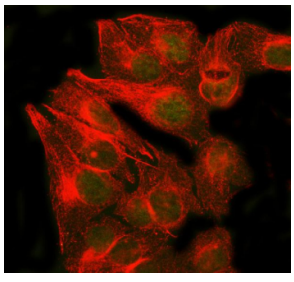
RAD51B Antibody / RAD51L1 (FY12303)

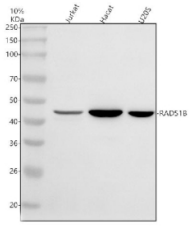
Catalog No.	Formulation	Size
FY12303	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

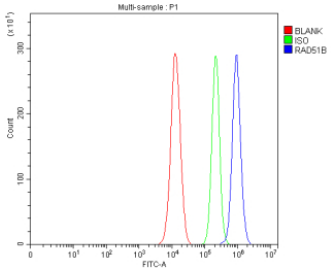
Availability	1-2 days
Species Reactivity	Human
Format	Lyophilized
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	O15315
Localization	Nuclear
Applications	Western Blot: 0.25-0.5ug/ml Immunocytochemistry/Immunofluorescence: 5ug/ml Flow cytometry: 1-3ug/million cells ELISA: 0.1-0.5ug/ml
Limitations	This RAD51B antibody is available for research use only.



Immunofluorescent staining of RAD51B using anti-RAD51B antibody (green) and anti-Beta Tubulin antibody (red). RAD51B was detected in an immunocytochemical section of U2OS cells. Enzyme antigen retrieval was performed using IHC enzyme antigen retrieval reagent for 15 mins. The cells were blocked with 10% goat serum. And then incubated with 5 ug/ml rabbit anti-RAD51B antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. DyLight 488 Conjugated Goat Anti-Rabbit IgG and Cy3 Conjugated Goat Anti-Mouse IgG were used as secondary antibody at 1:500 dilution and incubated for 30 minutes at 37oC. Visualize using a fluorescence microscope and filter sets appropriate for the label used.



Western blot analysis of RAD51B using anti-RAD51B antibody. Electrophoresis was performed on a 10% SDS-PAGE gel at 80V (Stacking gel) / 120V (Resolving gel) for 2 hours. Lane 1: human Jurkat whole cell lysates, Lane 2: human Hacat whole cell lysates, Lane 3: human U20S whole cell lysates. After electrophoresis, proteins were transferred to a nitrocellulose membrane at 150 mA for 50-90 minutes. Blocked the membrane with 5% non-fat milk/TBS for 1.5 hour at RT. The membrane was incubated with rabbit anti-RAD51B antibody at 0.5 ug/ml overnight at 4oC, then washed with TBS-0.1%Tween 3 times with 5 minutes each and probed with a goat anti-rabbit IgG-HRP secondary antibody at a dilution of 1:5000 for 1.5 hour at RT. The signal was developed using an ECL Plus Western Blotting Substrate. The expected molecular weight of RAD51B is ~42 kDa.



Flow Cytometry analysis of U87 cells using anti-RAD51B antibody. Overlay histogram showing U87 cells stained with (Blue line). To facilitate intracellular staining, cells were fixed with 4% paraformaldehyde and permeabilized with permeabilization buffer. The cells were blocked with 10% normal goat serum. And then incubated with rabbit anti-RAD51B antibody (1 ug/million cells) for 30 min at 20oC. DyLight 488 conjugated goat anti-rabbit IgG (5-10 ug/million cells) was used as secondary antibody for 30 minutes at 20oC. Isotype control antibody (Green line) was rabbit IgG (1 ug/million cells) used under the same conditions. Unlabelled sample without incubation with primary antibody and secondary antibody (Red line) was used as a blank control.

Description

RAD51B antibody detects DNA repair protein RAD51 homolog 2, encoded by the RAD51B gene (also known as RAD51L1) on chromosome 14q24.1. RAD51B antibody is widely used in DNA damage response, homologous recombination, and cancer biology research. RAD51B is part of the RAD51 paralog family, which functions in homologous recombination repair of DNA double-strand breaks. It acts as a mediator, promoting the assembly and stability of RAD51 nucleoprotein filaments on single-stranded DNA.

Structurally, RAD51B is a ~42 kDa protein with ATP-binding motifs and DNA-binding domains. It forms a heterodimer with RAD51C and participates in the BCDX2 complex with RAD51C, RAD51D, and XRCC2, as well as in the CX3 complex with RAD51C and XRCC3. These complexes support RAD51 loading at DNA damage sites and stabilize recombination intermediates.

Functionally, RAD51B contributes to DNA repair fidelity by ensuring accurate homologous recombination. Loss of RAD51B impairs recombination, leading to chromosomal instability, hypersensitivity to DNA-damaging agents, and defective cell cycle checkpoints. Researchers use RAD51B antibody to study DNA repair, recombination, and genome stability.

Clinically, RAD51B variants are associated with breast cancer susceptibility and other malignancies. Disruption of RAD51B function contributes to genomic instability, a hallmark of cancer. Because homologous recombination is a therapeutic target in oncology, RAD51B is of interest in studies of PARP inhibitor sensitivity and synthetic lethality. NSJ Bioreagents provides RAD51B antibody for DNA repair and cancer research.

Experimentally, RAD51B antibody is applied in western blotting to detect the ~42 kDa protein, in immunofluorescence to study DNA repair foci, and in co-immunoprecipitation to analyze protein complexes. Chromatin immunoprecipitation with RAD51B antibody supports studies of recombination site localization.

Application Notes

Optimal dilution of the RAD51B antibody should be determined by the researcher.

Immunogen

E.coli-derived human RAD51L1/RAD51B recombinant protein (Position: H22-F384) was used as the immunogen for the RAD51B antibody.

Storage

After reconstitution, the RAD51B 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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