LKT Laboratories, Inc.

Bupivacaine

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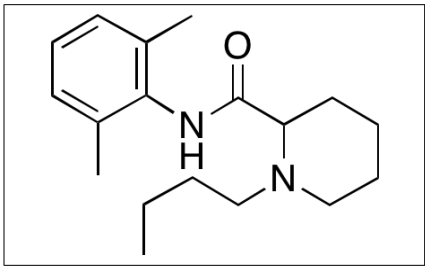
Product Information

Product ID B8261
CAS No. 38396-39-3
Chemical Name 1-butyl-N-(2,6-dimethylphenyl)piperidine-2-carboxamide

Synonym



Formula $C_{18}H_{28}N_2O$
Formula Wt. 288.43
Melting Point 107-108°C
Purity ≥98%
Solubility DMF (30 mg/mL),
DMSO (50 mg/mL)
Ethanol (50mg/mL)
Water: Insoluble

Bulk quanitites available upon request

Product ID	Size
B8261	1 g
B8261	5 g
B8261	25 g

Store Temp Ambient
Ship Temp Ambient

Description Bupivacaine is an amino amide anesthetic that decreases current amplitude and inhibits whole cell K+ currents in Ca2+-activated (BK/SK) K+ channels and N-type voltage-gated (Kv1/shaker and Kv3 KCNA/KCNC) K+ channels. Bupivacaine also inhibits voltage-gated Na+ channels and tandem pore domain (TASK-2/KCNK-5) K+ channels. Bupivacaine may be neurotoxic at high doses, activating p38 MAPK, increasing levels of ROS and WDR53, and inducing apoptosis in neuroblastoma cells. In other cellular models, bupivacaine induces depolarization of the mitochondrial membrane potential, resulting in apoptosis.

References

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Martín P, Enrique N, Palomo AR, et al. Bupivacaine inhibits large conductance, voltage- and Ca2+- activated K+ channels in human umbilical artery smooth muscle cells. Channels (Austin). 2012 May-Jun;6(3):174-80. PMID: 22688134.

Lu J, Xu SY, Zhang QG, et al. Bupivacaine induces apoptosis via mitochondria and p38 MAPK dependent pathways. Eur J Pharmacol. 2011 Apr 25;657(1-3):51-8. PMID: 21315711.

Cela O, Piccoli C, Scrima R, et al. Bupivacaine uncouples the mitochondrial oxidative phosphorylation, inhibits respiratory chain complexes I and III and enhances ROS production: results of a study on cell cultures. Mitochondrion. 2010 Aug;10(5):487-96. PMID: 20546950.

Nilsson J, Madeja M, Elinder F, et al. Bupivacaine blocks N-type inactivating Kv channels in the open state: no allosteric effect on inactivation kinetics. Biophys J. 2008 Dec;95(11):5138-52. PMID: 18790854.

Kindler CH, Paul M, Zou H, et al. Amide local anesthetics potently inhibit the human tandem pore domain background K+ channel TASK-2 (KCNK5). J Pharmacol Exp Ther. 2003 Jul;306(1):84-92. PMID: 12660311.

Caution: This product is intended for laboratory and research use only. It is not for human or drug use.