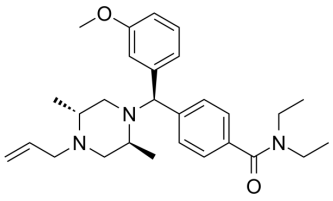
SNC80

Cat. No.:	HY-101202
CAS No.:	156727-74-1
Molecular Formula:	$C_{28}H_{39}N_3O_2$
Molecular Weight:	449.63
Target:	Opioid Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	SNC80 (NIH 10815) is a potent, highly selective and non-peptide δ-opioid receptor agonist with a K_i of 1.78 nM and an IC_{50} of 2.73 nM. SNC80 also selectively activates μ-δ heteromer in HEK293 cells with an EC_{50} of 52.8 nM. SNC80 shows antinociceptive, antihyperalgesic and antidepressant‐like effects. SNC80 has the potential for multiple headache disorders treatment[1][2][3][4][5][6].
IC_{50} & Target	IC50: 2.73 nM (δ-opioid receptor), 5457 nM (μ-opioid receptor)[3] Ki: 1.78 nM (δ-opioid receptor), 881.5 nM (μ-opioid receptor) and 441.8 nM (κ-opioid receptor)[2]
In Vitro	SNC80 selectively activates μ-δ heteromer in HEK293 cells with an EC_{50} of 52.8 nM. SNC80 exhibits substantially greater activity in cells coexpressing μ- and δ-opioid receptors than in cells either singly expressing δ-opioid receptors or coexpressing δ- and κ-opioid receptors[4]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	SNC80 (10 mg/kg; intraperitoneal injection; once; C57BL6/J mice) treatment significantly attenuated this allodynia caused by overuse of Sumatriptan[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	Male and female C57BL6/J mice (20-30g) injected with Sumatriptan[1]
Dosage:	10 mg/kg
Administration:	Intraperitoneal injection; once
Result:	Significantly attenuated allodynia.

REFERENCES

[1]. Moye LS, et al. Delta opioid receptor agonists are effective for multiple types of headache disorders. Neuropharmacology. 2019 Apr;148:77-86.

[2]. Bilsky EJ, et al. SNC 80, a selective, nonpeptidic and systemically active opioid delta agonist. J Pharmacol Exp Ther. 1995 Apr;273(1):359-66.

[3]. Calderon SN, et al. Probes for narcotic receptor mediated phenomena. 19. Synthesis of (+)-4-[(alpha R)-alpha-((2S,5R)-4-allyl-2,5-dimethyl-1-piperazinyl)-3-methoxybenzyl]-N,N-diethylbenzamide (SNC 80): a highly selective, nonpeptide delta opioid receptor agonist. J Med Chem. 1994 Jul 8;37(14):2125-8.

[4]. Vicente-Sanchez A, et al. The delta opioid receptor tool box. Neuroscience. 2016 Dec 3;338:145-159.

[5]. Dripps IJ, et al. Role of signalling molecules in behaviours mediated by the δ opioid receptor agonist SNC80. Br J Pharmacol. 2018 Mar;175(6):891-901.

[6]. Metcalf MD, et al. The δ opioid receptor agonist SNC80 selectively activates heteromeric μ-δ opioid receptors. ACS Chem Neurosci. 2012 Jul 18;3(7):505-9.

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