# Product Data Sheet

Product Name: AZT triphosphate TEA
Cat. No.: GC60617

## Chemical Properties

| | | | |
|---|---|---|---|
| Cas. No. | | | |
| SMILES | O=C(NC(C(C)=C1)=O)N1[C@H](O2)C[C@H](N=[N+]=[N-])[C@H]2COP(O)(OP(OP(O)(O)=O)(O)=O)=O.CCN(CC)CC.[x] | | |
| Formula | $C_{10}H_{16}N_5O_{13}P_3.xC_6H_{15}N$ | M.Wt | |
| Solubility | | Storage | Store at -20°C |
| General tips | For obtaining a higher solubility , please warm the tube at 37 ℃ and shake it in the ultrasonic bath for a while.Stock solution can be stored below -20℃ 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 | AZT triphosphate TEA | | |

## Background

AZT triphosphate TFA (3'-Azido-3'-deoxythymidine-5'-triphosphate TFA) is a active triphosphate metabolite of Zidovudine (AZT). AZT triphosphate TFA exhibits antiretroviral activity and inhibits replication of HIV. AZT triphosphate TFA also inhibits the DNA polymerase of HBV. AZT triphosphate TFA activates the mitochondria-mediated apoptosis pathway[1][2][3].

Treatment with 100 μM Zidovudine (AZT) for 48h disrupts the mitochondrial tubular network via accumulation of AZT triphosphate (AZT-TP) in H9c2 cells. AZT triphosphate accumulation causes downregulation of Opa1 and upregulation of Drp1. AZT triphosphate causes mitochondrial dysfunction, increases the production of cytotoxic reactive oxygen species (ROS), and impairs the balance of the mitochondrial quality control system in H9c2 cell model established from rat embryonic myoblasts[1].

[1]. Ryosuke Nomura, et al. Azidothymidine-triphosphate Impairs Mitochondrial Dynamics by Disrupting the Quality Control System. Redox Biol. 2017 Oct;13:407-417.
[2]. Takeya Sato, et al. Engineered Human tmpk/AZT as a Novel Enzyme/Prodrug Axis for


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Suicide Gene Therapy. Mol Ther. 2007 May;15(5):962-70. [3]. K Y Hostetler, et al. Enhanced Oral Absorption and Antiviral Activity of 1-O-octadecyl-sn-glycero-3-phospho-acyclovir and Related Compounds in Hepatitis B Virus Infection, in Vitro. Biochem Pharmacol. 1997 Jun 15;53(12):1815-22.


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