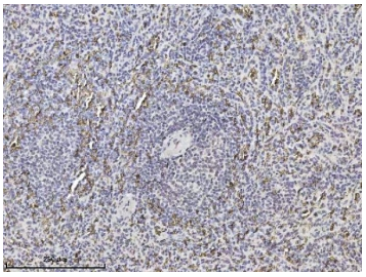
SLC4A1 Antibody / Erythrocyte Membrane Protein Antibody [clone 5G2G7] (RQ7114)

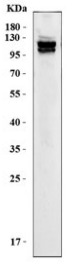
Catalog No.	Formulation	Size
RQ7114	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

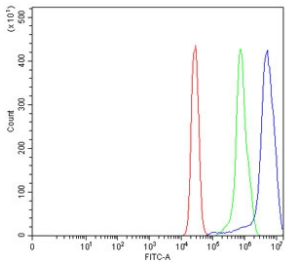
Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Host	Mouse
Clonality	Monoclonal (mouse origin)
Isotype	Mouse IgG2b
Clone Name	5G2G7
Purity	Antigen affinity purified
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	P02730
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Flow cytometry: 1-3ug/million cells
Limitations	This SLC4A1 Antibody / Erythrocyte Membrane Protein Antibody is available for research use only.



SLC4A1 Antibody Human Spleen IHC. Immunohistochemical staining of FFPE human spleen tissue using SLC4A1 Antibody / Erythrocyte Membrane Protein Antibody demonstrates widespread membranous and cytoplasmic HRP-DAB brown staining within erythrocyte-rich cellular populations distributed throughout splenic tissue. SLC4A1 (AE1/Band 3) is a chloride/bicarbonate exchanger that plays a critical role in erythrocyte membrane function, carbon dioxide transport, and maintenance of acid-base homeostasis. As one of the most abundant membrane proteins in red blood cells, SLC4A1 contributes to membrane organization, structural stability, and physiologic ion transport. The observed staining pattern is consistent with the established role of SLC4A1 in erythroid cell biology and blood-associated tissues. HIER: boil tissue sections in pH 8 EDTA for 20 minutes and allow to cool before testing.



SLC4A1 Antibody K562 WB. Western blot analysis of human K562 cell lysate using SLC4A1 Antibody / Erythrocyte Membrane Protein Antibody demonstrates a prominent band at approximately 100-110 kDa, consistent with expression of SLC4A1 (AE1/Band 3). SLC4A1 is a chloride/bicarbonate exchanger that plays an essential role in erythrocyte membrane physiology, carbon dioxide transport, and maintenance of cellular ionic balance. The observed molecular weight is consistent with the expected size of SLC4A1 and may be influenced by glycosylation, which is known to affect electrophoretic migration of the mature protein. Detection in K562 cells is consistent with the hematopoietic lineage-associated biology of SLC4A1 and its role in erythroid differentiation and membrane transport pathways.



SLC4A1 Antibody HepG2 FACS. Flow cytometric analysis of human HepG2 cells using SLC4A1 Antibody / Erythrocyte Membrane Protein Antibody demonstrates a pronounced rightward shift of the SLC4A1-positive population (blue) relative to both the isotype control (green) and unstained cells (red), consistent with expression of SLC4A1. Also known as AE1 or Band 3, SLC4A1 functions as a chloride/bicarbonate exchanger involved in ion transport, acid-base regulation, and maintenance of cellular homeostasis. The distinct fluorescence shift supports the utility of this antibody for flow cytometric detection of SLC4A1 expression. Red=cells alone; Green=isotype control; Blue=SLC4A1 antibody.

Description

SLC4A1 antibody is useful for studying Solute Carrier Family 4 Member 1 (SLC4A1), a membrane transport protein that functions as a chloride/bicarbonate exchanger and plays an essential role in erythrocyte physiology. SLC4A1 is also known as Anion Exchange Protein 1 (AE1) or Band 3 and belongs to the SLC4 family of bicarbonate transporters. Through the exchange of chloride and bicarbonate ions across the plasma membrane, SLC4A1 contributes to carbon dioxide transport, acid-base regulation, and maintenance of cellular ionic balance.

SLC4A1 is one of the most abundant membrane proteins in erythrocytes and serves as a critical component of red blood cell physiology. By facilitating bicarbonate and chloride exchange, the protein supports efficient transport of carbon dioxide from peripheral tissues to the lungs while helping maintain physiologic pH homeostasis. These functions make SLC4A1 an essential mediator of respiratory gas exchange and systemic acid-base balance.

Beyond its role in membrane transport, SLC4A1 contributes to erythrocyte membrane organization and structural stability through interactions with cytoskeletal and membrane-associated proteins. These interactions help maintain normal red blood cell morphology, membrane integrity, and mechanical flexibility during circulation. As a result, SLC4A1 occupies a central position in pathways governing erythrocyte function and membrane architecture.

Although most widely associated with erythroid cells, SLC4A1 expression has also been investigated in hematopoietic tissues and cell populations involved in blood cell development and differentiation. Analysis of SLC4A1 expression can provide insight into erythropoiesis, membrane transport biology, hematologic function, and mechanisms that regulate cellular ion homeostasis.

SLC4A1 has become an important target in studies of hematology, erythrocyte biology, membrane transport, and acid-base regulation. Because bicarbonate transport and cellular ion exchange are fundamental physiologic processes, proteins involved in these pathways remain valuable subjects of biomedical investigation. Research involving SLC4A1 contributes to a broader understanding of red blood cell physiology, circulatory function, and cellular homeostasis.

SLC4A1 antibodies are commonly used in immunohistochemistry, western blotting, immunofluorescence, flow cytometry, and related protein detection applications. These reagents support investigations of erythrocyte membrane biology, bicarbonate transport, acid-base regulation, erythropoiesis, hematopoietic development, membrane transport mechanisms, and vertebrate physiology.

Researchers studying bicarbonate transport, acid-base regulation, cellular ion homeostasis, and metabolic physiology may also be interested in our broader Metabolism Antibody collection.

Application Notes

Optimal dilution of the SLC4A1 Antibody / Erythrocyte Membrane Protein Antibody should be determined by the researcher.

Immunogen

Recombinant human protein (amino acids E28-N365) was used as the immunogen for the SLC4A1 antibody.

Storage

After reconstitution, the SLC4A1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

AE1 Antibody, Band 3 Antibody, Anion Exchange Protein 1 Antibody, Erythrocyte Membrane Protein Antibody, Chloride Bicarbonate Exchanger Antibody, Band 3 Anion Transporter Antibody

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