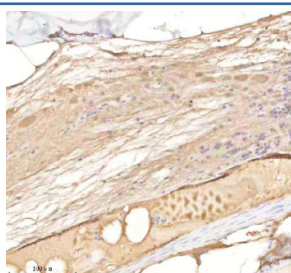


## Zebrafish Rab14 Antibody / Rab14I (RZ1297)

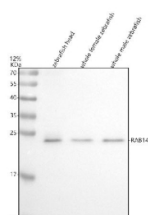
Catalog No.	Formulation	Size
RZ1297	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

**Bulk quote request**

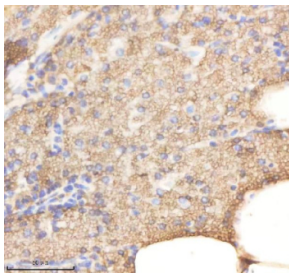
<b>Availability</b>	2-3 weeks
<b>Species Reactivity</b>	Zebrafish
<b>Format</b>	Antigen affinity purified
<b>Clonality</b>	Polyclonal (rabbit origin)
<b>Isotype</b>	Rabbit Ig
<b>Purity</b>	Antigen affinity chromatography
<b>Buffer</b>	Lyophilized from 1X PBS with 2% Trehalose
<b>UniProt</b>	Q7ZVX4, Q6PE19
<b>Localization</b>	Cytoplasm
<b>Applications</b>	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml
<b>Limitations</b>	This Zebrafish Rab14 antibody is available for research use only.



IHC staining of FFPE zebrafish spinal tissue with Rab14 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 Rab14 protein using Zebrafish Rab14 antibody and 1) zebrafish head, 2) whole female zebrafish and 3) whole male zebrafish tissue lysate. Predicted molecular weight ~24 kDa.



IHC staining of FFPE zebrafish pancreas tissue with Rab14 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

## Description

Rab14 is a member of the Rab GTPase family, which is involved in regulating intracellular vesicular trafficking, membrane dynamics, and various cellular processes such as endocytosis, exocytosis, and cell signaling. Rab14 specifically regulates the trafficking of vesicles to the endosomes and plays a key role in intracellular membrane fusion events. It is essential for maintaining cellular homeostasis, ensuring proper organelle communication, and facilitating processes like cytokinesis, cell migration, and immune response.

In zebrafish, Rab14 is the ortholog of the human RAB14 gene, exhibiting high sequence conservation and functional similarities. The zebrafish and human Rab14 proteins share conserved motifs, including the GTP-binding domain that is crucial for Rab protein function. As a result, Rab14 in zebrafish performs similar cellular roles to its human counterpart, including vesicle transport and membrane trafficking. The conservation of this protein between zebrafish and humans makes it an excellent model for studying vesicular trafficking mechanisms and their relevance to human diseases.

Rab14l, or Rab14-like, is a related protein in zebrafish, which may function similarly to Rab14 but could exhibit tissue-specific expression patterns or slight functional variations. The presence of Rab14l adds complexity to the Rab GTPase family, with potential differential roles in vesicle trafficking and cellular processes. Although detailed studies are still ongoing, it is likely that Rab14l and Rab14 share overlapping functions but may be involved in distinct cellular processes or developmental stages.

Rab14 in zebrafish, as well as its related protein Rab14l, may have isoforms arising from alternative splicing. These isoforms could show differential expression in specific tissues or during particular developmental stages, suggesting a level of regulatory control over vesicle trafficking in different contexts. These isoforms may also provide additional layers of specificity in the cellular functions that Rab14 and Rab14l regulate.

The expression of Rab14 in zebrafish is observed in various tissues, particularly in those with high trafficking and endocytosis, such as the brain, liver, and kidney. This is consistent with the role of Rab14 in cellular processes that require efficient vesicular transport and membrane dynamics. Additionally, Rab14 and Rab14l are implicated in cellular functions during developmental processes like neuronal migration, and the formation of cellular junctions in epithelial tissues.

Given its high conservation with the human RAB14 gene and its relationship with Rab14l, zebrafish Rab14 provides an excellent model for studying the molecular mechanisms behind vesicular trafficking and the pathogenesis of diseases associated with impaired trafficking, such as neurodegenerative diseases, immune disorders, and certain cancers. The zebrafish model also offers insights into potential therapeutic strategies aimed at modulating Rab protein function for treating these conditions.

## Application Notes

Optimal dilution of the Zebrafish Rab14 antibody should be determined by the researcher.

## Immunogen

E. coli-derived zebrafish Rab14 recombinant protein (amino acids D108-C215) was used as the immunogen for the Zebrafish Rab14 antibody. This antibody will detect Rab14 and Rab14l protein.

## Storage

After reconstitution, the Zebrafish Rab14 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.