



Stably Transfected Cell Line Data Sheet
hHCN2-CHO
Catalog Number CT6115

Related Services and Products

FastPatch[®] and ScreenPatch[™] automated patch clamp services
Additional information available at www.chantest.com

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1 Cell Line Description

1.1 Background

HCN2 is a hyperpolarization-gated, cyclic nucleotide-sensitive, non-selective cation channel. HCN2 channels expressed in cardiac and neuronal cells regulate pacemaking currents (I_h).

1.2 Pore-forming subunit identifier: hHCN2

Class: Hyperpolarization-gated channel
Species: Human
Gene name: HCN2

1.3 Sequence Information

The cDNA sequence of the HCN2 gene used to create this cell line was confirmed prior to transfection. The amino acid sequence encoded by the transfected cDNA is identical to the translated sequence for GenBank accession number NM_001194.2.

1.4 Expression System

CHO (Chinese hamster ovary), tetracycline-inducible expression

1.5 Product Format

Cryopreserved cells, 1×10^6 cells/vial

1.6 Mycoplasma Status: Negative

The absence of mycoplasma species in this cell line was confirmed with the MycoAlert Kit (Lonza Rockland, Inc.).

1.7 Cell line Stability

Channel expression in this cell line has been shown to be stable in patch clamp assays for at least 98 passages.

2 Validated Test Platforms

Electrophysiological and pharmacological verification of the functional properties of the cloned channels was assessed in the following test platforms:

PatchXpress[®] (MDS-AT)
QPatch[™] HT (Sophion)

