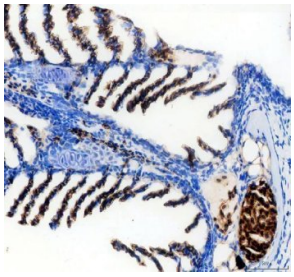
Zebrafish SLC4A1 Antibody / SLC4A1A Antibody (RZ1389)

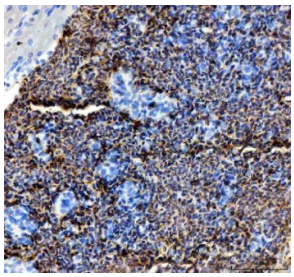
Catalog No.	Formulation	Size
RZ1389	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

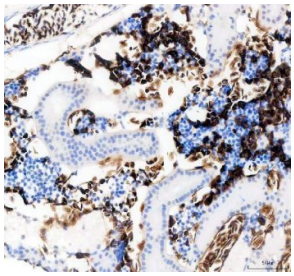
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Lyophilized from a buffered saline solution containing 2% trehalose. Reconstitute with 0.2 mL distilled water to yield a final antibody concentration of 500 ug/mL.
UniProt	Q7ZZJ7
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml
Limitations	This Zebrafish SLC4A1 Antibody / SLC4A1A Antibody is available for research use only.



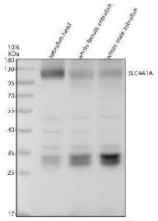
Zebrafish SLC4A1 Antibody Gill IHC. Immunohistochemical staining of paraffin-embedded zebrafish gill tissue using Zebrafish SLC4A1 Antibody / SLC4A1A Antibody demonstrates strong HRP-DAB brown staining within gill filament-associated cells and erythrocyte-rich structures. The staining pattern is consistent with expression of SLC4A1A, a chloride/bicarbonate exchanger that contributes to ion transport, acid-base regulation, and erythrocyte physiology. As the zebrafish ortholog of human SLC4A1 (Band 3/AE1), SLC4A1A plays an important role in maintaining cellular ionic balance and supporting carbon dioxide transport. Expression within gill-associated tissues is consistent with the involvement of anion transport proteins in respiratory physiology, gas exchange, and regulation of the aquatic ionic environment. Heat-mediated antigen retrieval was performed in EDTA buffer prior to overnight primary antibody incubation and HRP-DAB visualization.



Zebrafish SLC4A1 Antibody Spleen IHC. Immunohistochemical staining of paraffin-embedded zebrafish spleen tissue using Zebrafish SLC4A1 Antibody / SLC4A1A Antibody demonstrates strong HRP-DAB brown staining throughout erythrocyte-rich cellular populations within splenic tissue. The staining pattern is consistent with expression of SLC4A1A, the zebrafish ortholog of human SLC4A1 (Band 3/AE1), a chloride/bicarbonate exchanger that plays a critical role in erythrocyte membrane function, carbon dioxide transport, and acid-base regulation. SLC4A1A is highly associated with erythroid cells and contributes to maintenance of red blood cell membrane integrity and physiologic ion transport. The prominent splenic staining is consistent with the role of the spleen as a major hematopoietic and blood cell-associated organ in teleost fish. Heat-mediated antigen retrieval was performed in EDTA buffer prior to overnight primary antibody incubation and HRP-DAB visualization.



Zebrafish SLC4A1 Antibody Kidney IHC. Immunohistochemical staining of paraffin-embedded zebrafish kidney tissue using Zebrafish SLC4A1 Antibody / SLC4A1A Antibody demonstrates strong HRP-DAB brown staining within erythrocyte-rich cellular populations distributed throughout the renal hematopoietic compartment. The staining pattern is consistent with expression of SLC4A1A, the zebrafish ortholog of human SLC4A1 (Band 3/AE1), a chloride/bicarbonate exchanger that plays an essential role in erythrocyte membrane function, carbon dioxide transport, and acid-base regulation. SLC4A1A is highly associated with erythroid cells and contributes to maintenance of red blood cell membrane integrity and physiologic ion transport. The prominent staining observed within blood cell-rich regions of the zebrafish kidney is consistent with the role of the teleost kidney as a major hematopoietic organ involved in erythropoiesis and blood cell maintenance. Heat-mediated antigen retrieval was performed in EDTA buffer prior to overnight primary antibody incubation and HRP-DAB visualization.



