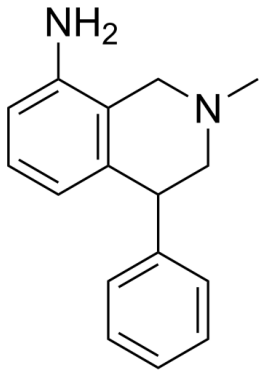
Data Sheet

Product Name:	Nomifensine
Cat. No.:	CS-4708
CAS No.:	24526-64-5
Molecular Formula:	$C_{16}H_{18}N_2$
Molecular Weight:	238.33
Target:	Adrenergic Receptor; Dopamine Receptor
Pathway:	GPCR/G Protein; Neuronal Signaling
Solubility:	DMSO : ≥ 100 mg/mL



BIOLOGICAL ACTIVITY:

Nomifensine ((±)-Nomifensine) is a potent **norepinephrine (NE)** and **dopamine (DA)** reuptake inhibitor. Nomifensine inhibits uptake of NE, DA and 5-HT in rat brain synaptosomes, with **IC_{50}** values of 6.6 nM, 48 nM and 830 nM, and **K_i** values of 4.7 nM, 26 nM and 4000 nM, respectively. Nomifensine has antidepressant and analgesic effects. Nomifensine is used in neurodegenerative diseases, compound addiction, and pain research[1][2][3][4][5][6][7]. ***In Vivo:***Nomifensine (10 mg/kg; i.p.; 12 days) reduces response latency and increases activity in WKY rats, with no significant effect on Wistar rats[3].

Nomifensine (5 mg/kg/day; s.c. using minipumps; 2-14 days) potently and significantly inhibits dopamine neuronal firing in the ventral tegmental area of SD rats after 2 days, with recovery to normal after 14-day treatment due to D_2 autoreceptor desensitization[4].

Nomifensine (0.625-5 mg/kg; s.c.; 30 min before testing) produces analgesia (only in the formaldehyde test) and abolishs the nociceptive behavior induced by 2% formaldehyde in rats[6].

Nomifensine (20 mg/kg; i.p.; once a day; 6 consecutive days) can suppress the neurotoxicity of MPTP (HY-15608) in C57 black mice, inhibiting the long-term depletion of neostriatal DA concentration induced by MPTP[7].

References:

[1]. Hyttel J, et al. Neurochemical profile of Lu 19-005, a potent inhibitor of uptake of dopamine, noradrenaline, and serotonin. J Neurochem. 1985 May;44(5):1615-22.

[2]. Tuomisto J. Nomifensine and its derivatives as possible tools for studying amine uptake. Eur J Pharmacol. 1977 Mar 21;42(2):101-6.

[3]. Tejani-Butt S, et al. Strain-dependent modification of behavior following antidepressant treatment. Prog Neuropsychopharmacol Biol Psychiatry. 2003 Feb;27(1):7-14.

[4]. Katz NS, et al. Effects of acute and sustained administration of the catecholamine reuptake inhibitor nomifensine on the firing activity of monoaminergic neurons. J Psychopharmacol. 2010 Aug;24(8):1223-35.

[5]. Kang SH, et al. Transformation of nomifensine using ionizing radiation and exploration of its anticancer effects in MCF-7 cells. Exp Ther Med. 2022 Apr;23(4):306.

[6]. Gilbert AK, et al. Characterization of the analgesic properties of nomifensine in rats. Pharmacol Biochem Behav. 2001 Apr;68(4):783-7.

[7]. Melamed E, et al. Suppression of MPTP-induced dopaminergic neurotoxicity in mice by nomifensine and L-DOPA. Brain Res. 1985 Sep 9;342(2):401-4.

CAIndexNames:

8-Isoquinolinamine, 1,2,3,4-tetrahydro-2-methyl-4-phenyl-

SMILES:

NC1=CC=CC2=C1CN(C)CC2C3=CC=CC=C3

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

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