SANTA CRUZ BIOTECHNOLOGY, INC.

KCNG1 (H-22): sc-133702

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The Power to Question

BACKGROUND

KCNG1 (potassium voltage-gated channel subfamily G member 1) is also known as K13, kH2, KCNG or KV6.1 (voltage-gated potassium channel subunit KV6.1) and is a multi-pass membrane protein that is 513 amino acids. KCNG1 is expressed as two isoforms and can be obtained from tissues including brain, placenta, kidneys and pancreas. KCNG1 has six transmembrane domains and is localized to the plasma membrane of cells. KCNG1 is an α-subunit that does not form a functional potassium channel unless it is incorporated into a heteromultimer with KV2.1. The KCNG1-KV2.1 heterotetramer is able to form a unique, functional potassium channel. KCNG1 and KV2.1 mRNA colocalize in brain and heart tissues including piriform cortex, hippocampus, dentate gyrus, olfactory tubercle, SA node, atria and ventricle. KCNG1 has an S6 domain regulatory region, followed by a short C-terminal sequence. KCNG1 is thought to regulate KV2.1, and PKA (cAMP-dependent kinase) is thought to regulate KCNG1-KV2.1 structure. Mutations in potassium channel genes are associated with many disorders. However, many pathological situations have only been associated with related chromosomes and have yet to be isolated to specific gene mutations.

REFERENCES

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2. Su, K., Kyaw, H., Fan, P., Zeng, Z., Shell, B.K., Carter, K.C. and Li, Y. 1997. Isolation, characterization, and mapping of two human potassium channels. Biochem. Biophys. Res. Commun. 241: 675-681.
3. Salinas, M., Duprat, F., Heurteaux, C., Hugnot, J.P. and Lazdunski, M. 1997. New modulatory α subunits for mammalian Shab K^+ channels. J. Biol. Chem. 272: 24371-24379.
4. Kramer, J.W., Post, M.A., Brown, A.M. and Kirsch, G.E. 1998. Modulation of potassium channel gating by coexpression of KV2.1 with regulatory KV5.1 or KV6.1 α-subunits. Am. J. Physiol. 274: C1501-C1510.
5. 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.
6. Online Mendelian Inheritance in Man, OMIM™. 2003. Johns Hopkins University, Baltimore, MD. MIM Number: 603788. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: KCNG1 (human) mapping to 20q13.13.

SOURCE

KCNG1 (H-22) is an affinity purified rabbit polyclonal antibody raised against synthetic KCNG1 peptide of human origin.

PRODUCT

Each vial contains 50 µg IgG in 500 µl PBS with < 0.1% sodium azide, 0.1% gelatin and < 0.02% sucrose.

APPLICATIONS

KCNG1 (H-22) is recommended for detection of KCNG1 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for KCNG1 siRNA (h): sc-75368, KCNG1 shRNA Plasmid (h): sc-75368-SH and KCNG1 shRNA (h) Lentiviral Particles: sc-75368-V.

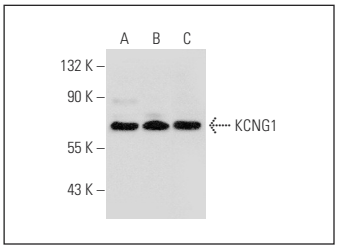
Molecular Weight of KCNG1: 58 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, MCF7 whole cell lysate: sc-2206 or IMR-32 cell lysate: sc-2409.

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).

DATA



KCNG1 (H-22): sc-133702. Western blot analysis of KCNG1 expression in MCF7 (**A**), HeLa (**B**) and IMR-32 (**C**) whole cell lysates.

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 or our catalog for detailed protocols and support products.