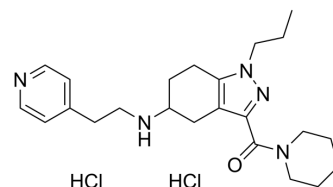


## NUCC-390 dihydrochloride

Cat. No.:	HY-111793A
CAS No.:	2749281-71-6
Molecular Formula:	C <sub>23</sub> H <sub>35</sub> Cl <sub>2</sub> N <sub>5</sub> O
Molecular Weight:	468.46
Target:	CXCR
Pathway:	GPCR/G Protein; Immunology/Inflammation
Storage:	4°C, stored under nitrogen * In solvent : -80°C, 6 months; -20°C, 1 month (stored under nitrogen)



### SOLVENT & SOLUBILITY

#### In Vitro

DMSO : 100 mg/mL (213.47 mM; Need ultrasonic)  
H<sub>2</sub>O : 25 mg/mL (53.37 mM; Need ultrasonic)

Preparing Stock Solutions	Solvent Concentration	Mass		
		1 mg	5 mg	10 mg
	1 mM	2.1347 mL	10.6733 mL	21.3465 mL
	5 mM	0.4269 mL	2.1347 mL	4.2693 mL
	10 mM	0.2135 mL	1.0673 mL	2.1347 mL

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

#### In Vivo

- Add each solvent one by one: PBS  
Solubility: 20 mg/mL (42.69 mM); Clear solution; Need ultrasonic and warming and heat to 60°C
- Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline  
Solubility: ≥ 2.5 mg/mL (5.34 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)  
Solubility: ≥ 2.5 mg/mL (5.34 mM); Clear solution
- Add each solvent one by one: 10% DMSO >> 90% corn oil  
Solubility: ≥ 2.5 mg/mL (5.34 mM); Clear solution

### BIOLOGICAL ACTIVITY

#### Description

NUCC-390 dihydrochloride is a novel and selective small-molecule CXCR4 receptor agonist. NUCC-390 dihydrochloride induces internalization of CXCR4 receptors and acts in an opposite way of AMD3100 (HY-10046)<sup>[1]</sup>. NUCC-390 dihydrochloride promotes nerve recovery of function after neurodegeneration in vivo<sup>[2]</sup>.

#### IC<sub>50</sub> & Target

CXCR4

## In Vitro

NUCC-390 dihydrochloride (10  $\mu$ M) produces strong (Ca)<sup>i</sup> response, but this effect can be blocked by the known potent and selective CXCR4 antagonist AMD3100<sup>[1]</sup>.

NUCC-390 dihydrochloride (10  $\mu$ M; pre-treatment 30 mins) leads to increased levels of pERK, it has the capability of stimulating signaling activity downstream of CXCR4 receptors<sup>[1]</sup>.

NUCC-390 dihydrochloride (10  $\mu$ M; 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<sup>[1]</sup>.

NUCC-390 dihydrochloride (0-1.25  $\mu$ M; 24 hours) boosts axonal growth in cultured cerebellar granule neurons (CGNs) via CXCR4<sup>[2]</sup>.

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

### Western Blot Analysis<sup>[1]</sup>

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

### Cell Proliferation Assay<sup>[2]</sup>

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

## In Vivo

NUCC-390 dihydrochloride (hind limb injection; 3.2 mg/kg; twice daily; 3 days) contributes to the functional and anatomical recovery of the neuromuscular junction (NMJ) following an acute nerve terminal damage by  $\alpha$ -LTx in CD-1 mice<sup>[2]</sup>.

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

Animal Model:	Six to eight-week-old CD1 mice <sup>[2]</sup>
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.

See more customer validations on [www.MedChemExpress.com](http://www.MedChemExpress.com)

## 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.

---

**Caution: Product has not been fully validated for medical applications. For research use only.**

Tel: 609-228-6898

Fax: 609-228-5909

E-mail: [tech@MedChemExpress.com](mailto:tech@MedChemExpress.com)

Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA