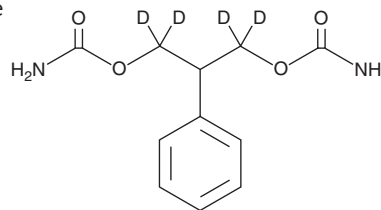


PRODUCT INFORMATION



Felbamate-d₄ Item No. 28489

CAS Registry No.: 106817-52-1
Formal Name: 2-phenyl-1,3-propane-1,1,3,3-d₄-diol dicarbamate
MF: C₁₁H₁₀D₄N₂O₄
FW: 242.3
Chemical Purity: ≥95% (Felbamate)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₄); ≤1% d₀
Supplied as: A solid
Storage: -20°C
Stability: ≥4 years



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

Laboratory Procedures

Felbamate-d₄ 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-d₄ is supplied as a solid. A stock solution may be made by dissolving the felbamate-d₄ in the solvent of choice, which should be purged with an inert gas. Felbamate-d₄ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide. The solubility of felbamate-d₄ 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 α₁β₂γ_{2S}, α₁β₃γ_{2S}, α₂β₂γ_{2S}, and α₂β₃γ_{2S} subunit-containing GABA_A receptors expressed in *X. laevis* oocytes, with negative modulation of GABA_A receptors containing the subunits α₁β₁, α₁β₃γ_{2L}, α₄β₁γ_{2S}, α₄β₃γ_{2S}, and α₆β₁γ_{2S}.² It inhibits seizures induced by maximal electroshock, pentylenetetrazole (Item No. 18682), and picrotoxin (Item No. 20771) in mice (ED₅₀s = 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).

WARNING

THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA

This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/08/2022

CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD
ANN ARBOR, MI 48108 · USA

PHONE: [800] 364-9897
[734] 971-3335

FAX: [734] 971-3640

CUSTSERV@CAYMANCHEM.COM
WWW.CAYMANCHEM.COM