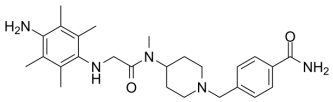
SUN11602

Cat. No.:	HY-101493
CAS No.:	704869-38-5
Molecular Formula:	$C_{26}H_{37}N_5O_2$
Molecular Weight:	451.6
Target:	FGFR
Pathway:	Protein Tyrosine Kinase/RTK

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 37 mg/mL (81.93 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	2.2143 mL	11.0717 mL	22.1435 mL
	5 mM	0.4429 mL	2.2143 mL	4.4287 mL
	10 mM	0.2214 mL	1.1072 mL	2.2143 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (5.54 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (5.54 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (5.54 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

SUN11602 is a novel aniline compound with basic fibroblast growth factor-like activity.

In Vitro

SUN11602 prevents glutamate-induced neuronal death in primary cultures of rat cerebrocortical neurons. SUN11602 increases the levels of CALB1 gene expression in cerebrocortical neurons[1]. SUN11602 exerts protective effects on hippocampal neurons through activation of FGFR1 and increases CalB expression[2]. SUN11602 promotes neurite outgrowth of primarily cultured rat hippocampal neurons[3].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

In Vivo	In WT mice, SUN11602 increases the levels of newly synthesized Calb in cerebrocortical neurons and suppresses the glutamate-induced rise in intracellular Ca^{2+}. This Ca^{2+}-capturing ability of Calb allows the neurons to survive severe toxic conditions of glutamate[1]. Oral administration of SUN11602 at the midpoint of Aβ1-40 and ibotenate injections attenuate short-term memory impairment in the Y-maze test, as well as spatial learning deficits in the water maze task. In addition, the SUN11602 treatment inhibits the increase of peripheral-type benzodiazepine-binding sites (PTBBS),which are a marker for gliosis[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	Cerebrocortical neurons are pretreated with vehicle (Hanks' Balanced Salt Solution), SUN11602, bFGF, or the other growth factors for 24 h prior to the onset of glutamate toxicity. Subsequently, 10 μL of the MTT solution (5 mg/mL) is added to each well (200 μL of culture medium) of the microplates. Neurons in each well are then dried for 24 h, and 200 μL of DMSO is poured into all of the wells in order to dissolve the reaction products thoroughly for the MTT assay[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [3]	Rats: SUN11602 (0.1,1,and10mg/kg)is administered orally to the rat hippocampal-lesion model, once at 24 h after the A β1–40 injection. In the vehicle-treated groups, saline is administered instead of SUN11602[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. Murayama N, et al. SUN11602, a novel aniline compound, mimics the neuroprotective mechanisms of basic fibroblast growth factor. ACS Chem Neurosci. 2013 Feb 20;4(2):266-76.

[2]. Murayama N, et al. SUN11602-induced hyperexpression of calbindin D-28k is pivotal for the survival of hippocampal neurons under neurotoxic conditions. Brain Res. 2015 Jan 12;1594:71-81.

[3]. Ogino R, et al. SUN11602 has basic fibroblast growth factor-like activity and attenuates neuronal damage and cognitive deficits in a rat model of Alzheimer's disease induced by amyloid β and excitatory amino acids. Brain Res. 2014 Oct 17;1585:159-66.

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