Data Sheet (Cat.No.T36881)

TargetMol

NHC-diphosphate triammonium

Chemical Properties

CAS No. :

Formula:

Molecular Weight:

Storage: Powder: -20°C for 3 years | In solvent: -80°C for 1 year
Actual storage temperature shall be subject to the COA.

Biological Description

Description	NHC-triphosphate triammonium is an active phosphorylated intracellular metabolite of β-d-N4-Hydroxycytidine (NHC) as a triphosphate form[1]. NHC-triphosphate triammonium is a weak alternative substrate for the viral polymerase and can be incorporated into HCV replicon RNA[1][2].
Targets(IC50)	Others,HCV Protease,Endogenous Metabolite,SARS-CoV,Topoisomerase,Virus Protease
In vitro	In an intracellular metabolism assay conducted on HCV replicon cells exposed to 10 μM 3H-labeled NHC, the transformation of NHC into its mono-, di-, and triphosphate forms is documented, exhibiting a significant increase in the NHC-triphosphate (NHC-TP) concentration up to 71.12 pM after 8 hours. The absence of NHC-TP at concentrations ranging from 5-40 μM results in complete polymerization, serving as a modest alternate substrate. Moreover, substituting NHC-TP for CTP during polymerization increases the weight of the resultant product by 16 units (attributable to an additional oxygen molecule), causing a noticeable electrophoretic shift in cell-free HCV NS5B polymerization reactions. In experiments utilizing Huh-7 cells treated with 10-50 μM NHC or a McGuigan phosphoramidate prodrug of NHC for 4 hours, analysis through LC-MS/MS reveals minor levels of NHC-mono- and diphosphates, with NHC-TP remaining the predominant metabolite. The NHC-TP metabolite is hypothesized to directly interact with the viral polymerase, acting as a potential nonobligate chain terminator and playing a crucial role in inhibiting the synthesis of early negative-strand RNA. This inhibition could lead to the disruption of proper replicase complex formation, either through chain termination or mutagenesis.

Solubility Information

Solubility	H2O: 160 mg/mL,Sonication and heating are recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Reference

Stuyver LJ,et al. Ribonucleoside analogue that blocks replication of bovine viral diarrhea and hepatitis C viruses in culture.Antimicrob Agents Chemother. 2003 Jan;47(1):244-54.

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

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