for the treatment of hepatitis C previously.	No timeline. Clinical trials currently occurring in China.	Approved for another indication; in clinical testing	Reported in Media / WHO /
Qilu Hospital of Shandong University	Bevacizumab	Therapeutic – antibodies	A recombinant humanized monoclonal IgG1 antibody that binds to and inhibits the biologic activity of human vascular endothelial growth factor (VEGF).	Amgen received prior approval from the FDA under the name Avastin which is indicated for cancer treatment.	Clinical trial is currently recruiting in China. Report out expected in April.	Approved for another indication; in clinical testing	Reported in media / Clinical Trial / DrugBank
Gilead Sichian Academy of Medical Sciences & Sichian Provincial People's Hospital	Emtricitabine, tenofovir	Therapeutic - antiviral	Clinical trial currently taking place in China for COVID-19 treatment. It works as a "Non-nucleoside reverse transcriptase inhibitor and nucleotide reverse transcriptase inhibitor"	Approved by the FDA in 2004 under name Truvada (Gilead) to treat/prevent HIV-1.	No timeline	Approved for another indication; in clinical testing	WHO / Clinical Trial
Roche BARDA First Affiliated Hospital of the University of Science and Technology of China	Tocilizumab	Therapeutic – antibodies	Roche is starting a Phase III clinical trial for treatment of COVID-19 pneumonia.	Approved by FDA under the name Actemra/ RoActemra for the indication of rheumatoid artritis.	No timeline, but further than others studying the same drug in other countries. Currently in Phase III	Approved for another indication; in clinical testing	Company announcement / Clinical Trial

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Mallinckrodt Massachusetts General Hospital	Inhaled nitric oxide (ino)	Therapeutic	The company is exploring inhaled nitric oxide (iNO) as a supportive measure for COVID-19, particularly for patients with pulmonary complications.	The company already markets iNO as INOmax in the US to treat term and near-term newborns suffering from hypoxic respiratory failure caused by pulmonary hypertension. Additionally, iNO was used in a study to treat six SARS-CoV patients and showed improvements compared to controls.	Currently working with FDA and other regulatory agencies to explore the use of the treatment for COVID-19. Massachusetts General has initiated clinical trials.	Approved for another indication; in clinical testing	Company announcement / PubChem / Clinical Trial
Roche	Baloxavir marboxil	Therapeutic	Baloxavir is an inhibitor of the influenza cap-dependent endonuclease enzyme and is used as therapy of influenza A and B.	Baloxavir marboxil was originally developed for influenza A/B infections. The drug was initially approved for use in Japan in February 2018. It was approved by the FDA on October 24, 2018, for the treatment of acute uncomplicated influenza in patients 12 years of age or older.	Previously approved under another indication. Currently in clinical testing in China in combination with Favipiravir at The First Affiliated Hospital, Zhejiang University School of Medicine.	Approved for another indication; in clinical testing	Reported in media / PubChem / Clinical Trials
Merck KGaA	Interferon beta-1a	Therapeutic	Interferon-beta is a form of recombinant human interferon used to slow disease progression and reduce the frequency of clinical symptoms in patients who have relapsing multiple sclerosis.	BIOGEN received approval in the US for this drug to treat multiple sclerosis. A trial for COVID treatment began in France in early March.	A clinical trial is ongoing in France, sponsored by the French Institut National de la Sante et de la Recherche Medicale (INSERM).	Approved for another indication; in clinical testing.	Company announcement / DrugBank / Clinical Trial
Montreal Heart Institute DACIMA Software	Colchicine	Therapeutic	Binds to tubulin, thereby interfering with the polymerization of tubulin, disrupting mitosis. This leads to an inhibition of migration of leukocytes and other inflammatory cells, thereby reducing the inflammatory response.	This drug was approved by the FDA in 2009 for the treatment of gout flares and familial Mediterranean fever.	Trials are ongoing in Canada to test this drug against COVID-19. Estimated completion is in September.	Approved for another indication; in clinical testing	Clinical Trial / PubChem

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Eli Lilly	Baricitinib	Therapeutic	Baricitinib is a selective and reversible Janus kinase 1 (JAK1) and 2 (JAK2) inhibitor. Janus kinases belong to the tyrosine protein kinase family and play an important role in the proinflammatory pathway signaling that is frequently over-activated in autoimmune disorders such as rheumatoid arthritis. By blocking the actions of JAK1/2, baricitinib disrupts the activation of downstream signaling molecules and proinflammatory mediators.	Eli Lilly received approval in 2018 to treat arthritis under the brand name Olumiant. Baricitinib was also approved in the EU in February 2017 as a second-line orally administered treatment for moderate to severe active rheumatoid arthritis in adults, either as a monotherapy or when combined with methotrexate.	Approved in the US and EU in 2018 under separate indication. Clinical trials for COVID-19 are taking place at Hospital of Prato and Nova Scotia Health Authority.	Approved for another indication / In clinical testing	Reported in media / PubChem / Clinical Trial / Clinical Trial
Johnson & Johnson (HIV) Gilead (testing for COVID-19), Janssen (testing for COVID-19)	Darunavir	Therapeutic	Darunavir is an antiretroviral protease inhibitor that is used in the treatment of human immunodeficiency virus (HIV) and prevention of acquired immunodeficiency syndrome (AIDS).	J&J received approval in 2006 for treatment of HIV under the name Prezista. With the recent SARS-CoV-2 outbreak of 2019 that causes coronavirus disease, darunavir is being studied as a possible treatment for SARS-CoV-2 due to in vitro evidence supporting its ability to combat this infection. Clinical trials are underway and are expected to conclude in August 2020.	Approved in 2006 under separate indication. Clinical trials started in 2020 for treatment of Coronavirus, which are set to conclude in August. J&J has indicated there is a lack of evidence supporting darunavir as a COVID-19 treatment.	Approved for another indication; in clinical testing.	Company announcement / Nature / Clinical Trial

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
University of Minnesota	Losartan	Therapeutic	Losartan is an angiotensin II receptor blocker (ARB) used to treat hypertension. Angiotensin-converting enzyme (ACE) inhibitors are used for a similar indication but are associated with a cough. When patients with ACE inhibitor associated coughs are switched to ARBs like losartan, they have an incidence of cough similar to placebo or hydrochlorothiazide.	Losartan was granted FDA approval in 1995, and many companies offer generic versions.	The University of Minnesota is enrolling for clinical trials to see if losartan can reduce organ failure in COVID patients, and avoid hospitalizations.	Approved for another indication; in clinical testing.	Reported in media / DrugBank / Clinical Trial
Partner Therapeutics	Sargramostim, rhu-GM-CSF	Therapeutic	Sargramostim is a human recombinant granulocyte macrophage colony-stimulating factor (GM-CSF) expressed in yeast. It is a glycoprotein that is 127 residues. Substitution of Leu23 leads to a difference from native protein.	Berlex Labs has already received FDA approval for this drug under the name Leukine.	Partner Therapeutics has announced the start of a clinical trial at University Hospital Ghent. The company notes medical centers in other countries are also considering joining the trial.	Approved for another indication; in clinical testing.	Company announcement / DrugBank / Clinical Trials

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Tongji Hospital	Oseltamivir	Therapeutic	Oseltamivir is an antiviral neuraminidase inhibitor used for the treatment and prophylaxis of infection with influenza viruses A (including pandemic H1N1) and B. Oseltamivir exerts its antiviral activity by inhibiting the activity of the viral neuraminidase enzyme found on the surface of the virus, which prevents budding from the host cell, viral replication, and infectivity.	Oseltamivir was approved by the FDA in 2012 for the treatment of influenza. Roche received this approval under the name Tamiflu. Roche has stated that it is extremely unlikely that this would be effective to treat the virus.	Trials are ongoing in China in combination and comparison to other antiviral therapies. The trial is expected to be completed by July 1, 2020.	Approved for another indication; in clinical testing.	Company announcement / DrugBank / Clinical Trial
Swedish Orphan Biovitrum	Anakinra and emapaluma b	Therapeutic	Anakinra is a recombinant, nonglycosylated human interleukin-1 receptor antagonist (IL-1Ra). Emapalumab, also known as NI-0501, is a fully human monoclonal antibody that targets interferon gamma.	Both drugs are approved by the FDA.	A trial is ongoing and set to complete in September.	Approved for another indication; in clinical testing.	DrugBank / DrugBank / Clinical Trials
Partner Therapeutics	Sargramo-stim	Therapeutic	Sargramostim is a human recombinant granulocyte macrophage colony-stimulating factor (GM-CSF) expressed in yeast.	The company announced they are starting a clinical trial for sargramostim for treatment of patients with COVID-19 related respiratory illness. The drug (known as Leukine) is already approved by FDA for five other conditions.	The trial is taking place currently at University Hospital Ghent.	Approved for another indication; in clinical testing.	Company announcement / DrugBank / Clinical Trials

