Oxcarbazepine

Cat. No.: HY-B0114

CAS No.: 28721-07-5

Molecular Formula: $C_{15}H_{12}N_2O_2$

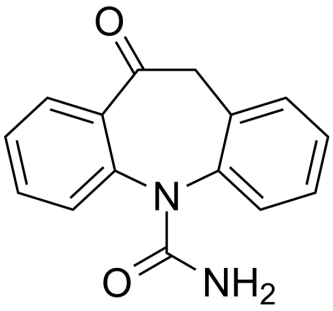
Molecular Weight: 252.27

Target: Sodium Channel; Apoptosis

Pathway: Membrane Transporter/Ion Channel; Apoptosis

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 : 50 mg/mL (198.20 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	3.9640 mL	19.8200 mL	39.6401 mL
5 mM	0.7928 mL	3.9640 mL	7.9280 mL
10 mM	0.3964 mL	1.9820 mL	3.9640 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: ≥ 1.67 mg/mL (6.62 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.67 mg/mL (6.62 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Oxcarbazepine is a sodium channel blocker[1]. Oxcarbazepine significantly inhibits glioblastoma cell growth and induces apoptosis or G2/M arrest in glioblastoma cell lines[2]. Anti-cancer and anticonvulsant effects[2][3].

IC_{50} & Target

Sodium Channel[1].

In Vitro

Oxcarbazepine significantly inhibits glioblastoma cell growth and reaches IC_{50} at therapeutic concentrations. The IC_{50}s of Oxcarbazepine screened with the U87 and T98 cell lines are 12.35 and 9.45 μg/mL,respectively[2].

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

Cell Viability Assay[2]

Cell Line:	Human glioma cell lines U-87 MG and T98G
Concentration:	2.5, 5, 10, 20, and 40 μg/mL
Incubation Time:	72 hours
Result:	The growth inhibition for the T98G cell line for each concentration was 17.7±4.1% (2.5 μg/mL), 21.1±3.6% (5 μg/mL), 53.6±14.2% (10 μg/mL), 82.2±2.3% (20 μg/mL), and 85.0±2.3% (40 μg/mL). The growth inhibition for U-87 MG cell line for each concentration was −1.7±5.1% (0.008 μg/mL), 5.3±2.4% (0.08 μg/mL), 3.5±7.4% (0.8 μg/mL), 0.3±9.2% (16 μg/mL), and −4.2±9.6% (40 μg/mL).

In Vivo

Oxcarbazepine protectes mice and rats against generalized tonic-clonic seizures induced by electroshock with ED_{50} values between 13.5 and 20.5 mg/kg p.o. No tolerance toward this anticonvulsant effect is observed when rats are treated with Oxcarbazepine daily for 4 weeks.

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

REFERENCES

[1]. Ashley M Thomas, et al. Old Friends With New Faces: Are Sodium Channel Blockers the Future of Adjunct Pain Medication Management?J Pain. 2018 Jan;19(1):1-9.

[2]. Ching-Yi Lee,et al. The effects of antiepileptic drugs on the growth of glioblastoma cell lines. J Neurooncol. 2016 May;127(3):445-53.

[3]. M Schmutz, et al. Oxcarbazepine: preclinical anticonvulsant profile and putative mechanisms of action. Epilepsia. 1994;35 Suppl 5:S47-50.

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