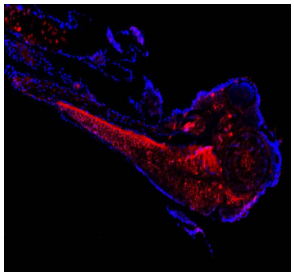
Zebrafish Cct3 Antibody / TCP1 gamma (RZ1002)

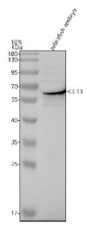
Catalog No.	Formulation	Size
RZ1002	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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	Q8JHI7
Localization	Cytoplasm
Applications	Western Blot : 0.5-1 ug/ml Immunofluorescence : 5 ug/ml
Limitations	This Zebrafish Cct3 antibody is available for research use only.



Zebrafish Cct3 Antibody Embryo IF. Immunofluorescent analysis of Cct3 protein using Zebrafish Cct3 antibody (red) and DAPI nuclear stain (blue) with zebrafish embryo tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Cct3 Antibody Embryo WB. Western blot analysis of Cct3 protein using Zebrafish Cct3 antibody and zebrafish embryo tissue lysate. The predicted molecular weight of Cct3 is 61 kDa.

Description

Zebrafish (Danio rerio) Cct3 antibody recognizes Chaperonin containing TCP1 subunit 3, also known as TCP1 gamma, a core component of the cytosolic chaperonin TRiC complex in Danio rerio. TRiC, also called CCT, is an essential multi-subunit protein folding machine that assists the maturation of a wide variety of cytoskeletal and regulatory proteins. Cct3 is encoded on zebrafish chromosome 1 and forms one of the eight paralogous subunits that arrange into a double ring structure. This architecture enables ATP dependent folding cycles required for the correct assembly of actin, tubulin, and numerous signaling proteins crucial for development. Localization studies show Cct3 concentrated in the cytoplasm, co-localizing with ribosome rich regions, protein synthesis machinery, and cytoskeletal assembly sites.

Cct3 participates directly in the folding of nascent polypeptides entering the TRiC complex. Its subunit specific interactions help define substrate specificity and folding efficiency, making it essential for cytoskeletal integrity and proper cell morphology. In zebrafish embryos, TRiC components including Cct3 are required for processes that shape early development, including cell division, axis elongation, neural crest differentiation, and muscle fiber formation. Disruption of TRiC subunits has been linked to impaired tubulin polymerization, abnormal somite formation, and defects in organogenesis. Cct3 mediated folding also supports proteostasis in rapidly dividing or highly metabolic tissues where protein synthesis demand is elevated.

In addition to folding cytoskeletal proteins, TCP1 gamma contributes to pathways involving cell cycle progression, intracellular trafficking, stress adaptation, and protein quality control. Cct3 interacts with cochaperones and factors involved in the ubiquitin proteasome system, linking TRiC function to degradation of misfolded proteins. In zebrafish, Cct3 expression increases during early embryonic stages when translational output is high and continues in proliferating tissues during organ development. Some isoform variation may arise from alternative transcriptional regulation and could influence folding kinetics or assembly of the TRiC complex.

Dysregulation of chaperonin components, including Cct3, has implications in developmental disorders and disease models. In vertebrates, TRiC malfunction can lead to protein aggregation, mitochondrial dysfunction, and disrupted cytoskeletal organization. Although zebrafish specific Cct3 disease models are still emerging, TRiC deficiencies in general are associated with neurodegeneration, cardiomyopathy, impaired growth, and altered stress responses. Zebrafish Cct3 is increasingly used in studies examining proteostasis, cytoskeletal assembly, and translational control under conditions such as environmental stress, toxicant exposure, and genetic perturbation.

This Zebrafish Cct3 antibody is suitable for detecting TCP1 gamma in research focused on chaperonin biology, cytoskeletal protein folding, embryonic development, proteostasis, and stress responses in zebrafish models. It supports analyses of TRiC complex function, actin and tubulin maturation, developmental phenotypes, and signaling pathways dependent on proper protein folding. NSJ Bioreagents provides this reagent within its zebrafish and developmental 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 Cct3 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Cct3 recombinant protein (amino acids L492-E543) was used as the immunogen for the Zebrafish Cct3 antibody.

Storage

After reconstitution, the Zebrafish Cct3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.