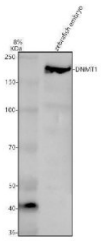
Zebrafish DNMT1 Antibody / DNA Methyltransferase 1 Antibody (RZ1423)

Catalog No.	Formulation	Size
RZ1423	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Lyophilized from a buffered saline solution containing 2% trehalose. Reconstitute with 0.2 mL distilled water to yield a final antibody concentration of 500 ug/mL.
UniProt	A0A8M6YUX4
Applications	Western blot: 0.5-1ug/ml
Limitations	This Zebrafish DNMT1 Antibody / DNA Methyltransferase 1 Antibody is available for research use only.



Zebrafish DNMT1 Antibody WB. Western blot analysis of DNMT1 using anti-DNMT1 antibody demonstrates a distinct immunoreactive band at approximately 169 kDa in zebrafish embryo lysate, consistent with the expected molecular weight of DNA Methyltransferase 1 (DNMT1). DNMT1 is a key epigenetic regulation enzyme responsible for maintenance of genomic DNA methylation patterns during DNA replication and cellular division. The observed expression in zebrafish embryo tissue is consistent with the essential role of DNMT1 in vertebrate development, genome stability, and epigenetic inheritance. Western blot was performed using 0.5 ug/ml primary antibody. Predicted molecular weight: ~169 kDa.

Description

Zebrafish DNMT1 Antibody / DNA Methyltransferase 1 Antibody is designed for the detection and study of DNMT1, a highly conserved DNA methyltransferase responsible for maintenance of genomic DNA methylation patterns during cell division. DNMT1 plays a central role in epigenetic regulation by copying methylation marks from parental DNA strands to newly synthesized daughter strands, thereby preserving cellular identity and gene expression programs throughout development. Because DNA methylation is a fundamental mechanism of transcriptional regulation, DNMT1 is essential for normal embryogenesis, tissue differentiation, and long-term genome stability in zebrafish.

As the primary maintenance DNA methyltransferase, DNMT1 helps ensure faithful inheritance of epigenetic information during cellular proliferation. The enzyme contributes to regulation of chromatin structure, transcriptional silencing, genomic imprinting, and suppression of transposable elements. Loss or disruption of DNMT1 activity can lead to widespread alterations in gene expression, developmental abnormalities, and genomic instability, highlighting its importance in normal vertebrate development and cellular homeostasis.

Zebrafish have become an important model for investigating epigenetic mechanisms during embryogenesis, organ formation, stem cell biology, and tissue regeneration. DNMT1 expression is particularly relevant in rapidly proliferating tissues where maintenance of DNA methylation patterns is required for proper cellular differentiation and developmental progression. Studies of zebrafish DNMT1 have provided valuable insight into how epigenetic modifications regulate developmental pathways and coordinate complex gene expression networks during vertebrate growth.

Beyond developmental biology, DNMT1 is widely studied in the context of cancer biology, aging, regenerative medicine, and environmental epigenetics. Altered DNA methylation patterns are associated with numerous disease processes, making DNMT1 an important target for understanding how epigenetic regulation influences cellular function under both normal and pathologic conditions. The strong evolutionary conservation of DNMT1 further supports the utility of zebrafish as a model system for investigating DNA methylation-dependent regulatory pathways relevant to human health and disease.

Zebrafish DNMT1 Antibody is suitable for applications including western blotting, immunohistochemistry, and immunofluorescence. Researchers use this antibody to evaluate DNMT1 expression, investigate epigenetic regulatory mechanisms, and study DNA methylation-associated pathways involved in development, differentiation, genome maintenance, and chromatin biology.

This antibody can be compared with our DNMT1 Antibody for consistent detection of DNMT1 across DNA methylation and epigenetic regulation studies.

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

Application Notes

The optimal working dilution of the Zebrafish DNMT1 Antibody / DNA Methyltransferase 1 Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish DNA Methyltransferase 1 recombinant protein (amino acids E11-D1505) was used as the immunogen for the Zebrafish DNMT1 Antibody.

Storage

After reconstitution, the Zebrafish DNMT1 Antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.

Alternate Names

Zebrafish DNMT1 Antibody, Zebrafish DNA Methyltransferase 1 Antibody, Zebrafish DNA Cytosine-5 Methyltransferase Antibody, Zebrafish Maintenance DNA Methyltransferase Antibody, Zebrafish CpG Methyltransferase Antibody, Zebrafish Epigenetic Regulation Enzyme Antibody, Zebrafish DNA Methylation Enzyme Antibody

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