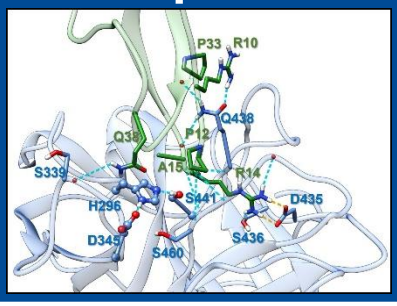
Trypstatin: A Broad-Spectrum Antiviral Therapeutic against Respiratory Viral Pathogens



Technology

Respiratory viral infections, including those caused by SARS-CoV-2, Influenza A and B, various other Coronaviruses, Metapneumoviruses, and Parainfluenza viruses, pose significant health risks globally. Our team has identified Trypstatin, a natural endogenous protease inhibitor with potent activity against TMPRSS2, a critical protease involved in the cellular invasion by a broad spectrum of respiratory pathogens. Trypstatin has demonstrated effective inhibition of infections by not only SARS-CoV-2 and Influenza A virus but also a wide range of respiratory coronaviruses and other significant respiratory viruses in vitro and in vivo. Thus, Trypstatin can serve as broad-spectrum prophylaxis or therapy against respiratory virus infections.

Key Advantages

- Broad-spectrum antiviral agent
- High specificity and superior toxicity profile
- Dual mechanism: inhibits both viral entry (via TMPRSSs) and virus-induced tissue damage (by neutrophil elastase)
- Better efficacy than other naturally occurring protease inhibitors
- Less prone to induce viral resistance
- Biotechnological production straight-forward

Application

- Prophylactic use against infections caused by Influenza A/B, SARS-CoV-2, Metapneumoviruses and Parainfluenza viruses
- Therapeutic application: Designed as a treatment option for already infected individuals
- Inhaler development: Advancing the formulation of Trypstatin for use in an inhaler delivery system, optimizing ease of use and targeting respiratory pathways directly

Corresponding publication

- Trypstatin as a Novel TMPRSS2 Inhibitor wih Broad-Spectrum Efficacy against Corona and Influenza Viruses

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Intellectual Property

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