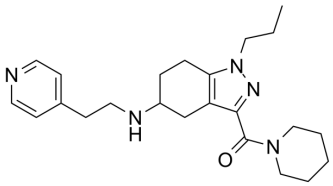
NUCC-390

Cat. No.:	HY-111793
CAS No.:	1060524-97-1
Molecular Formula:	$C_{23}H_{33}N_5O$
Molecular Weight:	395.54
Target:	CXCR
Pathway:	GPCR/G Protein; Immunology/Inflammation
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	NUCC-390 is a novel and selective small-molecule CXCR4 receptor agonist. NUCC-390 induces internalization of CXCR4 receptors and acts in an opposite way of AMD3100 (HY-10046)[1][2]. NUCC-390 promotes nerve recovery of function after neurodegeneration in vivo[2].
IC_{50} & Target	CXCR4
In Vitro	NUCC-390 (10 μM) produces strong (Ca)i response, but this effect can be blocked by the known potent and selective CXCR4 antagonist AMD3100[1]. NUCC-390 (10 μM; pre-treatment 30 mins) leads to increased levels of pERK, it has the capability of stimulating signaling activity downstream of CXCR4 receptors[1]. NUCC-390 (10 μM; 2 hours) can induce CXCR4 receptor internalization, and non-treated cells exhibit some diffuse expression of CXCR4-YFP throughout the cytosol and clear expression in the cell membrane in HEK cells[1]. NUCC-390 (0-1.25 μM; 24 hours) boosts axonal growth in cultured cerebellar granule neurons (CGNs) via CXCR4[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	NUCC-390 (hind limb injection; 3.2 mg/kg; twice daily; 3 days) contributes to the functional and anatomical recovery of the

Western Blot Analysis[1]

Cell Line:	C8161 cells
Concentration:	10 μM
Incubation Time:	Pre-treated 30 mins
Result:	Increased the level of pERK.

Cell Proliferation Assay[2]

Cell Line:	Cerebellar granule neurons (CGNs)
Concentration:	0 μM; 0.0625 μM; 0.25 μM; 1.25 μM
Incubation Time:	24 hours
Result:	Stimulated axonal growth via CXCR4.

neuromuscular junction (NMJ) following an acute nerve terminal damage by α-LTx in CD-1 mice[2].

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Animal Model:	Six to eight-week-old CD1 mice[2]
Dosage:	3.2 mg/kg
Administration:	Hind limb injection; twice daily; 3 days
Result:	Promoted functional and anatomical recovery of the NMJ.

CUSTOMER VALIDATION

- Neurosci Res. 2022 Dec 30;S0168-0102(22)00323-6.

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REFERENCES

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

[2]. 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.

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