PURDUE INNOVATES | Office of Technology Commercialization

Discovery of Potent Protease Inhibitors for Covid-19 Treatment using Specifically Designed Novel bis-amide Derivatives

Novel noncovalent functionalized bis-amide derivatives potently inhibit the SARS-CoV-2 enzyme 3CLpro, offering a promising therapeutic candidate for Covid-19 treatment and pandemic control with improved drug-like characteristics.

Researchers at Purdue University have developed potent inhibitors for the SARS-CoV-2 protease enzyme 3CLpro. Covid-19, an infection caused by the SARS-CoV-2 virus, has led to an ongoing global pandemic. Currently, no effective drug treatment is available for Covid-19. To find a potential therapeutic for Covid-19, Purdue researchers discovered a series of novel noncovalent functionalized bis-amide derivatives that were previously reported to inhibit a SARS-CoV-2 enzyme, 3CLpro. These are modified versions of previous compounds to improve drug-like characteristics and antiviral properties against SARS-CoV-2. The inhibitors have been evaluated in immunocytochemical and cellular assays against Covid-19 infections. These compounds show promise to be an effective treatment for Covid-19 upon further evaluation on in vivo systems.

Advantages:

-Potent Covid-19 Antiviral Properties

-Improved Drug-Like Features

Potential Applications:

-Covid-19 Treatment

-Pandemic Control

-Pharmaceutical Research and Development

Technology Validation: The bis-amide compounds potently inhibited SARS-CoV-2 in in vitro studies and immunocytochemistry assays.

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Category
Biotechnology & Life Sciences/Bioinformatics & Computational Biology
Artificial Intelligence & Machine Learning/AI Model Optimization & Acceleration Tools
Pharmaceuticals/Drug Discovery & Development
Pharmaceuticals/Small Molecule Therapeutics
Pharmaceuticals/Research Tools & Assays

Authors
Arun K Ghosh
Hiroaki Mitsuya

Further information
Joe Kasper
JRKasper@prf.org

Nathan Smith
nesmith@prf.org

View online

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Intellectual Property:

Provisional-Gov. Funding, 2020-05-15, United States | Provisional-Gov. Funding, 2020-12-01, United States | NATL-Patent, 2021-03-15, Japan | NATL-Patent, 2021-03-15, Russia | NATL-Patent, 2021-03-15, India | NATL-Patent, 2021-03-15, Australia | NATL-Patent, 2021-03-15, Republic of Korea | NATL-Patent, 2021-03-15, Canada | NATL-Patent, 2021-03-15, Brazil | NATL-Patent, 2021-03-15, China | NATL-Patent, 2021-03-15, Mexico | NATL-Patent, 2021-03-15, Europe | PCT-Gov. Funding, 2021-03-15, WO | NATL-Patent, 2022-11-15, United States

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