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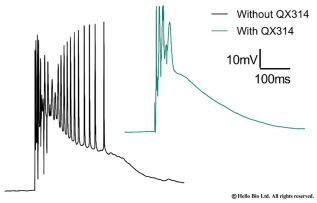
DATASHEET

QX 314 chloride

Product overview

Name	QX 314 chloride
Cat No	HB1030
Alternative names	N-Ethyllidocaine chloride
Biological action	Blocker
Purity	>98%
Description	Membrane impermeable Na^+ channel blocker

Images



Biological Data

Biological description

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

Application notes

#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).

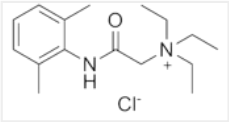
#Protocol 1: Evoked plateau potentials in rat CA1 pyramidal neurones

- 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 $GABA_B$ 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	Room temperature
Solubility overview	Soluble in water (100mM)
Important	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	
Molecular Formula	$C_{16}H_{27}N_2OCl$
CAS Number	5369-03-9
PubChem identifier	21462
SMILES	CC[N+](CC)(CC)CC(=O)NC1=C(C=CC=C1C)C.[Cl-]
Source	Synthetic
InChi	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,6-8,12H2,1-5H3;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