

# Zidovudine

Catalog No: tcsc1246



## Available Sizes

**Size:** 100mg

**Size:** 500mg



## Specifications

**CAS No:**

30516-87-1

**Formula:**

$C_{10}H_{13}N_5O_4$

**Pathway:**

Anti-infection;Cell Cycle/DNA Damage

**Target:**

HIV;CRISPR/Cas9

**Purity / Grade:**

>98%

**Solubility:**

DMSO :  $\geq 100$  mg/mL (374.20 mM)

**Alternative Names:**

Azidothymidine;AZT;ZDV

**Observed Molecular Weight:**

267.24

## Product Description

Zidovudine is a nucleoside reverse transcriptase inhibitor (**NRTI**), widely used to treat HIV infection. Zidovudine increases

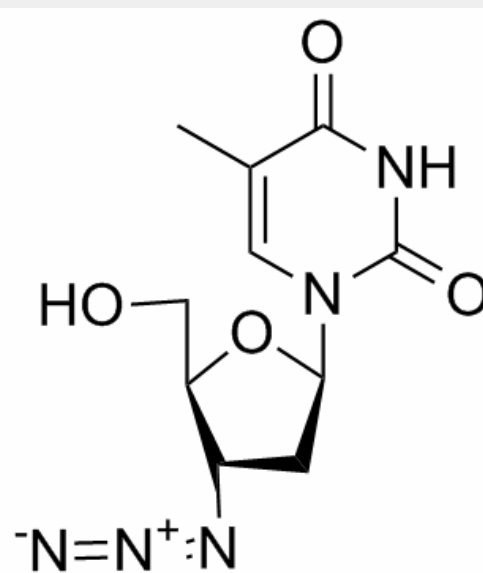
CRISPR/Cas9-mediated editing frequency.

IC50 & Target: NRTI, HIV<sup>[1]</sup>

CRISPR/Cas9<sup>[2]</sup>

**In Vitro:** Zidovudine inhibits SVG, Primary human fetal astrocytes (PFA), peripheral blood mononuclear cells (PBMC), and monocyte-derived macrophages (MDM) with EC<sub>50</sub> of 17, 1311, 8, and 5 nM, respectively. Zidovudine inhibits SVG, PFA, PBMC, and MDM with EC<sub>90</sub> of 0.205 μM, 44.157 μM, 0.481 μM, and 0.219 μM, respectively<sup>[1]</sup>. Genome editing via CRISPR/Cas9 has become an efficient and reliable way to make precise, targeted changes to the genome of living cells. CXCR4 is a co-receptor for the human immunodeficiency virus type 1 (HIV-1) infection and has been considered as an important therapeutic target for AIDS. CXCR4 mediates viral entry into human CD4<sup>+</sup> cells by binding to envelope protein, gp120. Human CXCR4 gene is efficiently disrupted by CRISPR/Cas9-mediated genome editing, leading to HIV-1 resistance of human primary CD4<sup>+</sup> T cells. The Cas9-mediated ablation of CXCR4 demonstrated high specificity and negligible off-target effects without affecting cell division and propagation<sup>[2]</sup>.

**In Vivo:** Intravitreal injection of the NRTIs Lamivudine (3TC), Zidovudine (AZT), or Abacavir (ABC) suppresses the laser-induced choroidal neovascularization (CNV) in wild-type mice compared to PBS vehicle. The mean level of VEGF-A in the RPE/choroid, which peaks on day 3 after laser injury, is significantly reduced in 3TC-, AZT- and ABC-treated eyes compared with control eyes in wild-type mice, but not in *P2rx7*<sup>-/-</sup> mice<sup>[3]</sup>.



All products are for RESEARCH USE ONLY. Not for diagnostic & therapeutic purposes!