

Data Sheet

| Product Name: | Lidocaine (hydrochloride) | |
|--------------------|--|------|
| Cat. No.: | CS-3888 | |
| CAS No.: | 73-78-9 | |
| Molecular Formula: | C ₁₄ H ₂₃ CIN ₂ O | |
| Molecular Weight: | 270.80 | |
| Target: | Apoptosis; ERK; MEK; NF-кВ; Sodium Channel | |
| Pathway: | Apoptosis; MAPK/ERK Pathway; Membrane Transporter/Ion Channel; NF-κB; Stem Cell/Wnt | H–CI |
| Solubility: | H2O : ≥ 100 mg/mL (369.28 mM); DMSO : ≥ 100 mg/mL (369.28 mM) | |

BIOLOGICAL ACTIVITY:

Lidocaine hydrochloride (Lignocaine hydrochloride) inhibits **sodium channels** involving complex voltage and using dependence^[1]. Lidocaine hydrochloride decreases growth, migration and invasion of gastric carcinoma cells via up-regulating miR-145 expression and further inactivation of **MEK/ERK** and **NF-**κ**B** signaling pathways. Lidocaine hydrochloride is an amide derivative and a drug to treat ventricular arrhythmia and an effective tumor-inhibitor^[2]. IC50 & Target: sodium channels^[1], MEK/ERK, NF-κB^[2] **In Vitro:** Lidocaine hydrochloride (Lignocaine hydrochloride) (10 nM; 48 hours) decreases significantly cell proliferation^[2]. Lidocaine hydrochloride (1-10 nM; 24-72 hours) inhibits cell viability and achieves the most suppressing effects at the concentration of 10 nM and treatment time 48 hours^[2].

Lidocaine hydrochloride (10 nM; 48 hours) increases significantly the apoptotic cell rate^[2].

Lidocaine hydrochloride (10 nM; 48 hours) down-regulates Cyclin D1 and up-regulates p21 expression significantly^[2]. **In Vivo:** Lidocaine hydrochloride (Lignocaine hydrochloride) causes completely reversible tail nerve block in rats. Mechanical nociception block produced by lidocaine has slower onset and faster recovery compared with thermal nociception block^[3].

References:

[1]. Cummins TR, et al. Setting up for the block: the mechanism underlying lidocaine's use-dependent inhibition of sodium channels. J Physiol. 2007 Jul 1:582(Pt 1):11.

[2]. Sui H, et al. Lidocaine inhibits growth, migration and invasion of gastric carcinoma cells by up-regulation of miR-145. BMC Cancer. 2019 Mar 15;19(1):233.

[3]. Li Z, et al. Evaluation of the antinociceptive effects of lidocaine and bupivacaine on the tail nerves of healthy rats. Basic Clin Pharmacol Toxicol. 2013 Jul;113(1):31-6.

CAIndexNames:

Acetamide, 2-(diethylamino)-N-(2,6-dimethylphenyl)-, hydrochloride (1:1)

SMILES:

O=C(NC1=C(C)C=CC=C1C)CN(CC)CC.[H]Cl

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

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