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DATASHEET

QX 314 chloride

Product overview

Name QX 314 chloride Cat No HB1030

Alternative names N-Ethyllidocaine chloride, QX-314

Biological action Blocker **Purity** >98%

Description Membrane impermeable Na⁺ channel blocker

Images



Biological Data

Biological description

Application notes

Membrane impermeable Na⁺ channel blocker. A quaternary derivative of lidocaine. Displays anesthetic properties. Active *in vivo*. QX 314 bromide also available.

#Figure 1: QX 314 inhibition of action potentials in rat CA1 pyramidal neurones during dendritic plateau potentials

QX 314 is a membrane impermeable Na⁺ channel blocker commonly used to inhibit action potential formation. QX 314 from Hello Bio inhibits the ability for action potentials to generate in two different cells during dendritic plateau potentials at 1mM (see Fig 1 above).

#Protocol 1: Evoked plateau potentials in rat CA1 pyramidal neurones

- Pyramidal neurones from adult Wistar rats were patched in CA1 using a KMeSO4 internal solution with and without the addition of 1mM QX 314 (HB1030).
- Cells were first held in V_{clamp} at -70mV for 10 minutes to wash out LTP before being transferred to I_{clamp} (again at -70mV) where they were stimulated at a high stimulation intensity to generate plateau potentials.
- Stimulation consisted of one single stimulation followed 400ms later by 5 stimulations at 100Hz.
- Experiments took place in the presence of the GABAB antagonist GCP-55845 (1 μ M, HB0960) and 50 μ M PTX.
- Throughout the experiment input current was adjusted to maintain the cell at -70mV ± 0.5mV.
- Data is shown from two separate cells.

Solubility & Handling

Solubility overview Soluble in water (100mM) **Storage instructions** Room temperature

Storage of solutions Prepare and use solutions on the same day if possible. Store solutions at -20 °C for up to one month if

storage is required. Equilibrate to RT and ensure the solution is precipitate free before use.

Shipping Conditions

Important

Stable for ambient temperature shipping. Follow storage instructions on receipt.

This product is for RESEARCH USE ONLY and is not intended for therapeutic or diagnostic use. Not

for human or veterinary use.

Chemical Data

Chemical name N-(2,6-Dimethylphenylcarbamoylmethyl)triethylammonium chloride

Molecular Weight 298.85

Chemical structure

N CI-

Molecular Formula $C_{16}H_{27}N_2OCI$ CAS Number5369-03-9PubChem identifier21462

Source Synthetic

InChi InChi=1S/C16H26N2O.CIH/c1-6-18(7-2,8-3)12-15(19)17-16-13(4)10-9-11-14(16)5;/h9-11H,6-8,12H

2,1-5H3;1H

InChiKey LLPPOMUAOGMYQI-UHFFFAOYSA-N

MDL number MFCD01669894 Appearance White solid

References

Fast sodium action potentials are generated in the distal apical dendrites of rat hippocampal CA1 pyramidal cells.

Colling SB *et al* (1994) Neurosci Lett 172(1-2) **PubMedID** 8084540

Intracellular QX-314 inhibits calcium currents in hippocampal CA1 pyramidal neurons.

Talbot MJ *et al* (1996) J Neurophysiol 76(3) **PubMedID**8890325