Moclobemide

Cat. No.: HY-B0534

CAS No.: 71320-77-9

Molecular Formula: $C_{13}H_{17}ClN_2O_2$

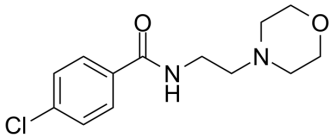
Molecular Weight: 268.74

Target: Monoamine Oxidase

Pathway: 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 : 100 mg/mL (372.11 mM; Need ultrasonic)

Preparing Stock Solutions	Mass / Solvent / Concentration	1 mg	5 mg	10 mg
	1 mM	3.7211 mL	18.6053 mL	37.2107 mL
	5 mM	0.7442 mL	3.7211 mL	7.4421 mL
	10 mM	0.3721 mL	1.8605 mL	3.7211 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 (9.30 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.30 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.30 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Moclobemide (Ro111163) is a brain-penetrant and reversible monoamine oxidase (MAO-A) inhibitor with an IC_{50} of 6.061 μM for hMAO-A[1].Moclobemide up-regulates proliferation of hippocampal progenitor cells in chronically stressed mice.

IC_{50} & Target

MAO-A
6.061 (IC_{50})

In Vitro

NMDA (600 μM for 3 days) inhibits the proliferation of PC12 cells.Moclobemide (2 and 10 μM) up-regulates the proliferation in

NMDA-treated PC12 cells[2].

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

Cell Cycle Analysis[2]

Cell Line:	PC12 cell line
Concentration:	Moclobemide (2 and 10 μM); N-methylaspartate (NMDA) (600 μM)
Incubation Time:	3 days
Result:	Treatment with NMDA significantly reduced the percentage of S-phase, while the percentage of other cell cycle phases did not change notablely.However,the percentage of S-phase increased in the presence of Moclobemide.

In Vivo

Moclobemide is a monoamine oxidase inhibitor and increases the levels of brain monoamines (such as 5-HT, norepinephrine).Moclobemide(40 mg/kg) is effective in animal behavior models[2].

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

Animal Model:	Chronically stressed male mice (18±2 g) of the Kunming strain[2]
Dosage:	40 mg/kg
Administration:	I.p.; daily
Result:	BDNF level in the hippocampal subfields including subgranule zone decreased in stressed mice compared with normal control. Chronic treatment with Moclobemide could reverse these changes.

REFERENCES

[1]. Nafiz Öncü Can, et al. Synthesis of New Hydrazone Derivatives for MAO Enzymes Inhibitory Activity. Molecules. 2017 Aug 20;22(8):1381.

[2]. Yun-feng Li, et al. Moclobemide up-regulates proliferation of hippocampal progenitor cells in chronically stressed mice. Acta Pharmacol Sin. 2004 Nov;25(11):1408-12.

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