SANTA CRUZ BIOTECHNOLOGY, INC.

KCNRG (P-15): sc-84334

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. The KV gene family encodes more than 30 genes that comprise the subunits of the K^+ channels and they vary in their gating and permeation properties, subcellular distribution and expression patterns. The potassium channel regulator KCNRG inhibits potassium fluxes in cells, specifically through Kv1.1 and Kv1.4 channels. KCNRG maps to human chromosome 13q, a region frequently prone to deletions. Subsequently, loss of the tumor suppressor actions of KCNRG has been shown to lead to gastrointestinal stromal tumors, hepatocellular carcinomas, as well as other soft tissue tumors. In addition, production of autoantibodies to KCNRG contribute to the pulmonary symptoms of patients with autoimmune polyendocrine syndrome type 1 (APS-1).

REFERENCES

1. Ivanov, D.V., et al. 2003. A new human gene KCNRG encoding potassium channel regulating protein is a cancer suppressor gene candidate located in 13q14.3. FEBS Lett. 539: 156-160.
2. Cho, Y.G., et al. 2006. Genetic and expression analysis of the KCNRG gene in hepatocellular carcinomas. Exp. Mol. Med. 38: 247-255.
3. Zhou, W.X., et al. 2007. Analysis of 13q14 chromosomal instability in soft tissue tumors by fluorescence *in situ* hybridization. Zhonghua Bing Li Xue Za Zhi 36: 582-586.
4. Usman, H. and Mathew, M.K. 2009. Potassium channel regulator KCNRG regulates surface expression of Shaker-type potassium channels. Biochem. Biophys. Res. Commun. 391:1301-1305.
5. Zhou, W., et al. 2009. Aberrations of chromosome 13q in gastrointestinal stromal tumors: analysis of 91 cases by fluorescence *in situ* hybridization (FISH). Diagn. Mol. Pathol. 18: 72-80.
6. Alimohammadi, M., et al. 2009. Pulmonary autoimmunity as a feature of autoimmune polyendocrine syndrome type 1 and identification of KCNRG as a bronchial autoantigen. Proc. Natl. Acad. Sci. USA 106: 4396-4401.

CHROMOSOMAL LOCATION

Genetic locus: KCNRG (human) mapping to 13q14.2.

SOURCE

KCNRG (P-15) is an affinity purified rabbit polyclonal antibody raised against a peptide mapping within an internal region of KCNRG of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-84334 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

RESEARCH USE

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

APPLICATIONS

KCNRG (P-15) is recommended for detection of KCNRG of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

KCNRG (P-15) is also recommended for detection of KCNRG in additional species, including equine, canine and porcine.

Suitable for use as control antibody for KCNRG siRNA (h): sc-75372, KCNRG shRNA Plasmid (h): sc-75372-SH and KCNRG shRNA (h) Lentiviral Particles: sc-75372-V.

Molecular Weight of KCNRG isoforms: 31/26/25 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) 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.