



Stably Transfected Cell Line - Product Data Sheet
hK_v1.2-HEK
Catalog Number CT6132

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

K_v1.2 is a voltage-gated, K⁺-selective channel expressed in the central nervous system, smooth muscle, and pancreas.

1.2 Pore-forming subunit identifier: hK_v1.2

Class: Voltage-gated potassium channel
Species: Human
Gene name: KCNA2

1.3 Sequence Information

The cDNA sequence of the KCNA2 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_004974.2.

1.4 Expression System

HEK293 (human embryonic kidney) cells, constitutive expression.

1.5 Product Format

Cryopreserved cells, 1 x10⁶ 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 has been stable for at least 49 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)

2.1 Representative PatchXpress® Data

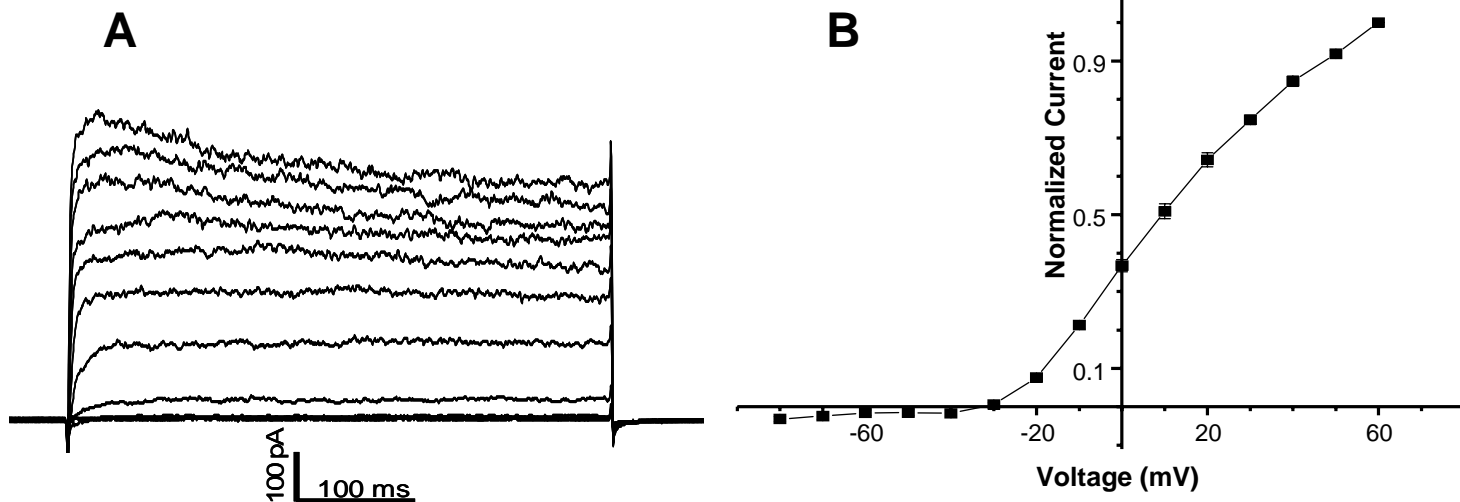


Figure 1. Voltage-dependent Gating in PatchXpress®.

A: hK_v1.2 current traces elicited by 300-ms depolarizing pulses from -80 to +60 mV in 10 mV increments, holding potential -80 mV. **B:** Steady-state current-voltage relationship.

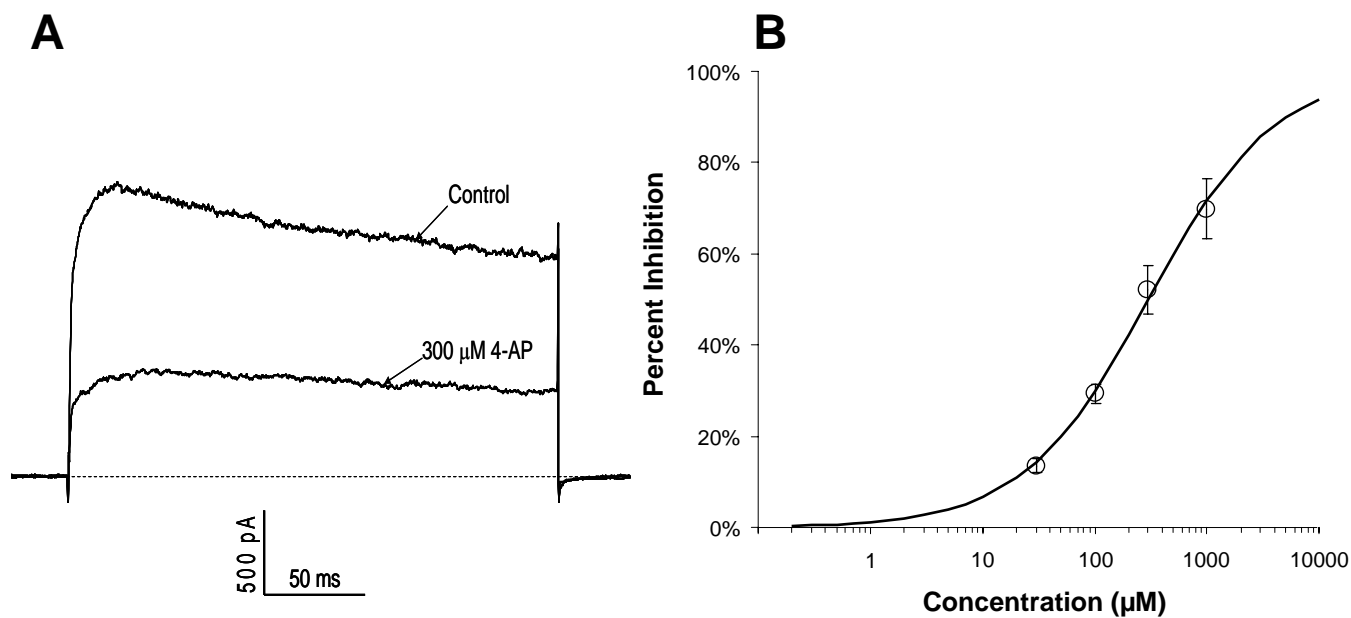


Figure 2. 4-Aminopyridine (4-AP) block in PatchXpress®

A: Current traces elicited by 300-ms test pulses to +40 mV in the before (control) and after application of 4-AP at 300 μM. **B:** Concentration-response relationship (Mean ± SEM, n = 4 cells/concentration). IC₅₀ = 300 μM.

3 References

Grissmer S, et al. 1994. Pharmacological characterization of five cloned voltage-gated K⁺ channels, types K_v1.1, 1.2, 1.3, 1.5, and 3.1, stably expressed in mammalian cell lines. *Mol Pharmacol* 45:1227-1234.

Gutman GA, et al. 2005. International Union of Pharmacology. LIII. Nomenclature and molecular relationships of voltage-gated potassium channels. *Pharmacol Rev.* 57:473-508.