## PATENTS

### Coronaviruses

Recent patents related to vaccines and methods of treatment of coronaviruses.

| Patent number | Description | Assignee | Inventor | Date       |
|---------------|-------------|----------|----------|------------|
| US 10,548,971 | A vaccine comprising a Middle East respiratory syndrome coronavirus (MERS-CoV) antigen. The antigen can be a consensus antigen. The consensus antigen can be a consensus spike antigen. Also, a method of treating a subject in need thereof, by administering the vaccine to the subject. | The Trustees of the University of Pennsylvania (Philadelphia), Inovio Pharmaceuticals (Plymouth Meeting, PA, USA) | Weiner D, Muthumani K, Sardesai NY | 2/4/2020 |
| US 10,519,452 | An antiviral agent comprising an RNA oligonucleotide having a particular sequence and structure that increases expression of interferon-β or ISG56 and exhibits antiviral properties. | Korea Advanced Institute of Science and Technology (Daejeon, S. Korea) | Choi B-S, Lee J | 12/31/2019 |
| US 10,479,996 | Antisense antiviral compounds and methods of their use and production in inhibition of growth of viruses of the Flaviviridae, Picornaviridae, Caliciviridae, Togaviridae, Arteriviridae, Coronaviridae, Astroviridae and Hepeviridae families in the treatment of a viral infection. | Sarepta Therapeutics (Cambridge, MA, USA) | Iversen PL, Stein DA, Weller DD | 11/19/2019 |
| US 10,434,116 | Methods for treating a coronavirus infection by, for example, administering a neurotransmitter inhibitor, a signaling kinase inhibitor, an estrogen receptor inhibitor, a DNA metabolism inhibitor or an antiparasitic agent. | University of Maryland, Baltimore (Baltimore, MD, USA), US Department of Health and Human Services (Bethesda, MD, USA) | Frieman M, Jarhling PB, Hensley LE | 10/8/2019 |
| US 10,421,802 | Polypeptides (e.g., antibodies) and fusion proteins that target a epitope in the receptor-binding domain of the spike glycoprotein of the MERS-CoV. The polypeptides and fusion proteins can be used to treat and prevent MERS-CoV infection in mammals. | US Department of Health and Human Services (Bethesda, MD, USA), Veritech (Hong Kong) | Dimitrov DS, Ying T, Ju TW, Yuen KY | 9/24/2019 |
| US 10,406,222 | Monoclonal antibodies that bind to the MERS-CoV spike protein, and methods of use. In some embodiments, the antibodies of the invention are useful for inhibiting or neutralizing MERS-CoV activity, thus providing a means of treating or preventing MERS infection in humans. | Regeneron Pharmaceuticals (Tarrytown, NY, USA) | Kyratsous C, Stahl N, Sivapalasingam S | 9/10/2019 |
| US 10,342,820 | The use of iota- and/or kappa-carrageenan for the manufacture of an antiviral pharmaceutical composition for the prophylaxis or treatment of a pathological condition or disease caused by or associated with an infection by a respiratory virus selected from the group consisting of orthomyxovirus, paramyxovirus, adenovirus and coronavirus. | Marinomed Biotech (Vienna) | Grassauer A, Prieschl-Grassauer E | 7/9/2019 |

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