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Alexion	Ravulizu-mab-cwvz	Therapeutic	Ravulizumab is considered a long-acting complement 5 (C5) inhibitor, considered similar to eculizumab.	Alexion received FDA approval for ravulizumab in 2018 under the brand name ULTOMIRIS for treatment of adults with paroxysmal nocturnal hemoglobinuria (PNH)	The company notes they will begin a phase III study for use of this drug for the treatment of adults with COVID who are hospitalized with severe symptoms such as pneumonia or ARDS. This will begin in May.	Approved for another indication; in clinical testing.	Company announcement / DrugBank
Pfizer	Tofacitinib	Therapeutic	Tofacitinib is an inhibitor of Janus kinases, a group of intracellular enzymes involved in signalling pathways that affect hematopoiesis and immune cell function.	The FDA approved tofacitinib for the treatment of moderate to severe rheumatoid arthritis in 2012. The approval went to Pfizer under the brand name Xeljanz.	Pfizer is supporting a study of the use of their drug in patients with pneumonia caused by COVID-19.	Approved for another indication; in clinical testing.	Company announcement / DrugBank / Clinical Trials
AstraZeneca	Acalabrutin-ib	Therapeutic	Acalabrutinib is an orally available inhibitor of Bruton's tyrosine kinase (BTK) with potential antineoplastic activity. Upon administration, acalabrutinib inhibits the activity of BTK and prevents the activation of the B-cell antigen receptor (BCR) signaling pathway.	AstraZeneca received FDA approval for acalabrutinib in 2017 for the treatment of chronic lymphocytic leukemia, small lymphocytic lymphoma, and Mantle Cell Lynphoma (MCL) in adults.	The company announced they will begin a global clinical trial which is estimated to conclude in September.	Approved for another indication; in clinical testing.	Company announcement / PubChem / Clinical Trials
Karyopharm Therapeutics	Selinexor	Therapeutic	Selinexor is a first-in-class selective inhibitor of nuclear transport (SINE) compound.	Selinexor was approved by the FDA in 2019 to treat multiple myeloma.	The company announced plans to intitiate a global trial for hospitalized COVID patients.	Approved for another indication	Company announcement / DrugBank

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
UNION Therapeutics Institut Pasteur	Niclosamide	Therapeutic	Niclosamide is an orally bioavailable chlorinated salicylanilide, with anthelmintic and potential antineoplastic activity. Upon oral administration, niclosamide specifically induces degradation of the androgen receptor (AR) variant V7 (AR-V7) through the proteasome-mediated pathway.	Bayer received FDA approval for this drug, but has since discontinued it.	The partners announced they are planning to submit a development program to the Danish medical authorities.	Approved for another indication	Company announcement / PubChem
Eagle Pharmaceuticals	Dantrolene sodium	Therapeutic	Dantrolene is a hydantoin derivative and direct-acting skeletal muscle relaxant. Dantrolene depresses excitation-contraction coupling in skeletal muscle by binding to the ryanodine receptor 1, and decreasing intracellular calcium concentration.	Eagle Pharmaceuticals received FDA approval for this drug in 2014 for the treatment of malignany hyperthermia.	Eagle announced they have submitted an IND to the FDA and are awaiting an answer.	Approved for another indication	Company announcement / DrugBank
Abbott (HIV approval) AbbVie (investigating for COVID-19)	Lopinavir	Therapeutic	Lopinavir is an anti-retroviral protease inhibitor used in combination with other antiretrovirals in the treatment of HIV-1 infection. Lopinavir is marketed and administered exclusively in combination with ritonavir.	Abbott Laboratories received approval in 2000 to treat HIV using the combination of lopinavir and ritonavir under the brand name Kaletra. Lopinavir is currently under investigation in combination with ritonavir for the treatment of COVID-19 caused by SARS-CoV-2.	Approved in 2000 in combination with ritonavir to treat HIV. Currently under investigation in combination with ritonavir for the treatment of COVID-19. One study has shown no clinical benefit from the treatment.	Approved for another indication.	Company announcement / DrugBank / Clinical results

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Romark	Nitazoxanide	Therapeutic	Nitazoxanide is a synthetic benzamide with antiprotozoal activity. Nitazoxanide exerts its antiprotozoal activity by interfering with the pyruvate ferredoxin/ flavodoxin oxidoreductase dependent electron transfer reaction, which is essential to anaerobic energy metabolism. PFOR enzyme reduces nitazoxanide, thereby impairing the energy metabolism.	Romark Pharmaceuticals received approval in 2005 to treat parasitic infections under the drug name Alinia. Recently, this drug has been studied as a broad-spectrum antiviral agent due to its ability to inhibit the replication of several RNA and DNA viruses.	Approved in 2005 for treatment of parasitic infections.	Approved for another indication.	Reported in media / DrugBank
EUSA Pharma Papa Giovanni XXIII Hospital	Siltuximab	Therapeutic	Siltuximab prevents the binding of IL-6 to soluble and membrane-bound IL-6 receptors by forming high affinity complexes with human interleukin-6 (IL-6).	Janssen received FDA approval for siltuximab in 2014 under the name Sylvant for the treatment of multicentric Castleman's disease.	A case-control study is ongoing. One third of patients observed in an interim analysis showed clinical improvement, and 43% were stable.	Approved for another indication.	Company announcement / DrugBank

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Mylan	Penciclovir	Therapeutic	Penciclovir is a synthetic acyclic guanine derivative with antiviral activity, mainly used to treat infections from herpes simplex virus (HSV) types 1 and 2. In HSV infected cells, penciclovir is phosphorylated by viral thymidine kinase and subsequently converted by cellular kinases into the active metabolite, penciclovir triphosphate, which competitively inhibits viral HSV polymerase by blocking deoxyguanosine triphosphate substrate binding. As a result, herpes viral DNA synthesis and replication are selectively inhibited.	Mylan received approval in 1996 to treat HSV under drug name Denavir.	Approved in 1996 for HSV.	Approved for another indication.	Reported in media / PubChem

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Sanofi	Chloroquine	Therapeutic	Chloroquine is a 4-aminoquinoline with antimalarial, anti-inflammatory, and potential chemosensitization and radiosensitization activities. Although the mechanism is not well understood, chloroquine is shown to inhibit the parasitic enzyme heme polymerase that converts the toxic heme into non-toxic hemazoin, thereby resulting in the accumulation of toxic heme within the parasite.	Chloroquine is an aminoquinolone derivative first developed in the 1940s for the treatment of malaria. Chloroquine was granted FDA approval on October 31, 1949. Sanofi received this approval under the product name Aralen. Since then, other companies have also had NDAs or ANDAs approved for this drug.	Approved in 1949 under separate indication.	Approved for another indication.	Reported in media / DrugBank
Valeant (Bausch) Merck	Ribavirin	Therapeutic	Ribavirin is a synthetic nucleoside analog of ribofuranose with activity against hepatitis C virus (HCV) and other RNA viruses. Ribavirin is incorporated into viral RNA, thereby inhibiting viral RNA synthesis, inducing viral genome mutations and inhibiting normal viral replication.	Valeant Pharmaceuticals received approval in 1985 for treatment of respiratory infections in children/babies under the name Virazole. Later, Merck received approval to treat HCV with this drug in combination with interferon alpha 2-b.	Two approvals for separate indications by separate companies were received decades ago. These targeted specific populations for HCV and respiratory illness.	Approved for another indication.	Reported in media / PubChem

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
MIT University of Colorado at Denver	Tissue plasminogen activator (tPA)	Therapeutic	Plasminogen activators are a heterogeneous group of proteolytic enzymes that convert Plasminogen to Fibrinolysin. They are concentrated in the lysosomes of most cells and in the vascular endothelium, particularly in the vessels of the microcirculation.	Various forms of tPA are already approved, for example Genentech's Alteplase.	MIT and the University of Colorado are working with hospitals in Massachusetts and Colorado to begin clinical testing in the US. Some results from China show positive response to the drug.	Approved for another indication.	Company announcement / DrugBank / China results
Alexion	Eculizumab	Therapeutic	Eculizumab is a monoclonal antibody that targets complement protein C5. Binding to this protein prevents the activation of a complement terminal complex, which is used to treat a number of autoimmune conditions.	Alexion received FDA approval for this drug in 2007 for the treatment of paroxysmal nocturnal hemoglobinuria to reduce hemolysis.	Alexion has discussed with various government agencies that they believe eculizumab should be investigated and considered for treatment of COVID, but nothing more has happened thus far.	Approved for another indication.	Company announcement / DrugBank
Fujifilm	Favipiravir	Therapeutic	Favipiravir is a pyrazinecarboxamide derivative with activity against RNA viruses. Favipiravir is converted to the ribofuranosyltri-phosphate derivative by host enzymes and selectively inhibits the influenza viral RNA-dependent RNA polymerase.	Discovered by Toyama Chemical Co., Ltd., in Japan, favipiravir is a modified pyrazine analog that was initially approved for therapeutic use in resistant cases of influenza.	Previously approved in Japan. Clinical trial in China has shown positive results.	In clinical testing.	Reported in media / DrugBank / Clinical Trial

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Gilead Sciences	Remdesivir	Therapeutic	Remdesivir, or GS-5734, is an adenosine triphosphate analog first described in the literature in 2016 as a potential treatment for Ebola. Gilead recently received orphan drug status from FDA, but voluntarily rescinded it after backlash.	In 2017, its activity against the coronavirus family of viruses was also demonstrated. Remdesivir is also being researched as a potential treatment to SARS-CoV2, the coronavirus responsible for COVID-19. Gilead Sciences performed the testing to treat Ebola and is in Phase III clinical trials in the US and China for COVID-19.	Not yet approved. Previous tests had taken place for Ebola. Current tests are taking place in tandem in the US and China for COVID-19. Report out from trial expected in April.	In clinical testing.	Company announcement / DrugBank / Clinical Trial / FDA
Pharmstandard	Umifenovir	Therapeutic	Umifenovir is an indole-based, hydrophobic, dual-acting direct antiviral/host-targeting agent used for the treatment and prophylaxis of influenza and other respiratory infections.	It has been in use in Russia for approximately 25 years and in China since 2006. Umifenovir's ability to exert antiviral effects through multiple pathways has resulted in considerable investigation into its use for a variety of enveloped and non-enveloped RNA and DNA viruses.	Umifenovir is currently being investigated as a potential treatment and prophylactic agent for COVID-19 caused by SARS-CoV2 infections in combination with both currently available and investigational HIV therapies.	In clinical testing.	Reported in media / PubChem / Clinical Trial
Beijing Defengrei Biotechnology, Co InflaRx	BDB-1/IFX-1	Therapeutic	This works as an anti-C5a monoclonal antibody.	BDB-1 received approval in February to move forward on clinical trials in China for COVID-19. InflaRx is now testing this in the Netherlands.	Initial data from two participants in China was positive. Studies will soon begin in the Netherlands.	In clinical testing.	Reported in media / Company statement/ Clinical Trial

