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SZABO-SCANDIC HandelsgmbH

Quellenstraße 110, A-1100 Wien

T. +43(0)1 489 3961-0

F. +43(0)1 489 3961-7

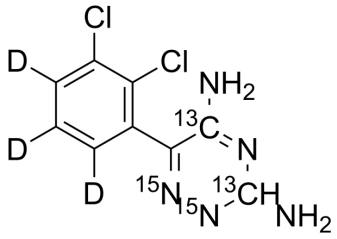
mail@szabo-scandic.com

www.szabo-scandic.com

linkedin.com/company/szaboscandic

Lamotrigine-$^{13}C_2$,$^{15}N_2$,d_3

Cat. No.:	HY-B0495S6
Molecular Formula:	$C_7{}^{13}C_2H_5D_3Cl_2N_3{}^{15}N_2$
Molecular Weight:	264.09
Target:	Autophagy; Sodium Channel; Isotope-Labeled Compounds
Pathway:	Autophagy; Membrane Transporter/Ion Channel; Others
Storage:	Please store the product under the recommended conditions in the Certificate of Analysis.



BIOLOGICAL ACTIVITY

Description	Lamotrigine-$^{13}C_2$,$^{15}N_2$,d_3 is ^{15}N and deuterated labeled Lamotrigine (HY-B0495). 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	Stable heavy isotopes of hydrogen, carbon, and other elements have been incorporated into drug molecules, largely as tracers for quantitation during the drug development process. Deuteration has gained attention because of its potential to affect the pharmacokinetic and metabolic profiles of drugs[1]. 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[2]. ?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[2]. 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[3]. MCE has not independently confirmed the accuracy of these methods. They are for reference only.

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.

[3]. Russak EM, et al. Impact of Deuterium Substitution on the Pharmacokinetics of Pharmaceuticals. Ann Pharmacother. 2019 Feb;53(2):211-216.

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

Tel: 609-228-6898 Fax: 609-228-5909 E-mail: tech@MedChemExpress.com
Address: 1 Deer Park Dr, Suite Q, Monmouth Junction, NJ 08852, USA