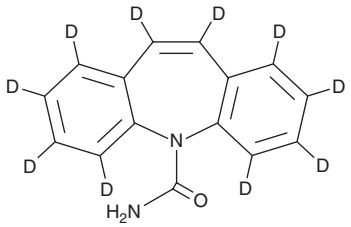
PRODUCT INFORMATION

Carbamazepine-d_{10}

Item No. 33486

CAS Registry No.:	132183-78-9
Formal Name:	5H-dibenz[b,f]azepine-1,2,3,4,6,7,8,9,10,11-d_{10}-5-carboxamide
Synonym:	Carbazepine-d_{10}, CBZ-d_{10}
MF:	$C_{15}H_2D_{10}N_2O$
FW:	246.3
Chemical Purity:	≥98% (Carbamazepine)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_{10}); ≤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

Carbamazepine-d_{10} is intended for use as an internal standard for the quantification of carbamazepine 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).

Carbamazepine-d_{10} is supplied as a solid. A stock solution may be made by dissolving the carbamazepine-d_{10} in the solvent of choice, which should be purged with an inert gas. Carbamazepine-d_{10} is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of carbamazepine-d_{10} in ethanol is approximately 3 mg/ml and approximately 25 mg/ml in DMSO and DMF.

Description

Carbamazepine is an anticonvulsant.[1,2] It reduces the occurrence of seizures in mouse models of tonic-clonic, or maximal electroshock-induced, seizures (ED_{50}s = 15.46 and ~13 mg/kg, respectively). Dietary administration of carbamazepine (0.75% w/w) reduces immobility time in the tail suspension test.[3] It also attenuates clonidine-induced aggressive behavior in mice.[4] Formulations containing carbamazepine have been used in the treatment of epilepsy and bipolar disorder.

References

1. Łuszczki, J.J., Marzeda, P., Gut-Lepiech, A., *et al.* New derivative of 1,2,4-triazole-3-thione (TP427) potentiates the anticonvulsant action of valproate, but not that of carbamazepine, phenytoin or phenobarbital in the mouse tonic-clonic seizure model. *Pharmacol. Rep.* **71(2)**, 299-305 (2019).
2. Borowicz-Reutt, K.K., Banach, M., and Rudkowska, M. Nebivolol attenuates the anticonvulsant action of carbamazepine and phenobarbital against the maximal electroshock-induced seizures in mice. *Pharmacol. Rep.* **72(1)**, 80-86 (2020).
3. Kara, N.Z., Karpel, O., Toker, L., *et al.* Chronic oral carbamazepine treatment elicits mood-stabilising effects in mice. *Acta Neuropsychiatr.* **26(1)**, 29-34 (2014).
4. Fujiwara, Y., Takeda, T., Kazahaya, Y., *et al.* Inhibitory effects of carbamazepine on clonidine-induced aggressive behavior in mice. *Int. J. Neurosci.* **42(1-2)**, 77-84 (1988).

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