

Product Data Sheet

Product Name: Ropivacaine

Cat. No.: GC61250

Chemical Properties

Cas. No. 84057-95-4

SMILES O=C([C@H]1N(CCC)CCCC1)NC2=C(C)C=CC=C2C

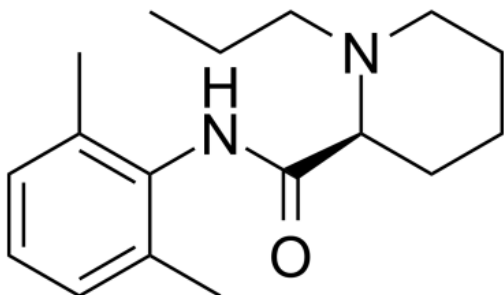
Formula $C_{17}H_{26}N_2O$ M.Wt 274.4

Solubility DMSO: 12.5 mg/mL (45.55 mM) Storage Store at -20°C

General tips For obtaining a higher solubility, please warm the tube at 37 °C and shake it in the ultrasonic bath for a while. Stock solution can be stored below -20°C for several months.

Shipping Condition Evaluation sample solution: ship with blue ice All other available size: ship with RT, or blue ice upon request.

Structure



Background

Ropivacaine is a potent sodium channel blocker and acts as a local anesthetic agent. Ropivacaine blocks impulse conduction via reversible inhibition of sodium ion influx in nerve fibers [1][2]. Ropivacaine is also an inhibitor of K2P (two-pore domain potassium channel) TREK-1 with an IC₅₀ of 402.7 μM in COS-7 cell's membrane [3]. Ropivacaine is used for the research of regional anesthesia and neuropathic pain management [1].

Caution: Product has not been fully validated for medical applications. For research use only.

Tel: (909) 407-4943 Fax: (626) 353-8530 E-mail: tech@glpbio.com

Address: 10292 Central Ave. #205, Montclair, CA, USA

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Epidural administration of Ropivacaine effectively blocks neuropathic pain (both mechanical allodynia and heat hyperalgesia) without induction of analgesic tolerance and significantly delays the development of neuropathic pain produced by peripheral nerve injury[1]. Ropivacaine inhibits pressure-induced increases in filtration coefficient (Kf) without affecting pulmonary artery pressure (Ppa), pulmonary capillary pressures (Ppc), and zonal characteristics (ZC)[2]. Ropivacaine prevents pressure-induced lung edema and associated hyperpermeability as evidenced by maintaining PaO₂, lung wet-to-dry ratio and plasma volume in levels similar to sham rats[2]. Ropivacaine inhibits pressure-induced NO production as evidenced by decreased lung nitro-tyrosine content when compared to hypertensive lungs[2]. Animal Model: Adult Sprague-Dawley rats (300-400g)[1]

[1]. Dene Simpson, et al. Ropivacaine: a review of its use in regional anaesthesia and acute pain management. *Drugs*. 2005;65(18):2675-717. [2]. Li TF, et al. Epidural sustained release ropivacaine prolongs anti-allodynia and anti-hyperalgesia in developing and established neuropathic pain. *PLoS One*. 2015 Jan 24;10(1):e0117321. [3]. Hye Won Shin, et al. The inhibitory effects of bupivacaine, levobupivacaine, and ropivacaine on K₂P (two-pore domain potassium) channel TREK-1. *J Anesth* [4]. Milan Patel, et al. Ropivacaine Inhibits Pressure-Induced Lung Endothelial Hyperpermeability in Models of Acute Hypertension. *Life Sci*. 2019 Apr 1;222:22-28.

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