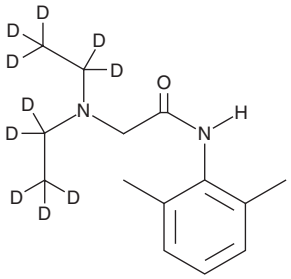
PRODUCT INFORMATION

Lidocaine-d_{10}

Item No. 35066

CAS Registry No.:	851528-09-1
Formal Name:	2-[di(ethyl-d_5)amino]-N-(2,6-dimethylphenyl)-acetamide
MF:	$C_{14}H_{12}D_{10}N_2O$
FW:	244.4
Chemical Purity:	≥98% (Lidocaine)
Deuterium Incorporation:	≥99% deuterated forms (d_1-d_{10}); ≤1% d_0
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

Lidocaine-d_{10} is intended for use as an internal standard for the quantification of lidocaine by GC- or LC-MS. The accuracy of the sample weight in this vial is between 5% over and 2% under the amount shown on the vial. If better precision is required, the deuterated standard should be quantitated against a more precisely weighed unlabeled standard by constructing a standard curve of peak intensity ratios (deuterated *versus* unlabeled).

Lidocaine-d_{10} is supplied as a crystalline solid. A stock solution may be made by dissolving the lidocaine-d_{10} in the solvent of choice, which should be purged with an inert gas. Lidocaine-d_{10} is soluble in DMSO.

Description

Lidocaine is an inhibitor of voltage-gated sodium channels (Na_vs) and a local anesthetic.[1-3] It inhibits $Na_v1.2$ (K_i = 11 µM), adult and neonatal $Na_v1.5$ (IC_{50}s = 380.1 and 360 µM, respectively), and $Na_v1.7$ and $Na_v1.8$ channels (IC_{50}s = 450 and 104 µM, respectively) expressed in *Xenopus* oocytes. Topical administration of lidocaine (1-2%) reduces escape behavior in a rhesus monkey model of noxious electrical cutaneous pain.[4] Formulations containing lidocaine have been used as local and regional anesthetics.

References

1. Ragsdale, D.S., McPhee, J.C., Scheuer, T., *et al.* Common molecular determinants of local anesthetic, antiarrhythmic, and anticonvulsant block of voltage-gated Na^+ channels. *Proc. Natl. Acad. Sci. USA* **93(17)**, 9270-9275 (1996).
2. Fraser, S.P., Onkal, R., Theys, M., *et al.* Neonatal $Na_v1.5$ channels: Pharmacological distinctiveness of a cancer-related voltage-gated sodium channel splice variant. *Br. J. Pharmacol.* (2021).
3. Chevrier, P., Vijayaragavan, K., and Chahine, M. Differential modulation of $Na_v1.7$ and $Na_v1.8$ peripheral nerve sodium channels by the local anesthetic lidocaine. *Br. J. Pharmacol.* **142(3)**, 576-584 (2004).
4. Lineberry, C.G. and Kulics, A.T. The effects of diazepam, morphine and lidocaine on nociception in rhesus monkeys: A signal detection analysis. *J. Pharmacol. Exp. Ther.* **205(2)**, 302-310 (1978).

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