Lidocaine-d_{10}

Cat. No.: HY-B0185S1

CAS No.: 851528-09-1

Molecular Formula: $C_{14}H_{12}D_{10}N_2O$

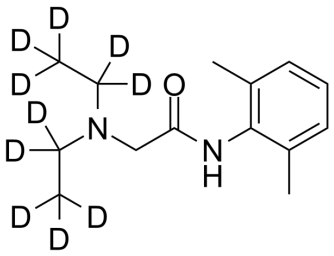
Molecular Weight: 244.4

Target: Apoptosis; ERK; NF-κB; MEK; Sodium Channel

Pathway: Apoptosis; MAPK/ERK Pathway; Stem Cell/Wnt; NF-κB; Membrane Transporter/Ion Channel

Storage:

Powder	-20°C	3 years
	4°C	2 years
In solvent	-80°C	6 months
	-20°C	1 month



SOLVENT & SOLUBILITY

In Vitro

DMSO : 100 mg/mL (409.17 mM; Need ultrasonic and warming)

Preparing Stock Solutions

Solvent / Mass / Concentration	1 mg	5 mg	10 mg
1 mM	4.0917 mL	20.4583 mL	40.9165 mL
5 mM	0.8183 mL	4.0917 mL	8.1833 mL
10 mM	0.4092 mL	2.0458 mL	4.0917 mL

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

BIOLOGICAL ACTIVITY

Description

Lidocaine-d_{10} is the deuterium labeled Lidocaine. Lidocaine (Lignocaine) inhibits sodium channels involving complex voltage and using dependence[1]. Lidocaine decreases growth, migration and invasion of gastric carcinoma cells via up-regulating miR-145 expression and further inactivation of MEK/ERK and NF-κB signaling pathways. Lidocaine is an amide derivative and has potential for the research of ventricular arrhythmia[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].

MCE has not independently confirmed the accuracy of these methods. They are for reference only.

REFERENCES

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

[2]. Li Z, et al. Evaluation of the antinociceptive effects of lidocaine and bupivacaine on the tail nerves of healthy rats. Basic Clin Pharmacol Toxicol. 2013 Jul;113(1):31-6.

[3]. Cummins TR, et al. Setting up for the block: the mechanism underlying lidocaine's use-dependent inhibition of sodium channels. J Physiol. 2007 Jul 1;582(Pt 1):11.

[4]. Sui H, et al. Lidocaine inhibits growth, migration and invasion of gastric carcinoma cells by up-regulation of miR-145. BMC Cancer. 2019 Mar 15;19(1):233.

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