Taiclone®
Quality Guarantee

Web: www.taiclone.com
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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 : ≥ 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

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CRISPR/Cas9-mediated editing frequency.

IC50 & Target: NRTI, HIV[1]

CRISPR/Cas9[2]

In Vitro: Zidovudine inhibits SVG, Primary human fetal astrocytes (PFA), peripheral blood mononuclear cells (PBMC), and monocyte-derived macrophages (MDM) with EC_{50} of 17, 1311, 8, and 5 nM, respectively. Zidovudine inhibits SVG, PFA, PBMC, and MDM with EC_{90} of 0.205 μM, 44.157 μM, 0.481 μM, and 0.219 μM, respectively[1]. 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 $CD4^+$ 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 $CD4^+$ T cells. The Cas9-mediated ablation of CXCR4 demonstrated high specificity and negligible off-target effects without affecting cell division and propagation[2].

In Vivo: Intravitrous 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*$^{-/-}$ mice[3].