

Library of Broad-Spectrum Coronavirus Therapeutics

Track Code: 2016-STJO-67409

Categories:

- Pharmaceuticals

Keywords:

- Compounds
- Drug Development
- Medical/Health
- Pharmaceuticals
- Protease Inhibitors
- Vaccines

Coronaviruses (CoVs) are viruses that infect humans and a wide variety of animals. The more virulent strains include those resulting in widespread human infection and diseases such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS). Human CoVs originate from a jump between species known as zoonotic shifts. As zoonotic shifts occur, the medical field does their best to create vaccines and therapeutics to combat these diseases. Vaccines exist for canine CoV, avian infectious bronchitis virus, and porcine transmissible gastroenteritis CoV; however, there is currently no treatment for human CoV infections.

Researchers from Purdue University have developed a series of 48 peptidomimetic compounds as broad-spectrum inhibitors of the CoV 3C-like protease (3CLpro). Five compounds present themselves as successful inhibitors of all alpha- and beta-CoV CL3pro's tested, and 28 compounds inhibit at least one 3CLpro. In the past, the focus has been on developing vaccines that are specialized to one strand or class of virus. With the current developments, multiple strands of CoVs can be treated by administering the anti-CoV drug. These 3CLpro inhibitors hold promise as a much needed treatment for a number respiratory diseases cause by CoV that infect humans as a result of zoonotic shifts.

Advantages:

- Wider spectrum of use
- Therapeutic treatment

Potential Applications:

- Drug development
- Viral disease research
- Coronaviruses
- Zoonotic diseases

People:

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Intellectual Property:

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