Lamotrigine

Cat. No.: HY-B0495

CAS No.: 84057-84-1

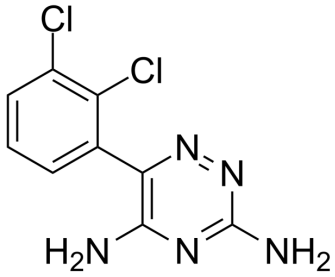
Molecular Formula: $C_9H_7Cl_2N_5$

Molecular Weight: 256.09

Target: Sodium Channel; Autophagy

Pathway: Membrane Transporter/Ion Channel; Autophagy

Storage: 4°C, protect from light
* In solvent : -80°C, 6 months; -20°C, 1 month (protect from light)



SOLVENT & SOLUBILITY

In Vitro

DMSO : 25 mg/mL (97.62 mM; Need ultrasonic)
H_2O : < 0.1 mg/mL (ultrasonic) (insoluble)

Preparing Stock Solutions

Concentration \ Solvent \ Mass	1 mg	5 mg	10 mg
1 mM	3.9049 mL	19.5244 mL	39.0488 mL
5 mM	0.7810 mL	3.9049 mL	7.8098 mL
10 mM	0.3905 mL	1.9524 mL	3.9049 mL

Please refer to the solubility information to select the appropriate solvent.

In Vivo

1. Add each solvent one by one: 10% DMSO >> 40% PEG300 >> 5% Tween-80 >> 45% saline
   Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution
2. Add each solvent one by one: 10% DMSO >> 90% (20% SBE-β-CD in saline)
   Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution
3. Add each solvent one by one: 10% DMSO >> 90% corn oil
   Solubility: ≥ 2.5 mg/mL (9.76 mM); Clear solution

BIOLOGICAL ACTIVITY

Description

Lamotrigine (BW430C) is a potent and orally active anticonvulsant or antiepileptic agent. Lamotrigine selectively blocks voltage-gated Na^+ channels, stabilizing presynaptic neuronal membranes and inhibiting glutamate release. Lamotrigine can be used for the research of epilepsy, focal seizure, et al[1][2].

In Vitro

Lamotrigine inhibits Veratrine evoked release of glutamate and aspartate with ED_{50} values of 21 μM for both amino acids, but Lamotrigine is less potent in the inhibition of GABA release (ED_{50}=44 μM. At concentrations up to 300 μM, LTG has no effect on patassium-evoked amino acid[1].
Lamotrigine is some five times less potent in the inhibition of Veratrine-evoked [^{3}H]acetylcholine release (ED_{50}=100 μM)

	than in glutamate or aspartate release[1]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.
In Vivo	Lamotrigine (IP, 30 min before pentylenetetrazol; 10 mg/kg, 15 mg/kg or 20 mg/kg) decreases the seizure intensity at the higher doses, it increases the latency to the first pentylenetetrazol-induced seizure in all studied doses compared with the controls[2]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

Animal Model:	White male mice weighing 25-30 g[2]
Dosage:	10 mg/kg, 15 mg/kg or 20 mg/kg
Administration:	Intraperitoneally 30 min before pentylenetetrazol
Result:	Had an anti-convulsive effect in seizure models, suppressing seizure intensity and influencing the latency to the first seizure.

CUSTOMER VALIDATION

- JCI Insight. 2022 Aug 8;7(15):e160247.
- Cell Calcium. March 2022, 102527.
- Pharmacol Biochem Behav. 2018 May;168:43-50.
- Pharmacol Res Perspect. 2021 Oct;9(5):e00879.
- Pharmacol Res Perspect. 2020 Apr;8(2):e00575.

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REFERENCES

[1]. M J Leach, et al. Pharmacological studies on lamotrigine, a novel potential antiepileptic drug: II. Neurochemical studies on the mechanism of action. Epilepsia. Sep-Oct 1986;27(5):490-7.

[2]. Damianka P Getova, et al. A study of the effects of lamotrigine on mice using two convulsive tests. Folia Med (Plovdiv). Apr-Jun 2011;53(2):57-62.

Caution: Product has not been fully validated for medical applications. For research use only.

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