Abacavir

Catalog No.C10813 Batch:C1081303

Product Datasheet

Technical Data

Formula	$C_{14}H_{18}N_6O$					
Molecular Weight	286.33	**CAS No.**	136470-78-5			
Solubility (25°C)*	In vitro	DMSO	57 mg/mL (199.07 mM)			
		Ethanol	14 mg/mL (48.89 mM)			
		Water	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

Biological Activity

Description	Abacavir is a powerful **nucleoside analog reverse transcriptase inhibitor (NRTI)** used to treat HIV and AIDS.
Targets	Reverse transcriptase [1]
In vitro	Abacavir (ABC) exhibits potent in vitro antiviral activity against wild-type HIV-1 (IC50 4.0 μM, MT-4 cells)[1]. This compound induces chromosomal DSBs and thereby kills ATL cells but not non-HTLV-1-infected cells. Once it is incorporated into the cells, it is phosphorylated in a unique stepwise anabolism to be converted to the triphosphated guanine analog carbovir (CBV) and then incorporated into host chromosomal DNA by replicative DNA polymerases, leading to premature termination of DNA replication, collapse of the replication fork, and DSB formation. This chemical induces S/G2-phase arrest and apoptosis in ED-40515(−) cells, but not in Jurkat cells[2].
In vivo	Abacavir efficiently inhibits the growth of ATL cell xenografts in NOD/SCID mice[2]. In adults, this compound is rapidly absorbed after oral administration, with peak concentrations occurring 0.63-1 hour after dosing. The absolute bioavailability of abacavir is approximately 83%. Its pharmacokinetics are linear and doseproportional over the range of 300-1200 mg/day. The apparent volume of distribution after intravenous administration is approximately 0.86 ± 0.15 L/kg, suggesting that it is distributed to extravascular spaces. Binding to plasma proteins is about 50% and is independent of the plasma abacavir concentration. This chemical is extensively metabolized by the liver; less than 2% is excreted as unchanged drug in the urine. It is primarily metabolized via two pathways, uridine diphosphate glucuronyltransferase and alcohol dehydrogenase, resulting in the inactive glucuronide metabolite and the inactive carboxylate metabolite. The terminal elimination half-life is approximately 1.5 hours. The antiviral effect is due to its intracellular anabolite, carbovirtriphosphate (CBV-TP). This compound is not significantly metabolized by cytochrome P450 (CYP) enzymes, nor does it inhibit these enzymes[3].

Protocol (from reference)

Cell Assay:[2]

- **Cell lines**
  Jurkat cells
- **Concentrations**
  300 μM
- **Incubation Time**
  48 h
- **Method**
  Jurkat cells transfected with control siRNA or siTDP1 are treated with or without 300 μM ABC for 48 hours. MTS assay is conducted.

Animal Study:[2]

- **Animal Models**
  NOD/SCID mice
- **Dosages**
  75 mg/kg
- **Administration**
  oral

References

https://pubmed.ncbi.nlm.nih.gov/16305515/ https://pubmed.ncbi.nlm.nih.gov/26601161/ https://pubmed.ncbi.nlm.nih.gov/18479171/

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.

EU Headquarters
Gajeva ulica 28, HR-10000 Zagreb, Croatia

US Headquarters
12222 Merit Dr STE 130 Dallas, Texas, 75251

UK Headquarters
121 ABILITY HOUSE, BROOKER ROAD, EN9 1JH, ESSEX

Orders: Sales@capsidbio.com
Enquiries: info@capsidbio.com
www.capsidbio.com