Product Datasheet

Technical Data

Formula	$C_{24}H_{34}F_6O_3$					
Molecular Weight	484.52	**CAS No.**	102586-30-1			
Solubility (25°C)*	In vitro	Ethanol	63 mg/mL (130.02 mM)			
		DMSO	10.3 mg/mL (21.25 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.	0.500mg/ml (1.03mM)	Taking the 1 mL working solution as an example, add 50 μL of 10 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.

* <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	2.0639 mL	10.3195 mL	20.6390 mL
5 mM	0.4128 mL	2.0639 mL	4.1278 mL
10 mM	0.2064 mL	1.0319 mL	2.0639 mL
50 mM	0.0413 mL	0.2064 mL	0.4128 mL

Biological Activity

Description	NSC12 (NSC 172285) is an orally available pan-FGF trap able to inhibit **FGF2/FGFR** interaction and endowed with promising antitumor activity.
Targets	FGF3 [1] (Cell-free assay) 15.9 μM(Kd); FGF8b [1] (Cell-free assay) 18.9 μM(Kd); FGF22 [1] (Cell-free assay) 26.8 μM(Kd); FGF20 [1] (Cell-free assay) 29.4 μM(Kd); FGF2/FGFR [1] (Cell-free assay) 30 μM; View More →
In vitro	NSC12 inhibits FGF-dependent tumor growth, angiogenesis, and metastases. This compound does not affect FGF2/heparin interaction, whereas it inhibits the binding of FGF2 to the immobilized receptor (ID50 ~30 μM). It interferes with FGF2/FGFR1 interaction without affecting the ability of the growth factor to interact with heparin or HSPGs. This chemical also binds immobilized FGF3, FGF4, FGF6, FGF8, FGF16, FGF18, FGF20, and FGF22 with Kd values ranging between ~16 and ~120 μM. It may act as a multi-FGF trap by interacting with all members of the canonical FGF subfamilies. This compound hampers FGF23-mediated FGFR1 activation in Klotho-expressing Chinese hamster ovary (CHO) cells. Treatment with it causes the reduction of the S phase of the cell cycle in all tumor cell lines but LLC cells, in which an accumulation in the S phase is observed. It inhibits FGFR1, FGFR2, FGFR3, and FGFR4 phosphorylation in CHO cell transfectants. This inhibitor reduces the proliferation of various FGF-dependent murine and human cancer cell lines with no inhibitory effect on HCC827 cancer cells that harbor a tumor-driving mutation of the EGFR TK domain and on FGF-independent cancer cell lines[1].
In vivo	Parenteral and oral delivery of NSC12 inhibits FGFR activation, tumor growth, angiogenesis, and metastasis in FGF-dependent murine and human tumor models. This compound causes a significant decrease of tumor weight, tumor cell FGFR1 phosphorylation and proliferation, and tumor CD31+ neovascularization at all the doses tested in the animal models[1].

Protocol (from reference)

Cell Assay:[1]

- **Cell lines**
  KATO III cells
- **Concentrations**
  1.0 or 3.0 μM
- **Incubation Time**
  72 h
- **Method**
  KATO III cells are plated at 10^4 cells/well in 96 well-plates in RPMI medium plus 1% FBS. After 24 hr cells are treated with different FGFs (30 ng/ml) in the absence or presence of an optimal dose of NSC12 (1.0 or 3.0 μM) or NSC21. After 72 hr the MTT assay is performed according to manufacturer's instructions. The optical density (OD) is determined using a plate reader at a test wavelength of 595 nm and a reference wavelength of 630 nm.

Animal Study:[1]

- **Animal Models**
  C57BL/6 mice
- **Dosages**
  from 2.5 to 10 mg/kg
- **Administration**

	i.p.

References

https://pubmed.ncbi.nlm.nih.gov/26267536/

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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