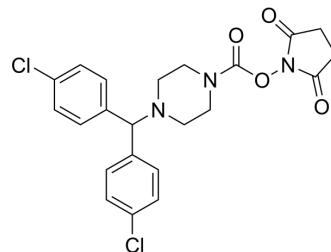


## MJN110

<b>Cat. No.:</b>	HY-117474		
<b>CAS No.:</b>	1438416-21-7		
<b>Molecular Formula:</b>	C <sub>22</sub> H <sub>21</sub> Cl <sub>2</sub> N <sub>3</sub> O <sub>4</sub>		
<b>Molecular Weight:</b>	462.33		
<b>Target:</b>	MAGL		
<b>Pathway:</b>	Metabolic Enzyme/Protease		
<b>Storage:</b>	Powder	-20°C	3 years
		4°C	2 years
	In solvent	-80°C	6 months
		-20°C	1 month



### SOLVENT & SOLUBILITY

<b>In Vitro</b>	DMSO : 50 mg/mL (108.15 mM; Need ultrasonic)					
		Solvent Concentration	Mass	1 mg	5 mg	10 mg
	<b>Preparing Stock Solutions</b>	1 mM		2.1630 mL	10.8148 mL	21.6296 mL
		5 mM		0.4326 mL	2.1630 mL	4.3259 mL
10 mM			0.2163 mL	1.0815 mL	2.1630 mL	
Please refer to the solubility information to select the appropriate solvent.						
<b>In Vivo</b>	<ol style="list-style-type: none"> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% corn oil Solubility: ≥ 2.5 mg/mL (5.41 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 40% PEG300 &gt;&gt; 5% Tween-80 &gt;&gt; 45% saline Solubility: ≥ 2.08 mg/mL (4.50 mM); Clear solution</li> <li>Add each solvent one by one: 10% DMSO &gt;&gt; 90% (20% SBE-β-CD in saline) Solubility: ≥ 2.08 mg/mL (4.50 mM); Clear solution</li> </ol>					

### BIOLOGICAL ACTIVITY

<b>Description</b>	MJN110 is an orally active and selective monoacylglycerol lipase (MAGL) inhibitor with IC <sub>50</sub> s of 9.1 nM and 2.1 nM for hMAGL and 2-arachidonoylglycerol (2-AG), respectively <sup>[1]</sup> . MJN110 produces opioid-sparing effects and displays strong antihyperalgesic activity <sup>[2]</sup> .
<b>IC<sub>50</sub> &amp; Target</b>	IC <sub>50</sub> : 9.1 nM (hMAGL) and 2.1 nM (2-AG) <sup>[1]</sup>
<b>In Vitro</b>	MJN110 (0.01-1000 nM; 4 hours) has the primary serine hydrolase target, hMAGL, with an IC <sub>50</sub> of ~1 nM and 10- and 100-fold

selectivity windows over ABHD6 and LYPLA1/2, respectively<sup>[2]</sup>.

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

#### Western Blot Analysis<sup>[2]</sup>

Cell Line:	Human-derived PC3 cells
Concentration:	0.01, 0.1, 1, 10, 100, 1000 nM
Incubation Time:	4 hours
Result:	HMAGL acted as the primary serine hydrolase target with an IC <sub>50</sub> of ~1 nM.

#### In Vivo

MJN110 (i.p.; 0.0818 mg/kg; twice daily for 5.5 days) reverses chronic constriction injury (CCI)-induced mechanical allodynia and thermal hyperalgesia in a dose-dependent manner. The respective ED<sub>50</sub> value (95% confidence limits) is 0.430 (0.233-0.793) mg/kg<sup>[1]</sup>.

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

Animal Model:	Male C57BL/6J mice ranged from 18 to 35 g <sup>[1]</sup>
Dosage:	0.0818 mg/kg
Administration:	I.p.; twice daily for 5.5 days
Result:	Reversed CCI-induced mechanical allodynia and thermal hyperalgesia in a dose-dependent manner.

## CUSTOMER VALIDATION

- bioRxiv. 2024 November 11.
- Research Square Print. Nov 3rd, 2022
- Università degli Studi di CAGLIARI. Dipartimento di Biomedicina, Neuroscienze e Diagnostica avanzata. 2021 Sep.

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## REFERENCES

[1]. Wilkerson JL, et al. The Selective Monoacylglycerol Lipase Inhibitor MJN110 Produces Opioid-Sparing Effects in a Mouse Neuropathic Pain Model. *J Pharmacol Exp Ther.* 2016 Apr;357(1):145-56.

[2]. Niphakis MJ, et al. Evaluation of NHS carbamates as a potent and selective class of endocannabinoid hydrolase inhibitors. *ACS Chem Neurosci.* 2013 Sep 18;4(9):1322-32.

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

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