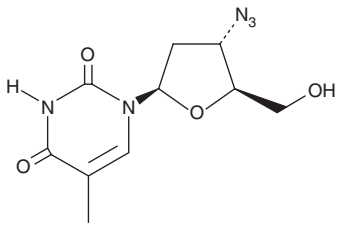
# PRODUCT INFORMATION

## Zidovudine

*Item No. 15492*

**CAS Registry No.:** 30516-87-1
**Formal Name:** 3'-azido-3'-deoxy-thymidine
**Synonyms:** Azidothymidine, AZT, NSC 602670, ZDV
**MF:** $C_{10}H_{13}N_5O_4$
**FW:** 267.3
**Purity:** ≥98%
**UV/Vis.:** $\lambda_{max}$: 209, 266 nm
**Supplied as:** A crystalline solid
**Storage:** -20°C
**Stability:** ≥4 years




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

### Laboratory Procedures

Zidovudine is supplied as a crystalline solid. A stock solution may be made by dissolving the zidovudine in the solvent of choice, which should be purged with an inert gas. Zidovudine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of zidovudine in ethanol is approximately 10 mg/ml and approximately 30 mg/ml in DMSO and DMF.

Further dilutions of the stock solution into aqueous buffers or isotonic saline should be made prior to performing biological experiments. Ensure that the residual amount of organic solvent is insignificant, since organic solvents may have physiological effects at low concentrations. Organic solvent-free aqueous solutions of zidovudine can be prepared by directly dissolving the crystalline solid in aqueous buffers. The solubility of zidovudine in PBS (pH 7.2) is approximately 10 mg/ml. We do not recommend storing the aqueous solution for more than one day.

### Description

Zidovudine is a nucleoside reverse transcriptase inhibitor (NRTI).[1] It is phosphorylated intracellularly to its active form zidovudine-5'-triphosphate by the successive actions of thymidine kinase, thymidylate kinase, and nucleoside diphosphate kinase.[2] Zidovudine (0.01, 0.1, and 1 µM) reduces HIV-1 p24 antigen levels in the culture supernatant of HIV-1-infected isolated human peripheral blood monocytes.[3] Formulations containing zidovudine have been used in the treatment of HIV infections.

### References


1. Cihlar, T. and Ray, A.S. Nucleoside and nucleotide HIV reverse transcriptase inhibitors: 25 years after zidovudine. *Antiviral Res.* **85(1)**, 39-58 (2010).
2. Anderson, P.L., Nakuda, T.K., and Lichtenstein, K.A. The cellular pharmacology of nucleoside- and nucleotide-analogue reverse-transcriptase inhibitors and its relationship to clinical toxicities. *Clin. Infect. Dis.* **38(5)**, 743-753 (2004).
3. Perno, C.-F., Yarchoan, R., Cooney, D.A., *et al.* Inhibition of human immunodeficiency virus (HIV-1/HTLV-III$_{Ba-L}$) replication in fresh and cultured human peripheral blood monocytes/macrophages by azidothymidine and related 2',3'-dideoxynucleosides. *J. Exp. Med.* **168(3)**, 1111-1125 (1988).





**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