

Product datasheet

XE-991 dihydrochloride, KCNQ channel blocker; blocks M current ab120089

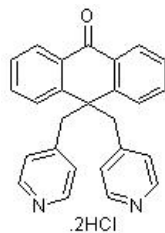
[30 References](#) [3 图像](#)

概述

产品名称	XE-991 dihydrochloride, KCNQ channel blocker; blocks M current
描述	Potent, selective KCNQ channel blocker; blocks M current
生物学描述	Potent and selective blocker of KCNQ voltage-gated potassium channels. Blocks M current. (IC ₅₀ values are 0.98 μM (M-current), 0.71 μM (KCNQ 2), 0.75 μM (KCNQX 1), >100 μM (Kv1.2) and >43 μM (Kv4.3). Potent pulmonary vasoconstrictor. Cognitive enhancer following oral administration <i>in vivo</i>).

CAS编号 122955-13-9

化学结构



性能

化学名称	10,10-Bis(4-pyridinylmethyl)-9(10H)-anthracenone dihydrochloride
分子量	449.40
分子式	C ₂₆ H ₂₀ N ₂ O.2HCl
PubChem识别号	45073462
存放说明	Store at +4°C. Store under desiccating conditions. The product can be stored for up to 12 months.
溶解度概述	Soluble in water to 100 mM
处理	Wherever possible, you should prepare and use solutions on the same day. However, if you need to make up stock solutions in advance, we recommend that you store the solution as aliquots in tightly sealed vials at -20°C. Generally, these will be useable for up to one month. Before use, and prior to opening the vial we recommend that you allow your product to equilibrate to room temperature for at least 1 hour. Refer to SDS for further information.

Need more advice on solubility, usage and handling? Please visit our [frequently asked questions \(FAQ\) page](#) for more details.

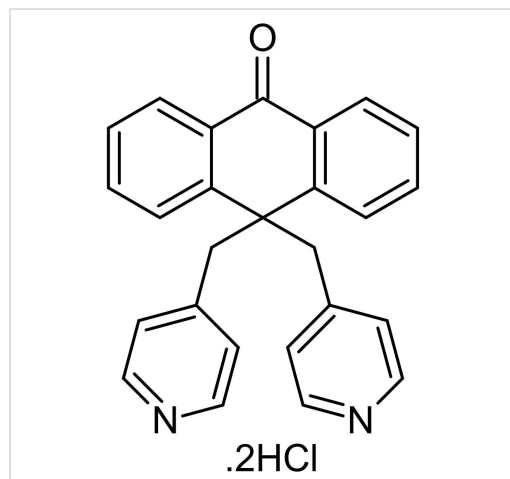
SMILES

C1=CC=C2C(=C1)C(=O)C3=CC=CC=C3C2(CC4=CC=NC=C4)CC5=CC=NC=C5.Cl.Cl

来源

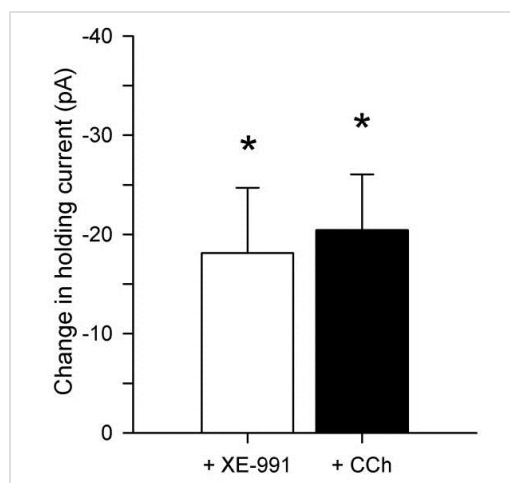
Synthetic

图片



Chemical Structure - XE-991 dihydrochloride, KCNQ channel blocker; blocks M current (ab120089)

2D chemical structure image of ab120089, XE-991 dihydrochloride, KCNQ channel blocker; blocks M current

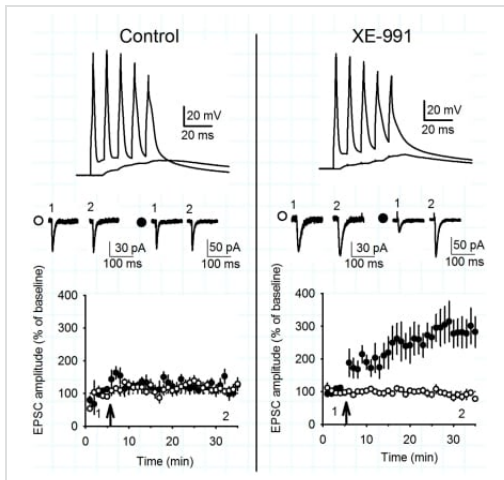


Functional Studies - XE-991 dihydrochloride, KCNQ channel blocker; blocks M current (ab120089)

Image from Glasgow SD et al., PLoS One. 2013;8(3):e58901. Fig 7(A).; doi: 10.1371/journal.pone.0058901. Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>

To assess the effects of blockade of muscarine-dependent K⁺ current, I_M under voltage clamp conditions, and to determine if carbachol, CCh, acts through the blockade of an additional conductance other than I_M voltage ramps were performed in ACSF containing TTX (0.5 μ M), ZD7288 (50 μ M), prior to and during sequential addition of XE-991 (10 μ M) and CCh (50 μ M) ($n=9$). Application of XE-991 in the presence of TTX and ZD7288 resulted in a significant increase in current required to hold neurons at -60 mV (-18.1 ± 6.6 pA; N-K: $p < 0.05$).

Bath application of XE-991 (10 μ M; white bar) resulted in an inward current in cells held at -60 mV indicating that the cells express I_M and the subsequent perfusion with CCh (50 μ M) resulted in an additional inward current, suggesting that CCh blocks a second K⁺ conductance (*: $p < 0.05$).



Functional Studies - XE-991 dihydrochloride, KCNQ channel blocker; blocks M current (ab120089)

Image from Petrovic MM et al., PLoS One. 2012;7(2):e30402. Fig 1(B,C).; doi: 10.1371/journal.pone.0030402. Reproduced under the Creative Commons license <http://creativecommons.org/licenses/by/4.0/>

Left - Theta burst stimulation (TBP) does not induce long-term potentiation (LTP) under control conditions. Coincident TBP of subthreshold excitatory post-synaptic potentials (EPSPs) and somatic action potentials induced no change in EPSC amplitude in the test (black circles) or control (white circles) pathways. The arrow indicates the timing of the TBP protocol. Example voltage traces show the initial burst of 5 coincident EPSPs and action potentials and a single test burst of 5 subthreshold EPSPs. Example current traces from a single experiment illustrating the mean EPSC response during the baseline (1) and at 30–35 minutes (2) in the test and control pathways. Right - TBP does induce LTP in the presence of the Kv7 channel inhibitor XE-991 (ab120089). In the presence of XE-991 (10 μ M), coincident TBP of subthreshold EPSPs and somatic action potentials induced pathway-specific LTP.

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