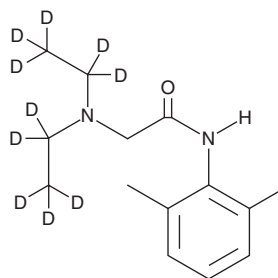


# PRODUCT INFORMATION



## Lidocaine-d<sub>10</sub> Item No. 35066

**CAS Registry No.:** 851528-09-1  
**Formal Name:** 2-[di(ethyl-d<sub>5</sub>)amino]-N-(2,6-dimethylphenyl)-acetamide  
**MF:** C<sub>14</sub>H<sub>12</sub>D<sub>10</sub>N<sub>2</sub>O  
**FW:** 244.4  
**Chemical Purity:** ≥98% (Lidocaine)  
**Deuterium Incorporation:** ≥99% deuterated forms (d<sub>1</sub>-d<sub>10</sub>); ≤1% d<sub>0</sub>  
**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<sub>10</sub> 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<sub>10</sub> is supplied as a crystalline solid. A stock solution may be made by dissolving the lidocaine-d<sub>10</sub> in the solvent of choice, which should be purged with an inert gas. Lidocaine-d<sub>10</sub> is soluble in DMSO.

### Description

Lidocaine is an inhibitor of voltage-gated sodium channels (Na<sub>v</sub>s) and a local anesthetic.<sup>1-3</sup> It inhibits Na<sub>v</sub>1.2 (K<sub>i</sub> = 11 μM), adult and neonatal Na<sub>v</sub>1.5 (IC<sub>50</sub>s = 380.1 and 360 μM, respectively), and Na<sub>v</sub>1.7 and Na<sub>v</sub>1.8 channels (IC<sub>50</sub>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.<sup>4</sup> 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<sup>+</sup> channels. *Proc. Natl. Acad. Sci. USA* **93**(17), 9270-9275 (1996).
2. Fraser, S.P., Onkal, R., Theys, M., *et al.* Neonatal Na<sub>v</sub>1.5 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<sub>v</sub>1.7 and Na<sub>v</sub>1.8 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).

#### 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.

#### WARRANTY AND LIMITATION OF REMEDY

Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

Copyright Cayman Chemical Company, 11/22/2022

#### CAYMAN CHEMICAL

1180 EAST ELLSWORTH RD  
ANN ARBOR, MI 48108 · USA

**PHONE:** [800] 364-9897  
[734] 971-3335

**FAX:** [734] 971-3640

CUSTSERV@CAYMANCHEM.COM  
WWW.CAYMANCHEM.COM