EIDD-1931

Cat. No.: HY-125033

CAS No.: 3258-02-4

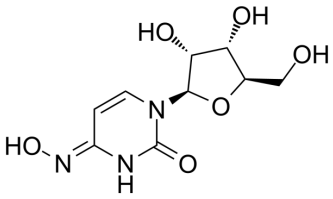
Molecular Formula: $C_9H_{13}N_3O_6$

Molecular Weight: 259.22

Target: SARS-CoV; Enterovirus; HCV; Topoisomerase

Pathway: Anti-infection; Cell Cycle/DNA Damage

Storage: Powder -20°C 3 years
4°C 2 years
* The compound is unstable in solutions, freshly prepared is recommended.



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (385.77 mM; Need ultrasonic)
H_2O : ≥ 25 mg/mL (96.44 mM)
* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.8577 mL	19.2886 mL	38.5773 mL
5 mM	0.7715 mL	3.8577 mL	7.7155 mL
10 mM	0.3858 mL	1.9289 mL	3.8577 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: ≥ 2.08 mg/mL (8.02 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.08 mg/mL (8.02 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.08 mg/mL (8.02 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

EIDD-1931 (Beta-d-N4-hydroxycytidine; NHC) is a novel nucleoside analog and behaves as a potent anti-virus agent. EIDD-1931 effectively inhibits the replication activity of venezuelan equine encephalitis virus (VEEV), Chikungunya virus (CHIKV) and hepatitis C virus (HCV)[1].

In Vitro

Beta-d-N4-hydroxycytidine is an anti-VEEV (venezuelan equine encephalitis virus) agent with EC_{50}, EC_{90}, and EC_{99} are 0.426, 1.036, and 2.5 μM, respectively[1].

Beta-d-N4-hydroxycytidine inhibits CHIKV replicon activity and the 50% effective concentration (EC_{50}) s 0.8 μM in the Huh-7–CHIKV replicon cell line. Similar results is presented with the replicon in BHK-21 cells (EC_{50}=1.8 μM)[2].
NHC has no cytotoxicity for NHC in the Huh-7 cell culture system until up to 100 μM using MTT assays. The 50% cytotoxic concentration (CCsub>50) values for NHC are determined to be 30.6 μM, 7.7 μM, and 2.5 μM in peripheral blood mononuclear (PBM), Vero, and CEM cells, respectively[2].
NHC behaves as a pyrimidine analog, NHC-mediated inhibition of the CHIKV replicon can be abrogated by the addition of exogenous nucleosides, such as pyrimidines C and U, but dA, dC, dG, dU, or T has no impact on the replicon. Pyrimidines A and G contributes to replicon inhibition both in the presence and in the absence of NHC[2].
MCE has not independently confirmed the accuracy of these methods. They are for reference only.

CUSTOMER VALIDATION

- Nat Cell Biol. 2023 Aug;25(8):1223-1234.
- Nucleic Acids Res. 2021 Jan 8;49(D1):D1113-D1121.
- ACS Sens. 2022 May 27;7(5):1564-1571.
- Antiviral Res. 2023 Dec 4:105769.
- Antiviral Res. 2023 May 3;214:105619.

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REFERENCES

[1]. Urakova N, et al. β-d-N^4-Hydroxycytidine Is a Potent Anti-alphavirus Compound That Induces a High Level of Mutations in the Viral Genome. J Virol. 2018 Jan 17;92(3). pii: e01965-17.

[2]. Brenda I Hernandez-Santiago, et al. Metabolism of the anti-hepatitis C virus nucleoside beta-D-N4-hydroxycytidine in different liver cells. Antimicrob Agents Chemother. 2004 Dec;48(12):4636-42

[3]. Maryam Ehteshami, et al. Characterization of β-d- N4-Hydroxycytidine as a Novel Inhibitor of Chikungunya Virus.

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