6-Thio-dG

Catalog No.C12923 Batch:C1292303

Product Datasheet

Technical Data

Formula	$C_{10}H_{13}N_5O_3S$					
Molecular Weight	283.31	**CAS No.**	789-61-7			
Solubility (25°C)*	In vitro	DMSO	57 mg/mL (201.19 mM)			
		Water	Insoluble			
		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.
		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.	2.850mg/ml (10.06mM)	Taking the 1 mL working solution as an example, add 50 μL of 57 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.	0.350mg/ml (1.24mM)	Taking the 1 mL working solution as an example, add 50 μL of 7 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	3.5297 mL	17.6485 mL	35.2970 mL
5 mM	0.7059 mL	3.5297 mL	7.0594 mL
10 mM	0.3530 mL	1.7649 mL	3.5297 mL
50 mM	0.0706 mL	0.3530 mL	0.7059 mL

Biological Activity

Description	6-thio-dG (β-TGdR) is a nucleoside analog and telomerase substrate.
In vitro	6-Thio-dG induces telomere dysfunction and results in progressive telomere shortening in telomerase-positive human cancer cells and hTERT-expressing human fibroblasts. In tested cancer cells, 6-thio-dG inhibits cell viability with IC50 values between 0.7 and 2.9 μM. [1]
In vivo	In mice bearing A549 lung cancer xenografts, 6-Thio-dG (2 mg/kg, i.p.) decreases the tumorigenicity of A549 Cells by inducing telomere dysfunction. [1]

Protocol (from reference)

Cell Assay:[1]

- **Cell lines**
  HCT11, A549, H2882, HCC2429, HCC827, HCC15, H2087, HCC4017, HCC515, H2009, BJ and HCEC1 cells
- **Concentrations**
  ~10 μM
- **Incubation Time**
  7 d
- **Method**
  Cells are plated in growth media in 96-well plates. Cells are incubated for 1 week and treated with varying concentrations of 6-thio-dG and 6-thioguanine or DMSO every 3 days. The 96-well plates are analyzed according the manufacturer's directions for the CellTiterGlo luminescent cell viability assay to obtain IC50 values. The IC50 is defined as the concentration of drug at which 50% of the cells are inhibited by the drug. Sigmoidal dose–response curves are used to calculate IC50 values. All samples are analyzed in triplicate, and SDs are from two independent experiments.

Animal Study:[1]

- **Animal Models**
  Mice bearing A549 lung cancer xenografts
- **Dosages**
  ~2 mg/kg
- **Administration**
  i.p.

References

https://pubmed.ncbi.nlm.nih.gov/25516420/

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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