SANTA CRUZ BIOTECHNOLOGY, INC.

MiRP1 (H-4): sc-374667

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 (also known as MiRP1) are two single transmembrane domain β subunits of the delayed rectifier potassium channel IKr. In cardiac tissue, MiRP1 assembles with HERG, the pore-forming α subunit of IKr. In the brain, MiRP1 associates with KCNQ2 and accelerates the dissociation of KCNQ2 from the KCNQ2-KCNQ3 complex. MiRP1 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 MiRP1 maps to chromosome 21q22.11. Missense mutations in the gene for MiRP1 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 403: 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.

CHROMOSOMAL LOCATION

Genetic locus: KCNE2 (human) mapping to 21q22.11.

SOURCE

MiRP1 (H-4) is a mouse monoclonal antibody raised against amino acids 1-70 mapping at the N-terminus of MiRP1 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

MiRP1 (H-4) is available conjugated to agarose (sc-374667 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-374667 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-374667 PE), fluorescein (sc-374667 FITC), Alexa Fluor® 488 (sc-374667 AF488), Alexa Fluor® 546 (sc-374667 AF546), Alexa Fluor® 594 (sc-374667 AF594) or Alexa Fluor® 647 (sc-374667 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-374667 AF680) or Alexa Fluor® 790 (sc-374667 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

MiRP1 (H-4) is recommended for detection of MiRP1 of human origin by Western Blotting (starting dilution 1:100, 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).

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

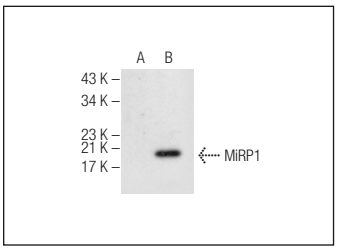
Molecular Weight of MiRP1: 25 kDa.

Positive Controls: human MiRP1 transfected HEK293T whole cell lysate.

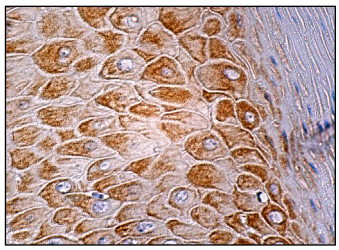
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 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 m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850. 4) Immunohistochemistry: use m-IgGκ BP-HRP: sc-516102 with DAB, 50X: sc-24982 and Immunohistomount: sc-45086, or Organo/Limonene Mount: sc-45087.

DATA



MiRP1 (H-4): sc-374667. Western blot analysis of MiRP1 expression in non-transfected (**A**) and human MiRP1 transfected (**B**) HEK293T whole cell lysates.



MiRP1 (H-4): sc-374667. Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing cytoplasmic staining of squamous epithelial cells.

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.