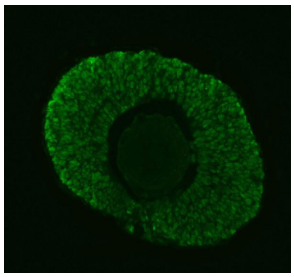
Zebrafish Dgcr8 Antibody / DiGeorge syndrome critical region gene eight (RZ1217)

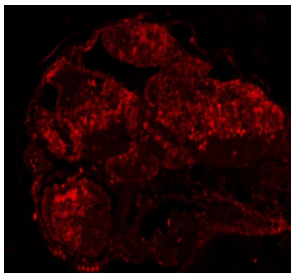
Catalog No.	Formulation	Size
RZ1217	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

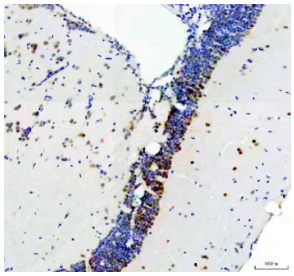
Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	A2BEG3
Localization	Nucleus, Nucleolus
Applications	Immunofluorescence : 5ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish Dgcr8 antibody is available for research use only.



Zebrafish Dgcr8 Antibody Embryo Tissue IF. Immunofluorescent analysis of Dgcr8 protein using Zebrafish Dgcr8 antibody (green) in zebrafish embryo tissue. Signal is distributed throughout embryonic cell populations with prominent intracellular localization. HIER: steam section in pH8 EDTA buffer for 20 min.



Zebrafish Dgcr8 Antibody Embryo Section IF. Immunofluorescent analysis of Dgcr8 protein using Zebrafish Dgcr8 antibody (red) in zebrafish embryo tissue. Distinct cellular staining highlights widespread expression across developing embryonic structures. HIER: steam section in pH8 EDTA buffer for 20 min.



Zebrafish Dgcr8 Antibody Brain Tissue IHC. Immunohistochemistry staining of FFPE zebrafish brain tissue with Dgcr8 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

The Zebrafish Dgcr8 antibody targets Dgcr8, a nuclear RNA-binding protein essential for primary microRNA processing, neural development, and embryonic patterning in Danio rerio. Zebrafish, also known as Danio rerio, express dgcr8 as the core double-stranded RNA-binding partner of Drosha within the Microprocessor complex. Dgcr8 recognizes and stabilizes pri-miRNA hairpins, enabling Drosha-mediated cleavage and generating pre-miRNAs that enter the cytoplasmic RNA interference pathway. This nuclear role positions Dgcr8 at the top of microRNA biogenesis, influencing gene-regulatory networks that control cell fate, proliferation, and differentiation during early development.

Dgcr8 belongs to the DiGeorge syndrome critical region gene family and contains two double-stranded RNA-binding domains that facilitate recognition of miRNA precursors. In zebrafish embryos, dgcr8 is expressed broadly but becomes enriched in proliferative and neurogenic territories including the neural tube, developing forebrain, somites, and hematopoietic regions. Loss-of-function studies demonstrate that Dgcr8 is required for normal body axis formation, neural differentiation, craniofacial development, and organogenesis. A Zebrafish Dgcr8 antibody is suitable for research applications examining nuclear expression, microRNA pathway regulation, and developmental consequences of altered post-transcriptional gene control.

Dgcr8 influences multiple developmental pathways through its regulation of microRNA maturation. By shaping the abundance of miRNAs that govern Wnt, Fgf, Notch, and Hedgehog signaling, Dgcr8 indirectly affects patterning decisions across the embryo. In the nervous system, proper Dgcr8 function supports neuronal lineage specification, axon guidance, and neural progenitor maintenance. In hematopoietic tissues, it contributes to the establishment of early progenitor pools by ensuring appropriate regulation of differentiation-related transcripts. Dgcr8 also plays roles in cardiac and craniofacial development, as miRNA-dependent gene networks influence cell migration, proliferation, and morphological remodeling.

Structurally, zebrafish Dgcr8 contains the conserved RNA-binding domains and dimerization regions characteristic of Microprocessor components. These domains enable selective recognition of pri-miRNA hairpins and recruitment of Drosha for precise endonucleolytic processing. Zebrafish dgcr8 maps to chromosome 1, with regulatory elements supporting early, widespread transcription followed by refined localization in neurogenic and organogenic tissues. Co-localization studies often detect Dgcr8 within the nucleus alongside Drosha and other processing factors, confirming its placement within the core miRNA biogenesis machinery.

A Zebrafish Dgcr8 antibody is suitable for detecting Dgcr8 in studies investigating microRNA pathway regulation, neural development, craniofacial formation, and differentiation processes in Danio rerio. Its nuclear localization provides a readout of active Microprocessor activity and allows researchers to map regions where microRNA production shapes developmental trajectories. Because disruptions in miRNA pathways affect numerous signaling circuits, Dgcr8 serves as

a valuable marker for examining genetic regulation, cell-type specification, and molecular responses to developmental perturbations. These features make the antibody an important tool for understanding post-transcriptional regulation, gene network coordination, and embryonic patterning, and this reagent is supplied for research use by NSJ Bioreagents.

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

Application Notes

Optimal dilution of the Zebrafish Dgcr8 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Dgcr8 recombinant protein (amino acids K570-Q771) was used as the immunogen for the Zebrafish Dgcr8 antibody.

Storage

After reconstitution, the Zebrafish Dgcr8 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.