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- Expressversand

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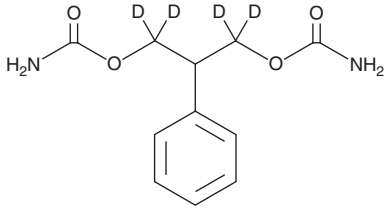
PRODUCT INFORMATION

Felbamate-d_4

Item No. 28489

CAS Registry No.: 106817-52-1
Formal Name: 2-phenyl-1,3-propane-1,1,3,3-d_4-diol dicarbamate
MF: $C_{11}H_{10}D_4N_2O_4$
FW: 242.3
Chemical Purity: ≥98% (Felbamate)
Deuterium Incorporation: ≥99% deuterated forms (d_1-d_4); ≤1% d_0
Supplied as: A solid
Storage: -20°C
Stability: ≥2 years



Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Laboratory Procedures

Felbamate-d_4 is intended for use as an internal standard for the quantification of felbamate (Item No. 18000) by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Felbamate-d_4 is supplied as a solid. A stock solution may be made by dissolving the felbamate-d_4 in the solvent of choice, which should be purged with an inert gas. Felbamate-d_4 is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of felbamate-d_4 in these solvents is approximately 1, 30, and 50 mg/ml, respectively.

Description

Felbamate is an inhibitor of NMDA receptors and a modulator of $GABA_A$ receptors that also has broad-spectrum inhibitory activity against excitatory amino acid receptors.[1-3] It binds to NMDA channels with dissociation constants of approximately 200, 110, and 55 µM in the resting, activated, and desensitized states, respectively, and inhibits NMDA currents in a use-dependent manner.[1] Felbamate is a positive modulator of $\alpha_1\beta_2\gamma_{2S}$, $\alpha_1\beta_3\gamma_{2S}$, $\alpha_2\beta_2\gamma_{2S}$, and $\alpha_2\beta_3\gamma_{2S}$ subunit-containing $GABA_A$ receptors expressed in *X. laevis* oocytes, with negative modulation of $GABA_A$ receptors containing the subunits $\alpha_1\beta_1$, $\alpha_1\beta_3\gamma_{2L}$, $\alpha_4\beta_1\gamma_{2S}$, $\alpha_4\beta_3\gamma_{2S}$, and $\alpha_6\beta_1\gamma_{2S}$.[2] It inhibits seizures induced by maximal electroshock, pentylenetetrazole (Item No. 18682), and picrotoxin (Item No. 20771) in mice (ED_{50}s = 16.3, 5.51, and 5.23 mg/kg, respectively). Formulations containing felbamate have been used in the treatment of severe refractory seizures.

References

1. Kuo, C.-C., Lin, B.-J., Chang, H.-R., *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.* **65(2)**, 370-380 (2004).
2. Simeone, T.A., Otto, J.F., Wilcox, K.S., *et al.* Felbamate is a subunit selective modulator of recombinant γ-aminobutyric acid type A receptors expressed in *Xenopus* oocytes. *Eur. J. Pharmacol.* **552(1-3)**, 31-35 (2006).
3. Domenici, M.R., Sagratella, S., Ongini, E., *et al.* Felbamate displays in vitro antiepileptic effects as a broad spectrum excitatory amino acid receptor antagonist. *Eur. J. Pharmacol.* **271(2-3)**, 259-263 (1994).

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