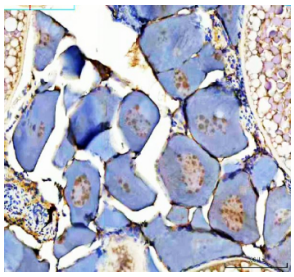
Zebrafish Dmrt1 Antibody / Doublesex and mab 3 related transcription factor 1 Antibody (RZ1017)

Catalog No.	Formulation	Size
RZ1017	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	Q71MM5
RRID	AB_3757219
Localization	Nuclear
Applications	Immunohistochemistry (FFPE): 2-5 ug/ml
Limitations	This Zebrafish Dmrt1 antibody is available for research use only.



Zebrafish Dmrt1 Antibody Ovary IHC. Immunohistochemical analysis of Zebrafish Dmrt1 protein using Zebrafish Dmrt1 antibody and zebrafish ovary tissue. HIER: boil tissue sections in pH8 EDTA for 20 min and allow to cool before testing.

Description

Zebrafish (Danio rerio) Dmrt1 antibody recognizes Doublesex and mab 3 related transcription factor 1, a conserved regulator of sex determination, gonadal development, and germ cell maintenance in Danio rerio. Dmrt1 is encoded by the

zebrafish dmrt1 gene on chromosome 4 and belongs to the DM domain transcription factor family. These proteins contain a zinc-binding DM DNA-binding domain that controls transcriptional programs involved in sexual differentiation and reproductive tissue formation. In zebrafish, Dmrt1 is expressed during early embryogenesis in the developing gonadal ridge, primordial germ cells, and supporting somatic cells that contribute to testis formation. Subcellular localization is predominantly nuclear, consistent with its role as a transcriptional regulator, though cytoplasmic pools may exist during specific developmental stages.

Doublesex and mab 3 related transcription factor 1 plays a central role in male gonad differentiation by promoting testis development and repressing ovarian pathways. Dmrt1 helps maintain spermatogonial stem cell identity and regulates the transition from undifferentiated germ cells to maturing spermatocytes. In zebrafish, Dmrt1 is required for establishing testis-specific gene expression programs, guiding proliferation of Sertoli cell precursors, and ensuring proper formation of testicular cords. Loss of dmrt1 function results in feminization, disrupted germ cell development, and altered reproductive tissue architecture, highlighting its importance in maintaining sex-specific developmental trajectories.

Beyond gonadal regulation, Dmrt1 influences broader developmental pathways, including germ cell migration, somatic-germline communication, and endocrine signaling. Zebrafish studies demonstrate that Dmrt1 interacts with transcriptional networks that modulate steroidogenesis, germ cell survival, and meiosis. Dmrt1 also participates in feedback regulation with hormone receptors and signaling factors that shape reproductive tissue maturation. Developmentally, its expression increases during gonadal differentiation and remains active in adult male testes, where it continues to govern germ cell maintenance and spermatogenic progression.

Dmrt1 is additionally relevant in stress response and environmental toxicity studies. In zebrafish, exposure to endocrine-disrupting compounds can alter dmrt1 expression, leading to impaired sex differentiation and reproductive failure. Because zebrafish are widely used for studying environmental effects on sexual development, Dmrt1 serves as a sensitive molecular marker for analyzing how chemical or genetic perturbations impact reproductive pathways. Isoform variation may arise through alternative regulatory elements and could influence transcriptional activity or tissue-specific expression patterns.

Across vertebrates, DMRT family proteins have been implicated in disorders of sex development, germ cell tumors, and reproductive dysfunction. While zebrafish do not display the same disease spectrum as mammals, conserved roles in germ cell regulation make Dmrt1 useful for modeling foundational aspects of reproductive biology, lineage specification, and sexual differentiation. Its involvement in DNA-binding regulatory networks also intersects with mechanisms guiding cell fate decisions during early embryogenesis.

This Zebrafish Dmrt1 antibody is suitable for detecting Doublesex and mab 3 related transcription factor 1 in research focused on sex determination, germ cell biology, gonadal development, endocrine signaling, and environmental influences on reproductive pathways in zebrafish. It supports studies examining transcriptional networks that regulate testis formation, germline maintenance, and embryonic determinants of sexual fate. NSJ Bioreagents provides this reagent within its zebrafish and reproductive biology antibody collection.

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

Application Notes

Optimal dilution of the Zebrafish Dmrt1 antibody should be determined by the researcher.

Immunogen

An E.coli-derived zebrafish Dmrt1 recombinant protein (amino acids R44-E76) was used as the immunogen for the Zebrafish Dmrt1 antibody.

Storage

After reconstitution, the Zebrafish Dmrt1 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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