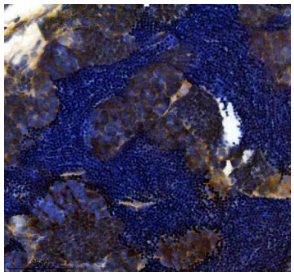
Zebrafish RAD51 Antibody / RAD51 Recombinase Antibody (RZ1450)

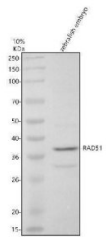
Catalog No.	Formulation	Size
RZ1450	0.5mg/ml if reconstituted with 0.2ml sterile DI water	100 ug

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	Q5TYR1
Applications	Western blot: 0.5-1ug/ml Immunohistochemistry (FFPE): 2-5ug/ml
Limitations	This Zebrafish RAD51 Antibody / RAD51 Recombinase Antibody is available for research use only.



Zebrafish RAD51 Antibody Testis IHC. Immunohistochemical analysis of RAD51 expression using anti-RAD51 antibody in paraffin embedded zebrafish testis tissue. RAD51, also known as RAD51 Recombinase, is a central mediator of homologous recombination and DNA double strand break repair that plays an essential role in meiotic chromosome segregation and germ cell maintenance. Prominent staining is observed within seminiferous structures, consistent with the high DNA repair activity associated with spermatogenesis. Heat mediated antigen retrieval was performed in EDTA buffer prior to staining. Sections were blocked with 10 percent goat serum and incubated with RAD51 antibody at 2 ug/ml overnight at 4 degrees Celsius. Detection was achieved using a peroxidase conjugated goat anti rabbit IgG secondary antibody and DAB chromogen. These results support the utility of Zebrafish RAD51 Antibody for studies of meiosis, genome stability, reproductive biology, and DNA damage responses.



Zebrafish RAD51 Antibody Embryo WB. Western blot analysis of RAD51 expression using anti-RAD51 antibody. RAD51, also known as RAD51 Recombinase, is a key mediator of homologous recombination and DNA double strand break repair that maintains genomic stability during development. Lane 1: zebrafish embryo tissue lysate. A specific band was detected at approximately 38 kDa. Although the predicted molecular weight of RAD51 is approximately 26 kDa, slower migration has been reported and may reflect post translational modifications, oligomerization, or species specific differences in electrophoretic mobility. These results demonstrate expression of RAD51 in zebrafish embryos and support the utility of this antibody for studies of DNA repair, genome maintenance, and developmental biology.

Description

Zebrafish RAD51 Antibody / RAD51 Recombinase Antibody recognizes RAD51, a highly conserved DNA repair protein that plays a central role in homologous recombination and the repair of DNA double strand breaks. RAD51 is the eukaryotic homolog of bacterial RecA and functions by assembling nucleoprotein filaments on single stranded DNA, thereby promoting strand invasion and exchange during repair. Through interactions with BRCA1, BRCA2, PALB2, and other components of the DNA damage response machinery, RAD51 helps maintain genomic stability and protects cells from the accumulation of mutations.

In zebrafish, RAD51 is essential for normal embryonic development, cell proliferation, and germ cell maintenance. RAD51 activity is particularly important in rapidly dividing tissues where faithful DNA repair is required to preserve chromosomal integrity. Defects in RAD51 function can result in developmental abnormalities, impaired fertility, and increased sensitivity to genotoxic stress. Because homologous recombination pathways are highly conserved among vertebrates, zebrafish provide a valuable model for studying DNA repair mechanisms and genome maintenance.

RAD51 also contributes to meiotic recombination and chromosome segregation during gametogenesis. Its activity is coordinated with cell cycle checkpoints and apoptosis pathways to ensure that damaged DNA is accurately repaired before cell division proceeds. Altered RAD51 expression has been associated with genomic instability and increased susceptibility to cancer in mammalian systems. Consequently, RAD51 has become an important target for studies of DNA damage responses and therapeutic sensitivity.

Zebrafish RAD51 Antibody / RAD51 Recombinase Antibody is useful for investigations of homologous recombination, genome stability, developmental biology, and reproductive function. Because RAD51 is a key mediator of DNA double strand break repair and cellular responses to genotoxic stress, it serves as an important marker for studies of DNA repair pathways, chromosome maintenance, and disease mechanisms. The evolutionary conservation of RAD51 makes zebrafish an effective model for understanding fundamental processes involved in genome integrity and cellular survival.

Explore our RAD51 Antibody page for additional antibodies against RAD51 Recombinase, including IHC and Protein Microarray validated reagents for studies of homologous recombination, DNA damage responses, and genome stability.

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 RAD51 Antibody / RAD51 Recombinase Antibody should be determined empirically by the investigator.

Immunogen

An E.coli-derived Zebrafish RAD51 recombinant protein (amino acids E18-D340) was used as the immunogen for the Zebrafish RAD51 Antibody.

Storage

After reconstitution, the Zebrafish RAD51 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 DNA Repair Protein RAD51 Antibody, Zebrafish Homologous Recombination Protein Antibody, Zebrafish DNA Strand Exchange Protein Antibody, Zebrafish RecA Homolog Antibody, Zebrafish Genome Stability Protein Antibody, Zebrafish Double Strand Break Repair Protein Antibody

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