SANTA CRUZ BIOTECHNOLOGY, INC.

KCNQ5 (H-170): sc-50416

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Voltage-gated K^+ channels in the plasma membrane control the repolarization and 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: KVLQT1 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. Lerche, C., et al. 2000. Molecular cloning and functional expression of KCNQ5, a potassium channel subunit that may contribute to neuronal M-current diversity. J. Biol. Chem. 275: 22395-22400.

CHROMOSOMAL LOCATION

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

SOURCE

KCNQ5 (H-170) is a rabbit polyclonal antibody raised against amino acids 727-896 mapping at 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.

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.

APPLICATIONS

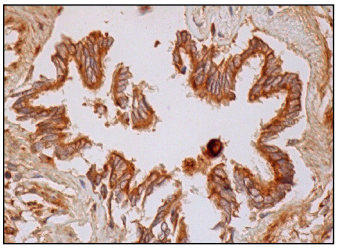
KCNQ5 (H-170) is recommended for detection of KCNQ5 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (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 (H-170) is also recommended for detection of KCNQ5 in additional species, including equine and canine.

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.

DATA



KCNQ5 (H-170): sc-50416. Immunoperoxidase staining of formalin fixed, paraffin-embedded human bronchus tissue showing cytoplasmic and membrane staining of respiratory epithelial cells.

SELECT PRODUCT CITATIONS

1. Zhang, X., et al. 2011. KCNQ5/K(v)7.5 potassium channel expression and subcellular localization in primate retinal pigment epithelium and neural retina. Am. J. Physiol., Cell Physiol. 301: C1017-C1026.
2. Anderson, U.A., et al. 2013. Functional expression of KCNQ (Kv7) channels in guinea pig bladder smooth muscle and their contribution to spontaneous activity. Br. J. Pharmacol. 169: 1290-1304.

PROTOCOLS

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