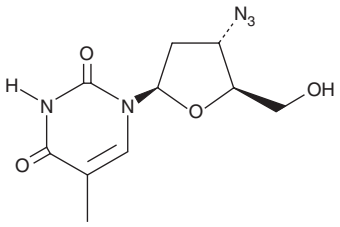
# PRODUCT INFORMATION

## Zidovudine

*Item No. 15492*

**CAS Registry No.:** 30516-87-1
**Formal Name:** 3'-azido-3'-deoxy-thymidine
**Synonyms:** Azidothymidine, AZT, NSC 602670, Retrovir, 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:** ≥2 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 that, following triphosphorylation by thymidine kinase, potently blocks replication of HIV ($EC_{50}$ = 3 nM) with low cytotoxicity ($CC_{50}$ > 5 µM).[1-4] It is commonly used in combination therapy to slow the replication of HIV *in vivo*.[5]

### References


1. Mitsuya, H., Weinhold, K.J., Furman, P.A., *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*. *Proc. Natl. Acad. Sci. USA* **82(20)**, 7096-7100 (1985).
2. Palomino, E., Meltsner, B.R., Kessel, D., *et al.* Synthesis and *in vitro* evaluation of some modified 4-thiopyrimidine nucleosides for prevention or reversal of AIDS-associated neurological disorders. *J. Med. Chem.* **33(1)**, 258-263 (1990).
3. Adams, D.R., Perez, C., Maillard, M., *et al.* Preparation and anti-HIV activity of N-3-substituted thymidine nucleoside analogs. *J. Med. Chem.* **40(10)**, 1550-1558 (1997).
4. Porcari, A.R., Devivar, R.V., Kucera, L.S., *et al.* Design, synthesis, and antiviral evaluations of 1-(substituted benzyl)-2-substituted-5,6-dichlorobenzimidazoles as nonnucleoside analogues of 2,5,6-trichloro-1-(b-D-ribofuranosyl)benzimidazole. *J. Med. Chem.* **41(8)**, 1252-1262 (1998).
5. Broder, S. The development of antiretroviral therapy and its impact on the HIV-1/AIDS pandemic. *Antiviral Res.* **85(1)**, 1-18 (2010).





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