Zebrafish SLC4A1 Antibody WB. Western blot analysis of zebrafish head tissue lysate (lane 1), whole female zebrafish tissue lysate (lane 2), and whole male zebrafish tissue lysate (lane 3) using Zebrafish SLC4A1 Antibody / SLC4A1A Antibody demonstrates a prominent band at approximately 101 kDa, consistent with the expected molecular weight of full-length SLC4A1A. SLC4A1A is the zebrafish ortholog of human SLC4A1, a chloride/bicarbonate exchanger also known as Anion Exchange Protein 1 (AE1) or Band 3. This erythrocyte-associated membrane protein plays a critical role in carbon dioxide transport, acid-base regulation, and maintenance of cellular ionic balance through bicarbonate and chloride exchange across the plasma membrane. Detection of SLC4A1A in multiple zebrafish tissue preparations is consistent with its established role in erythroid cell physiology, membrane transport, and hematopoietic function. Additional lower molecular weight bands are observed between approximately 28-35 kDa and may represent processed or proteolytically cleaved SLC4A1A species, which have been reported for Band 3 family proteins, or other factors influencing electrophoretic migration. Electrophoresis was performed on a 10% SDS-PAGE gel under reducing conditions with 30 Âµg of protein loaded per lane, followed by nitrocellulose transfer and HRP-ECL detection.

Description

Zebrafish SLC4A1 Antibody / SLC4A1A Antibody is useful for studying Solute Carrier Family 4 Member 1A (SLC4A1A), a membrane transport protein that functions as a chloride/bicarbonate exchanger and plays an essential role in erythrocyte physiology. SLC4A1A belongs to the SLC4 family of bicarbonate transporters and facilitates the exchange of chloride and bicarbonate ions across the plasma membrane. Through this activity, SLC4A1A contributes to carbon dioxide transport, acid-base regulation, and maintenance of cellular ionic balance.

SLC4A1A is the zebrafish ortholog of human SLC4A1, also known as Anion Exchange Protein 1 (AE1) or Band 3. In vertebrates, SLC4A1 proteins are among the most abundant membrane proteins in erythrocytes and are critical for

efficient respiratory gas transport. By exchanging bicarbonate and chloride ions, SLC4A1A supports the movement of carbon dioxide between tissues and the circulation while helping maintain physiologic pH balance.

In zebrafish, SLC4A1A expression is closely associated with erythroid cell populations, hematopoietic tissues, and developing blood cells. Proper erythrocyte function is essential for oxygen delivery, carbon dioxide transport, and maintenance of circulatory homeostasis during development and adulthood. Analysis of SLC4A1A expression can therefore provide insight into erythropoiesis, red blood cell maturation, membrane transport biology, and hematopoietic development.

Beyond its role in ion transport, SLC4A1A contributes to erythrocyte membrane organization and structural integrity through interactions with cytoskeletal and membrane-associated proteins. These functions help maintain normal red blood cell morphology and mechanical stability while supporting efficient circulation throughout the vascular system. As a result, SLC4A1A is frequently studied in investigations of erythrocyte biology, membrane transport mechanisms, and blood cell development.

Zebrafish has become a valuable model for studying hematopoiesis because many pathways involved in blood cell formation, erythroid differentiation, and membrane transport are highly conserved among vertebrates. The optical transparency of zebrafish embryos allows direct observation of blood development and circulation, while genetic accessibility enables detailed investigation of genes involved in erythrocyte physiology and vascular biology.

Zebrafish SLC4A1 antibodies are commonly used in immunohistochemistry, immunofluorescence, western blotting, and related protein detection applications to evaluate SLC4A1A expression and localization. These reagents support investigations of erythropoiesis, erythrocyte membrane biology, bicarbonate transport, acid-base regulation, hematopoietic development, respiratory physiology, and vertebrate circulatory system function.

Learn more about SLC4A1-mediated bicarbonate transport, erythrocyte membrane organization, acid-base regulation, and cellular ion homeostasis on our SLC4A1 Antibody page.

This Zebrafish antibody is part of a broader Zebrafish / Danio rerio antibody panel offered by NSJ Bioreagents.

Application Notes

The optimal working dilution of the Zebrafish SLC4A1 Antibody / SLC4A1A Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish SLC4A1A recombinant protein (amino acids M1-T579) was used as the immunogen for the Zebrafish SLC4A1A Antibody.

Storage

After reconstitution, the Zebrafish SLC4A1A 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

Zebrafish SLC4A1A Antibody, Zebrafish AE1 Antibody, Zebrafish Band 3 Antibody, Zebrafish Anion Exchange Protein 1 Antibody, Zebrafish Erythrocyte Membrane Protein Antibody, Zebrafish Chloride Bicarbonate Exchanger Antibody

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