Aniracetam

Cat. No.: HY-10932

CAS No.: 72432-10-1

Molecular Formula: $C_{12}H_{13}NO_3$

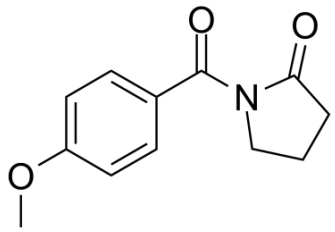
Molecular Weight: 219.24

Target: nAChR; iGluR

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : ≥ 100 mg/mL (456.12 mM)

H_2O : 0.33 mg/mL (1.51 mM; Need ultrasonic)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.5612 mL	22.8061 mL	45.6121 mL
5 mM	0.9122 mL	4.5612 mL	9.1224 mL
10 mM	0.4561 mL	2.2806 mL	4.5612 mL

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

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (11.40 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (11.40 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (11.40 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Aniracetam(Ro 13-5057) is a nootropics and neuroprotective drug, which is selectively modulates the AMPA receptor and nAChR.Target: AMPA; nAChRAniracetam is an ampakine and nootropic of the racetam chemical class purported to be considerably more potent than piracetam. It selectively modulates the AMPA receptor. It is lipid soluble and has possible cognition enhancing effects. It has been tested in animals extensively, Alzheimer's patients and temporarily-impaired healthy subjects. It has shown potential as an anxiolytic in three clinical animal models [1].Administration of aniracetam for

10 days (post-natal days (PND) 18-27), at a dose of 50 mg/kg reversed cognitive deficits in both rat genders, indicated by a significant increase in the number of avoidances and the number of 'good learners'. After the termination of the nootropic treatment, a significant increase in both amplitude and frequency of AMPA receptor-mediated mEPSCs in hippocampal CA-1 pyramidal cells was observed [2].Clinical indications: Cognitive disorder; StrokeFDA Approved Date: Toxicity: insomnia; headaches; nausea or rash.

REFERENCES

[1]. Nakamura K, et al. Anxiolytic effects of aniracetam in three different mouse models of anxiety and the underlying mechanism. Eur J Pharmacol. 2001 May 18;420(1):33-43.

[2]. Vaglenova J, et al. Aniracetam reversed learning and memory deficits following prenatal ethanol exposure by modulating functions of synaptic AMPA receptors. Neuropsychopharmacology. 2008 Apr;33(5):1071-83. Epub 2007 Jul 4.

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