Mephenytoin

Cat. No.: HY-B1184

CAS No.: 50-12-4

Molecular Formula: $C_{12}H_{14}N_2O_2$

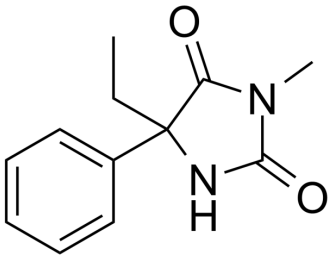
Molecular Weight: 218.25

Target: Cytochrome P450

Pathway: Metabolic Enzyme/Protease

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 : 50 mg/mL (229.10 mM; Need ultrasonic and warming)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.5819 mL	22.9095 mL	45.8190 mL
5 mM	0.9164 mL	4.5819 mL	9.1638 mL
10 mM	0.4582 mL	2.2910 mL	4.5819 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 (11.45 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (11.45 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (11.45 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Mephenytoin, an anticonvulsant, is the CYP2C19 and CYP2B6 substrate[1].

IC_{50} & Target

CYP2

In Vivo

Mephenytoin (orally administration, 100 mg/kg, 200 mg/kg) can reduce maternal weight gain and increase offspring mortality at 200 mg/kg but not produce excessive offspring mortality at 100 mg/kg in Pregnant Sprague-Dawley CD rats[2]. Mephenytoin (i.p., 20 mg/kg per day for 16 days) significantly reduces serum cholesterol and triglyceride levels in mice,

which may have a hypolipidemic effect[3].

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

REFERENCES

[1]. D R Minck, et al. Comparison of the behavioral teratogenic potential of phenytoin, mephenytoin, ethotoin, and hydantoin in rats. Teratology. 1991 Apr;43(4):279-93.

[2]. J H Maguire, et al. Hypolipidemic activity of antiepileptic 5-phenylhydantoins in mice. Eur J Pharmacol. 1985 Oct 29;117(1):135-8.

[3]. Klaassen T, et al. Assessment of urinary mephenytoin metrics to phenotype for CYP2C19 and CYP2B6 activity. Eur J Clin Pharmacol. 2008;64(4):387-398.

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