



**Stably Transfected Cell Line - Product Data Sheet**  
**hK<sub>v</sub>1.4-CHO**  
**Catalog Number CT6135**

**Related Services and Products**

FastPatch<sup>®</sup> and ScreenPatch<sup>™</sup> automated patch clamp services  
Replicating hK<sub>v</sub>1.4-HEK cell line. Cat. No. CT6136  
EZCell TT hK<sub>v</sub>1.4-CHO transiently transfected cells Cat. No. CT7136  
Additional information available at [www.chantest.com](http://www.chantest.com)

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## 1 Cell Line Description

### 1.1 Background

K<sub>v</sub>1.4 is a voltage-gated, K<sup>+</sup>-selective channel expressed in the central nervous system, skeletal muscle, heart, and pancreas. The channel is a potential therapeutic target in treatment of pain.

### 1.2 Pore-forming subunit identifier: hK<sub>v</sub>1.4

Class: Voltage-gated potassium channel  
Species: Human  
Gene name: KCNA4

### 1.3 Sequence Information

The cDNA sequence of the KCNA4 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\_002233.2.

### 1.4 Expression System

CHO (Chinese hamster ovary) cells, constitutive expression.

### 1.5 Product Format

Cryopreserved cells, 1 x10<sup>6</sup> 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

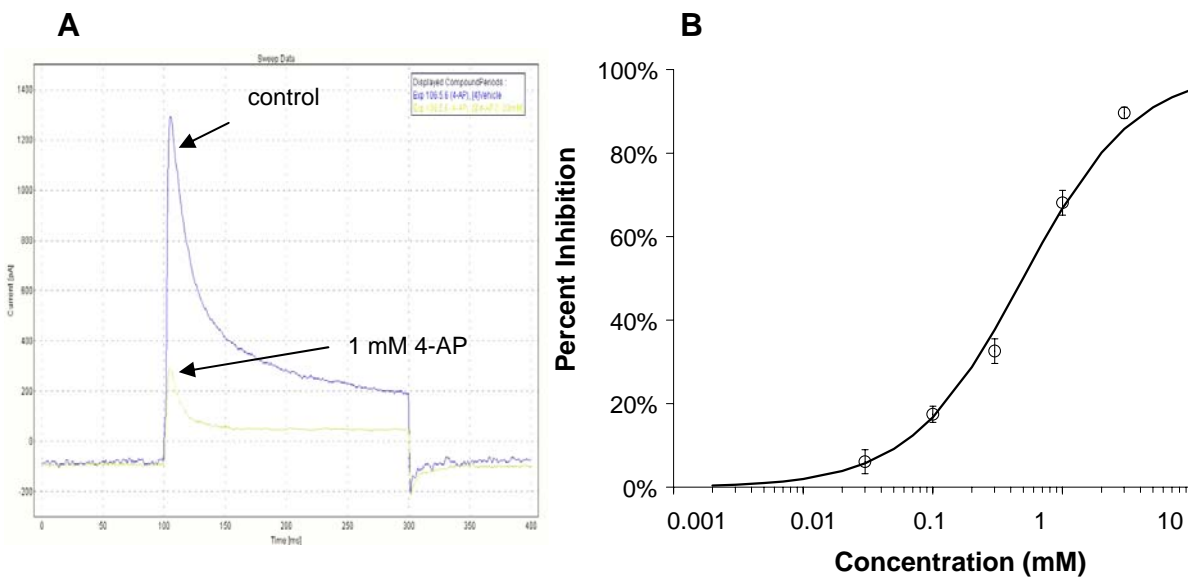
Channel expression in this cell line has been stable for at least 31 passages.

## 2 Validated Test Platforms

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

QPatch™ (Sophion Bioscience)

## 2.1 Representative QPatch™ Data



### Figure 1. 4-Aminopyridine Block of hK<sub>v</sub>1.4 in QPatch™

**A:** Current traces elicited by depolarizing test pulses to +20 mV, holding potential -80 mV, before (control) and after 1 mM 4-AP application. Horizontal and vertical calibrations are 50 ms and 0.2 nA, respectively. **B:** Concentration-response relationship. Mean  $\pm$  SEM (n = 5 - 7 cells/concentration). IC<sub>50</sub> = 0.5 mM.

## 3 References

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