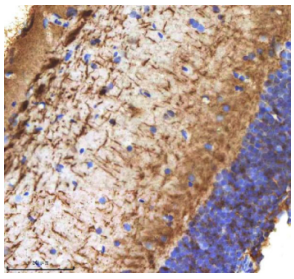
Zebrafish Cxcl12 Antibody / Cxcl12a / Cxcl12b (RZ1211)

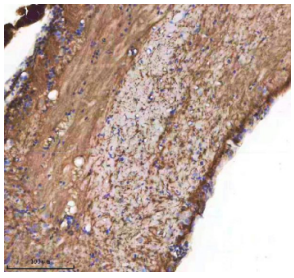
Catalog No.	Formulation	Size
RZ1211	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

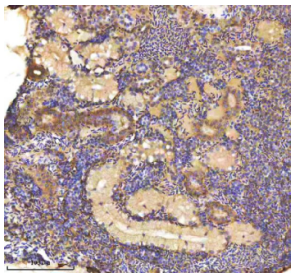
Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q8AV10
Applications	Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish Cxcl12 antibody is available for research use only.



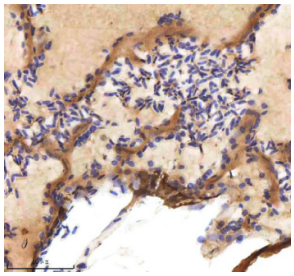
Zebrafish Cxcl12 Antibody Brain Tissue IHC. Immunohistochemistry staining of zebrafish Cxcl12 protein using Zebrafish Cxcl12 antibody, HRP-labeled secondary and DAB substrate. Cxcl12 was detected in a paraffin-embedded section of zebrafish brain tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



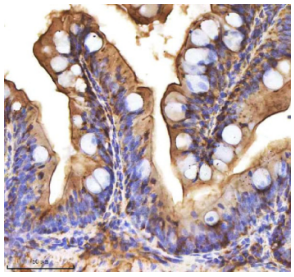
Zebrafish Cxcl12 Antibody Spinal Cord Tissue IHC. Immunohistochemistry staining of zebrafish Cxcl12 protein using Zebrafish Cxcl12 antibody, HRP-labeled secondary and DAB substrate. Cxcl12 was detected in a paraffin-embedded section of zebrafish spinal cord tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Cxcl12 Antibody Kidney Tissue IHC. Immunohistochemistry staining of zebrafish Cxcl12 protein using Zebrafish Cxcl12 antibody, HRP-labeled secondary and DAB substrate. Cxcl12 was detected in a paraffin-embedded section of zebrafish kidney tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Cxcl12 Antibody Heart Tissue IHC. Immunohistochemistry staining of zebrafish Cxcl12 protein using Zebrafish Cxcl12 antibody, HRP-labeled secondary and DAB substrate. Cxcl12 was detected in a paraffin-embedded section of zebrafish heart tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Cxcl12 Antibody Colon Tissue IHC. Immunohistochemistry staining of zebrafish Cxcl12 protein using Zebrafish Cxcl12 antibody, HRP-labeled secondary and DAB substrate. Cxcl12 was detected in a paraffin-embedded section of zebrafish colon tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

The Zebrafish Cxcl12 antibody targets Cxcl12, a chemokine essential for cell migration, hematopoietic stem cell guidance, and organogenesis in Danio rerio. Zebrafish, also known as Danio rerio, express two co-orthologs, cxcl12a and cxcl12b, which arose from the teleost genome duplication. Both encode secreted chemokines belonging to the CXC family and function as guidance cues in tissues undergoing directed cell migration. Cxcl12 proteins localize primarily to extracellular and pericellular spaces, where they interact with receptors including Cxcr4 and Cxcr7, generating chemotactic gradients that shape developmental patterning and tissue architecture.

Cxcl12a and Cxcl12b contribute to diverse processes including endoderm migration, germ cell positioning, vascular assembly, and neural crest patterning. In zebrafish embryos, cxcl12a is broadly expressed along migratory routes for primordial germ cells, while cxcl12b plays a more prominent role in vascular and cardiac morphogenesis. A Zebrafish Cxcl12 antibody is suitable for research applications focused on extracellular distribution, chemotactic signaling, and spatial guidance mechanisms that regulate early developmental movements.

The Cxcl12 signaling axis is particularly important for hematopoietic stem and progenitor cell development. In the posterior blood island and kidney marrow analog, Cxcl12 establishes gradients that control stem cell retention, homing, and proliferation. Its interaction with Cxcr4-expressing progenitors is a conserved mechanism across vertebrates. Beyond hematopoiesis, Cxcl12 regulates organ patterning by directing cell migration in the developing pancreas, gut, neural tube, and craniofacial regions. In cardiac development, cxcl12b expression marks endocardial and myocardial territories where chemokine signaling coordinates lumen formation and chamber morphogenesis.

Structurally, zebrafish Cxcl12 proteins share the conserved CXC chemokine signature with an N-terminal signal peptide for secretion and a core chemokine fold stabilized by disulfide bonds. Zebrafish cxcl12a maps to chromosome 5, while cxcl12b is located on chromosome 16, with distinct regulatory regions driving differential spatial expression. Co-localization studies frequently detect Cxcl12 in extracellular matrices adjacent to migrating cell populations, vascular precursors, and neural crest derivatives. These patterns reflect its role in creating microenvironmental cues that guide

morphogenetic processes and maintain progenitor niches.

A Zebrafish Cxcl12 antibody is suitable for detecting Cxcl12 in developmental studies examining directed cell migration, hematopoietic stem cell guidance, angiogenesis, and organ formation in Danio rerio. Its extracellular localization provides valuable insight into chemokine gradient formation and the spatial regulation of signaling pathways controlling progenitor behavior and tissue patterning. Cxcl12 expression responds dynamically to developmental stage and tissue context, making it a key marker for investigating migratory guidance systems and chemokine-controlled morphogenesis. These characteristics support research into vascular biology, neural crest migration, immune system development, and progenitor niche formation, 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 Cxcl12 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Cxcl12 recombinant protein (amino acids K24-V99) was used as the immunogen for the Zebrafish Cxcl12 antibody.

Storage

After reconstitution, the Zebrafish Cxcl12 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.