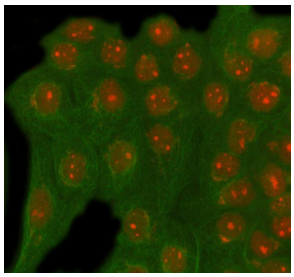
RAD54L2 Antibody / RAD54-like 2 (FY13030)

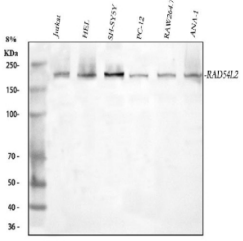
Catalog No.	Formulation	Size
FY13030	Adding 0.2 ml of distilled water will yield a concentration of 500 ug/ml	100 ug

Bulk quote request

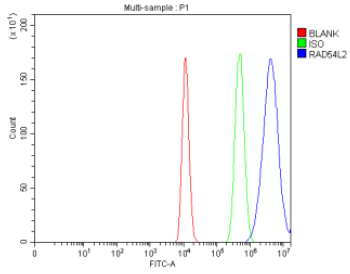
Availability	1-2 days
Species Reactivity	Human, Mouse, Rat
Format	Lyophilized
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit IgG
Purity	Immunogen affinity purified
Buffer	Each vial contains 4 mg Trehalose, 0.9 mg NaCl, 0.2 mg Na2HPO4.
UniProt	Q9Y4B4
Localization	Speckled nuclear
Applications	Western Blot : 0.25-0.5ug/ml Immunocytochemistry : 5ug/ml Immunofluorescence : 5ug/ml Flow Cytometry : 1-3ug/million cells ELISA : 0.1-0.5ug/ml
Limitations	This RAD54L2 antibody is available for research use only.



Immunofluorescent staining of RAD54L2 using anti-RAD54L2 antibody (red) and anti-Beta Tubulin antibody (green). RAD54L2 was detected in immunocytochemical section of cell. 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-RAD54L2 antibody and mouse anti-Beta Tubulin antibody overnight at 4oC. Cy3 Conjugated Goat Anti-Rabbit IgG and DyLight 488 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 RAD54L2 using anti-RAD54L2 antibody. Lane 1: human Jurkat whole cell lysates, Lane 2: human HEL whole cell lysates, Lane 3: human SH-SY5Y whole cell lysates, Lane 4: rat PC-12 whole cell lysates, Lane 5: mouse Raw264.7 whole cell lysates, Lane 6: mouse Ana-1 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-RAD54L2 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 enhanced chemiluminescent. A single prominent band is detected at ~190-200 kDa, higher than the predicted molecular weight of 163 kDa. This apparent shift is consistent with published observations for RAD54L2 and is attributed to its coiled-coil structure and post-translational modifications, including phosphorylation and sumoylation, which collectively cause slower migration on SDS-PAGE.



Flow Cytometry analysis of HEL cells using anti-RAD54L2 antibody. Overlay histogram showing HEL 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-RAD54L2 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 (Red line) was also used as a control.

Description

RAD54L2 antibody detects DNA repair and recombination protein RAD54-like 2, a member of the SNF2 family of ATP-dependent chromatin remodelers involved in DNA repair, replication, and transcriptional regulation. The UniProt recommended name is DNA repair and recombination protein RAD54-like 2 (RAD54L2). Also known as ARIP4, this nuclear protein interacts with DNA and chromatin-associated factors to maintain genomic stability and regulate gene expression.

Functionally, RAD54L2 antibody identifies a 1330-amino-acid protein characterized by helicase-like ATPase domains and DNA-binding motifs. RAD54L2 participates in homologous recombination repair, facilitating the remodeling of chromatin to enable access of repair enzymes to damaged DNA. It also interacts with transcriptional co-regulators and nuclear hormone receptors, integrating DNA repair with transcriptional control. Through ATP hydrolysis, RAD54L2 alters nucleosome structure, promoting chromatin relaxation at sites of DNA damage.

The RAD54L2 gene is located on chromosome 3p21.31 and is widely expressed in proliferative tissues such as testis, ovary, and thymus. RAD54L2 shares structural homology with RAD54L, another member of the SWI2/SNF2 family involved in recombination repair, but exhibits broader functional diversity. RAD54L2 binds both double-stranded DNA and repair intermediates, enhancing strand invasion and exchange during homologous recombination. This role ensures error-free repair of double-strand breaks and prevents chromosomal rearrangements.

Beyond its DNA repair function, RAD54L2 acts as a transcriptional co-regulator by binding to androgen receptor (AR) and other nuclear receptors, modulating gene transcription in response to hormonal signaling. It is also implicated in chromatin condensation and mitotic progression. Dysregulation of RAD54L2 expression has been associated with genomic instability, altered hormone signaling, and cancer development. Elevated expression has been observed in certain tumors, where it may support DNA repair efficiency and resistance to genotoxic stress.

RAD54L2 antibody is widely used in DNA repair, chromatin remodeling, and cancer research. It is suitable for western blotting, immunoprecipitation, and immunofluorescence to detect RAD54L2 protein localization and expression. This antibody supports studies of homologous recombination, transcriptional regulation, and genome stability. In oncology,

RAD54L2 detection aids in evaluating repair pathway activation and therapeutic response to DNA-damaging agents.

Structurally, RAD54L2 contains conserved ATP-binding Walker A and B motifs and DNA-binding helicase domains characteristic of SWI2/SNF2 family proteins. Its activity is regulated by post-translational modifications and interactions with transcriptional complexes. NSJ Bioreagents provides RAD54L2 antibody reagents validated for use in genomic stability, transcriptional regulation, and DNA repair research.

Application Notes

Optimal dilution of the RAD54L2 antibody should be determined by the researcher.

Immunogen

E.coli-derived human RAD54L2 recombinant protein (Position: R144-H1037) was used as the immunogen for the RAD54L2 antibody.

Storage

After reconstitution, the RAD54L2 antibody can be stored for up to one month at 4oC. For long-term, aliquot and store at -20oC. Avoid repeated freezing and thawing.