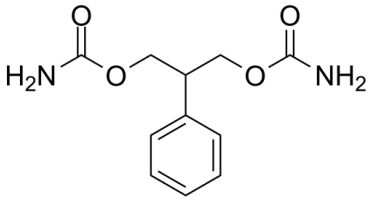
Data Sheet

Product Name:	Felbamate
Cat. No.:	CS-2068
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
Solubility:	DMSO : ≥ 100 mg/mL (419.74 mM)



BIOLOGICAL ACTIVITY:

Felbamate (W-554) is a potent nonsedative anticonvulsant whose clinical effect may be related to the inhibition of N-methyl-D-aspartate (NMDA). IC50 & 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.

CAIndexNames:

1,3-Propanediol, 2-phenyl-, 1,3-dicarbamate

SMILES:

NC(OCC(C1=CC=CC=C1)COC(N)=O)=O

Caution: Product has not been fully validated for medical applications. For research use only.

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