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Innovation Pharmaceutic-als, Inc.	Brilacidin	Therapeutic	Brilacidin is Innovation Pharmaceuticals' top defensin mimetic drug candidate, which will be tested against SARS-CoV-2.	The companies press release states, "Brilacidin is one of the few drugs targeting COVID-19 that has been tested in human trials for other clinical indications, providing an established safety and efficacy profile, thereby potentially enabling it to rapidly help address the emerging worldwide coronavirus crisis, developed both as an intravenous medicine and as a vaccine."	Testing is scheduled to start the week of March 16, 2020 in China. A company announcement notes that they received data supporting Brilacidin's inhibition of the virus.	In clinical testing.	Company announcement / PubChem
Wuhan Hamilton Biotechnology, Co., Ltd.	Umbilical cord-derived mesenchym al stem cells (intravenous)	Therapeutic	Wuhan Hamilton Biotechnology is investigating "human umbilical cord-derived mesenchymal stem cells for the potential intravenous treatment" of COVID-19.	Clinical trial was planned in China in February 2020.	Clinical trials should have already begun in China.	In clinical testing.	Reported in media / Clinical Trial
Wuhan Red Cross Hospital	Ebastine, lopinavir, interferon alpha	Therapeutic - antiviral	Clinical trial currently occurring in China.	Ebastine is under investigation for the treatment of IBS. Lopinavir is a popular compound among COVID-19 drug development programs.	Primary trial to conclude March 31st	In clinical testing	Clinical Trial / DrugBank
Numerous Chinese research groups Celltex	Mesenchym al stems cells	Therapeutic	Aiming to treat pneumonitis caused by COVID-19 pneumonia.	Multiple hospitals are participating in the trial. One outcome noted from the treatment is improved respiratory system function recovery time.	Read out on March 31st, currently in Phase II in China	In clinical testing	Reported in Media / Clinical Trial

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Southeast University in China	Thymosin; camrelizu-mab	Therapeutic – antibodies	A family of heat-stable, polypeptide hormones secreted by the thymus gland. Their biological activities include lymphocytopoiesis, restoration of immunological competence and enhancement of expression of T-cell characteristics and function.	Has been previously studied to treat Sepsis.	Phase II trial is scheduled to finish April 30th	In clinical testing.	Reported in media / Clinical Trials / PubChem
CytoDyn	Leronlimab	Therapeutic – antibodies	Leronlimab is a CCR5 antagonist intended to treat patients with respiratory complications from COVID-19.	Leronlimab is already being administered though an emergency IND. Five patients have already been treated in New York City.	Two clinical trials are being planned for both moderate and severe COVID cases.	In clinical testing	Company announcement / Clinical Trial
The Frist Affiliated Hospital of Zhejiang University Medical School	Novaferon, Nova, interferon	Therapeutic	Recombinant protein produced by DNA-shuffling of IFN-α .	Already licensed in China for Hepatitis B.	Studies currently taking place in China	In clinical testing	Reported in media / WHO / Clinical Trial
University of British Columbia Apeiron Biologics	APN01	Therapeutics	APN01 is a recombinant human angiotensin-converting enzyme2 (rhACE1).	Previous Phase I and Phase II clinical trials had positive results.	Trials are starting in China.	In clinical testing.	Company announcement
Ascletis Pharma, Inc.	ASC-09 + ritonavir	Therapeutic	This works as a fixed-dose combination of two HIV-1 protease inhibitors, ASC-09 and ritonavir, in order to treat HIV and COVID-19.	Ritonavir received approval under name Noravir for treatment of HIV (Abbott) in 1996. Testing this year in China was seen favorably as a COVID-19 treatment	In the US, a timeline is unclear. The clinical trial in China has concluded, but no results have been posted.	In clinical testing.	Company announcement / PubChem / Clinical Trials

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Sanofi Regeneron Pharmaceutic-als	Sarilumab	Therapeutic	Sarilumab is a fully human anti-IL-6R monoclonal IgG1 antibody that binds to both membrane bound and soluble interleukin 6 (IL-6) receptor forms, thus blocking the cis- and trans-inflammatory signaling cascades of IL-6.	Sarilumab was developed by Sanofi and Regeneron Pharmaceuticals, Inc. It was US FDA-approved in May 2017 and followed by EU approval in June 2017 for the treatment of moderate to severe rheumatoid arthritis (RA) in combination with methotrexate.	Press release from the companies states that Phase 2/3 trials will be enrolling patients immediately, starting in New York. On March 30th it was announced that the first patient (outside the US) had been treated in the trial.	In clinical testing.	Company announcement / DrugBank / Clinical Trial
New York State Department of Health Many other sponsors	Convalesc-ent plasma	Therapeutic	Convalescent plasma could shorten the duration of incubation and lower viral loads of COVID.	New York State DOH has begun recruiting recovered patients to donate plasma for the study.	Two studies are currently recruiting in the US.	In clinical testing	Reported in media / Clinical Trial / Clinical Trial / Clinical Trial / Clinical Trial
Zhengzhou Granlen PharmaTech	Azvudine	Therapeutic	Azvudine is being tested at a COVID treatment in China, it is an experimental reverse transcriptase inhibitor.	This drug is not approved in the US, but has been tested for treatment against HIV/AIDS.	The clinical trial in China was initiated in February.	In clinical testing	Reported in media / Clinical Trial
University of Aarhus	Camostat Mesylate	Therapeutic	Camostat mesylate is a serine protease inhibitor.	The drug is already approved in Japan under the name Foipan for treatment of remission of acute pancreatitis symptoms.	A clinical trial sponsored by the University is set to being March 31st.	In clinical testing	Reported by media / Clinical Trial
Sorrento Therapeutics Celularity	CYNK-001	Therapeutic - cell therapy	The two companies want to expand the use of Celularity's CYNK-001, "an allogeneic, off-the-shelf, placental-derived natural killer (NK) cell therapy" to treat COVID-19.	The NK cells have already been shown to be effective in treating virally effective cells.	On April 2nd the company announced they received FDA clearance for their IND application and will start Phase I/II studies for COVID.	In clinical testing	Company announcement
Tang-Du Hospital	Meplazuma b	Therapeutic	Meplazumab is a humanized anti-CD147 antibody.	A study has already begun recruiting in China to see the effects on pneumonia from COVID.	The estimated study completion date is December 31st.	In clinical testing.	Clinical trial

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Humanigen	Lenzilumab	Therapeutic	Lenzilumab "neutralizes granulocyte macrophage colony stimulating factor (GM-CSF) a key cytokine in the initiation of cytokine storm."	Humanigen is testing this drug for multiple indications. They have now partnered with CTI for their phase III study.	The company is moving towards Phase III trials for COVID related complications. The FDA has authorized compassionate use in this case.	In clinical testing.	Company announcement
Synairgen	SNG001	Therapeutic	SNG001 is an inhaled version of interferon beta-1a.	Interferon beta is widely used for other indications, but this inhalable version is not yet approved for use.	The company announced it treated its first COVID patient on March 31st in the UK.	In clinical testing.	Company announcement / DrugBank
PharmaMar	Plitidepsin	Therapeutic	Plitidepsin is a peptide found in tunicates which shows promise in shrinking tumors in pancreatic, stomach, bladder, and prostate cancers. The specific marine organism is Aplidium albicans. It is also of interest as a potential treatment for some leukemias.	The drug is approved in Australia for the treatment of multiple myeloma.	Trials have begun in Spain and France.	In clinical testing	Company announcement / Reported in Media / DrugBank
Kiniksa	Mavrilimu-mab	Therapeutic	Mavrilimumab targets granulocyte macrophage colony stimulating factor receptor alpha.	The company's press release notes that six patients have been treated using mavrilimumab and all showed positive results including an early resolution of fever and improved oxygenation.	The announcement also noted a plan for Phase II/III clinical trials.	In clinical testing	Company announcement / Clinical Trial
OncoImmune	CD24Fc	Therapeutic	The company's CEO notes, "CD24Fc is a first-in-class biologic that fortifies an innate immune checkpoint against excessive inflammation caused by tissue-injuries."	The antiviral treatment aims to help hospitalized COVID patients.	The company announced the receipt of a study-may-proceed letter from FDA for a Phase III clinical trial	In clinical testing	Company announcement / Clinical Trial

