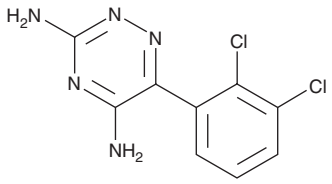
PRODUCT INFORMATION

Lamotrigine

Item No. 15428

CAS Registry No.:	84057-84-1
Formal Name:	6-(2,3-dichlorophenyl)-1,2,4-triazine-3,5-diamine
Synonyms:	BW 430C, LTG
MF:	$C_9H_7Cl_2N_5$
FW:	256.1
Purity:	≥98%
Supplied as:	A crystalline 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

Lamotrigine is supplied as a crystalline solid. A stock solution may be made by dissolving the lamotrigine in the solvent of choice, which should be purged with an inert gas. Lamotrigine is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of lamotrigine in ethanol is approximately 2 mg/ml and approximately 10 mg/ml in DMSO and DMF.

Lamotrigine is sparingly soluble in aqueous buffers. For maximum solubility in aqueous buffers, lamotrigine should first be dissolved in DMSO and then diluted with the aqueous buffer of choice. Lamotrigine has a solubility of approximately 0.5 mg/ml in a 1:1 solution of DMSO:PBS (pH 7.2) using this method. We do not recommend storing the aqueous solution for more than one day.

Description

Lamotrigine is an anticonvulsant.[1] It inhibits voltage-gated sodium channels (Na_v) in HEK293 cells expressing recombinant human $Na_v1.2$, $Na_v1.5$, or $Na_v1.8$ (IC_{50}s = 10, 62, and 96 µM, respectively), as well as high voltage-activated calcium currents in isolated rat cortical neurons (IC_{50} = 12.3 µM), an effect that can be reversed by the N-type calcium channel blocker ω-conotoxin GVIA (Item No. 24114) and P-type calcium channel blocker ω-agatoxin IVA (Item No. 21605).[1,2] Lamotrigine protects against seizures induced by maximal electroshock (MES) in mice and rats (ED_{50}s = 10.1 and 7.4 µmol/kg, respectively).[3] It also decreases mechanical allodynia in a rat model of neuropathic pain induced by spinal nerve ligation (ED_{50} = 47 µmol/kg).[1] Formulations containing lamotrigine have been used in the treatment of epilepsy and bipolar disorder.

References

1. Drizin, I., Gregg, R.J., Scanio, M.J., *et al.* Discovery of potent furan piperazine sodium channel blockers for treatment of neuropathic pain. *Bioorg. Med. Chem.* **16(12)**, 6379-6386 (2008).
2. Stefani, A., Spadoni, F., Siniscalchi, A., *et al.* Lamotrigine inhibits Ca^{2+} currents in cortical neurons: Functional implications. *Eur. J. Pharmacol.* **307(1)**, 113-116 (1996).
3. Miller, A.A., Wheatley, P., Sawyer, D.A., *et al.* Pharmacological studies on lamotrigine, a novel potential antiepileptic drug: I. Anticonvulsant profile in mice and rats. *Epilepsia* **27(5)**, 483-489 (1986).

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.

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