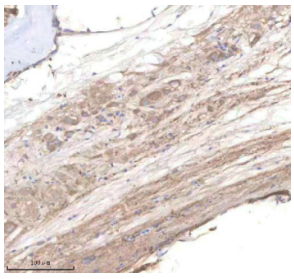
Zebrafish Pi4kb Antibody / Phosphatidylinositol 4-kinase beta (RZ1270)

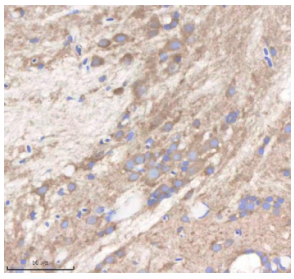
Catalog No.	Formulation	Size
RZ1270	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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	Q49GP3
Localization	Cytoplasm (ER, Mitochondria)
Applications	Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish Pi4kb antibody is available for research use only.



IHC staining of zebrafish Pi4kb protein using Zebrafish Pi4kb antibody, HRP-labeled secondary and DAB substrate. Pi4kb was detected in a paraffin-embedded section of zebrafish spinal tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



IHC staining of zebrafish Pi4kb protein using Zebrafish Pi4kb antibody, HRP-labeled secondary and DAB substrate. Pi4kb was detected in a paraffin-embedded section of zebrafish brain tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

Pi4kb (Phosphatidylinositol 4-kinase beta) is an enzyme involved in the phosphoinositide signaling pathway, playing a key role in the synthesis of phosphatidylinositol 4-phosphate (PI4P), a lipid molecule that serves as a precursor for other important phosphoinositides. Pi4kb is responsible for the phosphorylation of phosphatidylinositol at the 4-position of the inositol ring, which is a crucial step in regulating membrane trafficking, vesicular transport, and cell signaling. This enzyme is involved in numerous cellular processes, including endocytosis, vesicle formation, and membrane dynamics.

In zebrafish, Pi4kb is an ortholog of the human PI4KB gene. Both zebrafish and human Pi4kb share substantial sequence conservation and functional similarities, particularly in their roles in lipid signaling and membrane trafficking. The high degree of conservation between species makes zebrafish an ideal model for studying the molecular function of Pi4kb in cellular signaling, membrane dynamics, and vesicular trafficking.

Zebrafish Pi4kb is highly expressed in tissues with high demands for membrane turnover and vesicular trafficking, such as the brain, heart, and muscle. The protein plays a significant role in the formation and function of membrane-bound organelles, including endosomes, lysosomes, and the Golgi apparatus. It also regulates the recycling of phosphoinositides, which are essential for maintaining the integrity of cellular membranes and signal transduction pathways.

The Pi4kb gene in zebrafish has isoforms, which may differ in their tissue distribution and functional roles. These isoforms are thought to be important for the fine-tuned regulation of lipid signaling in different cell types and under varying physiological conditions. Isoform variation is likely linked to developmental stages and differentiation processes, particularly in tissues that require rapid changes in membrane composition.

Given its essential role in membrane dynamics, lipid signaling, and vesicular trafficking, zebrafish Pi4kb is an important model for studying diseases related to membrane dysfunction, neurological disorders, and metabolic diseases. Its role in regulating phosphoinositide metabolism also makes it a valuable target for research into diseases such as cancer, cardiovascular disorders, and neurodegenerative diseases.

Application Notes

Optimal dilution of the Zebrafish Pi4kb antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Pi4kb recombinant protein (amino acids D394-D690) was used as the immunogen for the Zebrafish Pi4kb antibody.

Storage

After reconstitution, the Zebrafish Pi4kb antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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