

NUCC-390

Chemical Properties

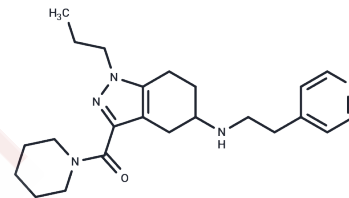
CAS No. : 1060524-97-1

Formula: C₂₃H₃₃N₅O

Molecular Weight: 395.54

Storage: Pure form: -20°C for 3 years | In solvent: -80°C for 1 year

Actual storage temperature shall be subject to the COA.



Biological Description

Description	NUCC-390, a novel small-molecule CXCR4 receptor agonist, selectively induces CXCR4 receptor internalization while acting antagonistically to AMD3100. This compound facilitates nerve functional recovery following neurodegeneration in vivo.
Targets(IC50)	CXCR
In vitro	NUCC-390 (10 μM) elicits a strong (Ca) _i response, which can be blocked by the potent and selective CXCR4 antagonist AMD3100. Pre-treatment with NUCC-390 (10 μM; 30 mins) increases pERK levels, stimulating signaling activity downstream of CXCR4 receptors. NUCC-390 (10 μM; 2 hours) induces CXCR4 receptor internalization, while non-treated cells show diffuse CXCR4-YFP expression in the cytosol and clear membrane expression in HEK cells[1]. Additionally, NUCC-390 (0-1.25 μM; 24 hours) enhances axonal growth in cultured cerebellar granule neurons (CGNs) via CXCR4[2].
In vivo	NUCC-390 (hind limb injection; 3.2 mg/kg; twice daily; 3 days) enhances functional and anatomical recovery of the neuromuscular junction (NMJ) after acute nerve terminal damage by α-LTx in CD-1 mice[2].

Solubility Information

Solubility	DMSO: 60 mg/mL (151.69 mM), Sonication is recommended. (< 1 mg/ml refers to the product slightly soluble or insoluble)
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Preparing Stock Solutions

	1mg	5mg	10mg
1 mM	2.5282 mL	12.6409 mL	25.2819 mL
5 mM	0.5056 mL	2.5282 mL	5.0564 mL
10 mM	0.2528 mL	1.2641 mL	2.5282 mL
50 mM	0.0506 mL	0.2528 mL	0.5056 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

Mishra RK, et al. Discovery and characterization of novel small-molecule CXCR4 receptor agonists and antagonists. Sci Rep. 2016 Jul 26;6:30155.

Negro S, et al. An Agonist of the CXCR4 Receptor Strongly Promotes Regeneration of Degenerated Motor Axon Terminals. Cells. 2019 Sep 30;8(10). pii: E1183.

Inhibitor · Natural Compounds · Compound Libraries · Recombinant Proteins

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