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Pulmotect	PUL-042	Therapeutic	PUL-042 is an inhaled immunomodulatory agent which works by stimulating the immune system in the lungs.	In January the company had announced strong results in animal tests against other coronaviruses.	They have now moved into clinical phases, operating one clinical trial set to conclude in the fall.	In clinical testing	Company announcement / Clinical Trial
Implicit Bioscience	IC14	Therapeutic	IC14 is a recombinant chimeric cAb which blocks CD14-mediated cellular activation in patients developing ARDS.	A previous pilot trial of the therapy showed it reduced alveolar inflammation and decreased BAL cytokines.	A compassionate use open-label trial is already taking place.	In clinical testing	Clinical Trial
Octapharma George Sakoulas of Sharp Memorial Hospital	Itravenous Immunoglobulin (IVIG)	Therapeutic	An investigator initiated study wants to assess if this treatment can stop the progression of the virus toward respiratory failure.	A study in China showed clinical improvement from this treatment.	The press release notes the study will be titled, "Randomized Open Label Study of Standard of Care Plus Intravenous Immunoglobulin (IVIG) Compared to Standard of Care Alone in the Treatment of COVID-19 Infection." But no definitive timeline could be found.	In clinical testing	Company announcement
Athersys	MutliStem Cell Therapy	Therapeutic	MultiStem is a cell therapy that promotes tissue repair and healthing in multiple ways, and focuses ona potential for multidimensional therapeutic impact.	The company has already been testing MultiStem against a variety of other indications. Most notably, they recently completed a Phase 1/2 study evaluating MultiStem administration to patients with ARDS which got them Frast Track Designation. FDA says that the treatment of ARDS from COVID falls under the same IND.	FDA has authorized Athersys to start a Phase 2/3 pivotal study for the use of MultiStem as treatment for ARDS induced by COVID-19.	In clinical testing	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Capricor Therapeutics	CAP-1002	Therapeutic	CAP-1002 "mitigates the release of anti-inflamatory cytokines as well as macrophage activation"	Two patients with COVID-19 have already been treated with CAP-1002 in California.	The company will be providing the therapy to others through the compassionate use pathway and collecting information on the treatment. They also have an IND under FDA review for CAP-1002 in specific COVID-19 patients.	In clinical testing	Company announcement / Clinical Trial
Blade Therapeutics	BLD-2660	Therapeutic	BLD-2660 is a small molecule inhibitor of calpain 1, 2, and 9.	A phase II clinical trial has been recruiting since early April.	The study is set to conclude in September 2020.	In clinical testing	Clinical Trials
Biohaven	Vazegepant	Therapeutic	Vazegepant is an intranasal, high-affinity CGRP receptor antagonist.	The therapy is also in a Phase III study for the acute treatment of migrane.	The company just received IND approval from the FDA and is initiating their phase II study.	In clinical testing	Company announcement
CalciMedica	CM4620-IE	Therapeutic	The drug is a small molecule calcium-release-activated calcium (CRAC), which prevents CRAC channel overactivation.	Regions Hospital has already started a Phase II clinical trial.	Other trials are expected to start through the end of the month, with completion dates in the fall.	In clinical testing	Company announcement / Clinical Trial
AMRS Pharmaceutical Case Western Reserve University University Hospitals	ARMS-I	Therapeutic	ARMS-I works by preventing airborne viral particles from attaching to the oropharynx to stop transmission.	ARMS-I has been previously studied related to reducing upper respiratory infections.	The group will start a clinical trial targeting healthcare workers to both prevent disease spread as well as treat symptoms. A company announcement notes a trial will start in April.	Not yet in clinical testing	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Drug Innovation Ventures at Emory Ridgeback Biotherapeutic	EIDD-2801	Therapeutic	EIDD-2801 is thought to work by preventing the replication of the virus.	The antiviral has been granted an IND from the FDA, and shown activity working against other viruses as well.	Emory developed the compound which is exclusively licensed to Ridgeback. Ridgeback is working to initiate a clinical trial in the US.	Not yet in clinical testing	Company announcement
Panoptes Pharma GmbH	PP-001	Therapeutic	PP-001 inhibits DHODH cellular enzyme which reduces the multiplication of viruses in human cells and reduces the release of cytokines.	The Austrian company believes PP-001's dual capabilities make it a viable therapeutic candidate, and it has been "successfully tested" against other viruses.	No timeline is stated, but the company is looking to begin a clinical trial shortly.	Not yet in clinical testing	Reported in media
Takeda Pharmaceutical	TAK-888 (plasma-derived anti-SARS-CoV-2 polyclonal hyperimmune globulin (H-Ig))	Therapeutic - antibody	The TAK-888 antibody is a plasma-derived anti-SARS-CoV-2 polyclonal hyperimmune globulin (H-Ig). Takeda stated they believe they will be able to progress past Phase I safety trials due to the IgG immunoglobin therapies previously proving to be "clinically safe."	At the beginning of March, Takeda started development of TAK-888 to treat high-risk COVID-19 patients.	A spokesperson said the therapy could be available to treat high-risk patients in 9-18 months, though it is unclear whether this would be in a clinical trial or available under and EUA or other mechanism.	Not yet in clinical testing.	Company announcement
Emergent BioSolutions	COVID-HIG, COVID-EIG	Therapeutic - antibody	Emergent Biosolutions is developing two plasma-derived products for COVID-19. These products will utilize the immune response to create protection from the COVID-19 infection.	The company has already generated a hyperimmune platform, which supports other FDA-approved products.	No official timeline, but next steps are to develop the COVID-HIG and COVID-EIG using plasma from humans and horses, respectively.	Not yet in clinical testing.	Company announcement

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Harbour BioMed with Mount Sinai	monoclonal antibodies (mAbs)	Therapeutic - antibody	Created a multi-year partnership to utilize the H2L2 Harbour Mice platform to generate monoclonal antibodies targeting COVID-19. This therapy will be used to prevent the spread of COVID-19 by inhibiting infection of cells.	Both companies bring historical expertise into the partnership. Harbour BioMed brings their antibody generation technology, while Mount Sinai brings translational medical research experience.	Nothing announced; however, the statement from the two organizations notes a commitment to "fast-track innovative research."	Not yet in clinical testing.	Company announcement
ImmunoPrecise Antibodies with EVQLV	PolyTope mAb Therapy	Therapeutic - antibody	The PolyTope mAb Therapy will be used to combine "the benefits of using well-defined and fully characterized monoclonal antibodies with the essential need for a multi-targeting strategy," ImmunoPrecise said in a statement.	The company started their research program for this topic in February.	None stated, but currently in an early research phase.	Not yet in clinical testing.	Company announcement
Regeneron Pharmaceutic-als	mAbs generated against SARS-CoV-2 spike on pseudovirus	Therapeutic - antibody	Regeneron aims to discover and develop a mAbs that are effective in both preventing and treating COVID-19.	Regeneron has had prior success in mAbs development for Ebola and MERS. They currently note having 1,000 antibodies in dishes being screened and selected for their COVID-19 efforts.	The CEO has stated that they will know quickly if the mAbs are safe and effective, further noting if this is the case, the company could begin mass production in the late summer of 2020.	Not yet in clinical testing.	Company announcement
Vir Biotechnology WuXi Biologics	mAbs from patients recovered from SARS or another coronavirus	Therapeutic - antibody	Vir and WuXi want to use human monoclonal antibodies to treat COVID-19.	Vir already discovered multiple monoclonal antibodies that can attach to COVID-19.	No stated timeline. The partnership between the groups includes clinical development, manufacturing and commercialization, which will begin at a later time.	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
NanoViricides	Anti-SARS-CoV-2 program	Therapeutic - nanoparticle	Very few details have been released, the program wants to use the companies nanovericide technology.	The company started preparations to test candidates in cell cultures against coronaviruses using the ACE2 receptor.	The group began preparation to test patients in January.	Not yet in clinical testing.	Company announcement
CEL-SCI Corporation	Immunotherapy treatment using LEAPS peptide technology	Therapeutic - peptide	The company statement notes this immunotherapy could reduce COVID-19 viral load and tissue damage due to lung infection.	LEAPS peptides have been tested against H1N1 in partnership with NIAID and were shown to reduce morbidity and mortality in mice.	None, development efforts were initiated on March 9th.	Not yet in clinical testing.	Company announcement
Insilico Medicine	Testing and publishing structures of up to 100 small molecules	Therapeutic - small molecule	The company plans to examine multiple Small molecules that can target COVID-19 protein.	The announcement made Feb 6th noted Insolico will publish structures of small molecules targeting key protein and synthesize and test up to 100 molecules.	None, but the company will continually post updates to their site. It has so far posted 6 small molecules.	Not yet in clinical testing.	Company announcement
Sirnaomics	Developing novel siRNA therapy	Therapeutic - siRNA	Research is taking place in the US and China to develop RNA interference (RNAi)-based prophylactics and therapeutics.	The company has previously used siRNA drugs for treatment of SARS and H5N1 in addition to other viral respiratory infections.	None, but company considers itself "well positioned" to make an impact particularly among patients with unmet medical need.	Not yet in clinical testing.	Company announcement
Vir Biotechnology Alnylam Pharmaceuticals	SARS-CoV-2 targeting human monoclonal antibodies	Therapeutic - siRNA	Utilizing Alnylam's "advances in lung delivery of novel conjugates of siRNA" with Vir's additional capabilities, the partnership will try to create siRNAs to treat COVID-19 and other coronaviruses.	The two groups have already been in partnership for infectious disease treatments and announced on March 4th that they are now expanding their partnership (and their technologies on the side of Vir) to help develop a COVID-19 treatment.	At beginning of March the two groups expanded a deal made in 2017 to develop RNAi programs for infectious diseases to include siRNA therapeutics for COVID-19.	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Flanders Institute for Biotechnology (VIB) Ghent University	Llama-derived single domain antibodies generated against spike protein domain conserved across SARS-CoV and Sars-COV-2	Therapeutic - antibody	The group will target the SARS-Cov and SARS-CoV-2 spike protein using Llama-derived single domain antibodies (VHHs).	The group has a second pending program using VHH-generated against SARS-CoV-2.	None stated, but the VHH candidate has already been generated.	Not yet in clinical testing.	Reported in media
Eli Lilly AbCellera	Unknown antibody	Therapeutic-antibody	Eli Lilly entered into an agreement with AbCellera Biologics to develop an experimental therapy for COVID-19.	The agreement between the companies was announced on the March 12, 2020. Previously, AbCellera was awarded a contract from DoD DARPA to create an end-to-end platform for rapid pandemic response in 2018. This tech was tested at the time against MERS-CoV with positive results.	No discussed timeline, however AbCellera technology aims to "quickly screen for potent antibodies and validate potential candidates on tight timelines."	Not yet in clinical testing.	Company announcement
AbbVie	Lopinavir/ ritonavir	Therapeutic	AbbVie will evaluate HIV medicine Kaletra/Aluvia for COVID-19 treatment in partnership with health authorities and institutions to examine efficacy and antiviral activity in the medication.	Company previously received approval for the drugs for the treatment of HIV. AbbVie donated Aluvia to China in January for experimental use against COVID-19, and Chinese media reports have said it is effective.	Previously approved in 2005 and announcement for new exploration came March 11, 2020.	Not yet in clinical testing.	Company announcement / PubChem

