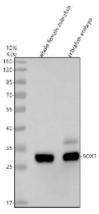
Zebrafish Sox3 Antibody / SRY-box 3 (RZ1194)

Catalog No.	Formulation	Size
RZ1194	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
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity chromatography
Buffer	Lyophilized from 1X PBS with 2% Trehalose
UniProt	Q6EJB7
Applications	Western Blot : 0.5-1ug/ml
Limitations	This Zebrafish Sox3 antibody is available for research use only.



Western blot analysis of Sox3 protein using Zebrafish Sox3 antibody and 1) whole female zebrafish tissue lysates and 2) zebrafish embryo tissue lysates. Predicted molecular weight ~33 kDa.

Description

Zebrafish Sox3 antibody detects Sox3, a high-mobility group (HMG) box transcription factor essential for early neural specification, progenitor maintenance, and germ cell development. In zebrafish (Danio rerio), Sox3 is one of the earliest markers of neural ectoderm and contributes to establishing transcriptional programs that regulate neural induction, anterior brain formation, and patterning of the central nervous system. Known in the literature as SRY-box 3, Sox3 is part of the SoxB1 family, which also includes Sox1 and Sox2, all of which function as key regulators of pluripotency and neural determination. Because Sox3 activity is deeply conserved across vertebrates, Zebrafish Sox3 antibody reagents support research in neural development, gene regulation, and early embryonic patterning.

During early gastrulation, sox3 is broadly expressed across the presumptive neural plate, where it helps maintain neural progenitors and prevent premature differentiation. Sox3 acts upstream of pathways controlling neurogenesis, influencing expression of proneural genes and interacting with Notch, FGF, and BMP signaling to coordinate neural plate formation. As embryonic tissues mature, Sox3 expression becomes enriched in regions of the forebrain, midbrain, and sensory placodes. In scientific literature, zebrafish proteins such as Sox3 are commonly described using Danio rerio naming, and terms such as Danio Sox3 or Danio rerio Sox3 appear interchangeably with zebrafish naming conventions.

SRY-box 3 also plays a significant role in germ cell development and sex determination pathways. Zebrafish models have shown that Sox3 contributes to the specification or maintenance of primordial germ cells and may influence aspects of gonadal differentiation. Its involvement in both neural and germline development reflects functional versatility that is shared across vertebrate systems.

Within the neural lineage, Sox3 cooperates with other SoxB1 factors to maintain progenitor characteristics by repressing differentiation-promoting transcription factors. This ability to preserve a progenitor state is essential for proper brain morphogenesis, anterior neural tube shaping, and establishment of sensory structures. In the developing eye and cranial placodes, Sox3 participates in early lineage specification and influences the formation of sensory neurons and epithelial derivatives.

At the molecular level, Sox3 binds DNA through its conserved HMG box domain, recognizing specific motifs and bending DNA to facilitate interactions with co-regulators. Depending on cellular context, Sox3 can function as a transcriptional activator or repressor. By partnering with chromatin remodelers, co-activators, and other transcription factors, Sox3 helps establish open chromatin regions and activates lineage-defining regulatory elements. Subcellular localization is nuclear, consistent with its function in transcriptional control.

Sox3 also plays critical roles in balancing proliferation and differentiation. In neural progenitors, it maintains appropriate cell cycle regulation to support expansion of neural precursor pools. In germline development, Sox3 influences cell identity and supports developmental transitions required for reproductive maturation.

A Zebrafish Sox3 antibody is suitable for research applications such as western blotting, immunohistochemistry, and assays examining neural induction, progenitor maintenance, germ cell biology, and early embryonic development. This antibody targets SRY-box 3 for studies involving transcriptional networks that govern vertebrate neural and reproductive development. NSJ Bioreagents provides the Zebrafish Sox3 antibody to support research in developmental and stem cell biology.

Application Notes

Optimal dilution of the Zebrafish Sox3 antibody should be determined by the researcher.

Immunogen

E. coli-derived zebrafish Sox3 recombinant protein (amino acids Q141-Q285) was used as the immunogen for the Zebrafish Sox3 antibody.

Storage

After reconstitution, the Zebrafish Sox3 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.