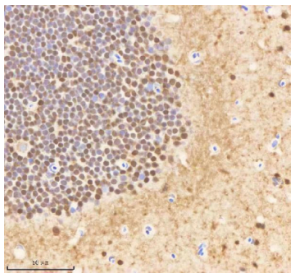
Zebrafish Psmc1 Antibody / Psmc1a / Psmc1b / 26S proteasome regulatory subunit 4 (RZ1288)

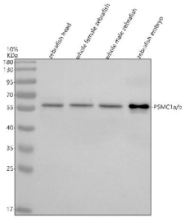
Catalog No.	Formulation	Size
RZ1288	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

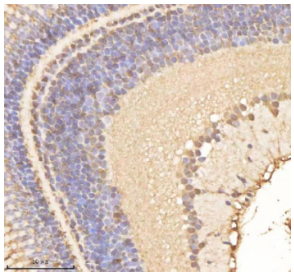
Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q7ZWD1, Q6IQ72
Localization	Cytoplasmic, Nuclear
Applications	Western Blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml
Limitations	This Zebrafish Psmc1 antibody is available for research use only.



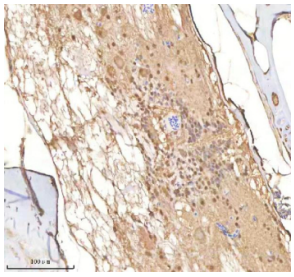
Zebrafish Psmc1 Antibody Brain Tissue IHC. Immunohistochemistry staining of FFPE zebrafish brain tissue with Psmc1 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



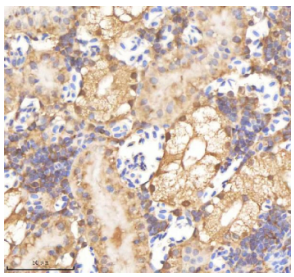
Zebrafish Psmc1 Antibody Tissue WB. Western blot analysis of Psmc1a/b protein using Zebrafish Psmc1 antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish and 4) zebrafish embryo tissue lysate. Predicted molecular weight ~49 kDa.



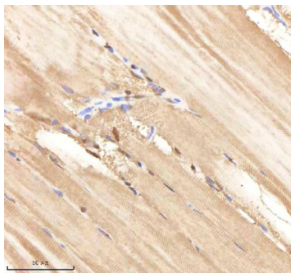
Zebrafish Psmc1 Antibody Eye Tissue IHC. Immunohistochemistry staining of FFPE zebrafish eye tissue with Psmc1 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



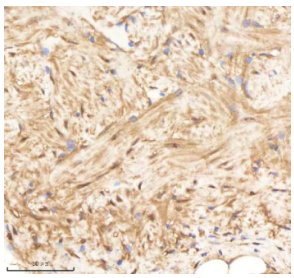
Zebrafish Psmc1 Antibody Spinal Tissue IHC. Immunohistochemistry staining of FFPE zebrafish spinal tissue with Psmc1 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



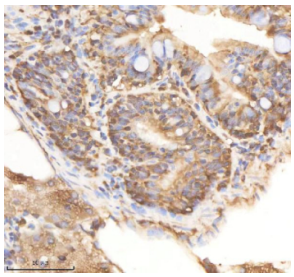
Zebrafish Psmc1 Antibody Kidney Tissue IHC. Immunohistochemistry staining of FFPE zebrafish kidney tissue with Psmc1 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Psmc1 Antibody Muscle Tissue IHC. Immunohistochemistry staining of FFPE zebrafish muscle tissue with Psmc1 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Psmc1 Antibody Heart Tissue IHC. Immunohistochemistry staining of FFPE zebrafish heart tissue with Psmc1 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Psmc1 Antibody Colon Tissue IHC. Immunohistochemistry staining of FFPE zebrafish colon tissue with Psmc1 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

The Zebrafish Psmc1 antibody targets Psmc1, including the zebrafish paralogs Psmc1a and Psmc1b, a core AAA-ATPase of the 19S regulatory particle of the 26S proteasome essential for ATP-dependent protein unfolding, substrate translocation, and ubiquitin-mediated degradation in Danio rerio. Zebrafish, also known as Danio rerio, express psmc1a and psmc1b broadly during embryogenesis, with strong enrichment in proliferative and metabolically active tissues such as the developing brain, somites, notochord, heart, and endodermal organs. Psmc1 localizes to the cytoplasm and nucleus as part of the AAA-ATPase ring, where it powers the mechanical steps that feed ubiquitinated proteins into the 20S proteolytic core.

Psmc1 belongs to the AAA+ ATPase family and serves as one of six ATP-driven motor subunits (Rpt2 in yeast nomenclature) that form the hexameric unfolding ring of the 19S base. Its ATP binding and hydrolysis drive conformational changes that remove ubiquitin chains, unfold regulatory proteins, and translocate substrates into the 20S chamber for degradation. In zebrafish embryos, high psmc1 expression corresponds to stages of rapid cell division, tissue remodeling, and metabolic switching that require robust proteolytic throughput. A Zebrafish Psmc1 antibody is suitable for detecting both cytoplasmic and nuclear pools of this regulatory ATPase, marking regions where ATP-dependent protein quality control and developmental signaling turnover are strongly active.

Functionally, Psmc1 is indispensable for proteasome performance and embryonic viability. The 26S proteasome regulates degradation of key developmental regulators across pathways such as Wnt, Notch, Hedgehog, Fgf, and NF-kB. In zebrafish, Psmc1-dependent proteolysis ensures proper germ layer specification, neural patterning, muscle fiber formation, cardiac development, and metabolic adaptation. Loss or reduction of psmc1a or psmc1b disrupts 26S assembly, causes accumulation of ubiquitinated proteins, triggers proteotoxic stress, and can lead to early lethality or tissue-specific defects. Because many transcription factors and signaling intermediates have short half-lives, Psmc1 activity is central to maintaining developmental timing and regulatory fidelity.

Structurally, zebrafish Psmc1 forms part of the hexameric AAA-ATPase ring that docks onto the alpha-ring of the 20S core, creating a gated channel for substrate translocation. It contains conserved Walker A and Walker B motifs, an ATP-binding pocket, and interaction domains that coordinate with ubiquitin receptors, deubiquitinating enzymes, and chaperone-like proteasomal factors. Zebrafish psmc1a maps to chromosome 5 and psmc1b to chromosome 3, with partially overlapping but distinct expression patterns shaped by developmental and metabolic cues. Co-localization studies detect Psmc1 in perinuclear regions, cytoplasmic proteasome clusters, and nuclei of transcriptionally active cells, often overlapping with ubiquitin-rich foci, Rpt-family ATPases, and 20S catalytic markers.

A Zebrafish Psmc1 antibody is suitable for detecting Psmc1 in studies focused on proteasome assembly, ATP-dependent protein unfolding, ubiquitin-mediated degradation, developmental proteostasis, and intracellular signaling dynamics in Danio rerio. Its distribution across nuclear and cytoplasmic compartments enables researchers to map areas of high proteolytic activity, analyze degradation defects in mutants, examine proteotoxic stress responses, and explore how precise turnover of regulatory proteins shapes organogenesis. Because the 26S proteasome underlies virtually every major developmental pathway, Psmc1 serves as a powerful marker of protein quality control and ATP-dependent proteolytic capacity in zebrafish systems. 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 Psmc1 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Psmc1 recombinant protein (amino acids K21-L440) was used as the immunogen for the Zebrafish Psmc1 antibody.

Storage

After reconstitution, the Zebrafish Psmc1 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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