SANTA CRUZ BIOTECHNOLOGY, INC.

KIR4.2 (G-5): sc-376322

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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. 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

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. Jpn. 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.

CHROMOSOMAL LOCATION

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

SOURCE

KIR4.2 (G-5) is a mouse monoclonal antibody raised against amino acids 304-375 mapping at the C-terminus of KIR4.2 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

KIR4.2 (G-5) is available conjugated to agarose (sc-376322 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-376322 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-376322 PE), fluorescein (sc-376322 FITC), Alexa Fluor® 488 (sc-376322 AF488), Alexa Fluor® 546 (sc-376322 AF546), Alexa Fluor® 594 (sc-376322 AF594) or Alexa Fluor® 647 (sc-376322 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-376322 AF680) or Alexa Fluor® 790 (sc-376322 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

KIR4.2 (G-5) is recommended for detection of KIR4.2 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

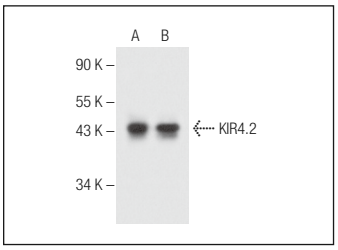
Suitable for use as control antibody for KIR4.2 siRNA (h): sc-91419, KIR4.2 shRNA Plasmid (h): sc-91419-SH and KIR4.2 shRNA (h) Lentiviral Particles: sc-91419-V.

Positive Controls: Hep G2 cell lysate: sc-2227 or HeLa whole cell lysate: sc-2200.

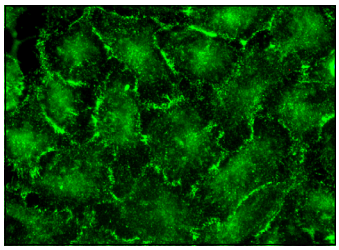
RECOMMENDED SUPPORT REAGENTS

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.

DATA



KIR4.2 (G-5): sc-376322. Western blot analysis of KIR4.2 expression in Hep G2 (**A**) and HeLa (**B**) whole cell lysates.



KIR4.2 (G-5): sc-376322. Immunofluorescence staining of methanol-fixed HeLa cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Beer, M.C., et al. 2022. KIR4.2 potassium channels in retinal pigment epithelial cells *in vitro:* contribution to cell viability and proliferation, and down-regulation by vascular endothelial growth factor. Biomolecules 12: 848.

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.