PURDUE INNOVATES | Office of Technology Commercialization

Potent Protease Inhibitors for Treatment of COVID-19

Potent 3CLprotease inhibitors have been developed that block SARS-CoV-2 replication and exhibit superior antiviral activity compared to current approved COVID-19 therapies.

Researchers at Purdue University have developed compounds that inhibit SARS-CoV-2 replication and outperform an approved therapy. Pfizer's Paxlovid and Merck's Molnupiravir are the only antiviral drugs available for individuals with severe COVID-19 symptoms. Purdue researchers are designing more potent compounds to address the continued need for effective COVID-19 therapies. The antiviral drugs developed by the Purdue researchers are 3CLprotease inhibitors that potently block SARS-CoV-2 replication. The best of these compounds are more potent than Pfizer's Paxlovid in enzyme inhibition and antiviral assays. The researchers expect the compounds to have drug-like properties.

Technology Validation: Enzyme inhibition and antiviral assays

Advantages:

- Effective inhibition of 3CLpro enzyme

- Potent antiviral activity

Applications:

- COVID-19 treatment

TRL: 3

Intellectual Property:

Provisional-Gov. Funding, 2022-02-07, United States | PCT-Gov. Funding, 2022-12-07, WO | CIP-Gov. Funding, 2024-08-06, United States

Keywords: SARS-CoV-2 inhibitor compounds, antiviral drug development, COVID-19 therapy, 3CLprotease inhibitors, block SARS-CoV-2 replication,

Technology ID
2022-GHOS-69724

Category
Pharmaceuticals/Drug Discovery & Development
Pharmaceuticals/Small Molecule Therapeutics
Pharmaceuticals/Research Tools & Assays

Authors
Arun K Ghosh
Ashish Sharma

Further information
Joe Kasper
JRKasper@prf.org

Nathan Smith
nesmith@prf.org

View online

Paxlovid alternative, Molnupiravir alternative, enzyme inhibition assays, potent antiviral activity, COVID-19 treatment