SANTA CRUZ BIOTECHNOLOGY, INC.

# MiRP1 (H-70): sc-25703

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*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 α 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. Nature 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. Tinel, N., et al. 2000. M-type KCNQ2-KCNQ3 potassium channels are modulated by the KCNE2 subunit. FEBS Lett. 480: 137-141.
6. Tinel, N., et al. 2000. KCNE2 confers background current characterisitcs to the cardiac KCNQ1 potassium channel. EMBO J. 19: 9326-9330.
7. Sesti, F., et al. 2000. A common polymorphism associated with antibiotic-induced cardiac arrythmia. Proc. Natl. Acad. Sci. USA 97: 10613-10618.
8. Grahammer, F., et al. 2001. The cardiac $K^+$ channel KCNQ1 is essential for gastric acid secretion. Gastroenterology 120: 1363-1371.


## CHROMOSOMAL LOCATION

Genetic locus: KCNE2 (human) mapping to 21q22.11; Kcne2 (mouse) mapping to 16 C4.

## SOURCE

MiRP1 (H-70) is a rabbit polyclonal antibody raised against amino acids 1-70 mapping at the N-terminus of MiRP1 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.

## RESEARCH USE

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

## APPLICATIONS

MiRP1 (H-70) is recommended for detection of MiRP1 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).

MiRP1 (H-70) is also recommended for detection of MiRP1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for MiRP1 siRNA (h): sc-42509, MiRP1 siRNA (m): sc-42510, MiRP1 shRNA Plasmid (h): sc-42509-SH, MiRP1 shRNA Plasmid (m): sc-42510-SH, MiRP1 shRNA (h) Lentiviral Particles: sc-42509-V and MiRP1 shRNA (m) Lentiviral Particles: sc-42510-V.

Molecular Weight of MiRP1: 25 kDa.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## STORAGE

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

## PROTOCOLS

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