



KIR5.1 (T-14): sc-22435

BACKGROUND

The KIR (for 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. KIR 5.1 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

- Gosset, P., Ghezala, G.A., Korn, B., Yaspo, M.L., Poutska, A., Lehrach, H., Sinet, P.M., and Creau, N. 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.
- Isomoto, S., Kondo, C. and Kurachi, Y. 1997. Inwardly rectifying potassium channels: their molecular heterogeneity and function. *J. Physiol.* 47: 11-39.
- Shuck, M.E., Piser, T.M., Bock, J.H., Slightom, J.L., Lee, K.S., and Bienkowski, M.J. 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.
- Liu, Y., McKenna, E., Figueroa, D.J., Blevins, R., Austin, C.P., Bennett, P.B., and Swanson, R. 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.
- Thieri, E., Gosset, P., Damotte, D., Delezoide, A.L., de Saint-Sauveur, N., Vayssettes, C., and Creau, N. 2000. Developmentally regulated expression of the murine ortholog of the potassium channel KIR4.2 (KCNJ15). *Mech. Dev.* 95: 313-336.
- Li, L., Head, V. and Timpe, L.C. 2001. Identification of an inward rectifier potassium channel gene expressed in mouse cortical astrocytes. *Glia* 33: 57-71.
- Neusch, C., Rozengurt, N., Jacobs, R.E., Lester, H.A., and Kofuji, P. 2001. KIR4.1 potassium channel subunit is crucial for oligodendrocyte development and *in vivo* myelination. *J. Neurosci.* 21: 5429-5438.
- Pessia, M., Imbrici, P., D'Adamo, M.C., Salvatore, L., and Tucker, S.J. 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.

SOURCE

KIR5.1 (T-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of KIR5.1 of human origin.

APPLICATIONS

KIR5.1 (T-14) is recommended for detection of KIR5.1 of mouse, rat and 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).

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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 donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

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-22435 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.

PROTOCOLS

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