
Product Data Sheet

Product Name: Tenofovir diphosphate

Cat. No.: GC60357

Chemical Properties

Cas. No. 166403-66-3

SMILES C[C@@H](OC[P](O[P](O[P](O)(O)=O)(O)=O)(O)=O)CN1C2=NC=NC(N)=C2N=C1Formula $C_9H_{16}N_5O_{10}P_3$

M.Wt

447.17

Solubility

Storage

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice. All other available size: ship with RT, or blue ice upon request.

Structure **Background**

Tenofovir diphosphate is an inhibitor of HIV reverse transcriptase (K_i s = 0.022 and 1.55 μ M for RNA and DNA, respectively) and hepatitis B virus (HBV) polymerase (K_i = 0.18 μ M).^{1,2} It is selective for these enzymes over DNA polymerase α and β , as well as mitochondrial DNA polymerase γ (K_i s = 5.2, 81.7, and 59.5 μ M, respectively). Tenofovir diphosphate is formed intracellularly through phosphorylation of the prodrugs tenofovir and tenofovir disoproxil by nucleotide kinases.³ Increased levels of tenofovir diphosphate in isolated peripheral blood mononuclear cells (PBMCs) correlate with a decrease in the risk of simian HIV (SHIV) acquisition in a macaque model of rectal SHIV transmission.⁴

1. Cherrington, J.M., Allen, S.J.W., Bischofberger, N., et al. Kinetic interaction of the diphosphates of 9-(2-phosphonylmethoxyethyl)adenine and other anti-HIV active purine congeners with HIV reverse transcriptase and human DNA polymerases α , β and γ . *Antivir. Chem. Chemother.* 6(4):217-221 (1995)
 2. Delaney, W.E., IV, Ray, A.S., Yang, H., et al. Intracellular metabolism and in vitro activity of tenofovir against hepatitis B

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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virusAntimicrob. Agents Chemother.50(7)2471-2477(2006) 3.Robbins, B.L., Srinivas, R.V., Kim, C., et al.Anti-human immunodeficiency virus activity and cellular metabolism of a potential prodrug of the acyclic nucleoside phosphonate 9-R-(2-phosphonomethoxypropyl)adenine (PMPA), bis(isopropylloxymethylcarbonyl)PMPAAntimicrob. Agents Chemother.42(3)612-617(1998) 4.Anderson, P.L., Glidden, D.V., Bushman, L.R., et al.Tenofovir diphosphate concentrations and prophylactic effect in a macaque model of rectal simian HIV transmissionJ. Antimicrob. Chemother.69(9)2470-2476(2014)

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