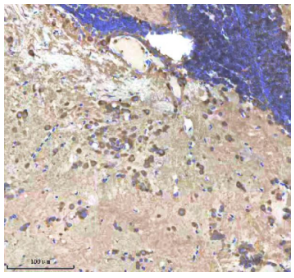
Zebrafish Shha Antibody / Shh / Sonic Hedgehog (RZ1309)

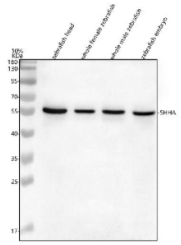
Catalog No.	Formulation	Size
RZ1309	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

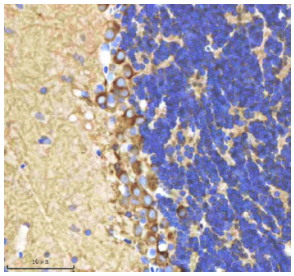
Availability	2-3 weeks
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q92008
Localization	Cytoplasm (ER, Golgi), cell membrane
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish Shha antibody is available for research use only.



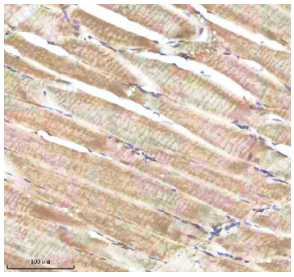
Zebrafish Shha antibody brain tissue IHC. Immunohistochemistry staining of Sonic Hedgehog protein in FFPE zebrafish brain tissue with Shha antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



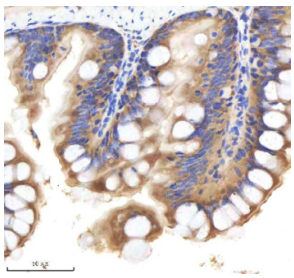
Zebrafish Shha antibody head/whole body/embryo WB. Western blot analysis of Sonic Hedgehog protein using Zebrafish Shha antibody and 1) zebrafish head, 2) whole female zebrafish, 3) whole male zebrafish and 4) zebrafish embryo tissue lysate. Predicted molecular weight ~46 kDa.



Zebrafish Shha antibody cerebellum tissue IHC. Immunohistochemistry staining of Sonic Hedgehog protein in FFPE zebrafish cerebellum tissue with Shha antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Shha antibody muscle tissue IHC. Immunohistochemistry staining of Sonic Hedgehog protein in FFPE zebrafish muscle tissue with Shha antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.



Zebrafish Shha antibody colon tissue IHC. Immunohistochemistry staining of Sonic Hedgehog protein in FFPE zebrafish colon tissue with Shha antibody, HRP-labeled secondary and DAB substrate. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Zebrafish Shha antibody embryo tissue IHC. Immunohistochemistry staining of Sonic Hedgehog protein in FFPE zebrafish embryo tissue with Shha 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 Shha antibody targets Shha, also known as Shh or Sonic Hedgehog, a secreted morphogen that plays a central role in embryonic patterning, tissue specification, and organogenesis in Danio rerio. Zebrafish, also known as Danio rerio, possess duplicated hedgehog genes, with shha serving as the primary ligand controlling midline signaling during early development. Shha is synthesized as a precursor protein that undergoes autocatalytic processing to generate an active N-terminal signaling fragment, which is secreted and acts over short and long ranges to regulate cell fate decisions. Shha expression is strongly enriched in the notochord, floor plate of the neural tube, ventral forebrain, somites, and developing musculature, reflecting its essential role in axial and ventral patterning.

Shha belongs to the Hedgehog family of signaling proteins and functions through binding to the Patched receptor, relieving repression of Smoothened and activating Gli-dependent transcriptional programs. In zebrafish embryos, Shha establishes concentration gradients that instruct dorsoventral neural tube patterning, specify motor neuron progenitors, regulate somite differentiation, and guide craniofacial and eye development. A Zebrafish Shha antibody is suitable for detecting Shha expression in midline and ventral tissues where hedgehog signaling coordinates morphogenetic programs and spatial organization during development.

Functionally, Shha is indispensable for proper embryonic patterning. It directs differentiation of ventral neural cell types, including floor plate cells and motor neurons, and regulates slow muscle fiber formation in somites. Shha signaling also influences left-right asymmetry, vascular patterning, and organ boundary formation by controlling proliferation and differentiation of progenitor populations. In zebrafish, loss or disruption of shha leads to severe defects such as cyclopia, impaired neural tube patterning, abnormal muscle development, and disrupted organogenesis, underscoring its role as a master developmental regulator. Because hedgehog signaling intersects with pathways such as Wnt, Fgf, Bmp, and Notch, Shha acts as an integrative signal coordinating multiple developmental inputs.

Structurally, zebrafish Shha is produced as a precursor that undergoes cleavage and lipid modification, including cholesterol attachment, which restricts diffusion and shapes signaling gradients. These biochemical features enable precise spatial control of hedgehog signaling during tissue patterning. The zebrafish shha gene maps to chromosome 7 and is transcriptionally regulated by early embryonic patterning cues and feedback mechanisms within the hedgehog pathway. Co-localization studies detect Shha protein along the notochord and floor plate, with downstream pathway activation evident in adjacent responding tissues, highlighting its role as a classic morphogen.

A Zebrafish Shha antibody is suitable for detecting Shha in studies focused on embryonic patterning, neural development, muscle differentiation, and hedgehog pathway signaling in Danio rerio. Its characteristic midline and ventral expression patterns make it a valuable marker for analyzing axial development, signaling gradients, and pathway perturbations in genetic or chemical models. Researchers use Shha expression to study congenital malformations, investigate pathway cross-talk during organogenesis, and map spatial domains of hedgehog activity throughout development. This antibody 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 Shha antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Shha recombinant protein (amino acids Q208-H409) was used as the immunogen for the Zebrafish Shha antibody.

Storage

After reconstitution, the Zebrafish Shha 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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