abcam

ab85492

Anti-Kir2.1/KCNJ2 antibody [S112]

Recombinant

Key facts

Isotype	IgG1
Host species	Mouse
Storage buffer	Preservative: 0.09% Sodium azide Constituents: PBS, 50% Glycerol (glycerin, glycerine)
Form	Liquid
Clonality	Monoclonal
Immunogens	Recombinant Fragment Protein within Mouse Kcnj2 aa 1-100. The exact immunogen used to generate this antibody is proprietary information. Database link P35561
Clone number	S112
Purification technique	Affinity purification Protein G
Specificity	No cross reactivity against Kir2.2, or Kir2.3
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1-2 µg for 10^6 Cells

Notes	ab170190 - Mouse monoclonal IgG1, is suitable for use as an isotype control with this antibody.

Expected

Species	African green monkey, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

WB

Tested

Species	African green monkey
Dilution info	1 µg/mL
Notes	If bands are weak, use lysate without boiling, heat at 37°C for 15 minutes.

Expected

Species	Human, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

IHC-P

Tested

Species	Mouse, Human
Dilution info	-
Notes	-

Expected

Species	African green monkey
Dilution info	Use at an assay dependent concentration.
Notes	-

ICC/IF

Tested

Species	Human
Dilution info	1-10 µg/mL
Notes	-

Expected

Species	African green monkey, Mouse
Dilution info	Use at an assay dependent concentration.
Notes	-

Target data

See full target information KCNJ2

Function	Inward rectifier potassium channels are characterized by a greater tendency to allow potassium to flow into the cell rather than out of it (PubMed:36149965, PubMed:7590287, PubMed:9490857). Their voltage dependence is regulated by the concentration of extracellular potassium; as external potassium is raised, the voltage range of the channel opening shifts to more positive voltages (PubMed:7590287, PubMed:7696590). The inward rectification is mainly due to the blockage of outward current by internal magnesium (PubMed:9490857). Can be blocked by extracellular barium or cesium (PubMed:7590287, PubMed:7696590). Probably participates in establishing action potential waveform and excitability of neuronal and muscle tissues (PubMed:7590287, PubMed:7696590, PubMed:7840300).

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage conditions	+4°C
Appropriate long-term storage conditions	-20°C
Aliquoting information	Upon delivery aliquot
Storage information	Avoid freeze / thaw cycle

Notes

The clone number has been updated from S112B-14 to N112B/14, both clone numbers name the same antibody clone.

What are the advantages of a recombinant monoclonal antibody?

This product is a recombinant monoclonal antibody, which offers several advantages including:

- High batch-to-batch consistency and reproducibility
- Improved sensitivity and specificity
- Long-term security of supply
- Animal-free batch production

For more information, read more on recombinant antibodies.

Supplementary info

This supplementary information is collated from multiple sources and compiled automatically.

Activity summary	The Kir2.1 protein also known as KCNJ2 belongs to a family of inward-rectifier potassium channels. Kir2.1 is important for setting and stabilizing the resting membrane potential. It has a molecular mass of approximately 48 kDa. Kir2.1 is mainly expressed in the heart and brain tissues and it facilitates the flow of potassium ions across the cell membrane with high efficiency. This modulation of potassium ion movement is critical for maintaining membrane potential and is vital for the normal electrical activity in excitable tissues.
Biological function summary	This process aids in the regulation of cellular excitability. Kir2.1 is an integral part of cell membranes and often associates with other proteins to form a functional channel complex. This complex plays a role in neuronal signaling and cardiac rhythm regulation contributing to various physiological functions in muscle and nerve tissue. Its roles underpin how potassium currents modulate nerve impulses and heartbeats reflecting its participation in the body's complex communication and control systems.
Pathways	The Kir2.1 channel influences the cardiac action potential and is involved in maintaining the stability of the heart’s electrical signaling. It is part of the cardiac conduction pathway. The channel interacts with other cardiac proteins like KCNJ3 and KCNJ5 complementing their function in the repolarization phase of the cardiac action potential. Kir2.1's presence in pathways responsible for repolarization highlights the precision needed for effective cardiac and neurological functions.
Associated diseases and disorders	Mutations in the Kir2.1 gene KCNJ2 relate to Andersen-Tawil syndrome and cardiac arrhythmias. Andersen-Tawil syndrome characterized by periodic paralysis cardiac arrhythmias and developmental anomalies highlights the multifaceted role Kir2.1 plays in cellular function. Kir2.1 mutations disrupt electrical stability in heart and skeletal muscle tissues. Similar mutations associate with connections to other membrane proteins like KCNH2 often exacerbating arrhythmic risk a critical factor in heart-related conditions.

Product promise

Tested

We have tested this species and application combination and it works. It is covered by our product promise.

Expected

We have not tested this specific species and application combination in-house, but expect it will work. It is covered by our product promise.

Predicted

This species and application combination has not been tested, but we predict it will work based on strong homology. However, this combination is not covered by our product promise.

Not recommended

We do not recommend this combination. It is not covered by our product promise.

