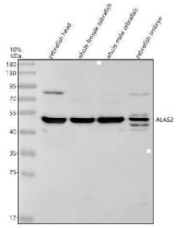
Zebrafish ALAS2 Antibody / Erythroid Differentiation Marker Antibody (RZ1410)

Catalog No.	Formulation	Size
RZ1410	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	Q9YHT4
Applications	Western blot: 0.5-1ug/ml
Limitations	This Zebrafish ALAS2 Antibody / Erythroid Differentiation Marker Antibody is available for research use only.



Zebrafish ALAS2 Antibody WB. Western blot analysis of zebrafish head (lane 1), whole female (lane 2), whole male (lane 3), and embryo (lane 4) tissue lysates using Zebrafish ALAS2 Antibody / Erythroid Differentiation Marker Antibody demonstrates a prominent immunoreactive band at approximately 50 kDa, consistent with expression of ALAS2. ALAS2 is an erythroid-specific enzyme that catalyzes the first and rate-limiting step of heme biosynthesis, making it essential for hemoglobin production and red blood cell development. Expression of ALAS2 is closely associated with erythroid lineage commitment and hematopoietic maturation. The observed band is consistent with the expected molecular weight of ALAS2, supporting detection of endogenous protein across multiple zebrafish tissue preparations. Primary antibody was used at 0.5 ug/ml. Predicted molecular weight: approximately 49 kDa. Observed molecular weight: approximately 50 kDa.

Description

Zebrafish ALAS2 Antibody / Erythroid Differentiation Marker Antibody detects ALAS2 (5-Aminolevulinate Synthase 2), an erythroid-specific enzyme that catalyzes the first and rate-limiting step of heme biosynthesis. ALAS2 is responsible for the production of 5-aminolevulinic acid, the precursor required for synthesis of heme, an essential component of hemoglobin

and numerous heme-containing proteins. Because erythroid cells require large amounts of heme to support hemoglobin production, ALAS2 serves as a critical regulator of red blood cell development and maturation. Zebrafish ALAS2 Antibody is widely used for studies of hematopoiesis, erythroid differentiation, and vertebrate blood development.

Expression of ALAS2 is closely linked to erythroid lineage commitment and maturation. During hematopoietic development, ALAS2 expression increases as progenitor cells differentiate into erythroblasts and mature red blood cells. The resulting increase in heme production supports assembly of functional hemoglobin and enables efficient oxygen transport. As a consequence, ALAS2 is frequently utilized as a marker of erythroid differentiation and developing blood cell populations.

In zebrafish, ALAS2 plays an essential role during both primitive and definitive hematopoiesis. Developing embryos rely on tightly regulated heme biosynthesis to support formation of circulating erythrocytes and establishment of the oxygen transport system. Because zebrafish embryos develop externally and possess optically transparent tissues, they provide an important vertebrate model for investigating erythroid lineage specification, blood development, and regulation of heme metabolism. Expression of ALAS2 is commonly associated with developing erythroid tissues and blood-forming regions during embryogenesis.

Heme biosynthesis is fundamental to normal vertebrate physiology and is required not only for hemoglobin production but also for numerous metabolic and enzymatic pathways. ALAS2 occupies a pivotal position within this pathway because it catalyzes the initial committed step of erythroid heme synthesis. Researchers frequently utilize Zebrafish ALAS2 Antibody to investigate erythropoiesis, red blood cell maturation, developmental hematology, and mechanisms regulating hemoglobin production during vertebrate development.

Beyond developmental biology, ALAS2 is studied in iron metabolism, erythroid disorders, heme-associated diseases, and inherited conditions affecting red blood cell formation. The evolutionary conservation of ALAS2 across vertebrate species has made zebrafish a valuable model for understanding the molecular pathways that regulate erythropoiesis and heme production. Analysis of ALAS2 expression provides insight into erythroid lineage commitment, hematopoietic differentiation, and blood cell development.

Zebrafish ALAS2 Antibody / Erythroid Differentiation Marker Antibody is useful for researchers studying hematopoiesis, erythroid differentiation, red blood cell development, heme biosynthesis, hemoglobin production, iron metabolism, developmental biology, and vertebrate embryogenesis. Applications may include immunohistochemistry, immunofluorescence, western blotting, and other protein expression analyses when supported by validation data.

Learn more about ALAS2 expression, erythroid heme biosynthesis, hemoglobin production, iron metabolism, and red blood cell development on our ALAS2 Antibody / Erythroid Heme Biosynthesis Enzyme 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 ALAS2 Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish ALAS2 recombinant protein (amino acids G16-Q583) was used as the immunogen for the Zebrafish ALAS2 Antibody.

Storage

After reconstitution, the Zebrafish ALAS2 Antibody / Erythroid Differentiation Marker 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 ALAS2 Antibody, Zebrafish 5-Aminolevulinate Synthase 2 Antibody, Zebrafish Erythroid Differentiation Marker Antibody, Zebrafish Heme Biosynthesis Enzyme Antibody, Zebrafish Erythroid Lineage Marker Antibody, Zebrafish Hemoglobin Synthesis Protein Antibody

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