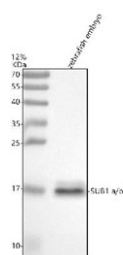


Zebrafish Sub1 Antibody / Activated RNA polymerase II transcriptional coactivator p15 / Isoforms a & b (RZ1038)

Catalog No.	Formulation	Size
RZ1038	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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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	Q504B1, Q6DGP6
Applications	Western Blot : 0.5-1 ug/ml
Limitations	This Zebrafish Sub1 antibody is available for research use only.



Western blot analysis of Sub1a/b protein using Sub1 antibody and zebrafish embryo tissue lysate. The predicted molecular weight of Sub1a/b is 14 kDa.

Description

Zebrafish Sub1 antibody recognizes Activated RNA polymerase II transcriptional coactivator p15, a conserved transcriptional regulator encoded by the zebrafish sub1 gene. This reagent detects both the a and b isoforms, which share extensive structural similarity and participate in core mechanisms of gene activation. Sub1 is best known as a transcriptional coactivator that interacts with RNA polymerase II, single-stranded DNA regions, and components of promoter-bound complexes. It is enriched in the nucleus of proliferative and transcriptionally active cells across *Danio rerio* embryogenesis, with strong expression in the developing brain, neural tube, somites, craniofacial mesenchyme, cardiovascular primordia, hematopoietic regions, and early endodermal organs.

Activated RNA polymerase II transcriptional coactivator p15 functions as a key mediator of promoter opening, transcription initiation, and early elongation. Sub1 stabilizes transcriptional pre-initiation complexes, binds promoter-proximal single-stranded DNA, and enhances RNA polymerase II engagement with transcriptional start sites. In zebrafish, these activities are essential for dynamic transcriptional responses during tissue patterning, rapid cell proliferation, and lineage specification. Sub1 also interacts with factors that regulate chromatin accessibility, helping coordinate transcription with nucleosome positioning and chromatin remodeling during development.

Developmental studies highlight Sub1 as a regulator of neural progenitor proliferation, neural tube patterning, and brain regionalization. The protein supports transcriptional programs that guide neuronal differentiation, axon specification, and neural crest development. Because early zebrafish neurogenesis depends on rapid cycles of transcriptional activation, Sub1-mediated coactivation is crucial for maintaining gene expression fidelity. In mesodermal tissues, Sub1 influences somite organization, muscle precursor proliferation, and early cardiac transcriptional networks. Endoderm-derived organs, including liver and pancreas, also require precise Sub1-mediated transcriptional control during primordium formation.

Sub1 contributes broadly to RNA metabolism beyond transcription initiation. It interacts with factors involved in mRNA processing, transcription-coupled repair, and genome stability. In zebrafish models, disruptions in Sub1 expression affect cell cycle regulation, DNA damage responses, and metabolic gene programs, underscoring its integrative role in coordinating nuclear processes. Isoforms a and b may reflect subtle regulatory differences across tissues or developmental stages, providing flexibility in transcriptional output during embryogenesis.

Sub1 also participates in stress-responsive transcriptional control. During oxidative stress, metabolic fluctuation, or environmental perturbation, Sub1 helps stabilize transcriptional machinery and maintain promoter accessibility. Because zebrafish embryos experience rapid transcriptional shifts during early development, Sub1 activity supports resilience to fluctuating intracellular conditions. Its involvement in genome maintenance and stress adaptation makes it relevant for studies of DNA repair, chromatin stability, and transcriptional fidelity in vertebrate models.

This Zebrafish Sub1 antibody is suitable for detecting both isoforms a and b of Activated RNA polymerase II transcriptional coactivator p15 in research focused on transcription initiation, chromatin-associated coactivators, neural development, somite specification, and early organogenesis in zebrafish. It supports studies examining promoter-proximal regulation, RNA polymerase II engagement, and developmental phenotypes arising from impaired transcriptional control. NSJ Bioreagents provides this reagent within its zebrafish and transcription-regulation antibody collection.

Application Notes

Optimal dilution of the Zebrafish Sub1 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Sub1a/b recombinant protein (amino acids N58-T123) was used as the immunogen for the Zebrafish Sub1 antibody. This antibody will detect the a and b isoforms.

Storage

After reconstitution, the Zebrafish Sub1 antibody can be stored for up to one month at 4°C. For long-term, aliquot and store at -20°C. Avoid repeated freezing and thawing.

