Felbamate

Cat. No.: HY-B0184

CAS No.: 25451-15-4

Molecular Formula: $C_{11}H_{14}N_2O_4$

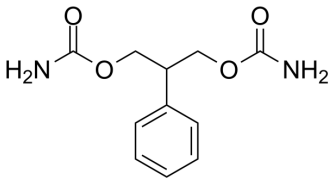
Molecular Weight: 238.24

Target: iGluR

Pathway: Membrane Transporter/Ion Channel; 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 (419.74 mM)

* "≥" means soluble, but saturation unknown.

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.1974 mL	20.9872 mL	41.9745 mL
5 mM	0.8395 mL	4.1974 mL	8.3949 mL
10 mM	0.4197 mL	2.0987 mL	4.1974 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: ≥ 2.75 mg/mL (11.54 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.75 mg/mL (11.54 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.75 mg/mL (11.54 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Felbamate (W-554) is a potent nonsedative anticonvulsant whose clinical effect may be related to the inhibition of N-methyl-D-aspartate (NMDA).

IC_{50} & Target

NMDA Receptor[1].

In Vitro

Felbamate (W-554) is an anti-epileptic drug used in the treatment of epilepsy. It is used to treat partial seizures (with and

without generalization) in adults and partial and generalized seizures associated with Lennox-Gastaut syndrome in children. However, an increased risk of potentially fatal aplastic anemia and/or liver failure limit the drugs usage to severe refractory epilepsy[1]. Felbamate (W-554) has been proposed to a unique dual mechanism of action as a positive modulator of GABAA receptors and as a blocker of NMDA receptors, particularly isoforms containing the NR2B subunit. Although it is clear that felbamate does cause pharmacological inhibition of NMDA receptor of relevance of NMDA receptor blockade as a strategy for the treatment of human epilepsy has been questioned. Therefore, the importance of the effects of felbamate on NMDA receptors to its therapeutic action in epilepsy is uncertain[2].

REFERENCES

[1]. Kuo CC, et al. Use-dependent inhibition of the N-methyl-D-aspartate currents by felbamate: a gating modifier with selective binding to the desensitized channels. Mol Pharmacol. 2004 Feb;65(2):370-80.

[2]. Harty TP, et al. Felbamate block of recombinant N-methyl-D-aspartate receptors: selectivity for the NR2B subunit. Epilepsy Res. 2000 Mar;39(1):47-55.

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