SANTA CRUZ BIOTECHNOLOGY, INC.

KIR3.2 (C-20): sc-16135

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

G protein-coupled inwardly rectifying potassium channels (KIR3.1 through KIR3.4) are coupled to numerous neurotransmitter receptors in the brain and are abundantly expressed in the olfactory bulb, hippocampus, neocortex, dentate gyrus, cerebellar cortex and thalamus regions of the brain. Also known as GIRK, KIR3 potassium channels localize to the soma and dendrites as well as axons of neurons. Liberated Gbγ subunits from G protein heterotrimers bind to and regulate KIR3 channel activity. Gb3- and Gb4-containing Gbγ dimers bind directly to cytoplasmic domains of KIR3 proteins and increase the K^+ current while Gb5-containing Gbγ dimers inhibit KIR3 K^+ current. KIR3 activity is also inhibited by tyrosine phosphorylation. Brain-derived neurotrophic factor activates receptor tyrosine kinase B, which then phosphorylates KIR3 tyrosine residues, effectively inactivating the KIR3 channels.

REFERENCES

1. Braun, A.P., et al. 1992. Activation of α 1-adrenoceptors modulates the inwardly rectifying potassium currents of mammalian atrial myocytes. Pflugers Arch. 421: 431-439.
2. Ponce, A., et al. 1996. G protein-gated inward rectifier K^+ channel proteins (GIRK1) are present in the soma and dendrites as well as in nerve terminals of specific neurons in the brain. J. Neurosci. 16: 1990-2001.
3. Farkas, R.H., et al. 1997. Neurotensin and dopamine D2 activation oppositely regulate the same K^+ conductance in rat midbrain dopaminergic neurons. Neurosci. Lett. 231: 21-24.
4. Lei, Q., et al. 2000. Activation and inhibition of G protein-coupled inwardly rectifying potassium (KIR3) channels by G protein by subunits. Proc. Natl. Acad. Sci. USA 97: 9771-9776.
5. Rogalski, S.L., et al. 2000. TrkB activation by brain-derived neurotrophic factor inhibits the G protein-gated inward rectifier KIR3 by tyrosine phosphorylation of the channel. J. Biol. Chem. 275: 25082-25088.

CHROMOSOMAL LOCATION

Genetic locus: KCNJ6 (human) mapping to 21q22.13; Kcnj6 (mouse) mapping to 16 C4.

SOURCE

KIR3.2 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of KIR3.2 of human origin.

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-16135 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.

APPLICATIONS

KIR3.2 (C-20) is recommended for detection of KIR3.2 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), 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).

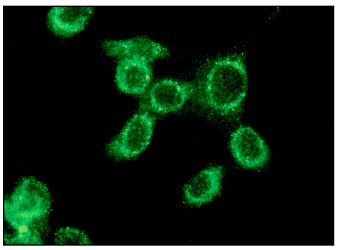
KIR3.2 (C-20) is also recommended for detection of KIR3.2 in additional species, including equine, canine, bovine and avian.

Suitable for use as control antibody for KIR3.2 siRNA (h): sc-42618, KIR3.2 siRNA (m): sc-42619, KIR3.2 shRNA Plasmid (h): sc-42618-SH, KIR3.2 shRNA Plasmid (m): sc-42619-SH, KIR3.2 shRNA (h) Lentiviral Particles: sc-42618-V and KIR3.2 shRNA (m) Lentiviral Particles: sc-42619-V.

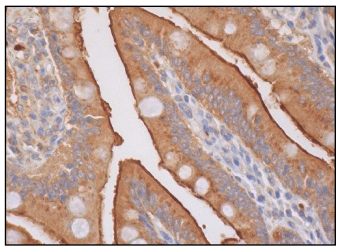
RECOMMENDED SECONDARY REAGENTS

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. 3) Immunohistochemistry: use ImmunoCruz™: sc-2053 or ABC: sc-2023 goat IgG Staining Systems.

DATA



KIR3.2 (C-20): sc-16135. Immunofluorescence staining of methanol-fixed Sol8 cells showing membrane localization.



KIR3.2 (C-20): sc-16135. Immunoperoxidase staining of formalin fixed, paraffin-embedded human duodenum tissue showing apical membrane and cytoplasmic staining of glandular cells.

SELECT PRODUCT CITATIONS

1. Kleene, R., et al. 2010. Functional consequences of the interactions among the neural cell adhesion molecule NCAM, the receptor tyrosine kinase TrkB, and the inwardly rectifying K^+ channel KIR3.3. J. Biol. Chem. 285: 28968-28979.

RESEARCH USE

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