2.1 Representative PatchXpress® Data

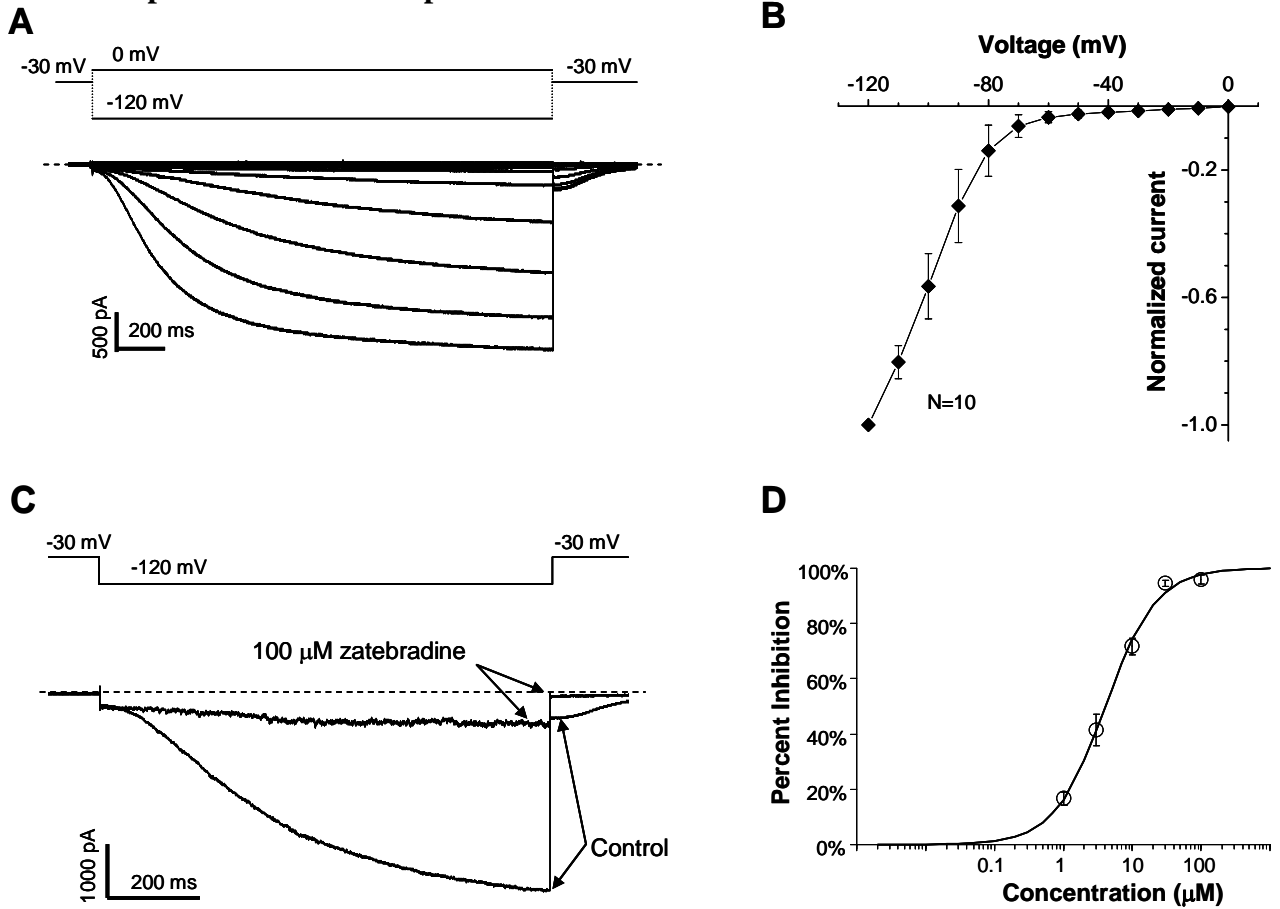


Figure 1. Voltage-dependent gating and zatebradine block in patchXpress®
A: Hyperpolarization-dependent activation. Currents were elicited by test pulses from 0 to -120 mV in 10 mV decrements from holding potential, -30 mV.
B: Current-voltage relationship. **C:** Effect of 100 μM zatebradine on hHCN2 currents evoked by test potentials to -120 mV. **D:** Zatebradine concentration-response relationship (Mean ± SEM, n = 3 - 7 cells/concentration). IC₅₀ = 4.2 μM.

2.2 Representative QPatch™ Data

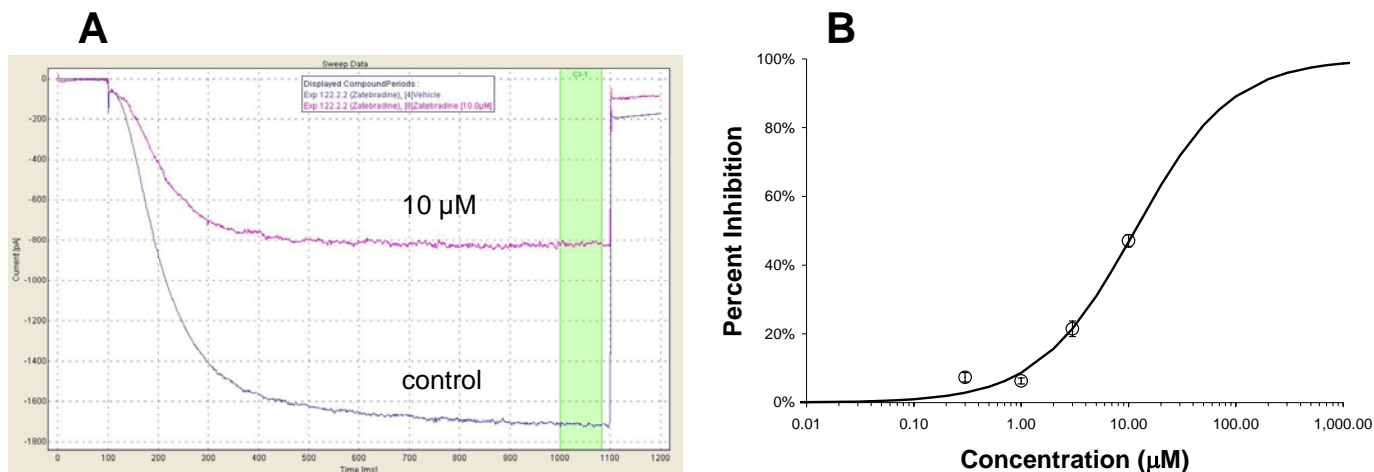


Figure 2. Zatebradine block of hHCN2 current measure in QPatch™ HT.

A: Test pulse currents at -120 mV before and after 10 μM zatebradine application.

B: Concentration-response relationship (Mean ± SEM, n = 8 cells/concentration).

IC₅₀ = 11.4 μM.

3 References

Hofmann F, et al. 2005. *Pharmacol Rev.* 57:455 - 462. International Union of Pharmacology. LI. Nomenclature and molecular relationships of cyclic nucleotide-regulated channels.