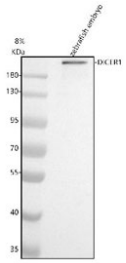
Zebrafish Dicer Antibody / Dicer1 (RZ1088)

Catalog No.	Formulation	Size
RZ1088	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	Q6TV19
Applications	Western Blot : 0.5-1 ug/ml
Limitations	This Zebrafish Dicer antibody is available for research use only.



Zebrafish Dicer Antibody WB. Western blot analysis of Dicer protein using Zebrafish Dicer antibody and zebrafish embryo tissue lysate. The predicted molecular weight of Dicer is ~219 kDa.

Description

Zebrafish (Danio rerio) Dicer antibody targets Dicer, an RNase III family endoribonuclease essential for processing precursor microRNAs and small interfering RNAs into their mature, functional forms. In zebrafish, the dicer1 gene encodes a highly conserved multidomain enzyme containing a PAZ domain, dual RNase III catalytic domains, and a dsRNA binding region that together facilitate recognition and cleavage of structured RNA substrates. Through its foundational role in microRNA biogenesis, Dicer regulates post transcriptional gene silencing programs that shape early development, cell identity, and tissue patterning. These critical functions make Dicer1 antibody reagents important tools for studying RNA mediated regulatory pathways in zebrafish models.

Dicer is maternally deposited in zebrafish embryos, and its early expression is essential for cleavage stage development, gastrulation, and germ layer specification. Loss of dicer1 function leads to severe developmental defects, including disrupted morphogenesis, impaired organogenesis, and failure to establish normal cell cycle control. Because microRNAs regulate hundreds of transcripts simultaneously, Dicer serves as a global coordinator of gene expression, integrating signals across diverse pathways such as Wnt, Hedgehog, BMP, and Notch. This positions Dicer at the center of regulatory networks governing proliferation, apoptosis, differentiation, and tissue homeostasis.

Expression of dicer1 is widespread across embryonic and adult tissues, with enriched localization in neural tissues, somites, heart, gut, and germ cells. In the nervous system, Dicer contributes to neuronal differentiation, axon formation, and synaptic maturation by generating microRNAs that modulate cytoskeletal and guidance signaling. In the cardiovascular system, Dicer regulates microRNAs controlling chamber morphogenesis, endothelial identity, and vascular stability. In germline cells, Dicer supports small RNA pathways that maintain genomic integrity during meiosis and early gametogenesis.

At the subcellular level, Dicer resides primarily in the cytoplasm, where it forms the core of the microRNA processing complex prior to Argonaute loading. Known interaction partners include TRBP, PACT, and components of the RNA induced silencing machinery. These coordinated interactions ensure correct processing and strand selection of microRNAs and siRNAs, enabling precise control of target gene repression. Because mature microRNAs regulate translation and mRNA stability across entire gene networks, disruptions in Dicer activity can produce widespread transcriptional imbalances with developmental and physiological consequences.

Dicer also participates in stress response pathways, innate immunity, and metabolic regulation. Studies across vertebrate systems suggest roles in antiviral defense, inflammatory modulation, and oxidative stress adaptation. These functions are likely conserved in zebrafish, where microRNA networks guide tissue remodeling, regeneration, and environmental resilience. The enzyme's broad regulatory scope makes it a key focus for researchers exploring how RNA based mechanisms control organismal development and adaptation.

The Zebrafish Dicer antibody is suitable for research applications such as western blotting, immunohistochemistry, and related assays evaluating Dicer expression across tissues and developmental stages. This reagent detects endogenous Dicer protein without implying epitope mapping or literature validated specificity. NSJ Bioreagents provides the Zebrafish Dicer antibody to support studies in microRNA biogenesis, embryonic patterning, neural development, and RNA mediated gene regulation.

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

Application Notes

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

Immunogen

An E.coli-derived zebrafish Dicer1 recombinant protein (amino acids Y1522-N1865) was used as the immunogen for the Zebrafish Dicer antibody.

Storage

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