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Aim Immunotech Inc. (formerly Hemispherx Biopharma Inc.) GP Pharm SA Goethe University Frankfurt	Rintatolimod	Therapeutic	Rintatolimod is a synthetic derivative of inosinic acid with antiretroviral and immunomodulatory properties. Atvogen acts through a number of pathways to stimulate intracellular antiviral activity of the immune system: it stimulates interferon production; activates the oligoadenylate synthase-RNase L pathway; stimulates natural killer cell activity; and acts as a non-mitogenic stimulator of the immune system. This agent also inhibits replication of HIV in vitro.	Approved for chronic fatigue syndrome in various countries; entered discovery for coronavirus in February 2020.	March 9, 2020 press release indicated testing would soon begin in Japan.	Not yet in clinical testing.	Company announcement / PubChem
Beroni Group Tianjin University	Novel medication using nanobody technologies	Therapeutic	Developing product for both detection and treatment of COVID-19 using nanobody-based technology.	Beroni Group has previously worked on products for global diseases.	None stated, but Beroni has discussed working with regulatory bodies to advance toward clinical trials.	Not yet in clinical testing.	Company announcement
Celltrion	Antibodies from recovered COVID-19 patients	Therapeutic – antibody	Creating a monoclonal antibody for treatment and prevention of COVID-19. They have been selected by the Korea CDC as a preferred developer.	Celltrion has already sourced a library of antibodies from blood of recovered patients in Korea.	Clinical testing set to begin in the third quarter of 2020.	Not yet in clinical testing.	Company announcement
Kamada	Antibodies from recovered COVID-19 patients	Therapeutic – antibody	Kamada is looking to develop a polyclonal immunoglobulin treatment for serious COVID-19 cases.	The company will use their proprietary plasma derived IgG platform.	Kamada specifically notes "there can be no assurance" for timely, safe, and effective therapy development.	Not yet in clinical testing	Company announcement
Pluristem Therapeutics	PLX cell product	Therapeutic	The groups are working in collaboration to examine effects of PLX cell product candidates	Plutistem has requested to utilize a per-patient compassionate use framework in Israel.	Working to use in per-patient treatment.	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
BIH Center for Regenerative Therapy Berlin Center for Advanced Therapies			for COVID-19 complications.				
Erasmus MC Utrecht University	Human monoclonal antibody	Therapeutic – antibodies	Scientists at the University discovered an antibody they believe can detect and prevent COVID-19.	The antibody has not been tested on humans.	No timeline, the scientists are looking for a pharmaceutical company partner.	Not yet in clinical testing	Announcement
AstraZeneca United States Army Medical Research Institute of Infectious Diseases University of Maryland	Monoclonal antibodies	Therapeutic – antibodies	Using proprietary antibody discovering tech to search for antibodies to fight COVID-19.	Have engaged with WHO and European Federation of Pharmaceutical Industries.	An April announcement notes that preclinical safety and efficact assessments will take place via USAMRIID and University of Maryland School of Medicine's biosafety level 3 labs.	Not yet in clinical testing.	Company announcement
Mesoblast	Remestemcel-L	Therapeutic	The company is evaluating its allogeneic mesenchymal stem cell product for treatment of patients with acute respiratory distress symdrome from COVID-19.	Prior studies of this product against COPD have been positive.	No timeline. Company is currently talking with various stakeholders in US, Australia, China and Europe to advance forward.	Not yet in clinical testing.	Company announcement
Laurent Pharmaceutical	LAU-7b	Therapeutic	"LAU-7b is a novel once-a-day oral form of fenretinide, an investigational drug under development by Laurent Pharmaceuticals for its ability to help control inflammation in the lungs."	LAU-7b is currently being evaluated as a treatment for Cyctic Fibrosis.	The company notes they would like to begin clinical trials in the next month.	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Mateon Therapeutics	OT-101, a TGF-Beta antisense	Therapeutic	The company is operating a rapid antiviral response program against coronaviruses.	OT-101 is also being investigated for anti-cancer purposes.	Currently in preclinical testing.	Not yet in clinical testing.	Company announcement
Bioxytran	BXT-25; glycoprotein	Therapeutics	Partnering with Dr. David Platt to develop a galectin inhibitor that could treat COVID-19.	Prior studies note that this treatment could help "restore the adaptive immune system."	No timeline, partnership was announced March 24th	Not yet in clinical testing.	Company announcement
Algernon Pharmaceutic-als	Ifenprodil, NP-120	Therapeutic	Ifenprodil is an "NDMA receptor glutamate receptor antagonist specifically targeting the NMDA-type subunit 2B (Glu2NB). Ifenprodil also exhibits agonist activity for the Sigma-1 receptor, a chaperone protein up-regulated during endoplasmic reticulum stress."	Algernon is a company focused on drug re-purposing. This drug is currently approved in South Korea and Japan, developed by Sanofi.	Algernon is submitting ethics approval for a phase II clinical trial in Australia, and has filed a pre-IND meeting request with FDA.	Not yet in clinical testing.	Company announcement
University of Tokyo	Nafamostat	Therapeutic	Nafamostat is a synthetic serine protease inhibitor that is commonly formulated with hydrochloric acid due to its basic properties. It has been used in trials studying the prevention of Liver Transplantation and Postreperfusion Syndrome.	Nafamostat mesylate is currently approved in Japan under the brand name Fusan for treatment of acute pancreatitis.	The University of Tokyo announced they intend to launch clinical trials in April for the treatment of COVID-19.	Not yet in clinical testing.	Company announcement / DrugBank
BioSig Technologies	Vicromax	Therapeutic	Vicromax is an orally administered, broad spectrum anti-viral agent. BioSig recently aquired the right to develop it.	Vicromax previously completed phase I and II clinical trials for other indications.	BioSig will develop this drug under ViralClear Pharmaceuticals, one of their subsidiaries.	Not yet in clinical testing	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
BioCryst	Galidesivir	Therapeutic	Galidesivir is an adenosine analogue that has been investigated for use against Zaire ebolavirus. In animal studies, galidesivir was effective in increasing the survival rates from infections caused by various pathogens, including Ebola, Marburg, Yellow Fever and Zika viruses. In vitro, it displayed broad-spectrum antiviral activity against various negative- and positive-sense RNA viruses, including coronaviruses, filoviruses, and arenaviruses.	BioCryst developed this drug and Phase 1 clinical trials have begun to determine the safety of this drug in humans for treatment of yellow fever. Because of its activity against other coronaviruses, it may be studied as a potential therapy for COVID-19.	While testing has been done previously against some infectious diseases, no approvals have been received. Because it has already undergone Phase 1 testing in humans and was reportedly "well tolerated," it may be able to enter clinical testing for COVID-19 at an accelerated rate.	Not yet in clinical testing.	Company announcement / DrugBank
AlloVir Baylor College of Medicine	T-cell therapy, ALVR106	Therapeutic	AlloVir will use proprietary technology to develop a CoV therapy that may be used alone, or in combination with the companies multi-respiratory investigational therapy (ALVR106).	AlloVir has already done other work in this space, and has announced they will expand their current partnership with Baylor in order to progress against COVID.	No timeline has been discussed.	Not yet in clinical testing	Company announcement
Distributed Bio	Antibody	Therapeutic	The company announced they are working to create a COVID treatment using their Distributed Bio SuperHuman 2.0 technology, as well as a platform called Tumbler.	Distributed Bio say they have already generated a panel of therapeutic antibodies to potentially neutralize the virus.	No timeline discussed.	Not yet in clinical testing	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
CoCrystal Pharma Kansas State University Research Foundation (KSURF)	Novel antiviral therapeutic	Therapeutic	The two groups have formed a partnership to develop antiviral treatments for norovirus and coronavirus infections.	They will use their proprietary drug discovery platform to develop a novel antiviral.	No timeline has been discussed but they are working quickly toward pre-clinical development.	Not yet in clinical testing	Company announcement
Moleculin	WP1122	Therapeutic	WP1122 works by limiting the ability of a virus (like COVID-19) to replicate.	The company has been working on WP1122, their antiviral, for a while. With the rise of COVID, there was greater urgency.	The group is working with a "major Texas University" on this. They hope to generate animal data soon.	Not yet in clinical testing.	Company announcement
GigaGen	rCIG	Therapeutic	The therapy is a recombinant anti-COVID hyperimmune gammaglobulin and works by reproducing whole anti-body repertoires of recovered patients and will aim to provide passive immunity to help recover and fight the infection.	Gigagen has partnered with Access Biologics for manufacturing.	The company is currently recruiting recovered patients to donate blood.	Not yet in clinical testing	Company announcement
Generation Bio Vir Biotech	Gene therapy/ mAbs	Therapeutic	They combination approach being taken could neutralize antibodies and provide protection from the virus.	Vir Biotech is working across multiple fronts to use its technology to create a COVID treatment. Generation Bio is a genetic medicines company.	No timeline has been stated, but the press announcement notes they are beginning research.	Not yet in clinical testing	Company announcement
Amgen Adaptive Biotechnol-ogies	Human neutralizing antibodies	Therapeutic	Neutralizing antibodies defend healthy cells by interfering with the invading viruses biological function. This could work to treat and prevent the virus.	Both groups are collaborating to utilize Adaptive Biotech's proprietary immune medicine platform and Amgen's expertise across various development areas.	No timeline stated, the companies are working on finalizing their partnership and note the desire to work quickly.	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Tsinghua University 3rd People's Hospital of Shenzhen Brii Biosciences	Human neutralizing monoclonal antibodies	Therapeutic	Multiple antibodies with therapeutic potential have been identified and the groups, working in tandem, will advance multiple candidates for a prophylactic and therapeutic.	The hospital and university will work to discover antibodies, while Brii Bio will provide development expertise.	The group wants to move from selection of a lead candidate to first human trails in 6 months.	Not yet in clinical testing	Company announcement
Vanderbilt University Medical Center DARPA Multiple additional partners	Antibodies from recovered patients	Therapeutic	Vanderbilt wants to identify and analyze antibodies from the blood of recovered patients to neutralize the virus.	Thousands of antibodies that have been identified are being analyzed by Vanderbilt.	The goal is to start human trials by the summer.	Not yet in clinical testing.	Company announcement
I-Mab Biopharma	TJM2	Therapeutic	TJM2 is an antibody that may help treat cytokine storm associated with COVID.	I-Mab has submitted an IND to the FDA.	No timeline stated.	Not yet in clinical testing.	Company announcement
Roivant	Gimsilumab	Therapeutic	Gimsilumab is a monoclonal antibody that "targets GM-CSF, a pro-inflammatory cytokine found to be up-regulated in COVID-19 patients."	A Phase I study was completed and showed favorable safety and tolerability. COVID-specific studies have not started.	No timeline stated, but the company is prioritizing COVID studies and postponing Phase II studies for another indication.	Not yet in clinical testing.	Company announcement
Vir Biotechnology GSK	Antibodies	Therapeutic	The two groups announced a partnership to develop solutions for coronaviruses at-large, including COVID-19.	The collaboration will use the proprietary monoclonal antibody platform from Vir, and GSK's expertise. They also plan to use CRISPR screening and artificial intelligence to identify compounds that "target cellular host genes."	No timeline is discussed, but the company announcement notes the need for efficiency.	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Green Cross Lab Cell	NK-cell treatment	Therapeutic	The company wants to develop a COVID treatment using a cancer immunotherapy – natural killer (NK) cells.	The development process will be in partnership with KLEO Pharmaceuticals, using both companies' antibody recruiting molecules.	Green Cross wants to begin trials in the second half of 2020.	Not yet in clinical testing.	Reported in media
Applied Therapeutics	AT-001	Therapeutic	AT-001 is a novel potent Aldose Reductase inhibitor.	AT-001 is in Phase III for the treatment for diabetic cardiomyopathy.	Applied Therapeutics has submitted an IND to the FDA.	Not yet in clinical testing.	Company announcement
Johnson & Johnson	Pimodivir	Therapeutic	Pimodivir is an orally bioavailable non-nucleoside inhibitor of the polymerase basic protein 2 (PB2) subunit of the influenza A virus polymerase complex with potential antiviral activity. Upon administration, pimodivir occupies the 7-methyl GTP (m7GTP) binding site of PB2.	Pimodivir is under investigation in clinical trial NCT02658825 by Johnson & Johnson.	Extensive testing has been done already for influenza.	Not yet in clinical testing	Reported in media / PubChem
FairJourney Biologics Iontas	Antibody treatment	Therapeutic	The partnership will draw on FairJourneys technical expertise and antibody libraries as well as Iontas Mammalian Display technology in order to develop a "highly specific" SARS-CoV-2 antibodies.	The press release notes that the partnership will reduce the risk of development delays and or delays in scale up.	No timeline was listed	Not yet in clinical testing	Company announcement
CSL Behring SAB Biotherapeutic	SAB-185	Therapeutic	SAB-185 is a "high-potency immunotherapy delivering human polyclonal antibodies targeting SARS-CoV-2."	The therapy was developed using SAB's DiversitAb platform, which leveraged genetically engineered cattle to produce human antibodies.	The partners state they are on track to begin clinical evaluation in early summer	Not yet in clinical testing	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Vaccine Development

