

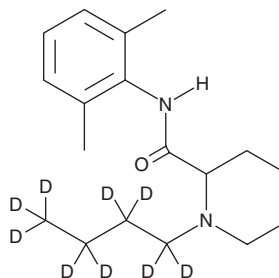
PRODUCT INFORMATION



Bupivacaine-d₉

Item No. 18246

CAS Registry No.: 474668-57-0
Formal Name: 1-(butyl-d₉)-N-(2,6-dimethylphenyl)-2-piperidinecarboxamide
MF: C₁₈H₁₉D₉N₂O
FW: 297.5
Chemical Purity: ≥98% (Bupivacaine)
Deuterium Incorporation: ≥99% deuterated forms (d₁-d₉); ≤1% d₀
Supplied as: A 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

Bupivacaine-d₉ is intended for use as an internal standard for the quantification of bupivacaine (Item No. 16618) 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).

Bupivacaine-d₉ is supplied as a solid. A stock solution may be made by dissolving the bupivacaine-d₉ in the solvent of choice, which should be purged with an inert gas. Bupivacaine-d₉ is soluble in organic solvents such as ethanol, DMSO, and dimethyl formamide (DMF). The solubility of bupivacaine-d₉ in ethanol and DMF is approximately 30 mg/ml and approximately 25 mg/ml in DMSO.

Description

Bupivacaine is a sodium channel blocker and local anesthetic.^{1,2} It inhibits sodium currents in rat dorsal horn neurons in a concentration-dependent manner and inhibits synaptic transmission in rat sympathetic ganglia, increasing the firing threshold when used at a concentration of 200 nM.^{3,4} Bupivacaine (10 μM) blocks cardiac sodium channels in a use-dependent manner and inhibits respiration in cardiac cell mitochondria when palmitoyl-carnitine or acetyl-carnitine are used as substrates (IC₅₀s = 0.78 and 0.37 mM, respectively).^{1,5} It also reduces thermal hyperplasia in a rat model of sciatic ligation injury when 0.6 ml of a 0.5% solution is administered into the perinerve space, and the duration of this effect is extended by co-administration of the NMDA receptor antagonist MK-801 (Item No. 10009019).² Formulations containing bupivacaine have been used as local anesthetics for surgery, oral surgery, and dental procedures and for anesthetic purposes in research studies using animals.

References

1. Arlock, P. *Pharmacol. Toxicol.* **63**(2), 96-104 (1988).
2. Mao, J., Price, D.D., Mayer, D.J., et al. *Brain Res.* **576**(2), 254-262 (1992).
3. Olschewski, A., Hempelmann, G., Vogel, W., et al. *Anesthesiology* **88**(1), 172-179 (1998).
4. Tabatabai, M. and Booth, A.M. *Anesth. Analg.* **71**(2), 149-157 (1990).
5. Weinberg, G.L., Palmer, J.W., VadeBoncouer, T.R., et al. *Anesthesiology* **92**(2), 523-528 (2000).

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, 12/13/2022

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