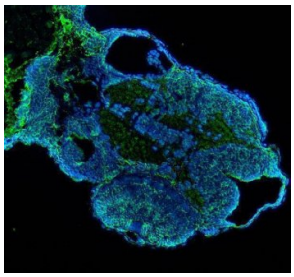
Zebrafish DUSP6 Antibody / Dual Specificity Phosphatase 6 Antibody (RZ1384)

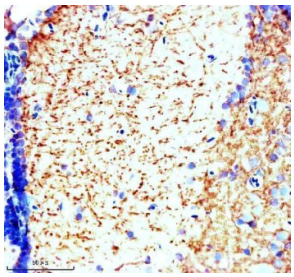
Catalog No.	Formulation	Size
RZ1384	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

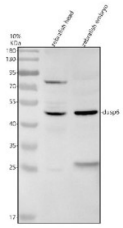
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Lyophilized from a buffered saline solution containing 2% trehalose. Reconstitute with 0.2 mL distilled water to yield a final antibody concentration of 500 ug/mL.
UniProt	Q7T2L8
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml Immunofluorescence : 5ug/ml
Limitations	This Zebrafish DUSP6 Antibody / Dual Specificity Phosphatase 6 Antibody is available for research use only.



Zebrafish DUSP6 Antibody Embryo IF. Immunofluorescent staining of paraffin-embedded zebrafish embryo tissue using Zebrafish DUSP6 Antibody / Dual Specificity Phosphatase 6 Antibody demonstrates widespread green fluorescence within developing embryonic structures. The staining pattern is consistent with expression of DUSP6, a dual-specificity phosphatase that functions as a key negative regulator of ERK/MAPK signaling pathways. DUSP6 plays an important role in controlling growth factor-mediated signaling responses during embryogenesis, helping regulate cellular differentiation, tissue patterning, and organ development. The observed expression is consistent with the established involvement of DUSP6 in developmental signaling networks and feedback regulation of MAPK pathway activity. Nuclei are counterstained with DAPI (blue). Heat-mediated antigen retrieval was performed in EDTA buffer, and sections were incubated with 5 Âµg/ml primary antibody overnight at 4Â°C followed by DyLight-488 conjugated goat anti-rabbit IgG secondary antibody.



Zebrafish DUSP6 Antibody Brain IHC. Immunohistochemical staining of paraffin-embedded zebrafish brain tissue using Zebrafish DUSP6 Antibody / Dual Specificity Phosphatase 6 Antibody demonstrates widespread cytoplasmic HRP-DAB brown staining throughout neural tissue. The staining pattern is consistent with expression of DUSP6, a dual-specificity phosphatase that functions as a key negative regulator of ERK/MAPK signaling pathways. DUSP6 modulates growth factor-dependent signaling responses by dephosphorylating activated ERK proteins, thereby helping control signaling intensity, cellular differentiation, and tissue homeostasis. The observed expression within neural tissue is consistent with the importance of regulated MAPK signaling during nervous system development and maintenance. Heat-mediated antigen retrieval was performed in EDTA buffer. Sections were blocked with 10% goat serum and incubated overnight at 4Â°C with 2 Âµg/ml primary antibody, followed by peroxidase-conjugated goat anti-rabbit IgG for 30 minutes at 37Â°C. DAB was used as the chromogenic substrate.



Zebrafish DUSP6 Antibody WB. Western blot analysis of zebrafish head tissue lysate (lane 1) and zebrafish embryo tissue lysate (lane 2) using Zebrafish DUSP6 Antibody / Dual Specificity Protein Phosphatase 6 Antibody demonstrates a prominent immunoreactive band at approximately 42-45 kDa, consistent with the predicted molecular weight of DUSP6. DUSP6, also known as MKP-3, is a dual-specificity phosphatase that negatively regulates MAPK/ERK signaling and plays important roles in embryonic development, cell differentiation, tissue patterning, and growth factor-mediated signaling pathways. DUSP6 expression is widely studied in zebrafish developmental biology due to its involvement in FGF and ERK pathway regulation. Thirty micrograms of protein lysate were resolved under reducing conditions on a 10% SDS-PAGE gel and transferred to nitrocellulose prior to immunodetection. The observed bands support detection of zebrafish DUSP6 by western blot analysis.

Description

Zebrafish DUSP6 Antibody / Dual Specificity Phosphatase 6 Antibody is useful for studying Dual Specificity Phosphatase 6 (DUSP6), a key regulator of mitogen-activated protein kinase (MAPK) signaling pathways. DUSP6 functions as a dual-specificity phosphatase capable of removing phosphate groups from both tyrosine and serine/threonine residues. Its best-characterized activity involves the selective dephosphorylation and inactivation of extracellular signal-regulated kinases (ERKs), making DUSP6 an important negative regulator of MAPK pathway activity and intracellular signal transduction.

DUSP6 serves as a critical feedback regulator within signaling networks that control cellular proliferation, differentiation, migration, and survival. Following activation of growth factor signaling pathways, DUSP6 expression is frequently induced as part of a regulatory mechanism that limits ERK signaling intensity and duration. This negative feedback function helps maintain signaling homeostasis and ensures appropriate cellular responses during development and tissue formation.

In zebrafish, DUSP6 plays important roles during embryogenesis, where precisely controlled MAPK signaling is required for tissue patterning, organogenesis, and developmental progression. DUSP6 is widely recognized as a downstream target and regulator of fibroblast growth factor (FGF) signaling pathways, making it a commonly studied marker of developmental signaling activity. Analysis of DUSP6 expression can therefore provide insight into mechanisms governing growth factor responses and developmental signaling networks.

Zebrafish has become a valuable model for investigating MAPK pathway regulation because many signaling mechanisms are highly conserved among vertebrates. The optical transparency of developing embryos and the accessibility of genetic manipulation allow researchers to directly examine signaling events that influence tissue development and cellular differentiation. DUSP6 is frequently utilized in studies focused on embryonic patterning, organ development, regenerative biology, and signal transduction.

Beyond its developmental functions, DUSP6 participates in broader regulatory networks that influence cellular adaptation, tissue homeostasis, and responses to environmental stimuli. Because ERK signaling contributes to numerous biologic processes, proteins that regulate MAPK pathway activity remain important targets for understanding normal physiology and disease-associated signaling mechanisms. DUSP6 is therefore commonly investigated in developmental biology, cell biology, regenerative research, and studies of intracellular signaling regulation.

Zebrafish DUSP6 antibodies are commonly used in immunohistochemistry, immunofluorescence, western blotting, and related protein detection applications to evaluate Dual Specificity Phosphatase 6 expression and localization. These reagents support investigations of MAPK signaling, ERK pathway regulation, FGF signaling, embryonic development, organogenesis, regenerative biology, and signal transduction mechanisms in zebrafish research models.

Learn more about DUSP6 function in MAPK signaling regulation, ERK pathway control, growth factor responses, and intracellular signal transduction on our DUSP6 Antibody page.

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

Application Notes

The optimal working dilution of the Zebrafish DUSP6 Antibody / Dual Specificity Phosphatase 6 Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish DUSP6 recombinant protein (amino acids M1-K233) was used as the immunogen for the Zebrafish DUSP6 Antibody.

Storage

After reconstitution, the Zebrafish DUSP6 Antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Zebrafish Dual Specificity Phosphatase 6 Antibody, Zebrafish MKP-3 Antibody, Zebrafish MAP Kinase Phosphatase 3 Antibody, Zebrafish ERK Phosphatase Antibody, Zebrafish FGF Signaling Regulator Antibody, Zebrafish MAPK Pathway Protein Antibody