COVID-19 Treatments

Last Updated:
Feb. 24, 2021

Federally-funded and private sector researchers are working diligently to find effective treatments for COVID-19, whether through developing novel therapeutics or repurposing previously-approved drugs. Below are some classes of COVID-19 treatments that have been approved for use or are in development:

Antivirals

Antivirals are compounds that **halt the function of key viral proteins and enzymes** to prevent the virus from replicating inside a cell, or from entering the cell at all.

Monoclonal Antibodies

Monoclonal antibodies are **laboratory-engineered proteins** that can mimic the human immune system response to infection. They work by **binding to and neutralizing foreign intruders** like viruses.

Steroids

Steroids work to **reduce inflammation** in the body. In patients with severe or critical COVID-19, corticosteroids like dexamethasone are a standard of care, as they can minimize damage from systemic inflammation.

Immunomodulatory Drugs

Immunomodulators used in the treatment of COVID-19 are often administered alongside other therapeutics like antivirals to **reduce a patient's immune response** and **minimize inflammation**.

Cell & Gene Therapies

Cell & gene therapies involve **reprogramming** stem cells or immune cells via **engineered DNA** to **provide additional disease-fighting abilities** or to reduce severe immune response.

Combination Therapies

Combination therapy is the use of **two or more drugs** to treat a disease. For COVID-19 patients, combining an antiviral drug (remdesivir) with an anti-inflammatory drug (baricitnib) has been shown to **improve recovery time**.

87
in Preclinical Development

407
in Clinical Trials

8
Authorized for Emergency Use

1
FDA Approved

NIH COVID-19 Treatment Guidelines

The **National Institutes of Health (NIH)** established the **COVID-19 Treatment Guidelines Panel** to provide guidance for clinicians caring for patients with COVID-19. Reviewing existing data for a treatment (e.g. clinical trial data), the panel provides **recommendations on if and when a treatment should be used** depending on patient benefit, patient risk factors, disease severity, and other criteria. The guidelines are regularly updated as new therapeutics are authorized and as new evidence becomes available.

Emergency Use Authorization (EUA)

If clinical trial data shows **compelling evidence** that a therapeutic may be effective in treating COVID-19, the manufacturer can request **Emergency Use Authorization** (EUA). The FDA will review the data and determine if the potential benefits of the treatment outweigh any potential risks, and, if all criteria are met, grant EUA. This means the **therapeutic can be administered to the appropriate patients while clinical trials continue**.

Public-Private Partnerships and COVID-19

In April 2020, NIH launched the **Accelerating COVID-19 Interventions and Vaccines (ACTIV)** initiative to facilitate public-private partnerships that will swiftly advance the development of promising vaccines and therapeutic candidates to help end the COVID-19 pandemic. ACTIV has developed **adaptive master protocols** to rapidly identify drugs that work and swiftly transition experimental agents into COVID-19 therapeutics clinical trials.

Leading COVID-19 Treatments Approved or Authorized by the FDA:

	Veklury	Olumiant/Barcinix	Bamlanivimab	Casirivimab & Imdevimab
Generic Name:	remdesivir	baricitinib	LY-CoV555	REGN-CoV2
Approval Status:	FDA Approved	EUA Granted (in combination w/ remdesivir)	EUA Granted	EUA Granted
Trial Phase:	Phase II & III Combined	Phase III & IV Combined	Phase II & III Combined	Phase I,II, III Combined
Medication Class:	Antiviral	JAX Inhibitor (anti-inflammatory)	Monoclonal Antibody	Monoclonal Antibody
Developer:	Gilead Sciences	Eli Lilly	Eli Lilly & AbCellera	Regeneron Pharmaceuticals
Additional Information:	First developed as a broad spectrum antiviral with preliminary efficacy against MERS and SARS, and later studied as a treatment for Ebola, remedesivir has been found to reduce time to clinical improvement for COVID-19 patients.	This combination therapy shortened time to recovery during clinical trials; it is recommended for use in adult and adolescent patients hospitalized with COVID-19 requiring supplemental oxygen or ventilation.	Bamlanivimab was found to reduce nursing home residents' risk of symptomatic COVID-19 by up to 80% when used preventatively. EUA has also been granted in combination with etesevimab for outpatients age 12+ with mild to moderate COVID-19 and who are at high risk of hospitalization.	An antibody cocktail that treats patients age 12+ with mild to moderate COVID-19 and who are at high risk of hospitalization. Interim data from phase 3 clinical trials shows that REGN-COV2 was 100% effective at preventing symptomatic infection.

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