

Product Name: Carbamazepine

Catalog No.: 4098

Batch No.: 2

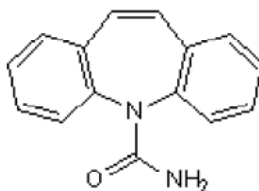
CAS Number: 298-46-4

EC Number: 206-062-7

IUPAC Name: 5H-Dibenz[b,f]azepine-5-carboxamide

1. PHYSICAL AND CHEMICAL PROPERTIES

Batch Molecular Formula: C₁₅H₁₂N₂O.
Batch Molecular Weight: 236.27
Physical Appearance: White solid
Solubility: DMSO to 100 mM
ethanol to 25 mM
Storage: Store at +4°C
Batch Molecular Structure:



2. ANALYTICAL DATA

HPLC: Shows 99.7% purity
¹H NMR: Consistent with structure
Mass Spectrum: Consistent with structure

Microanalysis:

	Carbon	Hydrogen	Nitrogen
Theoretical	76.25	5.12	11.86
Found	76.5	5.12	11.68

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

Product Name: Carbamazepine

Catalog No.: 4098

Batch No.: 2

CAS Number: 298-46-4

EC Number: 206-062-7

IUPAC Name: 5H-Dibenz[b,f]azepine-5-carboxamide

Description:

Inhibitor of neuronal voltage-gated Na⁺ channels. Exhibits anticonvulsant activity. Potentiates GABA-induced Cl⁻ currents in HEK 293 cells expressing the GABA_A receptor α1β2γ2 subtype combination. Can induce autophagy by inhibiting inositol synthesis. Also delays disease onset and prolongs survival in a mouse amyotrophic lateral sclerosis (ALS) model, as well as reducing motor neuron loss and altered muscle morphology.

Physical and Chemical Properties:

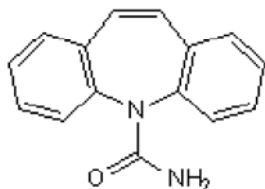
Batch Molecular Formula: C₁₅H₁₂N₂O.

Batch Molecular Weight: 236.27

Physical Appearance: White solid

Minimum Purity: >99%

Batch Molecular Structure:



References:

Zhang *et al* (2018) Repurposing carbamazepine for the treatment of amyotrophic lateral sclerosis in SOD1-G93A mouse model. *CNS Neurosci. Ther.* . PMID: 29656576.

Galluzzi *et al* (2017) Pharmacological modulation of autophagy: therapeutic potential and persisting obstacles. *Nat.Rev.Drug.Discov.* **16** 487. PMID: 28529316.

Lipkind and Fozzard (2010) Molecular model of anticonvulsant drug binding to the voltage-gated sodium channel inner pore. *Mol.Pharmacol.* **78** 631. PMID: 20643904.

Sarkar *et al* (2009) Rapamycin and mTOR-independent autophagy inducers ameliorate toxicity of polyglutamine-expanded huntingtin and related proteinopathies. *Cell Death Differ.* **16** 46. PMID: 18636076.

Afanas'ev *et al* (1999) Lamotrigine and carbamazepine affect differently the release of D-[³H] aspartate from mouse cerebral cortex slices: involvement of NO. *Neurochem.Res.* **24** 1153. PMID: 10485587.

Granger *et al* (1995) Modulation of the gamma-aminobutyric acid type A receptor by the antiepileptic drugs carbamazepine and phenytoin. *Mol.Pharmacol.* **47** 1189. PMID: 7603459.

Storage: Store at +4°C

Solubility & Usage Info:

DMSO to 100 mM

ethanol to 25 mM

Stability and Solubility Advice:

Some solutions can be difficult to obtain and can be encouraged by rapid stirring, sonication or gentle warming (in a 45-60°C water bath).

Information concerning product stability, particularly in solution, has rarely been reported and in most cases we can only offer a general guide. Our standard recommendations are:

SOLIDS: Provided storage is as stated on the product label and the vial is kept tightly sealed, the product can be stored for up to 6 months from date of receipt.

SOLUTIONS: We recommend that stock solutions, once prepared, are stored aliquoted in tightly sealed vials at -20°C or below and used within 1 month. Wherever possible solutions should be made up and used on the same day.

Caution - Not Fully Tested • Research Use Only • Not For Human or Veterinary Use

bio-techne.com

info@bio-techne.com

techsupport@bio-techne.com

North America

Tel: (800) 343 7475

China

info.cn@bio-techne.com

Tel: +86 (21) 52380373

Europe Middle East Africa

Tel: +44 (0)1235 529449

Rest of World

www.tocris.com/distributors

Tel:+1 612 379 2956