Lamivudine (3TC, BCH-189)

Catalog No.C07993 Batch:C0799303

Product Datasheet

Technical Data

Formula	$C_8H_{11}N_3O_3S$					
Molecular Weight	229.26	**CAS No.**	134678-17-4			
Solubility (25°C)*	In vitro	DMSO	46 mg/mL (200.64 mM)			
		Water	46 mg/mL (200.64 mM)			
		Ethanol	Insoluble			
	In vivo (Add solvents to the product individually and in order)	Oral Administration	Homogeneous suspension	CMC-NA	≥5mg/ml	Taking the 1 mL working solution as an example, add 5 mg of this product to 1 ml of CMC-Na solution, mix evenly to obtain a homogeneous suspension with a final concentration of 5 mg/ml.

* <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	4.3619 mL	21.8093 mL	43.6186 mL
5 mM	0.8724 mL	4.3619 mL	8.7237 mL
10 mM	0.4362 mL	2.1809 mL	4.3619 mL
50 mM	0.0872 mL	0.4362 mL	0.8724 mL

Biological Activity

Description	Lamivudine is a potent nucleoside analog **reverse transcriptase** inhibitor, used for treatment of chronic HBV and HIV/AIDS. It works by blocking the **HIV reverse transcriptase** and **hepatitis B virus polymerase**.
Targets	Reverse transcriptase [1]
In vitro	Lamivudine's anti- HBV activity, like its anti-HIV activity, has been shown to depend on the ability of LMV-TP to serve as both substrate and inhibitor of the DNA- and RNA-dependent polymerase activities of the HBV P gene product. This compound owes its activity to the remarkably broad substrate specificity of deoxycytidine kinase and the unusual substrate preference of the HBV polymerases for dNTPs with the unnatural L-conformation, whereas the anti-HBV activity of PCV appears to depend on several factors including optimal phosphorylation (sufficient for antiviral activity but not cytotoxicity) by key cellular enzymes, the long intracellular half-life of PCV-TP and the ability of PCV-TP to inhibit the HBV RT priming reaction as well as RT and DNA polymerase activity. [1] This compound and Penciclovir inhibits duck hepatitis B virus (DHBV) replication to a comparable extent when used alone, and in combination, the two nucleoside analogs acts synergistically over a wide range of clinically relevant concentrations. It combined with Penciclovir is more effective in reducing the normally recalcitrant viral covalently closed circular (CCC) DNA form of DHBV than either drug alone. [2] It inhibits p24 antigen production by HIV-I in PBMC, with ED50s ranging from 0.07 μM to 0.2 μM. [3]

Protocol (from reference)

Cell Assay:[4]

- **Cell lines**
  Neonatal rat ventricular cardiomyocytes
- **Concentrations**
  5 μM
- **Incubation Time**
  24 h
- **Method**
  Cells were treated with indicated concentrations of this compound for 24 h.

References

https://pubmed.ncbi.nlm.nih.gov/10607220/ https://pubmed.ncbi.nlm.nih.gov/9214473/ https://pubmed.ncbi.nlm.nih.gov/8568296/

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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.

NOT FOR HUMAN, VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

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