

# KCNE4 (FL-170): sc-66940

## BACKGROUND

The KCNE genes encode small, single transmembrane domain peptides that associate with pore-forming  $\alpha$ -subunits to form K<sup>+</sup> channels with unique characteristics. Voltage-gated K<sup>+</sup> channels in the plasma membrane control the repolarization and the frequency of action potentials in neurons, muscles, and other excitable cells. KCNE4 (K<sup>+</sup> voltage-gated channel, Isk-related family, member 4), also known as minimum K<sup>+</sup> ion channel-related peptide 3 (MiRP3), belongs to a family of proteins known to have a dramatic effect on the gating of certain potassium channels. KCNE4 is expressed strongly in heart, skeletal muscle, and kidney. Electrophysiological studies show that human KCNE4 inhibits the KCNQ1 channel. KCNE4 also plays a role in inhibiting the currents of Kv1.1 and Kv1.3. Alternatively, it is a key player in increasing the current amplitude of the KCNQ4 channel.

## REFERENCES

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2. Grunnet, M., et al. 2003. KCNE4 is an inhibitory subunit to Kv1.1 and Kv1.3 potassium channels. *Biophys. J.* 85: 1525-1537.
3. Teng, S., et al. 2003. Novel gene hKCNE4 slows the activation of the KCNQ1 channel. *Biochem. Biophys. Res. Commun.* 303: 808-813.
4. Lundquist, et al. 2005. Expression of multiple KCNE genes in human heart may enable variable modulation of I(Ks). *J. Mol. Cell. Cardiol.* 38: 277-287.
5. Grunnet, M., et al. 2005. hKCNE4 inhibits the hKCNQ1 potassium current without affecting the activation kinetics. *Biochem. Biophys. Res. Commun.* 328: 1146-1153.
6. Bendahhou, S., et al. 2005. *In vitro* molecular interactions and distribution of KCNE family with KCNQ1 in the human heart. *Cardiovasc. Res.* 67: 529-538.
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8. Strutz-Seeböhm, N., et al. 2006. Functional coassembly of KCNQ4 with KCNEb subunits in *Xenopus* oocytes. *Cell. Physiol. Biochem.* 18: 57-66.
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## CHROMOSOMAL LOCATION

Genetic locus: KCNE4 (human) mapping to 2q36.1; Kcne4 (mouse) mapping to 1 C4.

## SOURCE

KCNE4 (FL-170) is a rabbit polyclonal antibody raised against amino acids 1-170 representing full length KCNE4 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

KCNE4 (FL-170) is recommended for detection of KCNE4 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

KCNE4 (FL-170) is also recommended for detection of KCNE4 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for KCNE4 siRNA (h): sc-45535, KCNE4 siRNA (m): sc-45536, KCNE4 shRNA Plasmid (h): sc-45535-SH, KCNE4 shRNA Plasmid (m): sc-45536-SH, KCNE4 shRNA (h) Lentiviral Particles: sc-45535-V and KCNE4 shRNA (m) Lentiviral Particles: sc-45536-V.

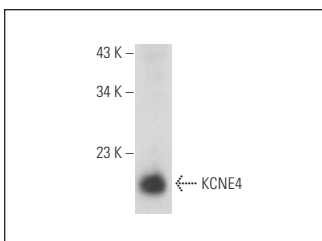
Molecular Weight of KCNE4: 18 kDa.

Positive Controls: mouse embryo extract: sc-364239.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## DATA



KCNE4 (FL-170): sc-66940. Western blot analysis of KCNE4 expression in mouse embryo tissue extract.

## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## RESEARCH USE

For research use only, not for use in diagnostic procedures.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) or our catalog for detailed protocols and support products.