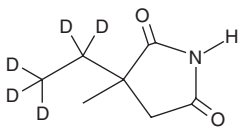
PRODUCT INFORMATION

Ethosuximide-d_5

Item No. 30759

CAS Registry No.:	1989660-59-4
Formal Name:	3-(ethyl-1,1,2,2,2-d_5)-3-methyl-2,5-pyrrolidinedione
Synonyms:	CI-366-d_5, NSC 64013-d_5
MF:	$C_7H_6D5NO_2$
FW:	146.2
Chemical Purity:	≥98% (Ethosuximide)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_5); ≤1% d_0
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

Ethosuximide-d_5 is intended for use as an internal standard for the quantification of ethosuximide (Item No. 23947) 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).

Ethosuximide-d_5 is supplied as a solid. A stock solution may be made by dissolving the ethosuximide-d_5 in the solvent of choice, which should be purged with an inert gas. Ethosuximide-d_5 is soluble in methanol.

Description

Ethosuximide is an anticonvulsant.[1-5] It increases glucose, fructose-1,6-bisphosphate, and pyruvate levels in rat brain when administered at a dose of 200 mg/kg.[1] Ethosuximide (400 mg/kg) reduces the severity of audiogenic seizures in a rat model of barbiturate withdrawal-induced convulsions.[2] It also inhibits tonic hindlimb extension induced by pentylenetetrazole (PTZ; Item No. 18682) or brainstem stimulation (ED_{50}s = 35 and 70 mg/kg, respectively), as well as leptazol-induced clonic seizures (ED_{50} = 230 mg/kg), in rats.[3,4] Ethosuximide reduces resting tremor by 60% in a macaque model of Parkinson's disease induced by MPTP when administered at a dose of 150 mg/animal for 5 days.[5] Formulations containing ethosuximide have been used in the treatment of petit mal seizures.

References

1. Nahorski, S.R. Biochemical effects of the anticonvulsants trimethadione, ethosuximide and chlordiazepoxide in rat brain. *J. Neurochem.* **19(8)**, 1937-1946 (1972).
2. Norton, P.R. The effects of drugs on barbiturate withdrawal convulsions in the rat. *J. Pharm. Pharmacol.* **22(10)**, 763-766 (1970).
3. Consroe, P.F. and Wolkin, A.L. Anticonvulsant interaction of cannabidiol and ethosuximide in rats. *J. Pharm. Pharmacol.* **29(8)**, 500-501 (1977).
4. Chiu, P. and Burnham, W.M. The effect of anticonvulsant drugs on convulsions triggered by direct stimulation of the brainstem. *Neuropharmacology* **21(4)**, 355-359 (1982).
5. Gomez-Mancilla, B., Latulippe, J.F., Boucher, R., *et al.* Effect of ethosuximide on rest tremor in the MPTP monkey model. *Mov. Disord.* **7(2)**, 137-141 (1992).

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