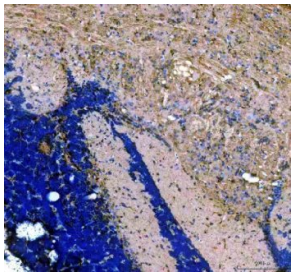
Zebrafish PIWIL1 Antibody / Piwi-like Protein 1 Antibody (RZ1395)

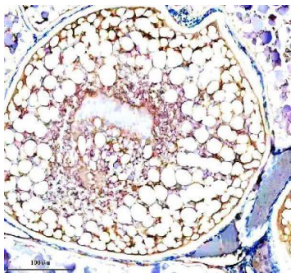
Catalog No.	Formulation	Size
RZ1395	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

Bulk quote request

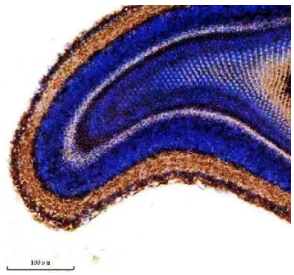
Species Reactivity	Zebrafish
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Buffer	Lyophilized from a buffered saline solution containing 2% trehalose. Reconstitute with 0.2 mL distilled water to yield a final antibody concentration of 500 ug/mL.
UniProt	Q8UVX0
Applications	Western Blot : 0.5-1ug/ml Immunohistochemistry (FFPE) : 2-5ug/ml
Limitations	This Zebrafish PIWIL1 Antibody / Piwi-like Protein 1 Antibody is available for research use only.



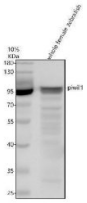
Zebrafish PIWIL1 Antibody IHC. Immunohistochemistry staining of paraffin-embedded zebrafish brain tissue using Zebrafish PIWIL1 Antibody / Piwi-like Protein 1 Antibody demonstrates cytoplasmic and perinuclear HRP-DAB brown staining within discrete cellular populations. The staining pattern is consistent with expression of PIWIL1 (Ziwi), a germline-associated PIWI family protein involved in piRNA-mediated gene silencing, transposon suppression, genome stability, and stem cell maintenance. PIWIL1 is a key regulator of germ cell development and reproductive biology and serves as an important marker for studies of germline specification and developmental genetics in zebrafish. HIER was performed using EDTA buffer. Tissue sections were blocked with 10% goat serum and incubated with primary antibody at 2 Âµg/ml overnight at 4Â°C prior to detection with HRP-conjugated secondary antibody and DAB chromogen.



Zebrafish PIWIL1 Antibody Ovary IHC. Immunohistochemistry staining of paraffin-embedded zebrafish ovary tissue using Zebrafish PIWIL1 Antibody / Piwi-like Protein 1 Antibody demonstrates cytoplasmic HRP-DAB brown staining within ovarian germ cell-associated compartments. The staining pattern is consistent with expression of PIWIL1 (Ziwi), a germline-specific PIWI family protein that regulates piRNA-mediated gene silencing, transposon suppression, genome integrity, and germ cell maintenance. PIWIL1 is an established marker of germline development and reproductive biology in zebrafish and plays a critical role in oogenesis and long-term preservation of germ cell populations. HIER was performed using EDTA buffer. Tissue sections were blocked with 10% goat serum and incubated with primary antibody at 2 Âµg/ml overnight at 4Â°C prior to detection with HRP-conjugated secondary antibody and DAB chromogen.



Zebrafish PIWIL1 Antibody Eye IHC. Immunohistochemistry staining of paraffin-embedded zebrafish eye tissue using Zebrafish PIWIL1 Antibody / Piwi-like Protein 1 Antibody demonstrates prominent HRP-DAB brown staining within retinal-associated cellular layers. The staining pattern is consistent with expression of PIWIL1 (Ziwi), a member of the PIWI family of Argonaute proteins that functions in piRNA-mediated gene regulation, transposon suppression, genome stability, and germline maintenance. In zebrafish, PIWIL1 is best known for its role in germ cell development, although PIWI-pathway proteins have also been implicated in broader developmental and stem cell regulatory processes. HIER was performed using EDTA buffer. Tissue sections were blocked with 10% goat serum and incubated with primary antibody at 2 Âµg/ml overnight at 4Â°C prior to detection with HRP-conjugated secondary antibody and DAB chromogen.



