Product Datasheet

Technical Data

Formula	$C_{26}H_{37}N_5O_2$					
Molecular Weight	451.60	**CAS No.**	704869-38-5			
Solubility (25°C)*	In vitro	DMSO	90 mg/mL (199.29 mM)			
		Ethanol	31 mg/mL (68.64 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.	3.5mg/ml (7.75mM)	Taking the 1 mL working solution as an example, add 50 μL of 70 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.	0.5mg/ml (1.11mM)	Taking the 1 mL working solution as an example, add 50 μL of 10 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

Biological Activity

Description	SUN11602 is a small synthetic compound that mimics the neuroprotective activities of **bFGF** and activates key molecules in the FGF receptor-1-mitogen-activated protein kinase/extracellular signal-regulated kinase-1/2 kinase (FGFR-1-MEK/ERK) signaling pathway.
Targets	bFGF [1]
In vitro	Physiological actions of SUN11602 mimic several phenomena of the neuroprotection that is induced by bFGF. This compound plays a pivotal role in allowing primary cultured neurons to survive in adverse environments of glutamate toxicity and activating intracellular key molecules that are involved in the neuroprotective mechanisms. These actions are quite similar to those of bFGF. Such neuroprotective mechanisms are specific and distinctive to this compound and bFGF and differs clearly from those of the other growth factors that are investigated. But unlike bFGF, it can either directly or indirectly trigger the phosphorylation of the cytosolic domain of the FGFR without binding to the extracellular domain of the FGFR-1[1]. This chemical demonstrates no cell proliferative activity of somatic cells, unlike bFGF. It significantly affects neuronal survival in adverse conditions through a FGFR1-mitogen-activated protein kinase/extracellular signal-regulated kinase-1/2 kinase (FGFR-1–MEK/ERK) signaling pathway[2].
In vivo	In WT mice, SUN11602 and bFGF increase the levels of newly synthesized Calb in cerebrocortical neurons and suppress the glutamate-induced rise in intracellular Ca2+. This Ca2+-capturing ability of Calb allows the neurons to survive severe toxic conditions of glutamate. In contrast, Calb levels remain unchanged in Calb-/- mice after exposure to this compound or bFGF, and due to a loss of function of the gene, these neurons are no longer resistant to toxic conditions of glutamate[1]. Neuroprotective activities of this chemical and FGF-2 are due to exogenously induced hyperexpression of CalB in hippocampal neurons. The pharmacokinetic properties of this compound appear to hold promise in terms of bioavailability (>65%) after oral administration in rodents (rats and mice) and dogs (beagles)[2].

Protocol (from reference)

Cell Assay:[1]

- **Cell lines**
  Rat cerebrocortical neurons
- **Concentrations**
  0.1, 0.3, 1 μM
- **Incubation Time**
  24 h
- **Method**
  Actinomycin D or cycloheximide is first added to the cultures, and, 2 h later, SUN11602 or bFGF is added. After a 24 h incubation, neurons in the cultures are exposed to 150 μM glutamate for another 24 h, and cell viability is determined by a (3-(4,5-dimethyl-2-thiazolyl)-2,5-diphenyl-2H tetrazolium bromide (MTT) assay.

Animal Study:[2]

- **Animal Models**
  A rat model of hippocampal tissue damage
- **Dosages**
  0.3, 1 and 3 mg/kg
- **Administration**
  oral administration

References

https://pubmed.ncbi.nlm.nih.gov/23421678/ https://pubmed.ncbi.nlm.nih.gov/25449889/

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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