

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: C₁₀H₁₆N₅O₁₁P₃ • XLi

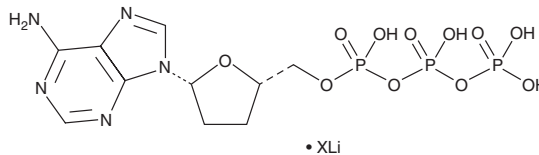
FW: 475.2

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_i s = 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., Prhavic, 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 polydideoxynucleotides 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 P2X₃ receptors. *J. Pharmacol. Exp. Ther.* **310(1)**, 407-416 (2004).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 10/18/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD

ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897

[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM

WWW.CAYMANCHEM.COM