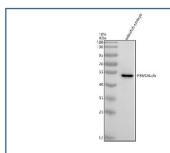


# Zebrafish Psmd4 Antibody / Psmd4a / Psmd4b / 26S proteasome non-ATPase regulatory subunit 4 (RZ1293)

Catalog No.	Formulation	Size
RZ1293	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
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q6IQC6, Q561Y1
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish Psmd4 antibody is available for research use only.



Western blot analysis of Psmd4a/b protein using Zebrafish Psmd4 antibody and zebrafish embryo tissue lysates. Predicted molecular weight ~40 kDa.

## **Description**

Psmd4 (Proteasome 26S subunit, non-ATPase 4) is an integral part of the 19S regulatory particle of the 26S proteasome, which plays a crucial role in the ATP-dependent degradation of ubiquitinated proteins. As a non-ATPase subunit, Psmd4 contributes to the recognition, unfolding, and translocation of substrates into the 20S catalytic core of the proteasome for degradation. This process is vital for maintaining cellular homeostasis, regulating the cell cycle, and controlling protein turnover, particularly in response to cellular stress or damage.

In zebrafish, Psmd4 is the ortholog of the human PSMD4 gene, showing a high degree of sequence identity and

functional conservation. Both the zebrafish and human proteins share the same basic structural motifs essential for proteasomal function, including interaction domains that allow for proper assembly and regulation of the proteasomal complex.

Zebrafish Psmd4 may have isoforms resulting from alternative splicing events, although specific isoform variants may not be fully characterized. These isoforms could potentially exhibit tissue-specific expression or alternative regulatory roles, further contributing to the fine-tuned regulation of proteasomal activity. The functional diversity provided by these isoforms allows for specialized roles in different tissues or developmental stages, ensuring efficient protein degradation and homeostasis under varying conditions.

The expression of Psmd4 in zebrafish is widespread, with notable expression in tissues that undergo rapid cell division or have high protein turnover, such as the brain, liver, and kidney. This expression profile highlights the critical role of Psmd4 in maintaining protein integrity, regulating cellular stress responses, and ensuring proper protein homeostasis, particularly in rapidly growing or dividing cells.

Given the functional conservation between zebrafish and human Psmd4, zebrafish serves as an ideal model for studying the molecular mechanisms underlying proteasomal dysfunction in humans. In particular, PSMD4 mutations in humans are associated with certain diseases, including cancer and neurodegenerative disorders, where impaired proteasomal degradation leads to the accumulation of misfolded or damaged proteins. Zebrafish Psmd4 is a valuable tool for investigating proteasome-related diseases and for screening potential therapeutic agents that can modulate proteasomal activity.

## **Application Notes**

Optimal dilution of the Zebrafish Psmd4 antibody should be determined by the researcher.

#### **Immunogen**

E. coli-derived zebrafish Psmd4 recombinant protein (amino acids M1-D322) was used as the immunogen for the Zebrafish Psmd4 antibody.

#### **Storage**

After reconstitution, the Zebrafish Psmd4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.