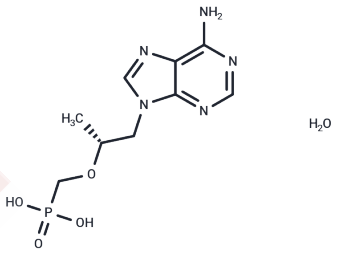
Data Sheet (Cat.No.T1649L)

TargetMol

Tenofovir hydrate

Chemical Properties



CAS No. : 206184-49-8

Formula: C9H16N5O5P

Molecular Weight: 305.23

Storage: Keep away from direct sunlight,Keep away from moisture,Store at low temperature
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	Tenofovir hydrate (GS 1278 hydrate) is a nucleotide reverse transcriptase inhibitor with antiviral activity, inhibits EBV replication, and is used in the study of HIV and HBV.
Targets(IC50)	HIV Protease,Reverse Transcriptase
In vitro	Tenofovir hydrate exhibited cytotoxic effects in HK-2 cells, with IC50 values of 9.21 and 2.77 μM at 48 h and 72 h, respectively, in the MTT assay.Tenofovir hydrate decreased ATP levels in HK-2 cells and increased oxidative stress and protein carbonylation in the range of 3.0 to 28.8 μM. In addition, Tenofovir hydrate induced apoptosis in HK-2 cells through mitochondrial damage. [1] The formulation of Tenofovir hydrate and M48U1 in 0.25% HEC inhibited replication of R5ophilic HIV-1BaL and X4ophilic HIV-1IIIb in activated PBMCs, as well as multiple laboratory strains and patient-derived HIV-1 strains. The combination of M48U1 and Tenofovir hydrate demonstrated synergistic antiviral activity against R5ophilic HIV-1BaL infection and was non-toxic to PBMCs. [2]
In vivo	Tenofovir Disoproxil fumarate (20, 50, 140, or 300 mg/kg) administered to BLT mice shows dose-dependent activity against vaginal HIV challenge in BLT humanized mice, significantly decreasing HIV transmission at 50, 140, and 300 mg/kg [3]. Additionally, Tenofovir Disoproxil fumarate (0.5, 1.5, or 5.0 mg/kg/day, p.o.) causes a dose-dependent decline in serum viremia in woodchucks chronically infected with WHV, proving to be safe and effective in the woodchuck model of chronic HBV infection [4].

Solubility Information

Solubility	DMSO: 2 mg/mL (6.55 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.2762 mL	16.3811 mL	32.7622 mL
5 mM	0.6552 mL	3.2762 mL	6.5524 mL
10 mM	0.3276 mL	1.6381 mL	3.2762 mL
50 mM	0.0655 mL	0.3276 mL	0.6552 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.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Musumeci G, et al. M48U1 and Tenofovir combination synergistically inhibits HIV infection in activated PBMCs and human cervicovaginal histocultures. Sci Rep. 2017 Feb 1;7:41018.
Murphy RA, et al. Establishment of HK-2 Cells as a Relevant Model to Study Tenofovir-Induced Cytotoxicity. Int J Mol Sci. 2017 Mar 1;18(3):531.