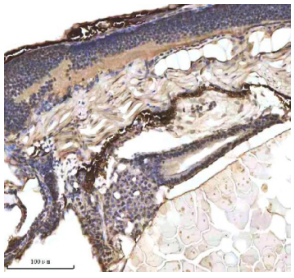
Zebrafish p53 Antibody / Tp53 / Tumor protein 53 (RZ1259)

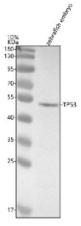
Catalog No.	Formulation	Size
RZ1259	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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	P79734
Localization	Cytoplasmic, Nuclear
Applications	Western Blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml
Limitations	This Zebrafish p53 antibody is available for research use only.



Zebrafish p53 antibody Embryo Tissue IHC. Immunohistochemistry staining of zebrafish p53 protein using Zebrafish p53 antibody, HRP-labeled secondary and DAB substrate. p53 was detected in a paraffin-embedded section of zebrafish embryo tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish p53 antibody Embryo Tissue WB. Western blot analysis of p53 protein using Zebrafish p53 antibody and zebrafish embryo tissue lysates. Predicted molecular weight ~42 kDa but commonly observed at 53-60 kDa.

Description

Zebrafish p53 antibody targets p53 (also known as Tp53 or Tumor protein 53), a central transcription factor that regulates DNA damage responses, apoptosis, cell cycle arrest, and genomic stability in Danio rerio. Zebrafish, also known as Danio rerio, express tp53 as a core guardian of the genome, activated rapidly in response to irradiation, chemical stress, oxidative damage, or developmental perturbations. p53 localizes primarily to the nucleus, where it binds DNA to initiate transcription of stress-response genes, including cdkn1a/p21, pro-apoptotic factors, and repair-related regulators that safeguard embryonic development and cellular integrity.

p53 belongs to the tumor protein family of transcriptional regulators and contains a conserved DNA-binding domain, tetramerization domain, and N-terminal transactivation regions. Zebrafish tp53 shares strong functional homology with mammalian TP53, making the model highly useful for studying genome stability, toxicology, and stress biology. A Zebrafish p53 antibody is suitable for detecting nuclear expression in tissues undergoing stress-induced pathway activation, apoptotic priming, DNA repair, or proliferation checkpoints.

Functionally, p53 is indispensable for coordinating cellular responses to genotoxic stress. When activated, p53 halts the cell cycle by inducing cdkn1a, stabilizes DNA repair pathways, and triggers apoptosis when damage is irreparable. In zebrafish embryos, p53 plays additional developmental roles by regulating neural apoptosis, hematopoietic lineage balance, and tissue morphogenesis during periods of rapid proliferation. Because tp53 is highly inducible, zebrafish are widely used to model environmental toxicity, radiation responses, oxidative stress, and chemical screening platforms that monitor p53 activation as a readout of cellular distress.

Structurally, zebrafish p53 contains the canonical DNA-binding domain responsible for sequence-specific transcriptional activation, as well as a tetramerization interface that enables formation of the active regulatory complex. The protein also includes regulatory motifs responsive to post-translational modifications such as phosphorylation and acetylation that modulate its stability and transcriptional potency. Zebrafish tp53 maps to chromosome 5, with regulatory regions that respond to DNA damage sensor pathways, including ATM/ATR and Chk1/Chk2 cascades. Co-localization studies frequently detect p53 upregulation in nuclei of damaged or stressed cells, overlapping with markers such as gamma-H2AX, Cdkn1a, and apoptotic regulators including Bax and Caspase family members.

A Zebrafish p53 antibody is suitable for detecting p53 in studies focused on DNA damage signaling, apoptosis, genome integrity, toxicology, developmental cell cycle control, and stress-response pathways in Danio rerio. Its nuclear localization provides a clear readout of pathway activation in response to UV exposure, chemical stressors, oxidative imbalance, or genetic perturbation. Researchers use p53 expression patterns to evaluate developmental toxicity, analyze mutant phenotypes affecting genome stability, investigate mechanisms of programmed cell death, and characterize environmental or pharmacological agents that activate the DNA damage response. These applications make the antibody a valuable tool for developmental biology, cancer research, toxicology, and genome maintenance studies, and this reagent is supplied for research use by NSJ Bioreagents.

Researchers studying p53 expression and TP53 signaling can explore our Protein Microarray Validated p53 Antibody page for additional reagents targeting this key tumor suppressor in cancer, DNA damage response and cell cycle research.

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

Application Notes

Optimal dilution of the Zebrafish p53 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Tumor protein 53 (amino acids D29-Q358) was used as the immunogen for the Zebrafish p53

antibody.

Storage

After reconstitution, the Zebrafish p53 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Copyright © NSJ Bioreagents. All rights reserved.