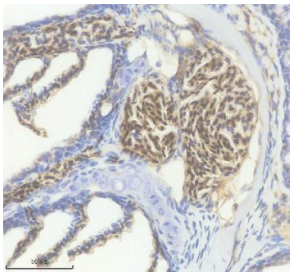
Zebrafish HBAE3 Antibody / Hemoglobin Alpha Embryonic 3 Antibody (RZ1388)

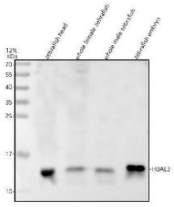
Catalog No.	Formulation	Size
RZ1388	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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	Q7ZYZ4
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish HBAE3 Antibody / Hemoglobin Alpha Embryonic 3 Antibody is available for research use only.



Zebrafish HBAE3 Antibody Erythrocyte IHC. Immunohistochemical staining of paraffin-embedded zebrafish erythrocytes using Zebrafish HBAE3 Antibody / Hemoglobin Alpha Embryonic 3 Antibody demonstrates strong HRP-DAB brown staining within clustered erythroid cells. The staining pattern is consistent with expression of HBAE3, an embryonic alpha-globin protein that contributes to hemoglobin complex formation and oxygen transport during early vertebrate development. HBAE3 is associated with hematopoietic tissues, developing blood cell populations, and the embryonic vasculature, where it supports oxygen delivery to rapidly growing tissues. The observed erythrocyte-associated staining is consistent with the established role of HBAE3 in embryonic hematopoiesis, erythroid differentiation, and developmental oxygen transport. Heat-mediated antigen retrieval was performed in EDTA buffer, followed by overnight incubation with 2 Âµg/ml primary antibody and HRP-DAB visualization.



Zebrafish HBAE3 Antibody WB. Western blot analysis of zebrafish head tissue lysate (lane 1), whole female zebrafish tissue lysate (lane 2), whole male zebrafish tissue lysate (lane 3), and zebrafish embryo tissue lysate (lane 4) using Zebrafish HBAE3 Antibody / Hemoglobin Alpha Embryonic 3 Antibody demonstrates a distinct band at approximately 16 kDa, consistent with the expected molecular weight of HBAE3. Hemoglobin Alpha Embryonic 3 (HBAE3) is an embryonic alpha-globin protein that participates in hemoglobin complex formation and oxygen transport during early vertebrate development. HBAE3 is expressed in hematopoietic tissues, developing blood cell populations, and the embryonic vasculature, where it supports oxygen delivery to rapidly growing tissues. Detection of HBAE3 in zebrafish embryo lysate and additional tissue preparations is consistent with its established role in embryonic hematopoiesis, erythroid differentiation, and developmental oxygen transport. Electrophoresis was performed on a 12% SDS-PAGE gel under reducing conditions with 30 Âµg of protein loaded per lane, followed by nitrocellulose transfer and HRP-ECL detection.

Description

Zebrafish HBAE3 Antibody / Hemoglobin Alpha Embryonic 3 Antibody is useful for studying Hemoglobin alpha embryonic-3 (HBAE3), an embryonic alpha-globin protein involved in oxygen transport during early vertebrate development. HBAE3 belongs to the globin family of heme-binding proteins and contributes to the formation of hemoglobin complexes that deliver oxygen to developing tissues. As an embryonic hemoglobin component, HBAE3 supports the metabolic demands of rapidly growing embryonic structures and plays an important role in developmental physiology.

HBAE3 is predicted to possess heme-binding, oxygen-binding, and oxygen carrier activities that support erythroid cell function and circulatory development. Like other alpha-globin family members, HBAE3 participates in hemoglobin complexes responsible for transporting oxygen throughout the developing organism. The protein is also predicted to contribute to hydrogen peroxide catabolism and peroxidase-associated activities, linking oxygen transport with pathways involved in oxidative balance and cellular protection.

In zebrafish, HBAE3 expression has been identified within hematopoietic cells, the hematopoietic system, mesoderm-derived tissues, presumptive blood, and the developing vasculature. These expression patterns are consistent with a role in embryonic hematopoiesis, erythroid differentiation, and establishment of the circulatory system. Analysis of HBAE3 expression can therefore provide insight into mechanisms governing blood development, vascular formation, and oxygen transport during embryogenesis.

HBAE3 is predicted to function within hemoglobin complexes and may participate in haptoglobin-hemoglobin interactions involved in hemoglobin handling and iron recycling pathways. As a member of the embryonic globin family, HBAE3 serves as a useful marker for studies of erythropoiesis, globin gene regulation, hemoglobin assembly, and developmental adaptation to changing oxygen requirements during early life stages.

Zebrafish has become a valuable model for investigating hematopoiesis and globin biology because many pathways controlling blood cell development and oxygen transport are highly conserved among vertebrates. The transparency of developing embryos enables direct observation of blood formation and vascular development, while genetic accessibility allows detailed investigation of developmental hematology and erythroid lineage specification.

HBAE3 is orthologous to human HBZ (hemoglobin subunit zeta), an embryonic alpha-like globin expressed during early stages of human development. This evolutionary conservation supports the use of zebrafish as a model for studying embryonic hemoglobin function, globin gene regulation, erythroid development, and oxygen transport mechanisms. Zebrafish HBAE3 antibodies are commonly used in immunohistochemistry, immunofluorescence, western blotting, and related protein detection applications to evaluate embryonic globin expression and localization in studies of hematopoiesis, vascular biology, developmental physiology, and vertebrate embryogenesis.

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 HBAE3 Antibody / Hemoglobin Alpha Embryonic 3 Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish HBAE3 recombinant protein (amino acids M1-R143) was used as the immunogen for the Zebrafish HBAE3 Antibody.

Storage

After reconstitution, the Zebrafish HBAE3 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 Hemoglobin Alpha Embryonic 3 Antibody, Zebrafish Embryonic Hemoglobin Alpha Antibody, Zebrafish Alpha-Globin Antibody, Zebrafish Embryonic Alpha-Globin Antibody, Zebrafish Novel Alpha-Globin Antibody, Zebrafish HBZ Ortholog Antibody