SANTA CRUZ BIOTECHNOLOGY, INC.

KCNG2 (E-16): sc-84858

BACKGROUND

Neuronal and cardiac cells are excited by voltage-gated ion channels. Voltage-gated K^+ channels in the plasma membrane control the repolarization and the frequency of action potentials in neurons, muscles and other excitable cells. Mutations interfering with potassium ion channels are known to cause a variety of disorders. KCNG2 (potassium voltage-gated channel subfamily G member 2) is also known as voltage-gated potassium channel subunit KV6.2, cardiac potassium channel subunit or KCNF2 and is a 466 amino acid protein. KCNG2 is a multi-pass membrane protein abundantly expressed in heart, liver, skeletal muscle, kidney and pancreas, and detected at lower concentrations in brain, lung and placenta. KCNG2 is an electrically silent subunit that forms heterodimers with KV2.1, creating a unique functional K^+ channel. KCNG2-KV2.1 heterodimers are known to be inhibited by tetraethylammonium and propafenone. KCNG2 is thought to downregulate potassium channel currents because KCNG2-KV2.1 heterodimers generate smaller currents than KV2.1 homodimers.

REFERENCES

1. Zhu, X.R., Netzer, R., Böhlke, K., Liu, Q. and Pongs, O. 1999. Structural and functional characterization of Kv6.2 a new γ-subunit of voltage-gated potassium channel. Recept. Channels 6: 337-350.
2. Thorneloe, K.S. and Nelson, M.T. 2003. Properties and molecular basis of the mouse urinary bladder voltage-gated K^+ current. J. Physiol. 549: 65-74.
3. Yan, L., Figueroa, D.J., Austin, C.P., Liu, Y., Bugianesi, R.M., Slaughter, R.S., Kaczorowski, G.J. and Kohler, M.G. 2004. Expression of voltage-gated potassium channels in human and rhesus pancreatic islets. Diabetes 53: 597-607.
4. Fantozzi, I., Platoshyn, O., Wong, A.H., Zhang, S., Remillard, C.V., Furtado, M.R., Petrauskene, O.V. and Yuan, J.X. 2006. Bone morphogenetic protein-2 upregulates expression and function of voltage-gated K^+ channels in human pulmonary artery smooth muscle cells. Am. J. Physiol. Lung Cell Mol. Physiol. 291: L993-1004.
5. Börjesson, S.I. and Elinder, F. 2008. Structure, function, and modification of the voltage sensor in voltage-gated ion channels. Cell Biochem. Biophys. 52: 149-174.
6. Pischalnikova, A.V. and Sokolova, O.S. 2008. The domain and conformational organization in potassium voltage-gated ion channels. J. Neuroimmune Pharmacol. 4: 71-82.

CHROMOSOMAL LOCATION

Genetic locus: KCNG2 (human) mapping to 18q23; Kcng2 (mouse) mapping to 18 E3.

SOURCE

KCNG2 (E-16) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of KCNG2 of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-84858 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

KCNG2 (E-16) is recommended for detection of KCNG2 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 KCNG2 siRNA (h): sc-75369, KCNG2 siRNA (m): sc-146360, KCNG2 shRNA Plasmid (h): sc-75369-SH, KCNG2 shRNA Plasmid (m): sc-146360-SH, KCNG2 shRNA (h) Lentiviral Particles: sc-75369-V and KCNG2 shRNA (m) Lentiviral Particles: sc-146360-V.

Molecular Weight of KCNG2: 51 kDa.

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) 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.

STORAGE

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

PROTOCOLS

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