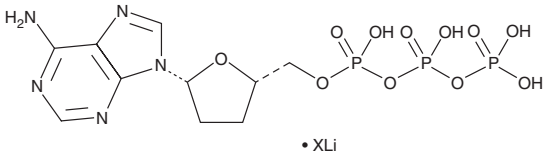
PRODUCT INFORMATION

2',3'-Dideoxyadenosine 5'-triphosphate (lithium salt)

Item No. 17460

Formal Name: 2',3'-dideoxy-adenosine 5'-(tetrahydrogen triphosphate), lithium salt
Synonym: ddATP
MF: $C_{10}H_{16}N_5O_{11}P_3 \bullet XLi$
FW: 475.2
Purity: ≥98%
Supplied as: A 10 mM solution in water
Storage: -20°C
Stability: ≥2 years



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

Description

ddATP is an *in vitro* inhibitor of reverse transcriptases from retroviruses, including HIV-1 and visna (K_is = 20 and 37 nM, respectively).[1-3] It also blocks, *in vitro*, mammalian and bacterial DNA polymerases.[4,5] ddATP, produced intracellularly by the phosphorylation of exogenously supplied 2',3'-dideoxyadenosine, competes with dATP, resulting in chain termination.[4,5] Because of this activity, dideoxynucleoside 5'-triphosphates, including ddATP, are used to terminate chain extension produced by the *Taq* polymerase used in polymerase chain reactions.[6] It is also an antagonist of the purinergic receptor $P2X_{2/3}$ (pIC_{50} = 6.5).[7]

References

1. Boyle, N.A., Rajwanshi, V.K., Prhavc, M., *et al.* Synthesis of 2',3'-dideoxynucleoside 5'-α-P-borano-β, γ-(difluoromethylene)triphosphates and their inhibition of HIV-1 reverse transcriptase. *J. Med. Chem.* **48(7)**, 2695-2700 (2005).
2. Frank, K.B., McKernan, P.A., Smith, R.A., *et al.* Visna virus as an *in vitro* model for human immunodeficiency virus and inhibition by ribavirin, phosphonoformate, and 2',3'-dideoxynucleosides. *Antimicrob. Agents Chemother.* **31(9)**, 1369-1374 (1987).
3. Ueno, T., Shirasaka, T., and Mitsuya, H. Enzymatic characterization of human immunodeficiency virus type 1 reverse transcriptase resistant to multiple 2',3'-dideoxynucleoside 5'-triphosphates. *J. Biol. Chem.* **270(40)**, 23605-23611 (1995).
4. Toji, L. and Cohen, S.S. The enzymatic termination of polydeoxynucleotides by 2',3'-dideoxyadenosine triphosphate. *Proc. Natl. Acad. Sci. USA* **63(3)**, 871-877 (1969).
5. Yagura, T., Kozu, T., and Seno, T. Mouse DNA polymerase accompanied by a novel RNA polymerase activity: Purification and partial characterization. *J. Biochem.* **91(2)**, 607-618 (1982).
6. Li, Y., Mitaxov, V., and Waksman, G. Structure-based design of *Taq* DNA polymerases with improved properties of dideoxynucleotide incorporation. *Proc. Natl. Acad. Sci. USA* **96(17)**, 9491-9496 (1999).
7. Jarvis, M.F., Bianchi, B., Uchic, J.T., *et al.* [3H]A-317491, a novel high-affinity non-nucleotide antagonist that specifically labels human $P2X_{2/3}$ and $P2X_3$ receptors. *J. Pharmacol. Exp. Ther.* **310(1)**, 407-416 (2004).

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