PrecisION® hKv7.4 Recombinant Stable Cell Line

Catalog Number CYL3092 **Lot Number** See Vial

Contents 2 Vials, 2 x 10^6 to 4 x 10^6 in 1 mL

Background Information

KCNQ genes encode potassium channels that have been associated with both cardiac and hearing abnormalities in humans, most notably the KNCQ1 gene (Neyroud et al., 1997). Using a partial KCNQ3 cDNA Kubisch et al. (1999) screened a human retinal cDNA λ phage library and obtained a novel homolog they named KCNQ4. Additional information can be found on page 2.

Product Information

Description Recombinant HEK 293 cell line expressing the human voltage-gated potassium channel Kv7.4

Family Potassium, Voltage-Gated

Target Kv7.4

	Target Protein	Accession Number
1	Kv7.4	NM_004700.3
2	N/A	N/A
3	N/A	N/A
4	N/A	N/A

Species Human

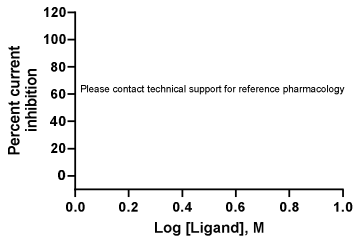
Host Cell Type HEK 293

Application Electrophysiology assay (conventional and automated patch clamp platforms)

Storage Vials are to be stored in vapor phase of liquid nitrogen

Functional Performance

HEK293 cells expressing hKv7.4 were characterized in terms of their pharmacological and biophysical properties using whole-cell patch clamp techniques.



Electrophysiology Method MPC

Reference Agonist

Reference Antagonist Linopridine

Antagonist IC_{50} (μM)

Passage Stability

Please contact technical support.

Mycoplasma Testing

This lot was tested and found to be free of mycoplasma contamination. Data available upon request.

Notes

Additional functional (pharmacological and electrophysiological) validation on multiple platforms is available upon request.

Additional Ligand Information

Control Compound	Linopridine
Vendor Name :	Sigma-Aldrich
Vendor Catalog No.	L134

Additional Background Information

When expressed in Xenopus oocytes KCNQ4 encodes a potassium current inhibited by 30% in the presence of 200 µM linopridine, whereas the current due to KCNQ3/KCNQ4 heteromers in the same study was inhibited by 75% at that concentration. Kubisch et al. (1999) also mapped the KCNQ4 gene to the 1p34 human chromosome, in a region associated with autosomal dominant deafness DFNA2A. Subsequent studies have identified additional families with mutations in KCNQ4 and hearing loss. KCNQ4-specific openers could possibly treat progressive hearing loss and tinnitus Kubisch et al. (1999).

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