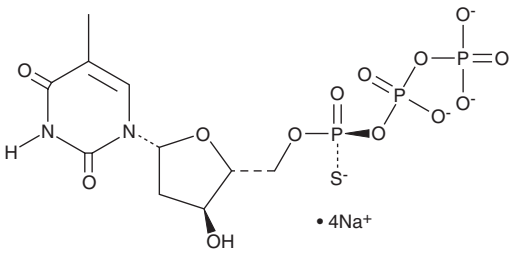
PRODUCT INFORMATION

Sp-Thymidine-5'-O-(1-thiotriphosphate) (sodium salt)

Item No. 38690

Formal Name: thymidine, 5′→P′′-ester with [P′′(S)]-thiotriphosphoric acid ((HO)2P(O)OP(O)(OH)OP(O)(OH)(SH)), tetrasodium salt
Synonym: Sp-TTP-α-S
MF: $C_{10}H_{13}N_2O_{13}P_3S \bullet 4Na$
FW: 586.2
Purity: ≥95%
Supplied as: A solution in water
Storage: -80°C
Stability: ≥4 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Description

Sp-Thymidine-5'-O-(1-thiotriphosphate) (Sp-TTP-α-S) is an isomer of the sulfur-containing nucleotide derivative TTP-α-S.[1] It binds to HIV-1 reverse transcriptase (K_ds = 2.88, 4.23, and 20.21 µM in the presence of magnesium, manganate, and cobalt, respectively). Sp-TTP-α-S inhibits deoxynucleoside triphosphate triphosphohydrolase SAMHD1 (K_i = 46 nM).[2]

References

1. Radzio, J. and Sluis-Cremer, N. Stereo-selectivity of HIV-1 reverse transcriptase toward isomers of thymidine-5'-O-1-thiotriphosphate. *Protein Sci.* **14(7)**, 1929-1933 (2005).
2. Morris, E.R., Kunzelmann, S., Caswell, S.J., *et al.* Probing the catalytic mechanism and inhibition of SAMHD1 using the differential properties of R_p- and S_p-dNTPαS diastereomers. *Biochemistry* **60(21)**, 1682-1698 (2021).

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