Galidesivir

Cat. No.: HY-18649A

CAS No.: 249503-25-1

Molecular Formula: $C_{11}H_{15}N_5O_3$

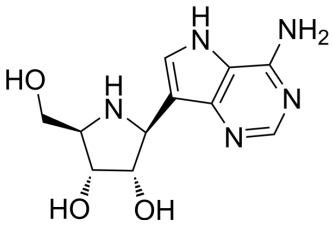
Molecular Weight: 265.27

Target: Filovirus; DNA/RNA Synthesis; SARS-CoV

Pathway: Anti-infection; Cell Cycle/DNA Damage

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

H_2O : 1.53 mg/mL (5.77 mM; Need ultrasonic and warming)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.7697 mL	18.8487 mL	37.6974 mL
5 mM	0.7539 mL	3.7697 mL	7.5395 mL
10 mM	---	---	---

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

BIOLOGICAL ACTIVITY

Description

Galidesivir (BCX4430), an adenosine analog and a direct-acting antiviral agent, disrupts viral RNA-dependent RNA polymerase (RdRp) activity. Galidesivir is active in vitro against many RNA viral pathogens, including the filoviruses and emerging infectious agents such as MERS-CoV, SARS-CoV, and SARS-CoV-2. Galidesivir inhibits some negative-sense RNA viruses with EC_{50}s ranging from ~3 to ~68 μM[1][2][3].

IC_{50} & Target

RdRp

In Vitro

Cellular kinases phosphorylate Galidesivir (BCX4430) to a triphosphate that mimics ATP; viral RNA polymerases incorporate the drug's monophosphate nucleotide into the growing RNA chain, causing premature chain termination[1].

Galidesivir effectively inhibits the infection of Vero cells with YFV. The EC50 determined by the neutral red uptake assay is 8.3 μg/ml (24.5 μM)[3].

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

In Vivo

Galidesivir (BCX4430) is active after intramuscular, intraperitoneal, and oral administration in a variety of experimental infections. In nonclinical studies involving lethal infections with Ebola virus, Marburg virus, Rift Valley fever virus, and Yellow

Fever virus, Galidesivir has demonstrated pronounced efficacy[1].
Galidesivir (4 mg/kg; i.p.; twice daily for 7 days) is effectively in a hamster model of yellow fever (YF)[4].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Female Syrian golden hamsters (hamsters infected with YF virus)[4]
Dosage:	4 mg/kg of body weight
Administration:	I.p.; twice daily for 7 days
Result:	Significantly improved the survival of hamsters infected with YFV.

CUSTOMER VALIDATION

- Nucleic Acids Res. 2021 Jan 8;49(D1):D1113-D1121.
- Antimicrob Agents Chemother. 2019 Feb 26;63(3):e02093-18.
- Microorganisms. 2021 Mar 31;9(4):734.
- Antiviral Res. 2017 Mar 21;142:63-67.
- Viruses. 2020 Jun 10;12(6):628.

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REFERENCES

[1]. Elfiky AA, et al. ICN-1229, Remdesivir, PSI-7977, Galidesivir, and GS 1278 against SARS-CoV-2 RNA dependent RNA polymerase (RdRp): A molecular docking study. Life Sci. 2020 Mar 25:117592.

[2]. Taylor R, et al. BCX4430 - A broad-spectrum antiviral adenosine nucleoside analog under development for the treatment of Ebola virus disease. J Infect Public Health. 2016;9(3):220-226.

[3]. Warren TK, et al. Protection against filovirus diseases by a novel broad-spectrum nucleoside analogue BCX4430. Nature. 2014;508(7496):402-405.

[4]. Julander JG, et al. BCX4430, a novel nucleoside analog, effectively treats yellow fever in a Hamster model. Antimicrob Agents Chemother. 2014;58(11):6607-6614.

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