

KCNG3 (L-14): sc-168240

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. A subunit of the potassium channel, KCNG3 (potassium voltage-gated channel subfamily G member 3) is a 436 amino acid protein that modulates channel activity and forms a heteromultimer with KV2.1, KV3.1 and KCNF1. KCNG3 contains an S4 domain that may serve as the voltage-sensor and is characterized by a series of positively charged amino acids at every third position. KCNG3 localizes to the membrane, however it must be associated with KV2.1 and possibly another partner to get inserted in the plasma membrane. KCNG3 is detected in testis, pancreas, lung, kidney, ovary, small intestine, colon, thymus, adrenal gland, spinal cord and in many parts of the brain, with the exception of the cerebellum.

REFERENCES

- Sano, Y., et al. 2002. Molecular cloning and characterization of Kv6.3, a novel modulatory subunit for voltage-gated K⁺ channel Kv2.1. *FEBS Lett.* 512: 230-234.
- Ottschytch, N., et al. 2002. Obligatory heterotetramerization of three previously uncharacterized Kv channel alpha-subunits identified in the human genome. *Proc. Natl. Acad. Sci. USA* 99: 7986-7991.
- Yan, L., et al. 2004. Expression of voltage-gated potassium channels in human and rhesus pancreatic islets. *Diabetes* 53: 597-607.
- Ottschytch, N., et al. 2005. Domain analysis of Kv6.3, an electrically silent channel. *J. Physiol.* 568: 737-747.
- Fantozzi, I., et al. 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.
- 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.
- Pischalnikova, A.V. and Sokolova, O.S. 2009. The domain and conformational organization in potassium voltage-gated ion channels. *J. Neuroimmune Pharmacol.* 4: 71-82.
- Mederos, Y. et al. 2009. Mutation of histidine 105 in the T1 domain of the potassium channel Kv2.1 disrupts heteromerization with Kv6.3 and Kv6.4. *J. Biol. Chem.* 284: 4695-4704.
- Moreno-Domínguez, A., et al. 2009. *De novo* expression of Kv6.3 contributes to changes in vascular smooth muscle cell excitability in a hypertensive mice strain. *J. Physiol.* 587: 625-640.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: KCNG3 (human) mapping to 2p21; Kcng3 (mouse) mapping to 17 E4.

SOURCE

KCNG3 (L-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within a cytoplasmic domain of KCNG3 of human origin.

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-168240 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

KCNG3 (L-14) is recommended for detection of KCNG3 of mouse, rat and 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)], 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); non cross-reactive with KCNG1 or KCNG2.

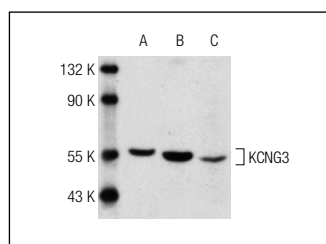
KCNG3 (L-14) is also recommended for detection of KCNG3 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for KCNG3 siRNA (h): sc-95004, KCNG3 siRNA (m): sc-146361, KCNG3 shRNA Plasmid (h): sc-95004-SH, KCNG3 shRNA Plasmid (m): sc-146361-SH, KCNG3 shRNA (h) Lentiviral Particles: sc-95004-V and KCNG3 shRNA (m) Lentiviral Particles: sc-146361-V.

Molecular Weight of KCNG isoforms: 50/49 kDa.

Positive Controls: mouse brain extract: sc-2253, mouse testis extract: sc-2405 or EOC 20 whole cell lysate.

DATA



KCNG3 (L-14): sc-168240. Western blot analysis of KCNG3 expression in EOC 20 whole cell lysate (A) and mouse brain (B) and mouse testis (C) tissue extracts.

RESEARCH USE

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