

KCNE4 (M-12): sc-34913

BACKGROUND

The KCNE genes encode small, single transmembrane domain peptides that associate with pore-forming α -subunits to form K⁺ channels with unique characteristics. Voltage-gated K⁺ channels in the plasma membrane control the repolarization and the frequency of action potentials in neurons, muscles, and other excitable cells. KCNE4 (K⁺ voltage-gated channel, Isk-related family, member 4), also known as minimum K⁺ 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., Rasmussen, H.B., Hay-Schmidt, A., Rosenstjerne, M., Klaerke, D.A., Olesen, S.P. and Jespersen, T. 2003. KCNE4 is an inhibitory subunit to Kv1.1 and Kv1.3 potassium channels. *Biophys. J.* 85: 1525-1537.
3. Teng, S., Ma, L., Zhen, Y., Lin, C., Bahring, R., Vardanyan, V., Pongs, O. and Hui, R. 2003. Novel gene hKCNE4 slows the activation of the KCNQ1 channel. *Biochem. Biophys. Res. Commun.* 303: 808-813.
4. Lundquist, A.L., Manderfield, L.J., Vanoye, C.G., Rogers, C.S., Donahue, B.S., Chang, P.A., Drinkwater, D.C., Murray, K.T. and George, A.L., Jr. 2005. Expression of multiple KCNE genes in human heart may enable variable modulation of I(Ks). *J. Mol. Cell. Cardiol.* 38: 277-287.

CHROMOSOMAL LOCATION

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

SOURCE

KCNE4 (M-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of KCNE4 of human origin.

PRODUCT

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

Blocking peptide available for competition studies, sc-34913 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

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.

APPLICATIONS

KCNE4 (M-12) 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), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

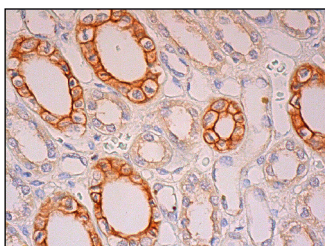
Suitable for use as control antibody for KCNE4 siRNA (h): sc-45535, KCNE4 siRNA (m): sc-45536, KCNE4 shRNA Plasmid (h): sc-45535-SH, KCNE4 shRNA Plasmid (m): sc-45536-SH, KCNE4 shRNA (h) Lentiviral Particles: sc-45535-V and KCNE4 shRNA (m) Lentiviral Particles: sc-45536-V.

Molecular Weight of KCNE4: 18 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



KCNE4 (M-12): sc-34913. Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing membrane staining of cells in tubules.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.