Astodrimer

Cat. No.: HY-P3626

CAS No.: 1379746-42-5

Target: Bacterial; HCV; SARS-CoV

Pathway: Anti-infection

Storage: Please store the product under the recommended conditions in the Certificate of Analysis.

BIOLOGICAL ACTIVITY

Description

Astodrimer (SPL7013 free base) is a large (3-4 nm, ~ 16.5 kDa), negatively charged, highly-branched dendrimer, is a potent virucidal agent. Astodrimer shows antiviral and virucidal activity against a broad spectrum of viruses, including SARS-CoV-2, HIV-1, HSV-1, HSV-2, HPV. Astodrimer also has antibacterial properties[1][2][3].

In Vitro

Astodrimer (0-10 mg/mL; 4 days) inhibits SARS-CoV-2 (hCoV-19/Australia/VIC01/2020) replication against SARS-CoV-2 (hCoV-19/Australia/VIC01/2020) infection of Vero E6 cells[1].

Astodrimer inhibits the 2019-nCoV/USA-WA1/2020 strain with EC_{50} values of 0.019–0.032 mg/mL and 0.030–0.037 mg/mL for infectious virus in Vero E6 cell and Calu-3 cells, respectively[1].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Cell Proliferation Assay[1]

Cell Line:	Vero E6 cells
Concentration:	0-10 mg/mL(1 h prior to infection, or 1 h post-infection with SARS-CoV-2)
Incubation Time:	4 days
Result:	Inhibited viral replication when added either 1 h prior to infection, or 1 h post-infection with SARS-CoV-2 in a dose dependent manner.

In Vivo

Astodrimer (3%, 8 times daily for 4 days then 4 times daily for 6 days) is non-toxic to rabbit eyes and has anti-adenoviral activity in NZW rabbits[2].

Astodrimer (1%, intranasal administration; once daily for 5 days) reduces the severity of SARS-CoV-2 replication and pathogenesis in the highly susceptible K18-hACE2 mouse model[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Two- to three-pound female NZW rabbits (both eyes with HAdV5 following corneal scarification)[2].
Dosage:	3% SPL7013
Administration:	8 times daily for 4 days then 4 times daily for 6 days

Result:	Inactivated the virus, and the resulting reduction in the exposure to the virus in vivo limits SARS-CoV-2 infection, resulting in significantly lower viral loads and infectious virus in the lung, trachea, brain and liver of K18-hACE2 mic, and significantly lower pro-inflammatory cytokine production.

Animal Model:	Six-to-eight-week-old K18-hACE2 mice[3]
Dosage:	1% astodrimer sodium nasal spray
Administration:	Intranasal administration; 25 μL/nostril; once daily on Days 1-6.
Result:	Significantly reduced the severity of SARS-CoV-2 replication and pathogenesis in the highly susceptible K18-hACE2 mouse model.

REFERENCES

[1]. Paull JRA, et al. Virucidal and antiviral activity of astodrimer sodium against SARS-CoV-2 in vitro. Antiviral Res. 2021 Jul;191:105089.

[2]. Romanowski EG, et al. Topical Astodrimer Sodium, a Non-Toxic Polyanionic Dendrimer, Demonstrates Antiviral Activity in an Experimental Ocular Adenovirus Infection Model. Molecules. 2021 Jun 5;26(11):3419.

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA