SANTA CRUZ BIOTECHNOLOGY, INC.

KCNE1 (N-16): sc-16796

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. KCNE1 and KCNE2 are two single transmembrane domain β subunits of the delayed rectifier potassium channel IKr. In cardiac tissue, KCNE2 (also known as MiRP1) assembles with HERG, the pore-forming a subunit of IKr. In the brain, KCNE2 associates with KCNQ2 and accelerates the dissociation of KCNQ2 from the KCNQ2-KCNQ3 complex. KCNE2 also regulates the current amplitude and gating properties of the KCNQ1 K^+ channel, and may assemble with KCNQ1 in the stomach to aid in K^+ recycling, which is necessary for gastric acid secretion. The gene encoding human KCNE2 maps to chromosome 21q22.12. Missense mutations in the gene for KCNE2 result in congenital long QT syndrome and drug-induced cardiac arrhythmia.

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. Abbott, G.W., et al. 1999. MiRP1 forms Ikr potassium channels with Herg and is associated with cardiac arrhythmia. Cell 97: 175-187.
4. Schroeder, B.C., et al. 2000. A constitutively open potassium channel formed by KCNQ1 and KCNE3. Nature 13: 196-199.
5. Sesti, F., et al. 2000. A common polymorphism associated with antibiotic-induced cardiac arrythmia. Proc. Natl. Acad. Sci. USA 97: 10613-10618.

CHROMOSOMAL LOCATION

Genetic locus: KCNE1 (human) mapping to 21q22.12; Kcne1 (mouse) mapping to 16 C4.

SOURCE

KCNE1 (N-16) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of KCNE1 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-16796 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.

RESEARCH USE

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

APPLICATIONS

KCNE1 (N-16) is recommended for detection of KCNE1 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).

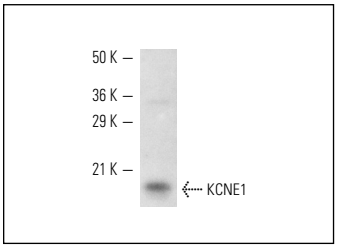
KCNE1 (N-16) is also recommended for detection of KCNE1 in additional species, including equine, canine, porcine and feline.

Suitable for use as control antibody for KCNE1 siRNA (h): sc-42499, KCNE1 siRNA (m): SC-42500, KCNE1 shRNA Plasmid (h): sc-42499-SH, KCNE1 shRNA Plasmid (m): sc-42500-SH, KCNE1 shRNA (h) Lentiviral Particles: sc-42499-V and KCNE1 shRNA (m) Lentiviral Particles: sc-42500-V.

Molecular Weight of KCNE1: 14 kDa.

Positive Controls: rat heart extract: sc-2393.

DATA



KCNE1 (N-16): sc-16796. Western blot analysis of KCNE1 expression in rat heart tissue extract.

SELECT PRODUCT CITATIONS

1. Pourrier, M., et al. 2003. Canine ventricular KCNE2 expression resides predominantly in Purkinje fibers. Circ. Res. 93: 189-191.
2. Tsuji, Y., et al. 2006. Potassium channel subunit remodeling in rabbits exposed to long-term bradycardia or tachycardia: discrete arrhythmogenic consequences related to differential delayed-rectifier changes. Circulation 113: 345-355.
3. Clancy, S.M., et al. 2009. KCNE1 and KCNE3 β-subunits regulate membrane surface expression of Kv12.2 K^+ channels *in vitro* and form a tripartite complex *in vivo*. PLoS ONE 4: e6330.
4. Asada, K., et al. 2009. Redox- and calmodulin-dependent S-nitrosylation of the KCNQ1 channel. J. Biol. Chem. 284: 6014-6020.