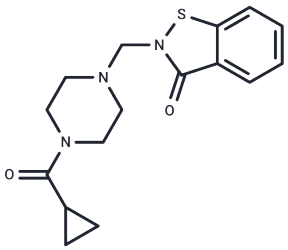
Data Sheet (Cat.No.T5534)

TargetMol

LOC14

Chemical Properties



CAS No. : 877963-94-5

Formula: C16H19N3O2S

Molecular Weight: 317.41

Storage: Powder: -20°C for 3 years
Actual storage temperature shall be subject to the COA.

Biological Description

Description	LOC14 to be the most potent PDI inhibitor reported to date(EC50 : 500 nM)
Targets(IC50)	Others
In vitro	LOC14-induced oxidation of PDI has a neuroprotective effect not only in cell culture, but also in corticostriatal brain slice cultures[1].
In vivo	LOC14 showed high stability in liver microsomes and blood plasma, was tolerated at a high dose of 20 mg/kg in mice, and penetrated the BBB in vivo[1][2].
Animal Research	LOC14 levels were measured in mouse plasma, striatum and cerebral cortex using Ultra Performance Liquid Chromatography-Tandem Mass Spectrometry (LC-MS/MS).?LOC14 was extracted from mouse plasma by mixing 100 µl of plasma with 900 µl of cold acetonitrile containing 25 ng/ml of cyclocreatine as an internal standard.?After mixing for 5 min. the sample was centrifuged for 10min and the organic layer was transferred to an LC-MS vial and dried under nitrogen.?The sample was reconstituted in 100 µl of 50% acetonitrile and 5 µl was injected onto the LC-MS.?Brain tissue samples were homogenized using a tissue tearor at a concentration of 150 mg/ml in cold LC-MS water followed by extraction with 1.8 ml of cold acetonitrile containing the cyclocreatine internal standard.?The brain samples were mixed and centrifuged and reconstituted the same as for the plasma samples[2].

Solubility Information

Solubility	DMSO: 50 mg/mL (157.52 mM),Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
In vivo Formulation	10% DMSO+40% PEG300+5% Tween 80+45% Saline: 2 mg/mL (6.3 mM),Sonication is recommended. *Please add the solvents sequentially, clarifying the solution as much as possible before adding the next one. Dissolve by heating and/or sonication if necessary. Working solution is recommended to be prepared and used immediately. The formulation provided above is for reference purposes only. In vivo formulations may vary and should be modified based on specific experimental conditions.*

Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	3.1505 mL	15.7525 mL	31.505 mL
5 mM	0.6301 mL	3.1505 mL	6.301 mL
10 mM	0.315 mL	1.5752 mL	3.1505 mL
50 mM	0.063 mL	0.315 mL	0.6301 mL

Please select the appropriate solvent to prepare the stock solution, according to the solubility of the product in different solvents. Please use it as soon as possible.

Note: The dilution table applies only to solid products. For liquid products, please calculate the stock solution based on the stated concentration and/or density.

Reference

Kaplan A, et al. Small molecule-induced oxidation of protein disulfide isomerase is neuroprotective. Proc Natl Acad Sci U S A. 2015 Apr 28;112(17):E2245-52.

Zhou X , Li G , Kaplan A , et al. Small molecule modulator of protein disulfide isomerase attenuates mutant huntingtin toxicity and inhibits endoplasmic reticulum stress in a mouse model of Huntington's disease[J]. Human Molecular Genetics, 2018.

Yang M, Li Q, Yang H, et al.Downregulation of PDIA3 inhibits gastric cancer cell growth through cell cycle regulation.Biomedicine & Pharmacotherapy.2024, 173: 116336.