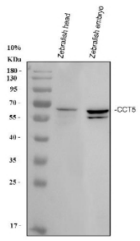
Zebrafish Cct5 Antibody / TCP1 epsilon (RZ1035)

Catalog No.	Formulation	Size
RZ1035	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	Q6NVI6
Applications	Western Blot : 0.5-1 ug/ml
Limitations	This Zebrafish Cct5 antibody is available for research use only.



Zebrafish Cct5 Antibody WB. Western blot analysis of Zebrafish Cct5 protein using Zebrafish Cct5 antibody with 1) zebrafish head and 2) zebrafish embryo tissue lysate. Predicted molecular weight ~59 kDa.

Description

Zebrafish (Danio rerio) Cct5 antibody recognizes Tcp1 epsilon, one of the eight essential subunits of the cytosolic chaperonin-containing TCP1 complex, encoded by the zebrafish cct5 gene on chromosome 18. Tcp1 epsilon forms part of the double-ring CCT complex, which performs ATP-dependent folding of key cytoskeletal proteins such as actin and tubulin, as well as a variety of signaling molecules and regulatory factors. In Danio rerio, Cct5 is maternally deposited and remains robustly expressed during embryogenesis, with enrichment in the brain, neural tube, somites, developing musculature, notochord, and rapidly proliferating endodermal tissues. Subcellular localization is cytosolic, consistent with its role in protein-folding homeostasis.

Tcp1 epsilon participates directly in maintaining proteostasis during periods of rapid cellular growth. Zebrafish embryos experience extensive cytoskeletal remodeling during gastrulation, neurulation, somite formation, and early organogenesis, all of which require folding of actin, tubulin, and other structural proteins. By supporting the correct assembly of microtubules and actin filaments, Cct5 influences cell shape, polarity, migration, and intracellular transport. These structural processes are essential for neural tube closure, brain regionalization, muscle fiber alignment, and notochord formation. Cct5 also supports folding of select regulatory proteins, linking it to broader developmental signaling networks.

Developmental studies show that perturbation of the CCT complex leads to widespread defects in tissue patterning and morphogenesis. Reduced Cct5 function disrupts cytoskeletal integrity, causing impaired convergence and extension movements, defective somite boundary formation, abnormal axon pathfinding, and compromised muscle development. Neural tissues are especially sensitive to altered chaperonin activity because neuronal differentiation, axon elongation, and synaptic maturation rely heavily on properly folded cytoskeletal components. In muscle precursor cells, Cct5 supports myofibrillar assembly and coordination between cytoskeletal and mitochondrial networks required for early myogenesis.

Tcp1 epsilon also participates in cellular stress responses. During proteotoxic, oxidative, or metabolic stress, the CCT complex helps refold damaged proteins and prevent aggregation. These protective functions are crucial in zebrafish embryos, where rapid proliferation and differentiation create high demands on protein quality control. Cct5 may influence pathways related to autophagy, apoptosis, and metabolic adaptation, particularly in tissues undergoing rapid growth. Because many CCT substrates play roles in signaling pathways such as Wnt, Hedgehog, and FGF, Cct5 indirectly affects transcriptional and developmental regulatory circuits.

At the molecular level, Cct5 interacts with the other seven CCT subunits to form a structurally precise folding chamber driven by ATP binding and hydrolysis. Tcp1 epsilon contributes to substrate specificity, inter-subunit communication, and conformational cycling that guide nascent polypeptides toward their native states. Isoform variation of cct5 or tissue-specific regulation may fine-tune folding activity during zebrafish development. Because defects in CCT function underlie human neurodevelopmental and neuromuscular disorders, zebrafish Cct5 studies offer insight into conserved proteostasis mechanisms that support embryonic viability and tissue formation.

This Zebrafish Cct5 antibody is suitable for detecting Tcp1 epsilon in research focused on protein folding, cytoskeletal regulation, neural development, muscle formation, cell migration, and early embryonic patterning in zebrafish. It supports studies examining CCT complex assembly, folding dynamics of actin and tubulin, and developmental phenotypes resulting from impaired proteostasis. NSJ Bioreagents provides this reagent within its zebrafish and protein-folding biology antibody portfolio.

This Zebrafish antibody is part of a broader Zebrafish / Danio rerio antibody panel offered by NSJ Bioreagents.

Application Notes

Optimal dilution of the Zebrafish Cct5 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Cct5 recombinant protein (amino acids S442-D541) was used as the immunogen for the Zebrafish Cct5 antibody.

Storage

After reconstitution, the Zebrafish Cct5 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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