

Therapeutics Under Early Investigation

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There are many therapeutics under early investigation for treatment of COVID-19 for which there is currently insufficient clinical data to recommend either for or against. This overview is not a comprehensive summary, but a list of therapeutics with strong biological plausibility that are available in the United States and are or will be studied by clinical trial.

Class/Drug	Mechanism of Action	Notable Publications*
Anakinra	<ul style="list-style-type: none"> Interleukin (IL)-1 receptor antagonist; blocks activity of the proinflammatory cytokines IL-1α and IL-1β. 	Cavalli, June 2020 Huet, May 2020
Baricitinib	<ul style="list-style-type: none"> Janus kinase (JAK) 1 and 2 inhibitor; inhibits JAK1-2 mediated cytokine release. Disrupts endocytosis regulators and cyclin G-associated kinase; may reduce inflammation and interfere with intracellular virus assembly. 	Cantini, April 2020
Colchicine	<ul style="list-style-type: none"> Exhibits broad anti-inflammatory and immunomodulatory properties. Disrupts microtubule formation and reduces chemotaxis, phagocytosis and migration of neutrophils. 	Tardif, January 2021 Della-Torre, August 2020 Lopes, August 2020 Gendelman, July 2020 Deftereos, June 2020
Interferons	<ul style="list-style-type: none"> Modulate the immune response in specific—not all—viral infections. Bind to interferon-α and -β receptors on the cell membrane, resulting in various transcription factor phosphorylation. Subsequent activation of interferon-stimulated genes leads to immunomodulatory effects and interference with viral replication. 	Monk, November 2020 Wang, July 2020 Davoudi-Monfared, May 2020 Zhou, May 2020 Hung, May 2020
Intravenous immunoglobulin	<ul style="list-style-type: none"> Derived from pooled plasma; contains antibodies typically present in adult human blood. May provide passive immune protection from viral infections via modulation of inflammation. 	Sakoulas, November 2020 Gharebaghi, October 2020 Xie, August 2020 Sakoulas, July 2020 Shao, April 2020
Ruxolitinib	<ul style="list-style-type: none"> Janus kinase (JAK) 1 and 2 inhibitor; inhibits JAK1-2 mediated cytokine release. Disrupts endocytosis regulators and cyclin G-associated kinase; may reduce inflammation and interfere with intracellular virus assembly. 	
Statins	<ul style="list-style-type: none"> Statins have anti-inflammatory and immunomodulatory properties that may allow for lung protection in the setting of infection. 	Zhang, August 2020 Kow, August 2020 De Spiegeleer, July 2020
Calcifediol/Vitamin D	<ul style="list-style-type: none"> Prohormone of the active form of vitamin D3, calcitriol (1,25-dihydroxyvitamin D3). 	Murai, February 2021 Patchen, February 2021 Castillo, October 2020

- Binds to the vitamin D receptor in target tissues and activates vitamin D responsive pathways that result in increased intestinal absorption of calcium and phosphorus and reduced parathyroid hormone synthesis.

**Published clinical studies (including preprints). Excludes case reports and case series.*