

Discovery of Potent Anti-Mpro Inhibitors for Covid-19 Treatment using Alpha-ketoamide 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 discovered that an alpha-ketoamide derivative potently inhibited Covid-19 in cell culture assay. This inhibitor has shown unprecedented antiviral potency against SARS-COV-2 in VERO cells. This compound exerted potent activity in VERO-E6 cells.

Technology Validation:

In cellulo assays in VERO cells.

Advantages:

- IC50 in low nanomolar range
- In cellulo activity

Applications:

- SARS-CoV-2

TRL: 5

Intellectual Property:

Provisional-Gov. Funding, 2020-04-23, United States | Provisional-Gov. Funding, 2020-12-01, United States | NATL-Patent, 2021-02-23, Canada | PCT-Gov. Funding, 2021-02-23, WO | NATL-Patent, 2021-02-23, Russia | NATL-Patent, 2021-02-23, Brazil | NATL-Patent, 2021-02-23, Europe | NATL-Patent, 2021-02-23, Mexico | NATL-Patent, 2021-02-23, Japan | NATL-Patent, 2021-02-23, India | NATL-Patent, 2021-02-23, China | NATL-Patent, 2021-02-

Technology ID

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Category

Pharmaceuticals/Other

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23, Australia | NATL-Patent, 2021-02-23, Republic of Korea | NATL-Patent,
2022-10-21, United States | DIV-Patent, 2025-06-20, Japan

Keywords: alpha-ketoamide derivative, Covid-19 inhibitor, SARS-CoV-2
antiviral, low nanomolar IC50, in cellulo activity, VERO cells, protease
inhibitor, antiviral potency, chemical derivative, cell culture assay