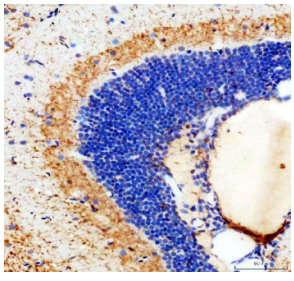
Zebrafish Stat3 Antibody / Signal transducer and activator of transcription 3 (RZ1195)

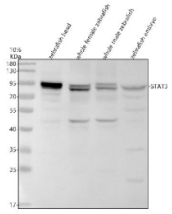
Catalog No.	Formulation	Size
RZ1195	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

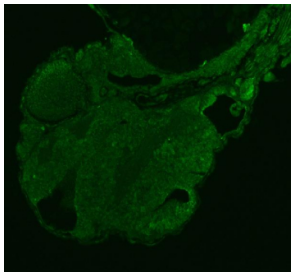
Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	A0A8M2BAX1
Localization	Cytoplasm, nucleus
Applications	Western Blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml Immunofluorescence: 5ug/ml
Limitations	This Zebrafish Stat3 antibody is available for research use only.



Zebrafish Stat3 Antibody Brain Tissue IHC. Immunohistochemistry staining of FFPE zebrafish brain tissue with Zebrafish Stat3 antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Stat3 Antibody Tissue WB. Western blot analysis of Stat3 protein using Zebrafish Stat3 antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish and 4) zebrafish embryo tissue lysate. Predicted molecular weight ~92 kDa.



Zebrafish Stat3 Antibody Embryo Tissue IF. Immunofluorescent staining of FFPE human zebrafish embryo tissue with Zebrafish Stat3 antibody (green). HIER: steam section in pH8 EDTA buffer for 20 min.

Description

Zebrafish Stat3 antibody detects Stat3, a transcription factor that mediates cytokine and growth factor signaling and plays essential roles in cell survival, proliferation, inflammation, and regeneration. In zebrafish (Danio rerio), Stat3 is a central component of the JAK-STAT signaling cascade and contributes to diverse developmental and physiological processes, including neural development, immune function, and tissue repair. Known in the literature as Signal transducer and activator of transcription 3, Stat3 acts downstream of cytokines such as IL-6 family ligands and interferons, integrating extracellular cues into transcriptional programs that shape vertebrate development. Because Stat3-dependent signaling is conserved across species, Zebrafish Stat3 antibody reagents support research in developmental biology, immunology, and regenerative mechanisms.

During early zebrafish embryogenesis, stat3 expression is broadly detected in neural tissues, mesodermal derivatives, and hematopoietic regions. Stat3 contributes to neuronal differentiation, maintenance of neural progenitors, and axon guidance. It also plays roles in gastrulation movements, where Stat3 regulates cell adhesion and migration, helping orchestrate coordinated tissue rearrangements. Scientific literature frequently uses Danio rerio naming conventions for zebrafish proteins such as Stat3, and terms such as Danio Stat3 or Danio rerio Stat3 often appear interchangeably with zebrafish terminology.

Signal transducer and activator of transcription 3 is activated through phosphorylation by JAK kinases following receptor engagement by cytokines or growth factors. Activated Stat3 dimerizes and translocates into the nucleus, where it binds target gene promoters and enhancers to regulate transcription. Genes controlled by Stat3 include regulators of proliferation, apoptosis, immune responses, and metabolic pathways. In zebrafish, Stat3 activity supports proper development of the liver, pancreas, blood system, and components of the central nervous system.

Stat3 has particularly important roles in inflammation and immune regulation. It is activated in macrophages, neutrophils, endothelial cells, and lymphoid tissues during immune responses to infection or injury. Stat3 signaling modulates cytokine production, promotes cell survival, and helps limit excessive inflammation, preventing tissue damage. Because zebrafish provide high-resolution in vivo imaging and immune accessibility, they have become a valuable model for studying Stat3-dependent innate immune signaling.

Zebrafish are also widely used to investigate regenerative biology, and Stat3 plays a key role in these processes. Following tissue injury, Stat3 becomes rapidly activated and promotes proliferation of progenitor cells, supports wound closure, and aids recovery of neural, muscular, and epithelial tissues. In fin, heart, and spinal cord regeneration models, Stat3 activation is required for efficient regrowth, highlighting the transcription factorÃ¢Â€Â™s importance in vertebrate repair mechanisms.

At the molecular level, Stat3 interacts with numerous co-regulators and chromatin remodeling complexes, enabling context-specific transcriptional outcomes. Its nuclear localization, DNA-binding HTH domain, and post-translational modifications influence target gene selection and transcriptional potency. Because of these versatile functions, Stat3 governs developmental transitions and dynamic stress responses in zebrafish tissues.

A Zebrafish Stat3 antibody is suitable for research applications such as western blotting, immunohistochemistry, and assays examining cytokine signaling, neural development, immune responses, and tissue regeneration. This antibody targets Signal transducer and activator of transcription 3 for studies involving JAK-STAT signaling and vertebrate developmental regulation. NSJ Bioreagents provides the Zebrafish Stat3 antibody to support research in immunology and regenerative 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 Stat3 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Stat3 recombinant protein (amino acids K64-S335) was used as the immunogen for the Zebrafish Stat3 antibody.

Storage

After reconstitution, the Zebrafish Stat3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

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