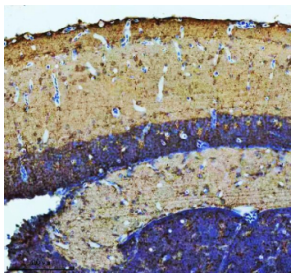
Zebrafish Atp6v1b2 Antibody / Atp6v1bb / Vacuolar proton pump subunit B (RZ1130)

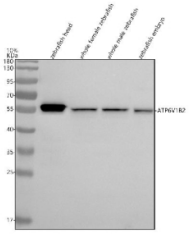
Catalog No.	Formulation	Size
RZ1130	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q8QHA6
Applications	Western Blot : 0.5-1 ug/ml Immunohistochemistry (FFPE) : 2-5 ug/ml
Limitations	This Zebrafish Atp6v1b2 antibody is available for research use only.



IHC staining of FFPE zebrafish brain tissue with Zebrafish Atp6v1b2 antibody, HRP secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Western blot analysis of Atp6v1b2 protein using Zebrafish Atp6v1b2 antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish and 4) zebrafish embryo tissue lysate. Predicted molecular weight ~57 kDa.

Description

Zebrafish (Danio rerio) Atp6v1b2 antibody detects Atp6v1b2, a core regulatory subunit of the vacuolar ATPase (V-ATPase), a multi-subunit proton pump essential for acidification of intracellular organelles. In zebrafish, the atp6v1b2 gene functions alongside its related paralog atp6v1bb, and both encode versions of vacuolar proton pump subunit B. This subunit forms part of the cytosolic V1 domain, the ATP-hydrolyzing motor that drives rotational force for proton translocation in the membrane-embedded V0 domain. V-ATPase activity underlies lysosomal acidification, endocytic trafficking, autophagy, protein turnover, and neurotransmitter loading in synaptic vesicles, making Zebrafish Atp6v1b2 antibody reagents broadly useful for developmental and cellular physiology research.

During zebrafish embryogenesis, atp6v1b2 is expressed across tissues with high vesicular transport and degradation demands, including neural progenitors, sensory organs, gut epithelium, pronephric ducts, and developing musculature. These regions rely on precise acidification to support vesicle maturation, receptor recycling, and metabolic remodeling. The V1 B subunit enables structural integrity of the V1 complex and influences ATP-driven conformational changes required for proton pumping. Loss of V-ATPase function disrupts organelle biogenesis, extracellular matrix remodeling, and secretion pathways, all of which contribute to defects in tissue patterning and organ formation.

At the molecular level, vacuolar proton pump subunit B helps stabilize the V1 domain and support its interaction with catalytic subunits. Through this role, Atp6v1b2 shapes the efficiency of ATP hydrolysis and coupling to proton transport. In zebrafish, proper function of Atp6v1b2 and its paralog Atp6v1bb ensures efficient acidification of lysosomes and endosomes, supporting processes such as cargo degradation, autophagic flux, and receptor downregulation. Dysregulation of V-ATPase activity can lead to accumulation of undegraded proteins, impaired autophagy, and altered cell signaling, all of which are detrimental during rapid embryonic growth.

V-ATPase activity also influences key developmental signaling pathways. Acidification governs activation and trafficking of receptors associated with Notch, Wnt, and Hedgehog pathways. In zebrafish embryos, these pathways direct cell fate decisions, neural tube patterning, somitogenesis, and cardiac specification. By contributing to endosomal pH regulation, Atp6v1b2 indirectly modulates the responsiveness of developing tissues to morphogen gradients and extracellular cues. Disruption of V-ATPase components in vertebrates results in widespread developmental abnormalities, emphasizing the essential nature of this proton pump.

Subcellular localization of Atp6v1b2 is largely cytosolic but concentrated near organelles where V1 and V0 sectors assemble into the functional holoenzyme. This includes endosomes, lysosomes, secretory vesicles, and synaptic terminals. Its interactions include ATP6V1A, ATP6V1C, and other V1-sector subunits, as well as regulatory proteins that modulate V-ATPase assembly in response to metabolic demands or environmental stress. The conservation of Atp6v1b2 from zebrafish to mammals enables mechanistic studies that translate effectively across vertebrate systems.

A Zebrafish Atp6v1b2 antibody is suitable for research applications such as western blotting, immunohistochemistry, and assays examining vesicle acidification, lysosomal activity, autophagy, and developmental signaling. This antibody targets Atp6v1b2 for studies of organelle biogenesis, intracellular trafficking, and vertebrate developmental physiology. NSJ Bioreagents provides the Zebrafish Atp6v1b2 antibody to support research in membrane dynamics, metabolic regulation, and cellular homeostasis.

Application Notes

Optimal dilution of the Zebrafish Atp6v1b2 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Atp6v1b2 recombinant protein (amino acids K488-H509) was used as the immunogen for the Zebrafish Atp6v1b2 antibody.

Storage

After reconstitution, the Zebrafish Atp6v1b2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.