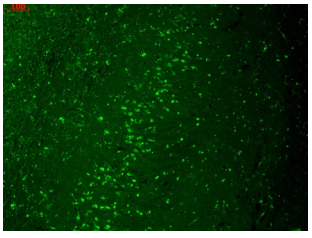
We are dedicated to supporting your work with high quality reagents and we are here for you every step of the way should you need us.

In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
Terms & Conditions.

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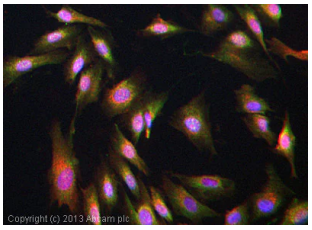
5 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Kir2.1/KCNJ2 antibody [S112] (ab85492)

Kir2.1/KCNJ2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Kir2.1/KCNJ2 antibody

ab85492 staining Kir2.1/KCNJ2 in human hippocampal tissue by IHC-P (Bouin's fixed paraffin embedded).
Incubated with primary antibody at 1:1000 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:50 for 1 hour at RT.

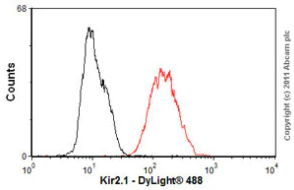


Immunocytochemistry/ Immunofluorescence - Anti-Kir2.1/KCNJ2 antibody [S112] (ab85492)

Kir2.1/KCNJ2 Immunocytochemistry/ Immunofluorescence staining using mouse Anti-Kir2.1/KCNJ2 antibody

ICC/IF image of ab85492 stained SK-N-SH (Human neuroblastoma cell line) cells.
The cells were 4% formaldehyde fixed (10 minutes) and then incubated in 1% BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1 hour to permeabilize the cells and block non-

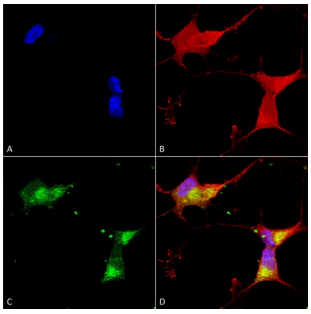
specific protein-protein interactions. The cells were then incubated with the antibody (ab85492, 10 µg/ml) overnight at +4°C. The secondary antibody (green) was ab96879, DyLight® 488 goat anti-mouse IgG (H+L) used at a 1/250 dilution for 1 hour. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1 hour. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43 µM.



Flow Cytometry - Anti-Kir2.1/KCNJ2 antibody [S112] (ab85492)

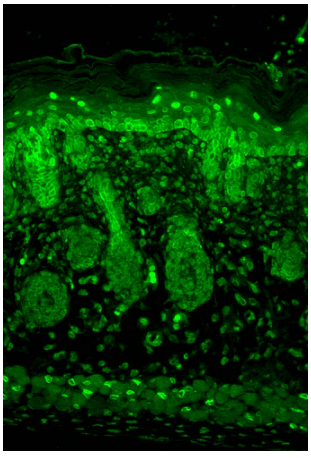
Kir2.1/KCNJ2 Flow Cytometry staining using mouse Anti-Kir2.1/KCNJ2 antibody

Overlay histogram showing SH-SY5Y (Human neuroblastoma cell line from bone marrow) cells stained with ab85492 (red line).
The cells were fixed with 80% methanol (5 minutes) and then permeabilized with 0.1% PBS-Tween for 20 minutes. The cells were then incubated in 1x PBS / 10% normal goat serum / 0.3M glycine to block non-specific protein-protein interactions followed by the antibody (ab85492, 1 µg/1x10^6 cells) for 30 minutes at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 minutes at 22°C. Isotype control antibody (black line) was mouse IgG1 [ICIGG1] (ab91353, 2 µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive result in SH-SY5Y cells fixed with 4% paraformaldehyde (10 minutes)/permeabilized in 0.1% PBS-Tween for 20 minutes used under the same conditions.



Immunocytochemistry/ Immunofluorescence - Anti-Kir2.1/KCNJ2 antibody [S112] (ab85492)

Immunofluorescent analysis of 4% Paraformaldehyde-fixed Neuroblastoma cells (SH-SY5Y) labeling Kir2.1/KCNJ2 with ab85492 at 1/50 dilution. Secondary antibody: AlexaFluor® 488 at 1/1000 dilution. (A) Hoechst (blue) nuclear stain. (B) Phalloidin-iFluor 647 (red) F-Actin stain. (C) Kir2.1 Antibody (D) Composite. (A) Hoechst (blue) nuclear stain. (B) Phalloidin-iFluor 647 (red) F-Actin stain. (C) Kir2.1 Antibody (D) Composite.



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Kir2.1/KCNJ2 antibody [S112] (ab85492)

Kir2.1/KCNJ2 Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Kir2.1/KCNJ2 antibody

ab85492 staining Kir2.1/KCNJ2 in mouse backskin tissue by IHC-P (Bouin's fixed paraffin embedded).
Incubated with primary antibody at 1:1000 for 1 hour at RT. Secondary Antibody: FITC Goat Anti-Mouse (green) at 1:50 for 1 hour at RT.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.