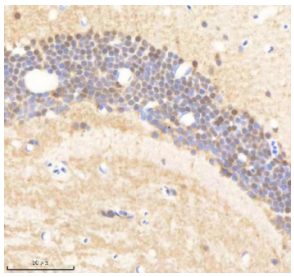
Zebrafish Psmc5 Antibody / 26S proteasome regulatory subunit 8 (RZ1290)

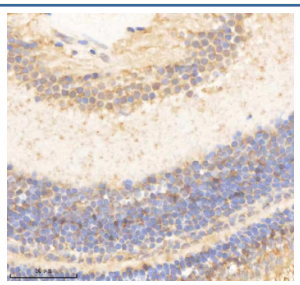
Catalog No.	Formulation	Size
RZ1290	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

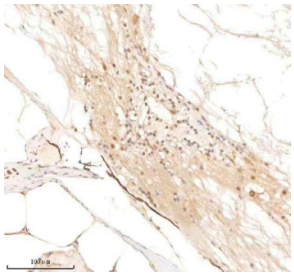
Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q6AZC1
Localization	Cytoplasmic, Nuclear
Applications	Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish Psmc5 antibody is available for research use only.



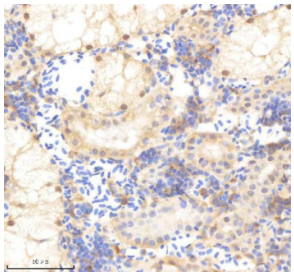
Zebrafish Psmc5 Antibody Brain Tissue IHC. Immunohistochemistry staining of zebrafish Psmc5 protein using Zebrafish Psmc5 antibody, HRP-labeled secondary and DAB substrate. Psmc5 was detected in a paraffin-embedded section of zebrafish brain tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



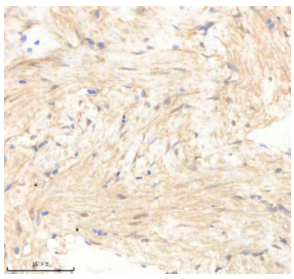
Zebrafish Psmc5 Antibody Eye Tissue IHC. Immunohistochemistry staining of zebrafish Psmc5 protein using Zebrafish Psmc5 antibody, HRP-labeled secondary and DAB substrate. Psmc5 was detected in a paraffin-embedded section of zebrafish eye tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



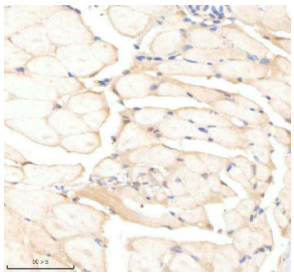
Zebrafish Psmc5 Antibody Spinal Tissue IHC. Immunohistochemistry staining of zebrafish Psmc5 protein using Zebrafish Psmc5 antibody, HRP-labeled secondary and DAB substrate. Psmc5 was detected in a paraffin-embedded section of zebrafish spinal tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



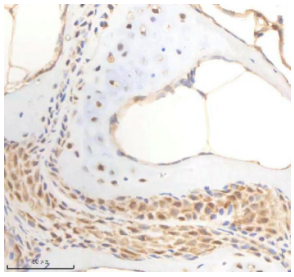
Zebrafish Psmc5 Antibody Kidney Tissue IHC. Immunohistochemistry staining of zebrafish Psmc5 protein using Zebrafish Psmc5 antibody, HRP-labeled secondary and DAB substrate. Psmc5 was detected in a paraffin-embedded section of zebrafish kidney tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Psmc5 Antibody Heart Tissue IHC. Immunohistochemistry staining of zebrafish PSMC5 protein using Zebrafish PSMC5 antibody, HRP-labeled secondary and DAB substrate. PSMC5 was detected in a paraffin-embedded section of zebrafish heart tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Psmc5 Antibody Muscle Tissue IHC. Immunohistochemistry staining of zebrafish Psmc5 protein using Zebrafish Psmc5 antibody, HRP-labeled secondary and DAB substrate. Psmc5 was detected in a paraffin-embedded section of zebrafish muscle tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Psmc5 Antibody Bone Tissue IHC. Immunohistochemistry staining of zebrafish Psmc5 protein using Zebrafish Psmc5 antibody, HRP-labeled secondary and DAB substrate. Psmc5 was detected in a paraffin-embedded section of zebrafish bone tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

