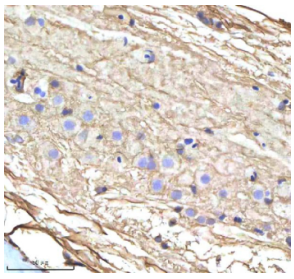
Zebrafish Cyp17a1 Antibody (RZ1214)

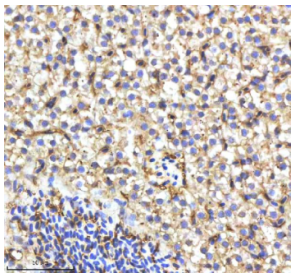
Catalog No.	Formulation	Size
RZ1214	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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	B3DH80
Localization	Membrane
Applications	Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish Cyp17a1 antibody is available for research use only.



IHC staining of zebrafish Cyp17a1 protein using Zebrafish Cyp17a1 antibody, HRP-labeled secondary and DAB substrate. Cyp17a1 was detected in a paraffin-embedded section of zebrafish spinal cord tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



IHC staining of zebrafish Cyp17a1 protein using Zebrafish Cyp17a1 antibody, HRP-labeled secondary and DAB substrate. Cyp17a1 was detected in a paraffin-embedded section of zebrafish liver tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

The Zebrafish Cyp17a1 antibody targets Cyp17a1, a key steroidogenic cytochrome P450 enzyme required for glucocorticoid, androgen, and estrogen biosynthesis in Danio rerio. Zebrafish, also known as Danio rerio, express cyp17a1 in steroid-producing tissues where it performs both 17-alpha-hydroxylase and 17,20-lyase functions. These activities convert pregnenolone and progesterone into androgenic precursors, making Cyp17a1 indispensable for the synthesis of sex steroids and stress-related hormones. Localized to the endoplasmic reticulum, Cyp17a1 contributes to endocrine development, reproductive maturation, and the establishment of the hypothalamic-pituitary-interrenal axis.

Cyp17a1 belongs to the cytochrome P450 superfamily, a group of enzymes that catalyze oxidative reactions central to hormone biosynthesis and metabolic regulation. In zebrafish embryos, cyp17a1 expression is first detected in the forming interrenal gland, a region analogous to the mammalian adrenal cortex. As development advances, expression expands to differentiating gonads where steroid output becomes essential for germ cell maturation and sex determination. A Zebrafish Cyp17a1 antibody is suitable for research applications examining endoplasmic reticulum-associated steroidogenic regions, endocrine tissue development, and hormone pathway activation across embryonic and larval stages.

Cyp17a1 plays a dual enzymatic role in generating glucocorticoid and sex steroid precursors. Its 17-alpha-hydroxylase activity produces intermediates required for cortisol synthesis, while its 17,20-lyase activity drives androgen production. In zebrafish, these functions impact reproductive maturation, stress axis regulation, and metabolic homeostasis. Disruption of cyp17a1 causes defects in steroid synthesis pathways, altering gonadal development, sex differentiation, and systemic cortisol levels. Because of its central endocrine role, cyp17a1 is often examined in studies of environmental endocrine disruption, stress physiology, and reproductive toxicology.

Structurally, Cyp17a1 contains the conserved heme-binding domain and membrane anchor motif found in endoplasmic reticulum-localized P450 enzymes. These features support electron transfer and catalytic activity at the membrane surface. Zebrafish cyp17a1 maps to chromosome 20, with regulatory sequences directing its expression to steroidogenic zones in the interrenal primordium and developing gonads. Co-localization studies commonly detect Cyp17a1 with steroidogenic markers such as StAR protein, Hsd3b, Cyp11a1.1, and mitochondrial metabolic proteins, reflecting its integration into multi-enzyme pathways that orchestrate hormone synthesis.

A Zebrafish Cyp17a1 antibody is suitable for detecting Cyp17a1 in studies focusing on endocrine organ development, steroidogenic pathway function, reproductive maturation, and stress axis activation in Danio rerio. Its endoplasmic reticulum-associated distribution provides insight into the spatial organization of hormone production and the timing of endocrine system maturation. Cyp17a1 expression helps define steroidogenic cell populations in embryos, larvae, and juveniles, making it valuable for research into reproductive biology, hormonal regulation, and developmental endocrinology. These features support investigations into gene regulatory networks governing steroid biosynthesis, comparative vertebrate endocrinology, and environmental impacts on endocrine physiology, and this reagent is supplied for research use by NSJ Bioreagents.

Application Notes

Optimal dilution of the Zebrafish Cyp17a1 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Cyp17a1 recombinant protein (amino acids Q67-C519) was used as the immunogen for the Zebrafish Cyp17a1 antibody.

Storage

After reconstitution, the Zebrafish Cyp17a1 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.