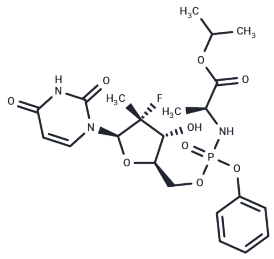
Data Sheet (Cat.No.T6676)

TargetMol

Sofosbuvir

Chemical Properties



CAS No. : 1190307-88-0

Formula: C22H29FN3O9P

Molecular Weight: 529.45

Appearance: no data available

Storage: keep away from moisture,store at low temperature, store under nitrogen
Powder: -20°C for 3 years | In solvent: -80°C for 1 year

Biological Description

Description	Sofosbuvir (GS 7977) is a uridine monophosphate analog inhibitor of hepatitis C virus (HCV) polymerase NS5B that is used as an antiviral agent in the treatment of chronic hepatitis C.
Targets(IC50)	HCV Protease
In vitro	As HCV NS5B polymerase inhibitor, PSI-7977 displays more potent inhibitory activity against HCV RNA replication than PSI-7976 with EC50 of 92 nM versus 1.07 μM and EC90 of 0.29 μM versus 2.99 μM, consistent with that incubating clone A cells with PSI-7977 leads to a higher concentration of PSI-7409 than clone A cells incubated with PSI-7976. PSI-7977 is an effective substrate for CatA to form PSI-352707 with 18-30 fold more potency as compared with PSI-7976. Unlike GS-7976, however, the CES1-mediated hydrolysis of PSI-7977 does not progress in a time-dependent manner. [1] The S282T NS5B polymerase mutation but not S96T mutation confers resistance to PSI-7977 with EC90 increases from 0.42 μM to 7.8 μM. When assessed in an 8-day cytotoxicity assay, PSI-7977 displays no cytotoxicity against Huh7, HepG2, BxPC3, and CEM cells even at concentrations up to 100 μM. PSI-7977 treatment for 14 days shows a IC90 of 72.1 μM and 68.6 μM for the inhibition of mtDNA and rDNA, respectively, in HepG2 cells. [2] PSI-7977 exhibits potent activity against genotype (GT) 1a, 1b, and 2a (strain JFH-1) replicons and chimeric replicons containing GT 2a (strain J6), 2b, and 3a NS5B polymerase. Sequence analysis of the JFH-1 NS5B region indicates that additional amino acid changes including T179A, M289L, I293L, M434T, and H479P are selected both prior to and after the emergence of S282T, which are required to confer resistance to PSI-7977. [3]
Kinase Assay	PTEN Inhibition Assay: To determine the dose response of potential PTEN inhibitors, doses of test compounds ranging from 1 nM to 250 uM (final reaction mix concentrations) are evaluated in the general PTEN inhibition assay. To obtain performed IC50 data, two separate rounds of the dose response assay are performed. In the first round, PTEN activity is tested in the presence of inhibitor at 10 fold serial dilutions ranging from 1 nM to 250 uM. Once the concentration range is determined, at which PTEN activity changes dramatically, two additional concentration data points within this range are added and the PTEN inhibition assay is then rerun for the second round. The PTEN inhibition IC50 is presented as the inhibitor concentration at which 50% of the PTEN activity. When the assay was run on multiple occasions and gave slightly different IC50

	then those are reported as a range of IC50 found.
Cell Research	Cells are exposed to various concentrations of PSI-7977 for 8 days. At the end of the growth period, MTS dye from the CellTiter 96 AQueous One Solution Cell Proliferation Assay kit is added to each well, and the plate is incubated for an additional 2 hours. The absorbance at 490 nm is read with a Victor3 plate reader using themedium only controlwells as blanks. The 50% inhibition value (IC50) is determined by comparing the absorbance in wells containing cells and PSI-7977 to untreated cell control wells.(Only for Reference)

Solubility Information

Solubility	Ethanol: 93 mg/mL (175.65 mM),Sonication is recommended. DMSO: 60 mg/mL (113.33 mM),Sonication is recommended. H2O: 9 mg/mL (17 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	1.8888 mL	9.4438 mL	18.8875 mL
5 mM	0.3778 mL	1.8888 mL	3.7775 mL
10 mM	0.1889 mL	0.9444 mL	1.8888 mL
50 mM	0.0378 mL	0.1889 mL	0.3778 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Reference

Murakami E, et al. J Biol Chem, 2010, 285(45), 34337-34347.
Sofia MJ, et al. J Med Chem, 2010, 53(19), 7202-7218.
Lam AM, et al. Antimicrob Agents Chemother, 2012, 56(6), 3359-3368.

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