Zebrafish PIWIL1 Antibody WB. Western blot analysis of whole female zebrafish tissue lysate using Zebrafish PIWIL1 Antibody / Piwi-like Protein 1 Antibody demonstrates a prominent immunoreactive band at approximately 97 kDa. PIWIL1 (Ziwi) is a member of the PIWI subfamily of Argonaute proteins and is a key regulator of germ cell development, piRNA-mediated gene silencing, transposon suppression, and genome stability in zebrafish. Expression of PIWIL1 is closely associated with germline cell populations and reproductive tissues, making it an important marker for studies of developmental and reproductive biology. Thirty micrograms of protein lysate were resolved under reducing conditions on a 10% SDS-PAGE gel and transferred to nitrocellulose prior to immunodetection. The observed band supports detection of PIWIL1 in zebrafish tissue lysates by western blot analysis. Predicted molecular weight: ~97 kDa.

Description

Zebrafish PIWIL1 Antibody / Piwi-like Protein 1 Antibody detects PIWIL1, a member of the evolutionarily conserved PIWI subfamily of Argonaute proteins that plays an essential role in germ cell development, stem cell maintenance, and genome integrity. In zebrafish, PIWIL1 is commonly known as Ziwi and serves as a key regulator of primordial germ cell specification, migration, survival, and differentiation. Because of its highly restricted expression within the germline, PIWIL1 is widely used as a marker for germ cells during embryonic development and reproductive biology research.

PIWIL1 functions through interactions with PIWI-interacting RNAs (piRNAs), a specialized class of small non-coding RNAs that help suppress transposable element activity and maintain genomic stability. The PIWIL1-piRNA pathway is critical for protecting germ cell genomes from transposon-mediated damage, thereby preserving reproductive fitness and normal germline development. This highly conserved mechanism is found across numerous animal species and represents a fundamental pathway in reproductive biology and developmental genetics.

During zebrafish embryogenesis, PIWIL1 is expressed in primordial germ cells and continues to be associated with germline populations throughout development. Researchers frequently utilize zebrafish PIWIL1 expression as a tool for

tracking germ cell migration, evaluating germline establishment, and studying the molecular pathways that govern reproductive system development. The optical transparency of zebrafish embryos allows detailed visualization of these developmental processes, making PIWIL1 an important target in germ cell research.

In addition to its role in germline biology, PIWIL1 has attracted significant interest for its involvement in stem cell regulation, RNA-mediated gene silencing, epigenetic control, and developmental programming. Studies of PIWIL1 and related PIWI proteins have contributed substantially to understanding how small RNA pathways influence cell fate decisions, genome defense mechanisms, and long-term maintenance of specialized cell populations. Zebrafish models continue to provide valuable insight into these conserved biological processes.

Zebrafish PIWIL1 Antibody / Piwi-like Protein 1 Antibody is useful for researchers studying germ cell biology, reproductive development, stem cell regulation, piRNA signaling pathways, genome stability, developmental genetics, and epigenetic regulation. Applications may include immunohistochemistry, immunofluorescence, western blotting, and other protein expression analyses when supported by validation data. As one of the most widely recognized markers of zebrafish germline cells, PIWIL1 remains an important target for investigating the molecular mechanisms that govern germ cell formation, maintenance, and reproductive development.

Learn more about PIWIL1 expression, germline development, spermatogenesis, and reproductive biology on our PIWIL1 Antibody / Germline Marker Antibody page.

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 PIWIL1 Antibody / Piwi-like Protein 1 Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish PIWIL1 recombinant protein (amino acids Q129-K731) was used as the immunogen for the Zebrafish PIWIL1 Antibody.

Storage

After reconstitution, the Zebrafish PIWIL1 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

PIWIL1 Antibody, Piwi-like Protein 1 Antibody, Piwi Protein Homolog 1 Antibody, Ziwi Antibody, Germ Cell Development Protein Antibody, Argonaute Family Protein Antibody