Zonisamide-d_4

Cat. No.: HY-B0124S

CAS No.: 1020720-04-0

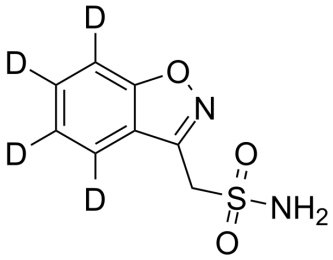
Molecular Formula: $C_8H_4D_4N_2O_3S$

Molecular Weight: 216.25

Target: Calcium Channel; Sodium Channel; Carbonic Anhydrase

Pathway: Membrane Transporter/Ion Channel; Neuronal Signaling; Metabolic Enzyme/Protease

Storage: 4°C, sealed storage, away from moisture and light
* In solvent : -80°C, 6 months; -20°C, 1 month (sealed storage, away from moisture and light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 250 mg/mL (1156.07 mM; Need ultrasonic)
DMSO : 50 mg/mL (231.21 mM; Need ultrasonic)
H2O : 0.67 mg/mL (3.10 mM; Need ultrasonic)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.6243 mL	23.1214 mL	46.2428 mL
5 mM	0.9249 mL	4.6243 mL	9.2486 mL
10 mM	0.4624 mL	2.3121 mL	4.6243 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: ≥ 1.25 mg/mL (5.78 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 1.25 mg/mL (5.78 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 1.25 mg/mL (5.78 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Zonisamide-d_4 is the deuterium labeled Zonisamide. Zonisamide (AD 810) is an inhibitor of zinc enzyme carbonic anhydrase (CA), with Kis of 35.2 nM and 20.6 nM for human mitochondrial isozyme hCA II and hCA V, respectively. Zonisamide has antiepileptic activity. Zonisamide can be used for the rsearch for epilepsy, seizures and Parkinson's disease[1][2].

In Vitro

Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to

affect the pharmacokinetic and metabolic profiles of drugs[1].

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

REFERENCES

[1]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

[2]. Peters DH, et al. Zonisamide. A review of its pharmacodynamic and pharmacokinetic properties, and therapeutic potential in epilepsy. Drugs. 1993 May;45(5):760-87.

[3]. De Simone G, et al. Carbonic anhydrase inhibitors. Zonisamide is an effective inhibitor of the cytosolic isozyme II and mitochondrial isozyme V: solution and X-ray crystallographic studies. Bioorg Med Chem Lett. 2005 May 2;15(9):2315-20.

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