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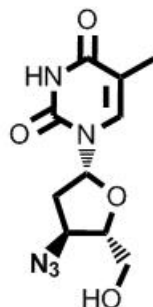
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## Reverse Transcriptase Inhibitor –Azidothymidine (AZT)

**Chemical Name:** 1-((2R,4S,5S)-4-azido-5-(hydroxymethyl)tetrahydrofuran-2-yl)-5-methylpyrimidine-2,4(1H,3H)-dione



Molecular Weight:	267.24
Formula:	C <sub>10</sub> H <sub>13</sub> N <sub>5</sub> O <sub>4</sub>
Purity:	≥98%
CAS#:	30516-87-1
Solubility:	DMSO up to 100 mM Water up to 50 mM
Storage	Powder: 4 °C 1 year DMSO: 4 °C 3 months -20 °C 1 year

### Biological Activity:

Azidothymidine (AZT) is a selective, orally bioavailable and brain penetrant reverse transcriptase inhibitor. It has 100-fold selectivity for HIV reverse transcriptase over DNA polymerase  $\alpha$ . It can suppress HIV-1 replication and enhance cell viability in a HIV-1 infected T cell line. It can also suppress growth of a multiple myeloma (MM) cell line and reduces the growth of MM tumor xenografts in mice. In recent studies, AZT can enhance CRISPR-mediated sequence-specific gene knockout via NHEJ in human induced pluripotent stem cells (iPSCs) and other cell types.

### How to Use:

**In vitro:** Azidothymidine (AZT) was used at 5-30  $\mu$ M final concentration in various in vitro assays.

**In vivo:** Azidothymidine (AZT) was dosed to mice at 10-50 mg/kg orally once per day.

### Reference:

1. Mitsuya H, et al. 3'-Azido-3'-deoxythymidine (BW A509U): an antiviral agent that inhibits the infectivity and cytopathic effect of human T-lymphotropic virus type III/lymphadenopathy-associated virus in vitro. (1985) Proc Natl Acad Sci USA. 82(20):7096-100.
2. Furman PA, et al. Phosphorylation of 3'-azido-3'-deoxythymidine and selective interaction of the 5'-triphosphate with human immunodeficiency virus reverse transcriptase. (1986) Proc Natl Acad Sci USA. 83(21):8333-7.
3. Broder S, et al. The development of antiretroviral therapy and its impact on the HIV-1/AIDS pandemic. (2010) Antiviral Res. 85(1):1-18.
4. Pereira J, et al. Azidothymidine is effective against human multiple myeloma: a new use for an old drug? (2013) Anticancer Agents Med Chem. 13(1):186-92.
5. Yu C, et al. Small Molecules Enhance CRISPR Genome Editing in Pluripotent Stem Cells. (2015) Cell Stem Cell 16(2):142-7.

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