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Design and Synthesis of Novel SARS-CoV-2 3C Inhibitors

A novel class of highly potent compounds inhibits a key viral protease (3CLpro) in coronaviruses like SARS-CoV-2, offering superior antiviral performance over existing emergency-authorized treatments.

Purdue University researchers have developed a series of compounds that potently inhibit an enzyme, 3-chymotrypsin like protease (3CLpro), of severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). The COVID-19 respiratory illness is caused by the SARS-CoV-2 coronavirus strain. While there are currently COVID-19 therapeutics authorized for emergency use, issues remain with efficacy, ease of administration and Covid recurrence. Purdue researchers created a new class of compounds capable of potently inhibiting 3CLpro, the main protease found in SARS-CoV-2 required for efficient viral replication. The Purdue compounds are chemically distinct from the current FDA approved SARS-CoV-2 3CLpro inhibitors and they showed more potent inhibition of 3CLpro and overall antiviral activity compared to the approved compounds.

Technology Validation: These compounds are more potent than an in-house prepared FDA approved compound in an enzymatic kinetics assay.

Advantages:

-More potent in vitro than commercially available compounds

-Distinct chemical architecture from other 3CLpro inhibitors.

Applications:

-COVID-19 treatment

-Antiviral therapy

TRL: 3

Intellectual Property:

Technology ID
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Category
Pharmaceuticals/Other

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