

Modified Chloropyridyl Ester Derivates as Anti-Mpro Inhibitors for Covid-19 Treatment

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Categories:

- Chemistry and Chemical Analysis
- Pharmaceuticals

Keywords:

- Chemistry and Chemical Analysis
- Coronavirus
- COVID-19
- Drug Development
- Inhibitors
- Medicinal Chemistry
- Pharmaceuticals
- Protease Inhibitor
- Respiratory
- Respiratory Diseases
- Therapeutics

Researchers at Purdue University have developed a new class of inhibitors for targeting the main protease (Mpro) of SARS-CoV-2.

There is an unmet need to develop a pharmacological treatment for coronavirus infection that leaves the world faced with an ongoing pandemic and urgent medical crisis. The compounds developed by Purdue researchers in this disclosure are newer modified versions of indole-chloropyridyl ester derivatives that have shown effectiveness as anti-Covid-19 protease inhibitor. One of the compounds, GRL-0920 had anti-viral activity ($IC_{50} = 2.8$ micromolar in Vero-E6 cells) as potent as Remdesivir and completely blocked the infectivity and cytopathic effect of SARS-CoV-2 without significant toxicity.

Advantages:

- Novel and Potent Inhibition of Against SARS-CoV-2 Infection
- Drug-Like Properties

Potential Applications:

- Treatment of Covid-19
- Treatment of Coronavirus
- Treatment of Severe Acute Respiratory Syndrome (SARS)
- Pharmaceutical Research and Development

Technology Validation:

Technology was validated in Vero E6 cells and TMPRSS2 (type II transmembrane serine proteases) overexpressing Vero cells.

Recent Publication:

"GRL-0920, an Indole Chloropyridinyl Ester, Completely Blocks SARS-2-Cov Infection"

American Society of Microbiology

Journal of Molecular Biology and Physiology (mBio)

DOI: 10.1128/mBio.01833-20

"A small molecule compound with an indole moiety inhibits the main protease of SARS-CoV-2 and blocks virus replication"

Nature Communication

DOI: 10.1038/s41467-021-20900-6

People:

- Ghosh, Arun K (Project leader)
- Mesecar, Andrew D
- Mitsuya, Hiroaki

Intellectual Property:

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Contact OTC:

Purdue Office of Technology Commercialization

The Convergence Center

101 Foundry Drive, Suite 2500

West Lafayette, IN 47906

Phone: (765) 588-3475

Fax: (765) 463-3486

Email: otcip@prf.org