

KCNE3 (L-20): sc-10648

BACKGROUND

Voltage-gated K⁺ channels in the plasma membrane control the repolarization and the frequency of action potentials in neurons, muscles, and other excitable cells. KCNE3 (potassium voltage-gated channel, Isk-related family, member 3), also known as HYPP, potassium channel subunit β MiRP2 or HOKPP, is a 103 amino acid single-pass type I membrane protein belonging to the potassium channel KCNE family. Expressed predominantly in kidney, KCNE3 is also found at moderate levels in small intestine and associates with a voltage-gated potassium channel complex to regulate stability and gating kinetics. The gene encoding KCNE3 maps to human chromosome 11q13.4; defects in which are the cause of an autosomal dominant disorder known as periodic paralysis hypokalemic (or HOKPP), a muscular disorder known as thyrotoxic periodic paralysis type 1 (TTPP1) and Brugada syndrome type 6 (BRS6).

REFERENCES

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- Dias Da Silva, M.R., et al. 2002. A mutation in the KCNE3 potassium channel gene is associated with susceptibility to thyrotoxic hypokalemic periodic paralysis. *J. Clin. Endocrinol. Metab.* 87: 4881-4884.
- Mazhari, R., et al. 2002. Ectopic expression of KCNE3 accelerates cardiac repolarization and abbreviates the QT interval. *J. Clin. Invest.* 109: 1083-1090.
- Jurkat-Rott, K. and Lehmann-Horn, F. 2004. Periodic paralysis mutation MiRP2-R83H in controls: Interpretations and general recommendation. *Neurology* 62: 1012-1015.
- Lundby, A. and Olesen, S.P. 2006. KCNE3 is an inhibitory subunit of the Kv4.3 potassium channel. *Biochem. Biophys. Res. Commun.* 346: 958-967.
- Abbott, G.W., et al. 2006. Phosphorylation and protonation of neighboring MiRP2 sites: function and pathophysiology of MiRP2-Kv3.4 potassium channels in periodic paralysis. *FASEB J.* 20: 293-301.
- Panaghie, G., et al. 2006. Interaction of KCNE subunits with the KCNQ1 K⁺ channel pore. *J. Physiol.* 570: 455-467.

CHROMOSOMAL LOCATION

Genetic locus: KCNE3 (human) mapping to 11q13.4; Kcne3 (mouse) mapping to 7 E2.

SOURCE

KCNE3 (L-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of KCNE3 of human origin.

STORAGE

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

PRODUCT

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

Blocking peptide available for competition studies, sc-10648 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

KCNE3 (L-20) is recommended for detection of KCNE3 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for KCNE3 siRNA (h): sc-35743, KCNE3 siRNA (m): sc-35744, KCNE3 shRNA Plasmid (h): sc-35743-SH, KCNE3 shRNA Plasmid (m): sc-35744-SH, KCNE3 shRNA (h) Lentiviral Particles: sc-35743-V and KCNE3 shRNA (m) Lentiviral Particles: sc-35744-V.

Molecular Weight of KCNE3: 12 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200.

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.

SELECT PRODUCT CITATIONS

- Liao, T., et al. 2005. K⁺ channel K_vLQT1 located in the basolateral membrane of distal colonic epithelium is not essential for activating Cl⁻ secretion. *Am. J. Physiol. Cell Physiol.* 289: C564-C575.

RESEARCH USE

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

PROTOCOLS

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



Try **KCNE3 (G-6): sc-393841**, our highly recommended monoclonal alternative to KCNE3 (L-20).