

KCNQ5 (C-17): sc-18048

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. KCNQ proteins contain six transmembrane domains and function as tetramers. KCNQ4 forms heteromeric channels with KCNQ3 and is expressed in several tissues, including the cochlea, where it is present in outer hair cells. KCNQ5 expression is highest in the brain and muscle. Out of the three splice variants of KCNQ5, the longest variant, KCNQ5 type III, is the predominant form expressed in skeletal muscle. The gene encoding human KCNQ5 maps to chromosome 6q13. Mutations in the gene encoding KCNQ2, but not in the gene encoding KCNQ5, lead to benign familial neonatal convulsions while mutations in the genes encoding for KCNQ1 and KCNE1 lead to cardiac disease because they directly impair electrical signaling. Mutations in KCNQ4 are implicated in the onset of deafness.

REFERENCES

1. Takumi, T., et al. 1988. Cloning of a membrane protein that induces a slow voltage-gated potassium current. *Science* 242: 1042-1045.
2. Wang, Q., et al. 1996. Positional cloning of a novel potassium channel gene: KVLT1 mutations cause cardiac arrhythmias. *Nat. Genet.* 12: 17-23.
3. Chouabe, C., et al. 1997. Properties of KvLQT1 K⁺ channel mutations in Romano-Ward and Jervell and Lange-Nielsen inherited cardiac arrhythmias. *EMBO J.* 16: 5472-5479.
4. Kubisch, C., et al. 1999. KCNQ4, a novel potassium channel expressed in sensory outer hair cells, is mutated in dominant deafness. *Cell* 5: 437-446.
5. Schroeder, B.C., et al. 2000. KCNQ5, a novel potassium channel broadly expressed in brain, mediates M-type currents. *J. Biol. Chem.* 275: 24089-24095.
7. Kananura, C., et al. 2000. The new voltage gated potassium channel KCNQ5 and neonatal convulsions. *Neuroreport* 11: 2063-2067.

CHROMOSOMAL LOCATION

Genetic locus: KCNQ5 (human) mapping to 6q13; Kcnq5 (mouse) mapping to 1 A4.

SOURCE

KCNQ5 (C-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of KCNQ5 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-18048 P, (100 µg 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

KCNQ5 (C-17) is recommended for detection of KCNQ5 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).

KCNQ5 (C-17) is also recommended for detection of KCNQ5 in additional species, including equine, canine and porcine.

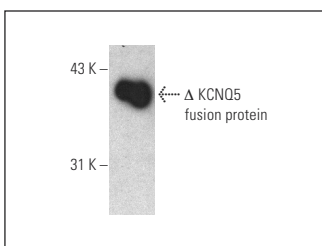
Suitable for use as control antibody for KCNQ5 siRNA (h): sc-42505, KCNQ5 siRNA (m): sc-42506, KCNQ5 shRNA Plasmid (h): sc-42505-SH, KCNQ5 shRNA Plasmid (m): sc-42506-SH, KCNQ5 shRNA (h) Lentiviral Particles: sc-42505-V and KCNQ5 shRNA (m) Lentiviral Particles: sc-42506-V.

Molecular Weight of KCNQ5: 99 kDa.

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.

DATA



KCNQ5 (C-17): sc-18048. Western blot analysis of truncated human recombinant KCNQ5 fusion protein.

RESEARCH USE

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

MONOS
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Try **KCNQ5 (2E2): sc-293305**, our highly recommended monoclonal alternative to KCNQ5 (C-17).