

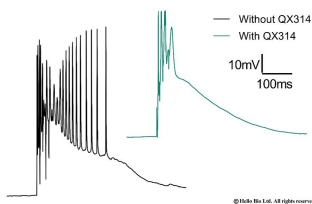
## DATASHEET

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 <sup>+</sup> channel blocker

### Images



### Biological Data

Biological description	Membrane impermeable Na <sup>+</sup> channel blocker. A quaternary derivative of lidocaine. Displays anesthetic properties. Active <i>in vivo</i> . <b>QX 314 bromide</b> also available.
Application notes	<b>#Figure 1: QX 314 inhibition of action potentials in rat CA1 pyramidal neurones during dendritic plateau potentials</b>

QX 314 is a membrane impermeable Na<sup>+</sup> 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 KMeSO<sub>4</sub> internal solution with and without the addition of 1mM QX 314 (HB1030).
- Cells were first held in  $V_{\text{clamp}}$  at -70mV for 10 minutes to wash out LTP before being transferred to  $I_{\text{clamp}}$  (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 GABA<sub>B</sub> antagonist GCP-55845 (1μM, HB0960) and 50μM 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

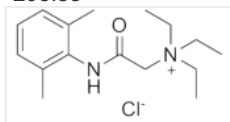
**Storage instructions**  
**Solubility overview**  
**Important**

Room temperature  
Soluble in water (100mM)  
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**  
**Molecular Weight**  
**Chemical structure**

*N*-(2,6-Dimethylphenylcarbamoylmethyl)triethylammonium chloride  
298.85



**Molecular Formula**  
**CAS Number**  
**PubChem identifier**  
**SMILES**  
**Source**  
**InChi**

C<sub>16</sub>H<sub>27</sub>N<sub>2</sub>OCl  
5369-03-9  
21462  
CC[N+](CC)(CC)CC(=O)NC1=C(C=CC=C1C)C.[Cl-]  
Synthetic  
InChI=1S/C16H26N2O.ClH/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

**InChiKey**  
**MDL number**  
**Appearance**

LLPPOMUAOGMYQI-UHFFFAOYSA-N  
MFCD01669894  
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](#)