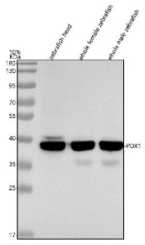
Zebrafish Pdx1 Antibody / Pancreas/duodenum homeobox protein 1 (RZ1267)

Catalog No.	Formulation	Size
RZ1267	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	Q6DC85
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish Pdx1 antibody is available for research use only.



Western blot analysis of Pdx1 protein using Zebrafish Pdx1 antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish tissue lysate. Predicted molecular weight ~28 kDa but may be observed at higher molecular weights due to post-translational modifications.

Description

Pdx1 (Pancreatic and duodenal homeobox 1) is a transcription factor that plays a critical role in pancreatic development and insulin production. It is essential for the development of the pancreas and the maintenance of beta-cell function in adults. Pdx1 regulates the expression of genes involved in pancreatic morphogenesis, beta-cell differentiation, and glucose metabolism.

In zebrafish, Pdx1 is an ortholog of the human PDX1 gene. Both zebrafish and human Pdx1 proteins share significant sequence similarity and functional conservation, particularly in regulating pancreatic development and insulin gene

expression. The similarities between the zebrafish and human versions of Pdx1 make zebrafish an excellent model for studying pancreatic biology, beta-cell development, and diabetes.

During embryogenesis, Pdx1 is highly expressed in the developing pancreas, where it directs the differentiation of pancreatic progenitor cells into insulin-producing beta cells. In zebrafish, Pdx1 is essential for the formation of the pancreatic islets and the regulation of insulin secretion in response to blood glucose levels. Pdx1 also plays a key role in beta-cell regeneration after injury, making it a critical factor in pancreatic plasticity.

Zebrafish Pdx1 is expressed predominantly in the pancreas and duodenum during development and in adult stages. The protein regulates the expression of several downstream genes involved in pancreatic endocrine function and beta-cell maturation, including insulin, glucagon, and somatostatin. Pdx1 also interacts with other transcription factors involved in pancreatic development, such as Ngn3 and Pax4, to coordinate the formation of the pancreatic islet.

Given its essential role in pancreatic development, insulin production, and beta-cell regeneration, zebrafish Pdx1 is an important model for studying type 1 and type 2 diabetes, as well as pancreatic diseases and beta-cell dysfunction. The zebrafish model offers a unique opportunity to study pancreatic regeneration, gene regulation, and metabolic disorders in real time.

Application Notes

Optimal dilution of the Zebrafish Pdx1 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Pdx1 recombinant protein (amino acids M1-S246) was used as the immunogen for the Zebrafish Pdx1 antibody.

Storage

After reconstitution, the Zebrafish Pdx1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.