

KV4.2 (N-15): sc-11680

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. The KV gene family encodes more than 30 genes that comprise the subunits of the K⁺ channels, and they vary in their gating and permeation properties, subcellular distribution, and expression patterns. Functional KV channels assemble as tetramers consisting of pore-forming α -subunits (KV), which include the KV1, KV2, KV3, and KV4 proteins, and accessory or KV-subunits that modify the gating properties of the coexpressed KV subunits. Differences exist in the patterns of trafficking, biosynthetic processing, and surface expression of the major KV1 subunits (KV1.1, KV1.2, and KV1.4) expressed in rat and human brain, suggesting that the individual protein subunits are highly regulated to control for the assembly and formation of functional neuronal channels.

CHROMOSOMAL LOCATION

Genetic locus: KCND2 (human) mapping to 7q31.31; Kcnd2 (mouse) mapping to 6 A2.

SOURCE

KV4.2 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of KV4.2 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-11680 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.

APPLICATIONS

KV4.2 (N-15) is recommended for detection of KV4.2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

KV4.2 (N-15) is also recommended for detection of KV4.2 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for KV4.2 siRNA (h): sc-42722, KV4.2 siRNA (m): sc-42723, KV4.2 siRNA (r): sc-156129, KV4.2 shRNA Plasmid (h): sc-42722-SH, KV4.2 shRNA Plasmid (m): sc-42723-SH, KV4.2 shRNA Plasmid (r): sc-156129-SH, KV4.2 shRNA (h) Lentiviral Particles: sc-42722-V, KV4.2 shRNA (m) Lentiviral Particles: sc-42723-V and KV4.2 shRNA (r) Lentiviral Particles: sc-156129-V.

Molecular Weight of KV4.2: 48 kDa.

Positive Controls: mouse brain extract: sc-2253.

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) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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

- Sutton, G.M., et al. 2004. Extracellular signal-regulated kinase 1/2 signaling pathway in solitary nucleus mediates cholecystokinin-induced suppression of food intake in rats. *J. Neurosci.* 24: 10240-10247.
- Ruiz-Gomez, A., et al. 2007. G protein-coupled receptor kinase 2-mediated phosphorylation of downstream regulatory element antagonist modulator regulates membrane trafficking of KV4.2 potassium channel. *J. Biol. Chem.* 282: 1205-1215.
- Fontán-Lozano, Á., et al. 2011. The A-current modulates learning via NMDA receptors containing the NR2B subunit. *PLoS ONE* 6: e24915.
- Ferrer, T., et al. 2012. Mechanisms responsible for the altered cardiac repolarization dispersion in experimental hypothyroidism. *Acta Physiol.* 204: 502-512.
- Torres-Jacome, J., et al. 2013. Improvement of the metabolic status recovers cardiac potassium channel synthesis in experimental diabetes. *Acta Physiol.* 207: 447-459.

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.

MONOS
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Try **KV4.2/4.3 (H-5): sc-390571**, our highly recommended monoclonal alternative to KV4.2 (N-15).