Zidovudine

Catalog No.C08689 Batch:C0868903

Product Datasheet

Technical Data

Formula	$C_{10}H_{13}N_5O_4$		
Molecular Weight	267.24	**CAS No.**	30516-87-1
Solubility (25°C)*	In vitro	DMSO	53 mg/mL (198.32 mM)
		Water	13 mg/mL (48.64 mM)
		Ethanol	13 mg/mL (48.64 mM)

* <1 mg/ml means slightly soluble or insoluble.
* Please note that Capsid Bio tests the solubility of all compounds in-house, and the actual solubility may differ slightly from published values. This is normal and is due to slight batch-to-batch variations.
* Room temperature shipping (Stability testing shows this product can be shipped at 2-8°C for storage purposes.)

Preparing Stock Solutions

Concentration \ Volume / Mass	1 mg	5 mg	10 mg
1 mM	3.7420 mL	18.7098 mL	37.4195 mL
5 mM	0.7484 mL	3.7420 mL	7.4839 mL
10 mM	0.3742 mL	1.8710 mL	3.7420 mL
50 mM	0.0748 mL	0.3742 mL	0.7484 mL

Biological Activity

Description	Zidovudine (ZDV, Azidothymidine, NSC 602670) is a nucleoside analogue **reverse transcriptase** inhibitor, used to treat HIV. This compound could decrease the HDR efficiency and decrease CRISPR-mediated sequence-specific genome knockin events while increaseing knockout efficiency.
Targets	Reverse transcriptase [1]
In vitro	Zidovudine pretreatment has potent anti-HIV-1 activity in the newly infected T and monocytic cells but not in chronically infected cells. [1] Inhibition of reverse transcription by this compound decreases p24 antigen levels modestly, decreased HIV-1 gag by 19-fold, and inhibits detection of 2-LTR HIV-1 DNA. [2] This compound and dideoxynucleosides deplete wild-type mitochondrial DNA levels and increase deletedmitochondrial DNA levels in cultured Kearns-Sayre syndrome fibroblasts. [3] This chemical (AZT, 0.1-50 mM) has a concentration dependent suppressive effect on the growth of granulocyte-monocyte colony forming unit (CFU-GM) derived colonies. This compound exposure also induces a concentration dependent suppressive effect (35-90%) on GM-CSF receptor type alpha (GM-CSFR alpha) gene expression. It causes a much lower decrease (15-22%) on the IL-3 receptor type alpha (IL-3R alpha) message level, and has an insignificant effect on glyceraldehyde 3-phosphate dehydrogenase (GAPDH) and c-myc message levels. [4] This chemical causes a concentration-dependent inhibition in the levels of the mRNA of Epo receptors and c-fos, whereas the level of c-myc mRNA is unaffected. It also inhibits protein kinase C (PKC) activity in a concentration- and time-dependent manner, causing 50% inhibition at 10 mM within 3 hours. This compound-induced down-regulation of Epo receptors and c-fos expression coupled with inhibition of Epo receptor-mediated signal transduction through PKC are significant contributory factors to AZT-induced erythroid toxicity. [5] This compound could decrease the HDR efficiency. It decrease CRISPR-mediated sequence-specific genome knockin events while increases knockout efficiency[6] .

References

https://pubmed.ncbi.nlm.nih.gov/9001825/ https://pubmed.ncbi.nlm.nih.gov/10335865/ https://pubmed.ncbi.nlm.nih.gov/8634344/

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RETURN POLICY

Capsid Bio's Unconditional Return Policy ensures a smooth online shopping experience for our customers. If you are in any way unsatisfied with your purchase, you may return any item(s) within 7 days of receiving it. In the event of product quality issues, either protocol related or product related problems, you may return any item(s) within 365 days from the original purchase date. Please follow the instructions below when returning products.

SHIPPING & STORAGE

Capsid Bio products are transported at room temperature. If you receive the product at room temperature, please rest assured, the Capsid Bio Quality Inspection Department has conducted experiments to verify that the normal temperature placement of one month will not affect the biological activity of powder products. After collecting, please store the product according to the requirements described in the datasheet. Most Capsid Bio products are stable under the recommended conditions.

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