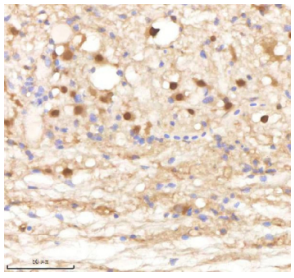
Zebrafish Psma1 Antibody / Proteasome subunit alpha type 1 (RZ1284)

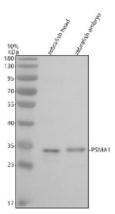
Catalog No.	Formulation	Size
RZ1284	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

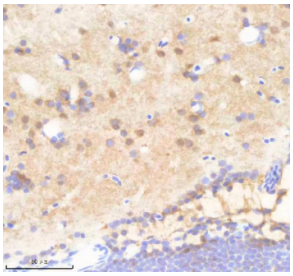
Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q6DGX8
Localization	Cytoplasmic, Nuclear
Applications	Western Blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml
Limitations	This Zebrafish Psma1 antibody is available for research use only.



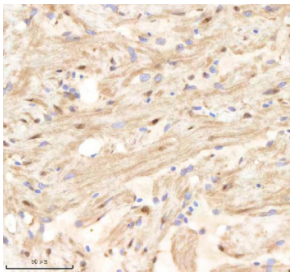
Zebrafish Psma1 Antibody Spinal Tissue IHC. Immunohistochemistry staining of FFPE zebrafish spinal tissue with Psma1 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



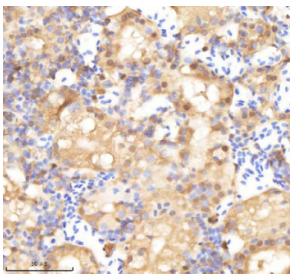
Zebrafish Psma1 Antibody Head and Embryo Tissue WB. Western blot analysis of Psma1 protein using Zebrafish PSMA1 antibody and 1) zebrafish head tissue lysates and 2) zebrafish embryo tissue lysate. Predicted molecular weight ~29 kDa.



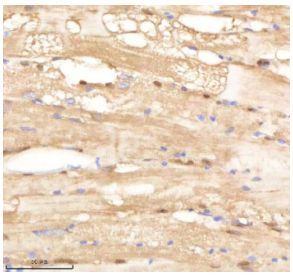
Zebrafish Psma1 Antibody Brain Tissue IHC. Immunohistochemistry staining of FFPE zebrafish brain tissue with Psma1 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Psma1 Antibody Heart Tissue IHC. Immunohistochemistry staining of FFPE zebrafish heart tissue with Psma1 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Psma1 Antibody Kidney Tissue IHC. Immunohistochemistry staining of FFPE zebrafish kidney tissue with Psma1 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Psma1 Antibody Muscle Tissue IHC. Immunohistochemistry staining of FFPE zebrafish muscle tissue with Psma1 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 Psma1 antibody targets Psma1, also known as Proteasome subunit alpha type 1, a core structural component of the 20S proteasome essential for intracellular protein degradation, proteostasis, and regulation of developmental signaling pathways in Danio rerio. Zebrafish, also known as Danio rerio, express psma1 widely during embryogenesis, with enriched expression in proliferative and metabolically active tissues such as the developing brain, somites, heart, liver primordium, and endodermal organs. Psma1 localizes to the cytoplasm and nucleus as part of the assembled 20S catalytic core, forming the gated alpha-ring that controls substrate entry into the proteolytic chamber of the proteasome.

Psma1 belongs to the alpha-ring family of proteasome subunits and contributes to scaffold architecture, proteasome assembly, and regulatory gating. Its conserved N-terminal extensions help maintain the closed conformation of the 20S core under basal conditions, opening in response to regulatory particle engagement. In zebrafish embryos, high psma1 expression reflects the need for continuous protein turnover to support rapid cell division, tissue patterning, and metabolic adaptation. A Zebrafish Psma1 antibody is suitable for detecting cytoplasmic and nuclear distribution consistent with regions of active protein degradation and ubiquitin-mediated signaling.

Functionally, Psma1 is indispensable for proteasome activity. The 20S core degrades damaged, oxidized, misfolded, or regulatory proteins, enabling precise control of cell-cycle factors, transcriptional regulators, metabolic enzymes, and components of major signaling pathways. In zebrafish, proteasome function influences Wnt, Notch, Hedgehog, Fgf, and NF-kB signaling, thereby shaping germ layer development, neural patterning, muscle formation, and organogenesis. Disruption of psma1 or proteasome integrity causes accumulation of ubiquitinated proteins, proteotoxic stress, and impaired differentiation, often resulting in early developmental arrest or tissue-specific patterning defects. Psma1 is therefore a key marker for studying proteostasis, degradation capacity, and protein quality-control systems during development.

Structurally, zebrafish Psma1 forms one of the seven alpha subunits that create the outer ring of the cylindrical 20S proteasome. It contains conserved helices and surface motifs that mediate interactions with beta subunits, assembly chaperones, and regulatory particles such as the 19S cap. The zebrafish psma1 gene maps to chromosome 16 and is transcriptionally regulated by metabolic stress, cell-proliferation cues, and pathways that modulate proteasome biogenesis. Co-localization studies detect Psma1 in cytoplasmic and perinuclear regions, often overlapping with ubiquitin accumulation sites, beta-ring proteasome markers, and stress-response proteins such as heat shock factors and chaperones.

A Zebrafish Psma1 antibody is suitable for detecting Psma1 in studies focused on proteasome assembly, ubiquitin-mediated degradation, developmental proteostasis, cellular stress management, and signaling pathway regulation in Danio rerio. Its distribution across cytoplasmic and nuclear compartments provides insight into tissue-specific degradation activity and enables researchers to assess proteotoxic stress, analyze proteasome dysfunction in genetic models, and explore how protein turnover influences organogenesis. Because the proteasome is fundamental to nearly every aspect of cellular and developmental biology, Psma1 is widely used to study regulatory protein turnover, metabolic adaptation, and stress responses 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 Psma1 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Psma1 recombinant protein (amino acids M1-E250) was used as the immunogen for the Zebrafish Psma1 antibody.

Storage

After reconstitution, the Zebrafish Psma1 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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