abcam

ab15009

Anti-Glycophorin A + B antibody [HIR2]

Key facts

Isotype	IgG2b
Host species	Mouse
Storage buffer	pH: 7.4 Preservative: 0.097% Sodium azide Constituents: PBS
Form	Liquid
Clonality	Monoclonal
Immunogen	Synthetic Peptide within Human GYPA. The exact immunogen used to generate this antibody is proprietary information. Database link P02724
Clone number	HIR2
Purification technique	Affinity purification Protein G
Specificity	The antibody recognizes N-terminal, homologous portion of glycophorins A (GPA) and B (GPB), (strongly to GPA, and weakly to GPB). The antibody is useful in erythroid cell development studies, because HIR2 antigen is expressed on early erythroblasts, late erythroblasts, erythroblasts, mature erythrocytes and the cells of erythroid cell lines K562 and HEL, but not on all other cells (mature erythrocytes are characteristically CD235a positive and CD45 and CD71 negative).
Concentration	1 mg/mL The concentration of this product may be batch-dependent Batch concentration finder →
Purification notes	Purified from TCS

Reactivity data

Flow Cyt

Tested

Species	Human
Dilution info	1 µg for 10^6 Cells
Notes	ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.

IHC-P

Tested

Species	Human
Dilution info	-
Notes	-

Target data

See full target information GYPA

Function Component of the ankyrin-1 complex, a multiprotein complex involved in the stability and shape of the erythrocyte membrane (PubMed:35835865). Glycophorin A is the major intrinsic membrane protein of the erythrocyte. The N-terminal glycosylated segment, which lies outside the erythrocyte membrane, has MN blood group receptors. Appears to be important for the function of SLC4A1 and is required for high activity of SLC4A1. May be involved in translocation of SLC4A1 to the plasma membrane. (Microbial infection) Appears to be a receptor for Hepatitis A virus (HAV). (Microbial infection) Receptor for P.falciparum erythrocyte-binding antigen 175 (EBA-175); binding of EBA-175 is dependent on sialic acid residues of the O-linked glycans.

Storage

Shipped at conditions	Blue Ice
Appropriate short-term storage duration	1-2 weeks
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

Supplementary info

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

Activity summary	Glycophorin A and Glycophorin B are well-known sialoglycoproteins located on the surface of human erythrocytes. They are often referenced by alternate names like GYPHE for Glycophorin E and Glycophorin A+B for the combination of both proteins. Glycophorin A which can be labeled with FITC for detection has a molecular mass of approximately 31.3 kDa while Glycophorin B has a similar but slightly smaller mass. These proteins are essential components of the erythrocyte membrane contributing significantly to the negative charge and structural stability of red blood cells.
Biological function summary	Glycophorins A and B interact with other proteins in the erythrocyte membrane influencing the cell's architecture and the stability of the cytoskeleton. These glycophorins associate with CD235a known for its role in red blood cell recognition and interactions. Glycophorin A participates in the formation of a protein complex with other membrane proteins contributing to the antigenic properties of red blood cells which is important in blood transfusion biology.
Pathways	Glycophorin A and B participate in several key biological processes such as membrane organization and signal transduction pathways. They are involved in the MNS blood group system and interact with proteins like band 3 which is a critical component of the erythrocyte's anion exchange mechanism. This interaction helps facilitate ion transport and gas exchange in red blood cells.
Associated diseases and disorders	Glycophorins A and B have associations with malaria and autoimmune hemolytic anemia. The malaria parasite Plasmodium falciparum interacts with these glycophorins to invade red blood cells. Changes in the glycan composition of glycophorin A contribute to the pathophysiology of certain autoimmune disorders potentially linking to immune recognition proteins. Managing these interactions and modifications can be important in designing therapeutic interventions for these 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.

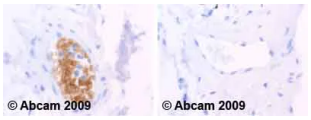
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In the unlikely event of one of our products not working as expected, you are covered by our product promise.

Full details and terms and conditions can be found here:
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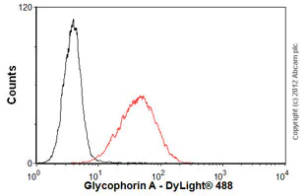
3 product images



Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) - Anti-Glycophorin A + B antibody [HIR2] (ab15009)

Glycophorin A + B Immunohistochemistry (Formalin/PFA-fixed paraffin-embedded sections) staining using mouse Anti-Glycophorin A + B antibody

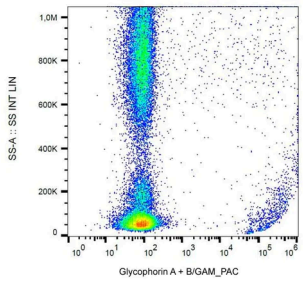
ab15009 staining Human normal lung tissue. Staining is localised to cellular membranes. Left panel: with primary antibody at 1 µg/ml. Right panel: isotype control. Sections were stained using an automated system DAKO Autostainer Plus, at RT. Sections were rehydrated and antigen retrieved with the Dako 3-in-1 antigen retrieval buffer citrate pH 6.0 in a DAKO PT Link. Slides were peroxidase blocked in 3% H2O2 in methanol for 10 mins followed by blocking with Dako Protein block for 10 mins (containing casein 0.25% in PBS) then incubated with primary antibody for 20 mins and detected with Dako Envision Flex amplification kit for 30 mins. Colorimetric detection was completed with DAB for 5 mins. Slides were counterstained with Haematoxylin and coverslipped under DePeX. Please note that for manual staining we recommend to optimize the primary antibody concentration and incubation time (overnight incubation), and amplification may be required.



Flow Cytometry - Anti-Glycophorin A + B antibody [HIR2] (ab15009)

Glycophorin A + B Flow Cytometry staining using mouse Anti-Glycophorin A + B antibody

Overlay histogram showing K562 cells stained with ab15009 (red line). The cells were fixed with 4% paraformaldehyde (10 min) and then permeabilized with 0.1% PBS-Tween for 20 min. 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 (ab15009, 1µg/1x106 cells) for 30 min at 22°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/500 dilution for 30 min at 22°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (ab91366, 2µg/1x106 cells) used under the same conditions. Acquisition of >5,000 events was performed. This antibody gave a positive signal in K562 cells fixed with 80% methanol (5 min)/permeabilized with 0.1% PBS-Tween for 20 min used under the same conditions.



Flow Cytometry - Anti-Glycophorin A + B antibody [HIR2] (ab15009)

Glycophorin A + B Flow Cytometry staining using mouse Anti-Glycophorin A + B antibody

Flow cytometry analysis of human peripheral blood cells labelling Glycophorin A + B with ab15009. A APC-conjugated goat anti-mouse IgG was used as the secondary antibody.

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