# Zebrafish Gata4 Antibody / GATA-binding factor 4 (RZ1186)

| Catalog No. | Formulation | Size |
|---|---|---|
| RZ1186 | 0.5mg/ml if reconstituted with 0.2ml sterile DI water | 100 ug |

**Bulk quote request**

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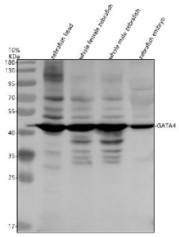
| **Availability** | 2-3 weeks |
| **Species Reactivity** | Zebrafish |
| **Format** | Antigen affinity purified |
| **Host** | Rabbit |
| **Clonality** | Polyclonal (rabbit origin) |
| **Isotype** | Rabbit Ig |
| **Purity** | Antigen affinity chromatography |
| **Buffer** | Lyophilized from 1X PBS with 2% Trehalose |
| **UniProt** | Q09JY7 |
| **Applications** | Western Blot : 0.5-1ug/ml |
| **Limitations** | This Zebrafish Gata4 antibody is available for research use only. |



Zebrafish Gata4 Antibody Tissue WB. Western blot analysis of Gata4 protein using Zebrafish Gata4 antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish and 4) zebrafish embryo tissue lysate. Predicted molecular weight ~38 kDa.

## Description

Zebrafish (Danio rerio) Gata4 antibody detects Gata4, a zinc finger transcription factor essential for early embryonic patterning, heart development, and endodermal organ formation. Encoded by the gata4 gene, GATA-binding factor 4 regulates transcription of genes involved in cardiogenesis, gut tube morphogenesis, epithelial differentiation, and mesoderm-endoderm signaling. As a founding member of the GATA family, Gata4 binds conserved WGATAR motifs across enhancer and promoter regions, activating gene networks that drive organ specification and morphogenetic movements. Because these developmental processes are highly conserved across vertebrates, Zebrafish Gata4 antibody reagents support research in cardiac development, endoderm formation, transcriptional regulation, and organogenesis.

In zebrafish embryos, gata4 expression begins during early gastrulation within mesendodermal populations and rapidly becomes enriched in developing heart fields, anterior lateral plate mesoderm, and the forming gut. During cardiogenesis, Gata4 works cooperatively with other cardiac transcription factors such as Gata5, Gata6, Nkx2.5, Hand2, and Tbx20 to promote cardiac progenitor specification, myocardial differentiation, and chamber morphogenesis. Loss or reduction of Gata4 activity can result in defects in cardiac looping, chamber formation, myocardial proliferation, and overall heart function.

Beyond its roles in the heart, Gata4 plays major functions in endodermal development. It helps specify endodermal progenitors and regulates genes essential for morphogenesis of the liver, pancreas, swim bladder, and intestinal epithelium. In the developing liver, Gata4 supports hepatoblast specification and early differentiation, while in the pancreas it cooperates with transcriptional partners to influence endocrine and exocrine lineage commitment. These roles mirror conserved functions described in mammals, emphasizing the translational relevance of zebrafish Gata4 studies.

Gata4 also participates in epithelial integrity and tissue remodeling. It regulates extracellular matrix genes, cell adhesion molecules, and junctional components required for coordinated cell movements during organ budding. In zebrafish cardiac tissue, Gata4 influences the migration of myocardial precursors and supports the mechanical and structural maturation of the forming ventricle. Because many congenital heart defects arise from disruptions in early transcriptional circuits, Gata4 remains a central focus of developmental cardiac research.

At the molecular level, GATA-binding factor 4 contains two zinc finger domains that recognize conserved GATA sequences and recruit co-factors including FOG proteins, chromatin remodelers, and histone-modifying enzymes. These interactions allow Gata4 to act as both a transcriptional activator and a pioneer factor capable of opening chromatin to enable access by other regulators. Subcellular localization is nuclear, with dynamic regulation dependent on developmental cues, signaling pathways such as BMP, FGF, and Hedgehog, and interactions with binding partners.

Gata4 remains active beyond embryogenesis, contributing to cardiac hypertrophy responses, tissue repair, and organ homeostasis. In zebrafish, which possess a high regenerative capacity, Gata4 expression is reactivated in injured myocardium and supports regeneration, making it a valuable marker for studies in cardiac repair biology.

A Zebrafish Gata4 antibody is suitable for research applications such as western blotting, immunohistochemistry, and assays examining cardiac development, endodermal organogenesis, transcriptional regulation, and vertebrate tissue morphogenesis. This antibody targets GATA-binding factor 4 and supports investigations of conserved transcriptional programs guiding embryonic development. NSJ Bioreagents provides the Zebrafish Gata4 antibody to support research in cardiac and endodermal biology.

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

## Application Notes

Optimal dilution of the Zebrafish Gata4 antibody should be determined by the researcher.

## Immunogen

E. coli-derived zebrafish Gata4 recombinant protein (amino acids M1-M332) was used as the immunogen for the Zebrafish Gata4 antibody.

## Storage

After reconstitution, the Zebrafish Gata4 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.