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Product Data Sheet

Presatovir

 Cat. No.:
 HY-16727

 CAS No.:
 1353625-73-6

 Molecular Formula:
 C₂₄H₃₀ClN₇O₃S

Molecular Weight: 532.06 Target: RSV

Pathway: Anti-infection

Storage: Powder -20°C 3 years

4°C 2 years

In solvent -80°C 2 years

-20°C 1 year

SOLVENT & SOLUBILITY

In Vitro

 $\label{eq:DMSO:6mg/mL} DMSO:6\,mg/mL\,(11.28\,mM;\,Need\,ultrasonic\,and\,warming)$ $H_2O:<0.1\,mg/mL\,(ultrasonic;warming;heat\,to\,60^{\circ}C)\,(insoluble)$

Preparing Stock Solutions	Solvent Mass Concentration	1 mg	5 mg	10 mg
	1 mM	1.8795 mL	9.3974 mL	18.7949 mL
	5 mM	0.3759 mL	1.8795 mL	3.7590 mL
	10 mM	0.1879 mL	0.9397 mL	1.8795 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

- 1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline Solubility: ≥ 0.6 mg/mL (1.13 mM); Clear solution
- 2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline) Solubility: ≥ 0.6 mg/mL (1.13 mM); Clear solution
- 3. Add each solvent one by one: 10% DMSO >> 90% corn oil Solubility: ≥ 0.6 mg/mL (1.13 mM); Clear solution
- 4. Add each solvent one by one: 5% DMSO >> 40% PEG300 >> 5% Tween-80 >> 50% saline Solubility: ≥ 0.48 mg/mL (0.90 mM); Clear solution
- 5. Add each solvent one by one: 5% DMSO >> 95% (20% SBE- β -CD in saline) Solubility: \geq 0.48 mg/mL (0.90 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Presatovir (GS-5806) is an orally bioavailable RSV fusion inhibitor with a mean EC_{50} value of 0.43 nM^[1].

IC ₅₀ & Target	EC50: 0.43 nM (RSV) ^[1]
In Vitro	Presatovir is a novel, orally bioavailable RSV fusion inhibitor discovered following a lead optimization campaign on a hit originated from a phenotypic RSV antiviral high-throughput screen. Presatovir exhibits potent activity against a wide range of RSV A and B clinical isolates with a mean EC ₅₀ value of 0.43 nM ^[1] . GS-5806 inhibits pre to post triggered conformational changes of RSV F protein, suggesting a possible mechanism for antiviral activity ^[2] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Presatovir demonstrates dose-dependent (0-30 mg/kg) antiviral efficacy in a cotton rat model of RSV infection. Oral bioavailability in preclinical species ranges from 46 to 100%, with penetration of the compound into the lung tissue demonstrated in Sprague-Dawley rats. Multidose oral treatment of Presatovir appears safe in adults, and in healthy human volunteers experimentally infected with RSV, a potent antiviral effect and reduction in disease severity is observed in the high dose group. A group treated with a lower dose of Presatovir allows for a PK-PD relationship to be established to help guide future dose selections ^[1] . MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]

GS-5806 are diluted in 100% DMSO. To conduct the cytopathic antiviral assay, 0.4 μ L of 100×concentrated 3-fold serially diluted drug is added to 20 μ L of cell culture medium in a 384-well plate. HEp-2 cells are then suspended in MEM plus 10% FBS at a density of 1×10⁵ cells/mL, are infected in bulk with RSV A2 at a titer of approximately 1×10^{4.5} tissue culture infectious doses/mL. Immediately following infection, 20 μ L of RSV-infected cells are added to each well. The cells are then cultured for 4 days at 37 °C. Following this incubation the cells are allowed to equilibrate to 25°C. The RSV-induced cytopathic effect is determined by adding 40 μ L of Cell-Titer Glo viability reagent. Following a 10 min incubation at 25 °C, cell viability is determined [1].

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

CUSTOMER VALIDATION

- J Enzyme Inhib Med Chem. 2022 Dec;37(1):2598-2604.
- J Virol. 2021 Aug 11; JVI0120521.
- J Antimicrob Chemother. 2018 Jul 1;73(7):1823-1829.
- Chemrxiv. 2024 Mar 22.

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REFERENCES

[1]. Mackman RL, et al. Discovery of an oral respiratory syncytial virus (RSV) fusion inhibitor (GS-5806) and clinical proof of concept in a human RSV challenge study. J Med Chem. 2015 Feb 26;58(4):1630-1643.

[2]. Samuel D, et al. GS-5806 inhibits pre- to postfusion conformational changes of the respiratory syncytial virus fusion protein. Antimicrob Agents Chemother. 2015 Nov;59(11):7109-12.

 $\label{lem:caution:Product} \textbf{Caution: Product has not been fully validated for medical applications. For research use only.}$

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