

Tenofovir (hydrate)

Catalog No: tcsc1874



Available Sizes

Size: 5mg

Size: 10mg

Size: 50mg



Specifications

CAS No:

206184-49-8

Formula:

$C_9H_{16}N_5O_5P$

Pathway:

Anti-infection;Anti-infection

Target:

Reverse Transcriptase;HIV

Purity / Grade:

>98%

Solubility:

DMSO : ≥ 6 mg/mL (19.66 mM)

Alternative Names:

GS 1278 hydrate;PMPA hydrate;TDF hydrate

Observed Molecular Weight:

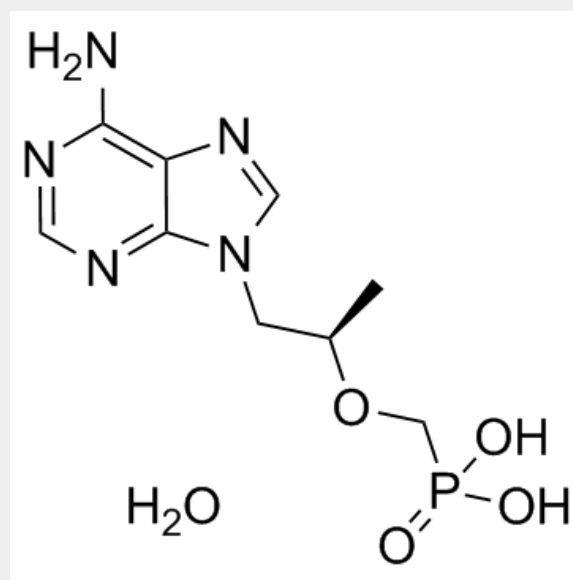
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Product Description

Tenofovir hydrate is a **nucleotide reverse transcriptase inhibitor** to treat HIV and chronic Hepatitis B.

In Vitro: Tenofovir shows cytotoxic effects on cell viability in HK-2 cells, with IC₅₀ values of 9.21 and 2.77 μM at 48 and 72 h in MTT assay, respectively. Tenofovir diminishes ATP levels in HK-2 cells. Tenofovir (3.0 to 28.8 μM) increases oxidative stress and protein carbonylation in HK-2 cells. Furthermore, Tenofovir induces apoptosis in HK-2 cells, and that apoptosis is induced via mitochondrial damage^[1]. Tenofovir and M48U1 formulated in 0.25% HEC each inhibits the replication of both R5-tropic HIV-1_{BaL} and X4-tropic HIV-1_{IIIb} in activated PBMCs, and inhibits several laboratory strains and patient-derived HIV-1 isolates. The combined formulation of M48U1 and tenofovir in 0.25% HEC exhibits synergistic antiretroviral activity against infection with R5-tropic HIV-1_{BaL}, and is not toxic to PBMCs^[2].

In Vivo: Tenofovir Disoproxil Fumarate (20, 50, 140, or 300 mg/kg) administered to BLT mice, shows dose dependent activity during vaginal HIV challenge in BLT humanized mice. Tenofovir Disoproxil Fumarate (50, 140, 300 mg/kg) significantly reduces HIV transmission in BLT mice^[3]. Tenofovir Disoproxil Fumarate (0.5, 1.5, or 5.0 mg/kg/day, p.o.) induces a dose-dependent decline in serum viremia in woodchucks chronically infected with WHV. Tenofovir Disoproxil Fumarate administration is safe and effective in the woodchuck model of chronic HBV infection^[4].



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