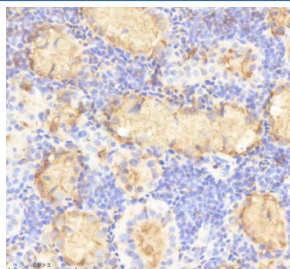


Zebrafish Prox1a Antibody / Prospero homeobox 1a (RZ1280)

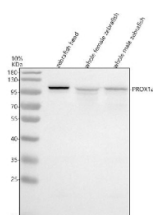
Catalog No.	Formulation	Size
RZ1280	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	F1QAE1
Localization	Nuclear, cytoplasmic
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish Prox1a antibody is available for research use only.



IHC staining of FFPE zebrafish kidney tissue with Prox1a antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Western blot analysis of Prox1a protein using Zebrafish Prox1a antibody and 1) zebrafish head, 2) whole female zebrafish and 3) whole male zebrafish tissue lysate. Predicted molecular weight ~83 kDa, commonly observed at 80-100 kDa. (human similarity)

Description

Prox1a (Prospero-related homeobox 1a) is a transcription factor that plays a critical role in the regulation of cell fate determination, organogenesis, and tissue differentiation during embryonic development. It is part of the homeobox gene family and functions primarily as a nuclear transcriptional regulator involved in the development of the central nervous system, eye, liver, pancreas, and lymphatic vasculature.

In zebrafish, Prox1a is one of 2 paralogs, the other being Prox1b, both arising from a genome duplication event. Prox1a is highly conserved and serves as an ortholog of the human PROX1 gene. The human and zebrafish proteins share conserved domains, including the homeodomain and prospero domain, which are essential for DNA binding and transcriptional regulation. This conservation supports the use of zebrafish as a model for studying human developmental biology and disease mechanisms involving PROX1.

Zebrafish Prox1a has known isoforms resulting from alternative splicing. These isoforms may differ in regulatory or functional capacities and show distinct expression patterns during various stages of development. Isoform diversity allows for specialized roles in different tissues and developmental contexts.

Prox1a is expressed in several key regions during zebrafish embryogenesis, including the central nervous system, retina, liver primordium, and developing lymphatic vessels. It is essential for the development of the liver and the specification of lymphatic endothelial cells, functioning as a master regulator of lymphangiogenesis. Loss of Prox1a function in zebrafish results in defects in organ development and disrupted lymphatic vessel formation.

Given its fundamental roles in organ development and lymphatic specification, zebrafish Prox1a is widely used to study transcriptional regulation, stem cell differentiation, and vascular biology. It is also a valuable model for understanding congenital diseases and cancer progression involving the lymphatic system and liver.

Application Notes

Optimal dilution of the Zebrafish Prox1a antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Prox1a recombinant protein (amino acids E51-E739) was used as the immunogen for the Zebrafish Prox1a antibody.

Storage

After reconstitution, the Zebrafish Prox1a antibody can be stored for up to one month at 4°C. For long-term, aliquot and store at -20°C. Avoid repeated freezing and thawing.