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Moderna NIAID	mRNA	Vaccine - RNA	Moderna creates mRNA vaccines that use "viral bits" to train the body to recognize them, rather than attenuated viruses. Moderna is a recognized industry leader in the development of mRNA vaccines, but many other companies also use this technology. HHS announced that the drug will transition to BARDA as an "emergency medical product." BARDA and Moderna are piloting the preparation of Phase 2 and 3 trials while Phase 1 is ongoing with hopes of expediting the process. BARDA will be giving nearly $500 million to fund Phases 2 and 3.	Moderna proposed a sequence for an mRNA vaccine in mid-January 2020. This shipped for safety trials at end of February.	First human trials to begin in Seattle at Kaiser Permanente Health Research Institute. Moderna has filed an 8-K with the SEC. They believe a commercial vaccine is 12-18 months away, but that emergency use authorization could make limited use available by fall 2020. Phase 1 clinical testing is expected to conclude June 1, 2020. Estimated study completion date is June 2021.	In Phase 1 clinical testing and is progressing according to schedule as of March 23, 2020. Results of Phase 1 are expected to be announced within the next month.	Company announcement Company Status Update NCT04283461 HHS Press Release Media Update
CanSino Biologics Beijing Institute of Biotech-nology	Ad5-nCoV	Vaccine - non-replicating viral vector	A recombinant novel coronavirus vaccine (adenovirus Type 5 vector). The company is classifying its vaccine candidate as globally innovative, but not globally best-in-class.	Company claims its platform has been used to help develop other vaccines, including one against Ebola approved by Chinese regulatory officials. CanSino has become the first company to enter its vaccine candidate into Phase 2 trials.	Entered clinical testing in China on March 17 and will continue through December 2020. Estimates the study will conclude by December 2022.	Phase 1 clinical testing has successfully concluded. Recruiting for Phase 2.	Company announcement and Development Pipeline Media NCT04313127

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Shenzhen Geno-immune Medical Institute	Efficient lentiviral vector system	Vaccine – artificial antigen presenting cell (aAPC)	This process will introduce viral proteins and immune modulatory genes to modify aAPCs and activate T-cell response.	This government sponsored research institute previously specialized in CAR-T cell therapy development.	Clinical testing began February 15, 2020. Estimated study completion date of December 31, 2024.	In Phase 1 clinical testing.	NCT04299724
Netherlands UMC Utrecht Raboud University **Australia**: Murdoch Childrens Research Institute Royal Children's Hospital	BCG vaccine	Vaccine – live attenuated bacteria	Bacille Calmette-Guérin (BCG) was developed for tuberculosis nearly a century ago. It introduces weakened bacteria to trigger immune response. The immune response may be effective against certain respiratory viruses.	Because BCG is a well-known vaccine for its safety, efficacy studies against SARS-CoV-2 are key here.	NE: Study began on March 25, 2020 and is estimated to complete December 25, 2020. AUS: Study began on March 30, 2020 and is estimated to complete March 30, 2022.	In Phase 1 clinical testing.	NCT04328441 (NE) NCT04327206 (AUS)
Institut Pasteur Centre Hospitalier Universitaire de Saint Etienne	Chemo-prophylaxis	Chemical prevention with two drugs: Hydroxychloroquine, and Liponavir/ ritonavir	This would use a pre-exposure chemoprophylaxis approach, where health care workers take a potentially effective therapeutic drug in advance of seroconversion from the SARS-CoV-2 virus.	The timeline for approval might be quicker than that of a true biologic vaccine.	Study was slated to begin March 30, 2020 and is expected to conclude November 30, 2020.	In Phase 1 clinical testing.	NCT04328285
Symvivo	bacTRL-Spike	Vaccine – Modified bacteria expressing protein subunit	Uses a genetically modified bacterium that expresses the SARS-CoV-2 spike protein to trigger an immune response.	This is one of the few candidates for an oral vaccine, which has some benefits for distribution and delivery over injection vaccines.	Study is set to begin on April 30, 2020 and conclude December 31, 2021.	In Phase 1 clinical testing.	NCT04334980

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Inovio	DNA plasmid vaccine Electro-poration device	Vaccine - DNA	Inovio received $5M from the Gates Foundation for research on a smart delivery device dubbed Cellectra 3PSP for use with the INO-4800 COVID-19 vaccine candidate. Inovio has received another $6.9 million from CEPI.	Began preclinical trials and preparatory research in January.	Phase 1 studies began on April 7, 2020 and are expected to conclude November 2020.	In Phase 1 clinical testing.	Company announcement NCT04336410 Media Update
BioNTech Pfizer Fosun	mRNA	Vaccine – RNA	mRNA vaccines use "viral bits" to train the body to recognize them, rather than attenuated viruses.	BioNTech is partnering with Fosun for the China market. Fosun has invested $50 million with the potential for $85 million more. Builds on existing agreement with Pfizer for flu vaccine.	Received approval from German drug regulator on April 22, 2020 to start human trials.	Not yet in clinical testing.	Company announcement Company Update
University of Oxford Novavax	ChAdOX1 and Matrix-M adjuvant technology. NVX-CoV2373	Vaccine - non-replicating viral vector	This technique uses an adenovirus to deliver genetic material into a cell. Novavax has received $4 million from CEPI to develop a vaccine.	ChAdOX1 will use a platform originally developed for malaria.	Expected to go into clinical trials in late spring 2020. Has been assigned NCT number: NCT04324606. Novavax is expected to begin phase 1 trials in mid-May. Estimated completion date is May 2021.	Not yet in clinical testing.	Company announcement NCT04324606

