SANTA CRUZ BIOTECHNOLOGY, INC.

KIR4.2 (QA-V13): sc-134372

BACKGROUND

The KIR (inwardly rectifying potassium channel) family of potassium channels possess a greater tendency to allow potassium to flow into the cell rather than out of it. KIR4.1, also known as KIR1.2, is highly expressed in brain including glial cells, astrocytes and cortical neurons. KIR4.1 is also expressed in myelin-synthesizing oligodendrocytes and is crucial to myelination in the developing nervous system. The gene encoding human KIR4.1 maps to chromosome 1. KIR4.2, also known as KIR1.3, is expressed in kidney, lung, heart, thymus and thyroid during development. The gene encoding human KIR4.2 maps to chromosome 21 in the Down syndrome chromosome region 1, and KIR4.2 may play a role in the pathogenesis of Down's syndrome. KIR5.1 forms functional channels only by coexpression with either KIR4.1 or KIR4.2 in the kidney and pancreas. The gene encoding human KIR5.1 maps to chromosome 17.

REFERENCES

1. Gosset, P., et al. 1997. A new inward rectifier potassium channel gene (KCNJ15) localized on chromosome 21 in the Down syndrome chromosome region 1 (DCR1). Genomics 44: 237-241.
2. Isomoto, S., et al. 1997. Inwardly rectifying potassium channels: their molecular heterogeneity and function. J. Physiol. 47: 11-39.
3. Shuck, M.E., et al. 1997. Cloning and characterization of two K^+ inward rectifier (KIR) 1.1 potassium channel homologs from human kidney (KIR1.2 and KIR1.3). J. Biol. Chem. 272: 586-593.
4. Liu, Y., et al. 2000. The human inward rectifier K^+ channel subunit KIR5.1 (KCNJ16) maps to chromosome 17q25 and is expressed in kidney and pancreas. Cytogenet. Cell Genet. 90: 60-63.
5. Thiery, E., et al. 2000. Developmentally regulated expression of the murine ortholog of the potassium channel KIR4.2 (KCNJ15). Mech. Dev. 95: 313-336.
6. Li, L., et al. 2001. Identification of an inward rectifier potassium channel gene expressed in mouse cortical astrocytes. Glia 33: 57-71.
7. Neusch, C., et al. 2001. KIR4.1 potassium channel subunit is crucial for oligodendrocyte development and *in vivo* myelination. J. Neurosci. 21: 5429-5438.
8. Pessia, M., et al. 2001. Differential pH sensitivity of KIR4.1 and KIR4.2 potassium channels and their modulation by heteropolymerisation with KIR5.1. J. Physiol. 532: 359-367.

CHROMOSOMAL LOCATION

Genetic locus: KCNJ15 (human) mapping to 21q22.13.

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.

SOURCE

KIR4.2 (QA-V13) is a mouse monoclonal antibody raised against recombinant KIR4.2 protein of human origin.

PRODUCT

Each vial contains 100 µg IgG_{2a} in 1.0 ml PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

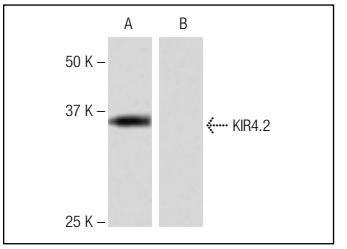
KIR4.2 (QA-V13) is recommended for detection of KIR4.2 of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for KIR4.2 siRNA (h): sc-91419, KIR4.2 shRNA Plasmid (h): sc-91419-SH and KIR4.2 shRNA (h) Lentiviral Particles: sc-91419-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-mouse IgG-HRP: sc-2005 (dilution range: 1:2000-1:32,000) or Cruz Marker™ compatible goat anti-mouse IgG-HRP: sc-2031 (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).

DATA



KIR4.2 (QA-V13): sc-134372. Western blot analysis of KIR4.2 expression in human KIR4.2 transfected (**A**) and non-transfected (**B**) 293T whole cell lysates.

RESEARCH USE

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