Sofosbuvir

Catalog No.C08863 Batch:C0886303

Product Datasheet

Technical Data

Formula	$C_{22}H_{29}FN_3O_9P$					
Molecular Weight	529.45	**CAS No.**	1190307-88-0			
Solubility (25°C)*	In vitro	DMSO	100 mg/mL (188.87 mM)			
		Ethanol	25 mg/mL (47.21 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.
		Injection	Clear solution	5%DMSO [1] → 40%PEG300 [2] → 5%Tween80 [3] → 50%ddH2O Validated by Capsid Bio labs. Should you need adjustments to this formulation, contact our sales team for custom testing.	5.000mg/ml (9.44mM)	Taking the 1 mL working solution as an example, add 50 μL of 100 mg/ml clarified DMSO stock solution to 400 μL of PEG300, mix evenly to clarify it; add 50 μL of Tween80 to the above system, mix evenly to clarify; then continue to add 500 μL of ddH2O to adjust the volume to 1 mL. The mixed solution should be used immediately for optimal results.
			Clear solution	5% DMSO [1] → 95% Corn oil Validated by Capsid Bio labs. Should you need adjustments to this formulation, contact our sales team for custom testing.	1.600mg/ml (3.02mM)	Taking the 1 mL working solution as an example, add 50 μL of 32 mg/ml clear DMSO stock solution to 950 μL of corn oil and mix evenly. The mixed solution should be used immediately for optimal results.

* <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	1.8888 mL	9.4438 mL	18.8875 mL
5 mM	0.3778 mL	1.8888 mL	3.7775 mL
10 mM	0.1889 mL	0.9444 mL	1.8888 mL
50 mM	0.0378 mL	0.1889 mL	0.3778 mL

Biological Activity

Description	Sofosbuvir is a HCV **NS5B polymerase** inhibitor for the treatment of chronic hepatitis C virus (HCV) infection.
Targets	NS5B polymerase [1]
In vitro	As HCV NS5B polymerase inhibitor, PSI-7977 displays more potent inhibitory activity against HCV RNA replication than PSI-7976 with EC50 of 92 nM versus 1.07 μM and EC90 of 0.29 μM versus 2.99 μM, consistent with that incubating clone A cells with PSI-7977 leads to a higher concentration of PSI-7409 than clone A cells incubated with PSI-7976. PSI-7977 is an effective substrate for CatA to form PSI-352707 with 18-30 fold more potency as compared with PSI-7976. Unlike GS-7976, however, the CES1-mediated hydrolysis of PSI-7977 does not progress in a time-dependent manner. [1] The S282T NS5B polymerase mutation but not S96T mutation confers resistance to PSI-7977 with EC90 increases from 0.42 μM to 7.8 μM. When assessed in an 8-day cytotoxicity assay, PSI-7977 displays no cytotoxicity against Huh7, HepG2, BxPC3, and CEM cells even at concentrations up to 100 μM. PSI-7977 treatment for 14 days shows a IC90 of 72.1 μM and 68.6 μM for the inhibition of mtDNA and rDNA, respectively, in HepG2 cells. [2] PSI-7977 exhibits potent activity against genotype (GT) 1a, 1b, and 2a (strain JFH-1) replicons and chimeric replicons containing GT 2a (strain J6), 2b, and 3a NS5B polymerase. Sequence analysis of the JFH-1 NS5B region indicates that additional amino acid changes including T179A, M289L, I293L, M434T, and H479P are selected both prior to and after the emergence of S282T, which are required to confer resistance to PSI-7977. [3]

Protocol (from reference)

Cell Assay: [2]

- **Cell lines**
  Huh7, HepG2, BxPC3, and CEM
- **Concentrations**
  Dissolved in DMSO, final concentrations ~100 μM
- **Incubation Time**
  8 days
- **Method**
  Cells are exposed to various concentrations of PSI-7977 for 8 days. At the end of the growth period, MTS dye from the CellTiter 96 AQueous One Solution Cell Proliferation Assay kit is added to each well, and the plate is incubated for an additional 2 hours. The absorbance at 490 nm is read with a Victor3 plate reader using themedium only controlwells as blanks. The 50% inhibition value (IC50) is determined by comparing the absorbance in wells containing cells and PSI-7977 to untreated cell control wells.

References

https://pubmed.ncbi.nlm.nih.gov/20801890/ https://pubmed.ncbi.nlm.nih.gov/20845908/ https://pubmed.ncbi.nlm.nih.gov/22430955/

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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