NS-638

Cat. No.: HY-101428

CAS No.: 150493-34-8

Molecular Formula: $C_{15}H_{11}ClF_3N_3$

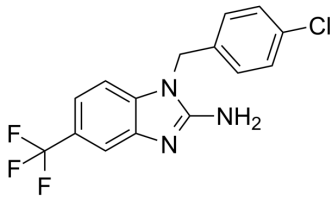
Molecular Weight: 325.72

Target: Calcium Channel

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	2 years
	-20°C	1 year



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 34 mg/mL (104.38 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.0701 mL	15.3506 mL	30.7012 mL
5 mM	0.6140 mL	3.0701 mL	6.1402 mL
10 mM	0.3070 mL	1.5351 mL	3.0701 mL

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

BIOLOGICAL ACTIVITY

Description

NS-638 is a small nonpeptide molecule with Ca^{2+}-channel blocking properties. K^+-stimulated intracellular Ca^{2+}-elevation is blocked with an IC_{50} value of 3.4 μM.

IC_{50} & Target

IC50: 3.4 μM (K^+-stimulated intracellular Ca^{2+}-elevation) [1]

In Vitro

NS-638 dose dependently inhibits K^+-stimulated [45 Ca^{2+}]-uptake in chick cortical synaptosomes and 2-amino-3-(3-hydroxy-5-methylisoxazol-4-yl)propionic acid (AMPA)- stimulated [^{3}H]GABA-release from cultured cortical neurons with IC_{50} values of 2.3 and 4.3 μM, respectively. K^+-stimulated intracellular Ca^{2+}-elevation in cultured cerebellar granule cells is equipotently blocked with an IC_{50} value of 3.4 μM. At this concentration no effect on Ca^{2+}-induced contractions in K^+-depolarized guinea pig taenia coli is observed. NS-638 reversibly blocks N- and L-type Ca^{2+}-channels in cultured chick dorsal root ganglion cells in the concentration range of 1-30 μM[1].

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

In Vivo

In the mouse middle cerebral artery occlusion model, NS-638 administered i.p. (50 mg kg-1) at 1 h and 6 h post-ischemia,

	and once a day for the next two days, results in a 48% reduction in total infarct volume. It does not show protection against ischemic neuronal damage in the gerbil model of bilateral carotid artery occlusion[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

PROTOCOL

Cell Assay [1]	The effect of NS-638 on neuronal Ca^{2+}-channels is evaluated using whole cell patch clamp techniques[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
Animal Administration [1]	Mice: In the mouse middle cerebral artery occlusion model, NS-638 is administered i.p. (50 mg kg-1) at 1 h and 6 h post-ischemia, and once a day for the next two days[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

[1]. M?ller A, et al. Pharmacological profile and anti-ischemic properties of the Ca(2+)-channel blocker NS-638. Neurol Res. 1995 Oct;17(5):353-60.

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