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Vaxart Emergent Biosolutions	Oral vaccine	Vaccine - non-replicating viral vector	Vaxart is a small biotech company specializing in oral vaccine development. They plan to deploy this technology on COVID-19. Emergent will be producing the vaccine.	Vaxart already operates a proprietary oral vaccine platform called VAAST, which has had prior success with influenza. They are now teaming up with Emergent for the chemical development.	None discussed. Positive pre-clinical data has Vaxart poised to begin phase 1 ahead of schedule.	Not yet in clinical testing.	Company announcement and Update
Greffex	Ad5 S (GREVAX platform)	Vaccine - non-replicating viral vector	This uses an adenoviral compound without Ad genes and with plasmid packaging.	Greffex is one of the first to move to animal testing.	Market ready by late 2020/early 2021, currently testing in animals.	Not yet in clinical testing.	Company announcement
Protein Sciences, subsidiary of Sanofi Pasteur BARDA	S protein (baculovirus production)	Vaccine - Protein subunit	Sanofi is working on the vaccine and also has projects therapeutics front.	The technology is based on SARS research.	Uncertain of when this would be ready but looking at accelerated timeline approval.	Not yet in clinical testing.	Company announcement
Janssen BARDA	AdVac and PER.C6 technologies	Vaccine - non-replicating viral vector	Janssen is in partnership with HHS for this development, using adjuvanted recombinant technology.	Janssen notably created an effective Ebola vaccine and plans to explore existing coronavirus information.	No official timeline announced.	Not yet in clinical testing.	Company announcement HHS Press Release
Takis Applied DNA Sciences Evvivax	DNA	Vaccine - DNA	The group designed 4 DNA vaccine candidates.	The four candidates will move to preclinical animal testing. The partnership with Takis is the first vaccine in Italy to move to this stage of development.	Scaling up production of candidates this month to send back to Takis for efficacy testing. Anticipates pre-clinical results by end of April 2020.	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Zydus Cadila	DNA plasmid vaccine	Vaccine - DNA	Plasmids are injected carrying DNA sequences that code for the viral antigen.	Zydus is partnered with XOMA.	No official timeline announced, but the company statement speaks to the desire to develop a "speedy solution."	Not yet in clinical testing.	Company announcement
Codagenix Serum Institute of India	Deoptimized live attenuated vaccines	Vaccine - live attenuated virus	This is a US-Indian partnership which will utilize a method that uses a weakened form of a virus to trigger an immune response from the body. Smallpox and measles vaccines use this method of inoculation.	The group claimed to be first to move from the lab to preclinical trials.	Human trials will begin in summer 2020, aiming to be market ready by 2022.	Not yet in clinical testing.	Company announcement
GeoVax BravoVax	MVA encoded VLP	Vaccine - non-replicating viral vector	This is a US-Chinese partnership, where BravoVax will be responsible for manufacturing and testing. This method uses virus like particles to trigger an immune response, rather than live copies of the virus.	GeoVax will use its GV-MVA-VLP vaccine platform.	The company anticipates human clinical trials by the end of 2020. They are preparing now for live animal efficacy trials.	Not yet in clinical testing.	Company announcement and Update
Altimmune	Adenovirus-based NasoVAX	Vaccine - non-replicating viral vector	This technique uses an adenovirus to deliver genetic material into a cell. This project builds on technology used in NasoVAX flu treatment.	Altimmune noted on February 28, 2020 that they have finished the design and synthesis of a vaccine and will take steps to test animals.	Clinical testing in August 2020.	Not yet in clinical testing.	Company announcement
ExpreS2ion	Drosophilia S2 insect cell expression system VLPs	Vaccine - protein subunit	This method uses insect cells to develop recombinant proteins.	Awarded an EU Horizon 2020 grant for the COVID-19 (SARS-CoV-2) Coronavirus vaccine development program.	Goal for 12-month trial timeline.	Not yet in clinical testing.	Company announcement
WRAIR USAMRIID	S Protein	Vaccine - protein subunit	S protein vaccines target the spike on the on the virus, which is used to break into cells.	Unknown	Unknown	Not yet in clinical testing.	Reported by media
Clover Biopharmaceuticals Inc.	S-Trimer	Vaccine - protein subunit with Dynavax	"Utilizing its patented Trimer-Tag© technology, Clover has produced a S-Trimer subunit vaccine that resembles the	Clover's previous focus has revolved around "developing novel and	The company notes that Clover could quickly produce	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
GSK Dynavax		providing CpG 1018, an adjuvant used in its FDA-approved Hep-B vaccine	native trimeric viral spike via a rapid mammalian cell-culture based expression system." RNA viruses rely on trimerized proteins to form the viral spike.	transformative biologic therapies." Dynavax recently joined the partnership	large amounts of the vaccine.		
GSK Innovax	COVID-19 XWG-03 vaccine with AS04 adjuvant platform	Vaccine – protein subunit	GSK is providing its vaccine adjuvant for Innovax for use with its vaccine candidate. It is hoped that the combination will trigger the immune system to respond to SARS-CoV-2.	GSK is working on multiple fronts with different partners to find solutions for COVID. Its adjuvant is sought as a "booster" for other vaccine candidates.	No formal timeline announced.	Not yet in clinical testing.	Company announcement
GSK Sanofi	S-protein COVID-19 antigen with AS04 adjuvant platform	Vaccine – Protein subunit	GSK is providing its vaccine adjuvant for Sanofi's use with its protein-based vaccine which uses rDNA to create proteins identical to those on the surface of SARS-CoV-2.	This is the third of GSK's adjuvant partnerships.	Entering clinical trials in second half of 2020.	Not yet in clinical testing	Company announcement
Vaxil Bio	Peptide	Vaccine - protein subunit	Peptide vaccines are unique in their ability to be especially targeted and mitigate unintended reactions.	A vaccine candidate was created using Vaxil's proprietary VAXHit platform.	The company has finished in silico analyses and feels a vaccine candidate has been successfully identified.	Not yet in clinical testing.	Company announcement
Generex EpiVax	Ii-Key peptide	Vaccine - protein subunit	The two companies will use EpiVax's NuGenerex Immuno-Oncology Ii-key technology to generate a peptide vaccine.	EpiVax has identified "hotspots" in COVID-19 amino acid sequences.	Plan to send a series of synthetic amino acid peptides to China for testing.	Not yet in clinical testing.	Company announcement

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
EpiVax	S Protein	Vaccine - protein subunit	S protein vaccines target the spike on the on the virus, which is used to break into cells.	EpiVax will use proprietary in silico tools which showed success with H7N9. EpiVax has joined an international consortium of developers called eTheRNA and is working on two candidates.	While a COVID-19 sample has been obtained, no further progress has been announced.	Not yet in clinical testing.	Company announcement
University of Queensland GSK	S protein clamp	Vaccine - protein subunit	S protein vaccines target the spike on the on the virus, which is used to break into cells. This would form a molecular clamp around the spike.	This is a culmination of many entities coming together to work on a vaccine, primarily under funding obtained by CEPI. Partnering with Viroclinics Xplore for preclinical testing.	Thus far, partnerships have been formalized, making way for more progress on the vaccine to begin.	Not yet in clinical testing.	Company announcement
Baylor, NY Blood Center Fudan University	S1 or RBD protein	Vaccine - protein subunit	Targets spike proteins and receptor binding domains, exposing neutralizing epitopes which are vulnerable to attack.	Builds on a technique originally used to target MERS and SARS.	No announced timeline.	Not yet in clinical testing.	Reported by media
iBio CC-Pharming	Subunit protein, plant produced	Vaccine - protein subunit	Will use plant-based expressions system and virus-like proteins.	In partnership with DARPA, iBio built their FastPharming Facility to generate rapid delivery of medical countermeasures in the case of a pandemic. The partners have also had previous experience working on MERS.	Both companies are expediting their work. iBio filed four provisional patent applications on March 11, 2020.	Not yet in clinical testing.	Company announcement and Update