The Zebrafish Psmc5 antibody targets Psmc5, also known as 26S proteasome regulatory subunit 8, a core AAA+ ATPase of the 19S regulatory particle essential for ATP-dependent substrate unfolding, translocation, and ubiquitin-mediated protein degradation in Danio rerio. Zebrafish, also known as Danio rerio, express psmc5 strongly throughout early embryogenesis, with enriched expression in proliferative and metabolically active tissues such as the developing brain, somites, heart, notochord, and endodermal organs. Psmc5 localizes to both the cytoplasm and nucleus as part of the six-member AAA-ATPase ring that powers substrate entry into the 20S catalytic core of the 26S proteasome.

Psmc5 belongs to the evolutionarily conserved AAA-ATPase family and corresponds to the Rpt6 subunit in yeast nomenclature. It contains hallmark Walker A and Walker B motifs required for ATP binding and hydrolysis, supporting the mechanical remodeling steps that remove ubiquitin chains and unfold regulatory proteins before degradation. In zebrafish embryos, psmc5 expression aligns with periods of intense protein turnover, transcriptional reprogramming, and differentiation, reflecting the developmental requirement for rapid proteostasis adjustments. A Zebrafish Psmc5 antibody is suitable for detecting cytoplasmic and nuclear expression consistent with regions of high proteolytic activity.

Functionally, Psmc5 is indispensable for proteasome assembly and activity. The 26S proteasome regulates degradation of misfolded proteins, short-lived transcription factors, cell-cycle regulators, metabolic enzymes, and numerous components of signaling pathways. In zebrafish, Psmc5-dependent proteolysis influences Wnt, Notch, Hedgehog, Fgf, and NF-kB pathways, all of which govern germ layer formation, neural and mesodermal patterning, cardiac development, muscle differentiation, and metabolic homeostasis. Loss or disruption of psmc5 causes accumulation of ubiquitinated proteins, proteotoxic stress, impaired tissue differentiation, and developmental arrest. Because many key signaling molecules require continuous turnover, Psmc5 is critical for maintaining timing and fidelity of regulatory pathways during embryogenesis.

Structurally, zebrafish Psmc5 forms one of the six AAA-ATPases that compose the regulatory base of the 19S proteasome, docking onto the alpha-ring of the 20S core to create a gated channel for substrate entry. It participates in conformational cycling that coordinates substrate deubiquitination, unfolding, and translocation. The zebrafish psmc5 gene maps to chromosome 15 and is regulated by proliferative cues, metabolic stress signals, and transcription factors governing proteasome biogenesis. Co-localization studies detect Psmc5 in perinuclear proteasome clusters, cytoplasmic proteolytic regions, and nuclei of transcriptionally active cells, often overlapping with ubiquitin foci, other AAA-ATPases, and catalytic 20S markers.

A Zebrafish Psmc5 antibody is suitable for detecting Psmc5 in studies focused on ubiquitin-mediated degradation, ATP-dependent proteasome mechanics, developmental proteostasis, stress-response signaling, and organogenesis in Danio rerio. Its nuclear and cytoplasmic distribution provides insight into proteolytic demand across tissues, enabling researchers to evaluate degradation defects in mutants, analyze proteotoxic conditions, and investigate how controlled turnover of regulatory proteins shapes development. This antibody is supplied for research use by NSJ Bioreagents.

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

Application Notes

Optimal dilution of the Zebrafish Psmc5 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Psmc5 recombinant protein (amino acids N41-K393) was used as the immunogen for the Zebrafish Psmc5 antibody.

Storage

After reconstitution, the Zebrafish Psmc5 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.