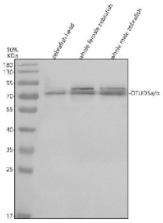
Zebrafish Otud5 Antibody / Otud5a / Otud5b (RZ1257)

Catalog No.	Formulation	Size
RZ1257	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	Q08BW0, F1QPN8
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish Otud5 antibody is available for research use only.



Western blot analysis of OTUD5a/b protein using Zebrafish OTUD5a/b antibody and 1) zebrafish head, 2) whole female zebrafish and 3) whole male zebrafish tissue lysate. Predicted molecular weight ~60 kDa (Otud5a) and ~58 kDa (Otud5b).

Description

The Zebrafish Otud5 antibody targets Otud5 (including paralogs Otud5a and Otud5b), a deubiquitinating enzyme essential for protein quality control, chromatin regulation, cell fate stability, and early embryonic development in Danio rerio. Zebrafish, also known as Danio rerio, encode duplicated otud5 paralogs that function within ubiquitin-dependent regulatory pathways controlling proteostasis, signaling fidelity, and transcriptional responses. Otud5 localizes to both the cytoplasm and nucleus, where it removes ubiquitin chains from specific substrates to stabilize proteins involved in DNA repair, immune signaling, transcriptional regulation, and developmental timing.

Otud5 belongs to the ovarian tumor (OTU) family of cysteine protease deubiquitinases, characterized by a conserved OTU catalytic domain that regulates linkage-specific ubiquitin cleavage. In zebrafish embryos, otud5a and otud5b are expressed in proliferative and transcriptionally active tissues, including early neural structures, mesodermal derivatives, and developing organ primordia. A Zebrafish Otud5 antibody is suitable for research applications examining cytoplasmic and nuclear localization across tissues undergoing protein turnover regulation, ubiquitin signaling, and developmental gene expression control.

Functionally, Otud5 stabilizes key regulatory proteins by removing degradative ubiquitin chains. In vertebrates, OTUD5 modulates DNA damage responses by deubiquitinating chromatin-associated proteins and promoting genome integrity. In immune-related pathways, it regulates antiviral signaling and inflammatory transcription factors, ensuring balanced activation. Although zebrafish-specific substrates are still being defined, otud5 paralogs play conserved roles in maintaining cellular homeostasis during rapid embryonic growth. Otud5 function supports neural development, somite patterning, and organogenesis, and disruptions in otud5 expression can impair proteostasis, alter transcriptional activity, and sensitize cells to stress, reflecting its central role in developmental stability.

Structurally, zebrafish Otud5 contains the catalytic OTU domain that confers deubiquitinase activity, along with flanking regulatory regions that determine substrate specificity and localization. These domains enable Otud5 paralogs to interact with ubiquitin chains, chromatin-associated factors, and signaling proteins requiring stabilization. Zebrafish otud5a and otud5b map to distinct chromosomal loci (chromosome 7 and chromosome 20, respectively), with paralog-specific expression patterns influenced by developmental cues and tissue-specific transcriptional programs. Co-localization studies identify Otud5 in nuclear and cytosolic compartments of neural progenitors, somitic cells, and early organ-forming tissues, frequently overlapping with markers of transcriptional regulation and ubiquitin machinery components.

A Zebrafish Otud5 antibody is suitable for detecting Otud5 in studies focused on ubiquitin-dependent regulation, proteostasis, chromatin dynamics, neural and mesodermal development, and stress-response pathways in Danio rerio. Its dual nuclear and cytoplasmic distribution provides insight into how deubiquitinases shape protein stability and developmental signaling networks. Researchers use Otud5 expression to investigate protein turnover defects, developmental mutants affecting ubiquitin pathways, and environmental or metabolic perturbations influencing proteostasis. These features make the antibody valuable for developmental biology, cell signaling, chromatin regulation, and regulatory protease research, and it is supplied for research use by NSJ Bioreagents.

Application Notes

Optimal dilution of the Zebrafish Otud5 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Otud5 recombinant protein (amino acids E167-D544) was used as the immunogen for the Zebrafish Otud5 antibody.

Storage

After reconstitution, the Zebrafish Otud5 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.