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Tonix Pharma Southern Research	Horsepox vector	Vaccine - replicating viral vector	Tonix uses a proprietary horsevirus as a vector to introduce vaccines into the immune system.	The group will work from Tonix's proprietary horsepox vaccine platform currently being used for a smallpox vaccine.	Partnership was announced on February 26, 2020.	Not yet in clinical testing.	Company announcement
Institute Pasteur University of Pittsburgh Themis	Measles vector	Vaccine - replicating viral vector	This uses a weakened measles virus as a vector to introduce coding for antigens against a specific virus into the immune system.	The group previously sequenced the entire genome of COVID-19. With funding from CEPI, IP has joined a consortium with University of Pittsburgh and Themis.	No formal timelines, but company says it is aiming to tackle this as quickly as possible.	Not yet in clinical testing. Announced new partnership on March 19, 2020.	Organization Announcement
China CDC Tongji University Stermina	mRNA	Vaccine - RNA	mRNA vaccines use "viral bits" to train the body to recognize them, rather than attenuated viruses.	The group isolated the first new COVID-19 strain on January 24, 2020.	The vaccine has been tested on animals.	Not yet in clinical testing.	Reported by media
Arcturus Duke-NUS	mRNA	Vaccine - RNA	mRNA vaccines use "viral bits" to train the body to recognize them, rather than attenuated viruses.	Development will utilize the company's STARR tech platform which may produce a vaccine response at lower doses than traditional mRNA vaccines.	No reported timeline, partnership announced on March 4, 2020.	Not yet in clinical testing.	Company announcement
Imperial College London	saRNA	Vaccine - RNA	This will use self-amplifying RNA to rapidly produce vaccines.	A vaccine candidate was generated, and animal testing began on February 10, 2020.	The company said new methods are much faster.	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
Heat Biologics University of Miami	Viral antigens	Vaccine – protein subunit	Heat will engineer multiple viral proteins and deliver them via its proprietary gp96 platform.	The gp96 platform uses "molecular recognition" to target the virus.	No timeline announced.	Not yet in clinical testing.	Company announcement
Flow Pharma	FlowVax stable dry powder platform	Vaccine –T-Cell	FlowVax believes its novel delivery platform may offer advantages over traditional vaccines.	Flow Pharma does not have previous development history.	No timeline announced.	Not yet in clinical testing.	Company announcement
German Center for Infection Research (DZIF)	Two platforms: Measles vector and modified *vaccinia virus Ankara*	Vaccine – viral vector	Viral vectors use weakened virus as a vector to introduce coding for antigens against a specific virus into the immune system.	DZIF faculty have vaccines for Ebola and MERS undergoing clinical trials.	Anticipates clinical testing to be 12-18 months out, but might be abbreviated due to demand.	Not yet in clinical testing.	Company announcement
Sorrento Therapeutics	I-Cell platform	Vaccine – Protein subunit	The I-Cell platform uses "replication-deficient human erythroleukemia K562 cells expressing membrane-bound S1 protein of the SARS-CoV-2 virus."	Sorrento generally focuses on immuno-oncology and pain management.	No formal timeline has been announced, but the company anticipates clinical trials in mid 2020.	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
OncoGen	Epitope-based peptide vaccine	Vaccine – viral peptides	Targets viral proteins that are unlikely to mutate with a system that can adapt to population characteristics.	OncoGen has traditionally focused on cancer treatment, including CAR-T. The company has said Romania currently lacks the resources to produce the proposed vaccine.	No timeline announced.	Not yet in clinical testing.	Media announcement
IAVI/Batavia Biosciences	Recombinant vesicular stomatitis virus	Vaccine – viral vector	Viral vectors use a weakened virus as a vector to introduce coding for antigens against a specific virus into the immune system.	IAVI specializes in developing vaccine candidates for hemorrhagic fever viruses.	No timeline announced.	Not yet in clinical testing.	Company announcement
Entos Pharmaceuticals	Proteo-lipid platform (Fusogenix)	Vaccine – DNA	Uses a plasmid to stimulate antigen production by the recipient's own cells. The delivery system gets the DNA directly into cells efficiently.	Entos currently has brought no drugs to market. It focuses on oncology, autoimmune and anti-aging.	No timeline announced.	Not yet in clinical testing.	Company announcement
Medicago	Virus-like particle	Vaccine – Virus-like particle	This method uses particles similar in structure to SARS-CoV-2 to trigger immune response to protect against the virus.	Medicago has little development history and has primarily been focused on flu vaccines. The Canadian government is the primary funder.	Expects to initiate human trials in summer 2020.	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
MIGAL Research Institute	Infectious bronchitis virus	Vaccine – Viral vector	Viral vectors use a weakened virus as a vector to introduce coding for antigens against a specific virus into the immune system.	The research was funded by the Israeli government and adapted a virus vaccine for an avian condition. MIGAL plans to use an oral vaccine.	Clinical trials are expected to begin before summer 2020.	Not yet in clinical testing.	Company announcement
University of Bristol Imophoron	ADDomer	Vaccine – Virus-like particles	This method uses particles similar in structure to SARS-CoV-2 to trigger immune response to protect against the virus.	The ADDomer platform's use of synthetic virus-like particles would ensure that a vaccine doesn't cause re-infections.	No timeline announced.	Not yet in clinical testing.	Company Announcement / Media
Tulane University	No information available.	No information available.	No information available.	Received a $10.3 million grant for COVID-19 therapies and vaccines.	No timeline announced.	Not yet in clinical testing.	Company announcement
IMV	DPX platform	Vaccine	DPX does not provide many details about the mode of action, but notes that the DPX platform focuses on T-Cell stimulation.	IMV specializes in immuno-oncology therapies and is seeking grant funding in Canada for its vaccine candidate.	No timeline announced, but seeking to begin phase 1 trials in summer 2020. The company has completed Phase 1 design.	Not yet in clinical testing.	Company announcement Update
Saiba GmbH	CuMVtt	Vaccine – Virus-like particle	Proteins similar to those of the SARS-CoV-2 virus are introduced to stimulate an immune response and induce neutralizing antibodies.	Saiba has a proprietary platform which it uses to induce neutralizing antibodies.	No timeline announced.	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
CNB-CSIC	RNA	Vaccine – Defective SARS-CoV-2 RNA	Uses the *vaccinia* virus with a replicated surface protein that mimics the spike on SARS-CoV-2 to stimulate immune response.	CNB-CSIC worked to develop vaccine candidates for Ebola and Zika.	No timeline announced.	Not yet in clinical testing.	Company announcement
BIOCAD	mRNA	Vaccine – Liposome encapsulate mRNA	Liposomes assist the mRNA with breaking the lipid membrane that surrounds the cells. Once inside, the mRNA codes the cell for production of antigens.	BIOCAD has traditionally specialized in mRNA oncovaccines and is adapting this platform to its coronavirus vaccine.	No timeline announced.	Not yet in clinical testing.	Company announcement
University of Hong Kong	LAIV (live attenuated influenza)	Vaccine – Replicating viral vector	Uses a live virus to introduce material that produces antigens that will respond to the SARS-CoV-2 binding domain.	UHK is one of many institutes that has joined CEPI in researching vaccine candidates. The flu-based vaccine means the candidate could be combined with existing flu vaccines.	UHK expects to begin human trials by July.	Not yet in clinical testing.	Company announcement and update
VIDO-Intervac University of Sasketchewan	Adjuvanted microsphere peptide	Vaccine – Protein subunit	Uses proteins similar to the SARS-CoV-2 virus to trigger targeted immunes response.	USask has previously worked on MERS and SARS vaccines. They have developed two coronavirus vaccines for animals.	No timeline announced.	Not yet in clinical testing.	Company Announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
VBI Vaccines	Pan-coronavirus vaccine using enveloped virus-like particle platform	Vaccine – Virus-like particle	Proteins similar to those of the coronavirus are introduced to stimulate an immune response and induce neutralizing antibodies.	VBI intends to target MERS and SARS 1 and 2 with this vaccine. "The collaboration will combine VBI's viral vaccine expertise, eVLP technology platform, and coronavirus antigens with the NRC's uniquely-designed COVID-19 antigens and assay development capabilities to identify the most immunogenic vaccine candidate for further development."	Tentatively plans to initiate clinical trials at the end of 2020.	Not yet in clinical testing.	Media Announcement
CureVac	mRNA	Vaccine - RNA	The mRNA vaccines use "viral bits" to train the body to recognize them, rather than attenuated viruses.	The company previously announced successful rabies vaccination results and boasts previous expertise in mRNA-based vaccine manufacturing. The EU has pledged €80 million to CureVac.	Expects to begin clinical testing in June 2020.	Not yet in clinical testing.	Company announcement

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
HaloVax (Voltron) Hoth Massachusetts General	Self-assembling vaccine with fixed adjuvant or variable targeting	Vaccine – DNA and protein subunit	This platform uses a fusion protein from weakened bacteria and biotin binding protein. When mixed with pathogen-specific peptides, it creates a vaccine.	HaloVax previously attempted to use this platform for a Lassa fever vaccine. The company believes this vaccine platform has the benfit of expedient development against many emerging new pathogens.	No formal timeline announced.	Not yet in clinical testing.	Media announcement
Cobra Biologics Karolinska Institute	DNA	Vaccine – DNA plasmid	Uses a plasmid to insert DNA into cells to generate the production of pathogen-specific antigens and trigger immune response.	This will be part of the OPENCORONA consortium. The company	Expects human trials to begin in 2020.	Not yet in clinical testing.	Media announcement
University of Manitoba	S protein	Vaccine – Protein subunit	S protein vaccines target the spike on the virus, which is used to break into cells. This would target the binding domain of the virus and stimulate neutralizing epitopes.	The UM proposal was one of six to get funding from the Canadian government in march.	No formal timeline announced.	Not yet in clinical testing.	Company announcement
University of Alberta	S protein	Vaccine – Protein subunit	S protein vaccines target the spike on the virus, which is used to break into cells.	Researchers on this team previously worked on developing a SARS vaccine.	No formal timeline announced.	Not yet in clinical testing.	Company announcement
AJ Vaccine	Unavailable	Vaccine – Protein subunit	Uses proteins similar to the SARS-CoV-2 virus to trigger targeted immunes response.	This group has historically developed vaccines for other common infectious diseases.	No formal timeline announced. Aiming for global release by 2021.	Not yet in clinical testing.	Media announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Company	Drug Name/ Platform	Product Type	Overview/Highlights	History	Timeline	Clinical phase	Sources
University of Western Ontario	VSV-S	Vaccine – Replicating viral vector	Viral vectors use a weakened virus as a vector to introduce coding for antigens against a specific virus into the immune system.	The efforts builds on technology for HIV and MERS.	No formal timeline announced.	Not yet in clinical testing.	Company announcement

Last updated 23 April 2020. New updates to this spreadsheet are highlighted in purple.

Last updated April 23, 2020.

First published March 17, 2020

For questions or concerns, please contact the AgencyIQ team:

Alexander Gaffney, RAC
Senior Director, Research
agaffney@agencyiq.com

Kedest Tadesse, MS, RAC
Senior Research Manager
ktadesse@agencyiq.com

Laura DiAngelo, MPH
Senior Research Manager
ldiangelo@agencyiq.com

Lily Rosenfield
Research Analyst
lrosenfield@agencyiq.com

Aaron Badida, JD
Research Analyst
abadida@agencyiq.com