

RAD51 Antibody
Purified Mouse Monoclonal Antibody (Mab)
Catalog # AM8421b

Specification

RAD51 Antibody - Product Information

Application	WB,E
Primary Accession	Q06609
Reactivity	Human, Mouse, Rat
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1, κ
Calculated MW	36966
Antigen Region	1-250

RAD51 Antibody - Additional Information

Gene ID 5888

Other Names

DNA repair protein RAD51 homolog 1, HsRAD51, hRAD51, RAD51 homolog A, RAD51, RAD51A, RECA

Target/Specificity

This RAD51 antibody is generated from a mouse immunized with a recombination protein from human.

Dilution

WB~~1:1000

Format

Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.

Storage

Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.

Precautions

RAD51 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

RAD51 Antibody - Protein Information

Name RAD51 ([HGNC:9817](#))

Synonyms RAD51A, RECA

Function Plays an important role in homologous strand exchange, a key step in DNA repair

through homologous recombination (HR) (PubMed:[12205100](#), PubMed:[18417535](#), PubMed:[20231364](#), PubMed:[20348101](#), PubMed:[22325354](#), PubMed:[23509288](#), PubMed:[23754376](#), PubMed:[26681308](#), PubMed:[28575658](#), PubMed:[32640219](#)). Binds to single-stranded DNA in an ATP-dependent manner to form nucleoprotein filaments which are essential for the homology search and strand exchange (PubMed:[12205100](#), PubMed:[18417535](#), PubMed:[20231364](#), PubMed:[20348101](#), PubMed:[23509288](#), PubMed:[23754376](#), PubMed:[26681308](#), PubMed:[28575658](#)). Catalyzes the recognition of homology and strand exchange between homologous DNA partners to form a joint molecule between a processed DNA break and the repair template (PubMed:[12205100](#), PubMed:[18417535](#), PubMed:[20231364](#), PubMed:[20348101](#), PubMed:[23509288](#), PubMed:[23754376](#), PubMed:[26681308](#), PubMed:[28575658](#), PubMed:[38459011](#)). Recruited to resolve stalled replication forks during replication stress (PubMed:[27797818](#), PubMed:[31844045](#)). Part of a PALB2-scaffolded HR complex containing BRCA2 and RAD51C and which is thought to play a role in DNA repair by HR (PubMed:[12442171](#), PubMed:[24141787](#)). Plays a role in regulating mitochondrial DNA copy number under conditions of oxidative stress in the presence of RAD51C and XRCC3 (PubMed:[20413593](#)). Also involved in interstrand cross-link repair (PubMed:[26253028](#)).

Cellular Location

Nucleus. Cytoplasm. Cytoplasm, perinuclear region. Mitochondrion matrix Chromosome. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome Note=Colocalizes with RAD51AP1 and RPA2 to multiple nuclear foci upon induction of DNA damage (PubMed:20154705). DNA damage induces an increase in nuclear levels (PubMed:20154705). Together with FIGNL1, redistributed in discrete nuclear DNA damage-induced foci after ionizing radiation (IR) or camptothecin (CPT) treatment (PubMed:23754376). Accumulated at sites of DNA damage in a SPIDR- dependent manner (PubMed:23509288). Recruited at sites of DNA damage in a MCM9-MCM8-dependent manner (PubMed:23401855). Recruited at sites of DNA damage following interaction with TOPBP1 in S-phase (PubMed:26811421). Colocalizes with ERCC5/XPG to nuclear foci in S phase (PubMed:26833090). Recruited to stalled replication forks during replication stress by the TONSL-MMS22L complex, as well as ATAD5 and WDR48 in an ATR-dependent manner (PubMed:27797818, PubMed:31844045)

Tissue Location

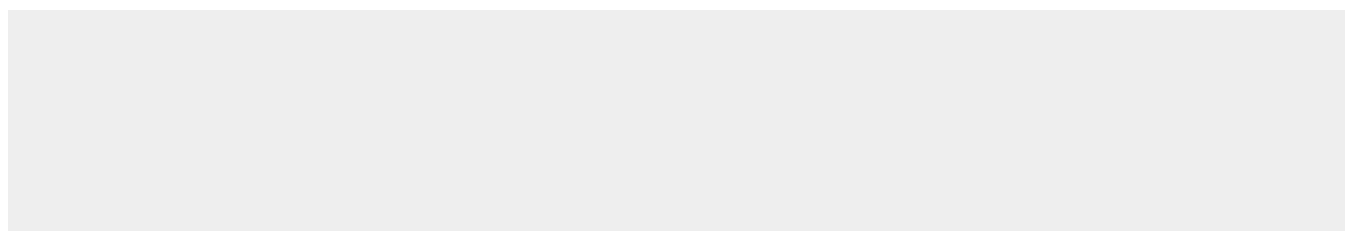
Highly expressed in testis and thymus, followed by small intestine, placenta, colon, pancreas and ovary. Weakly expressed in breast

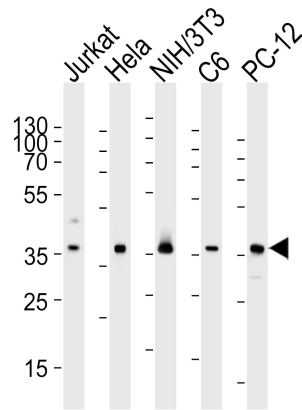
RAD51 Antibody - Protocols

Provided below are standard protocols that you may find useful for product applications.

- [Western Blot](#)
- [Blocking Peptides](#)
- [Dot Blot](#)
- [Immunohistochemistry](#)
- [Immunofluorescence](#)
- [Immunoprecipitation](#)
- [Flow Cytometry](#)
- [Cell Culture](#)

RAD51 Antibody - Images





Western blot analysis of lysates from Jurkat, HeLa, mouse NIH/3T3, rat C6, PC-12 cell line (from left to right), using RAD51 Antibody (Cat. #AM8421b). AM8421b was diluted at 1:1000 at each lane. A goat anti-mouse IgG H&L(HRP) at 1:3000 dilution was used as the secondary antibody. Lysates at 35µg per lane.

RAD51 Antibody - Background

Participates in a common DNA damage response pathway associated with the activation of homologous recombination and double-strand break repair. Binds to single and double-stranded DNA and exhibits DNA-dependent ATPase activity. Underwinds duplex DNA and forms helical nucleoprotein filaments. Plays a role in regulating mitochondrial DNA copy number under conditions of oxidative stress in the presence of RAD51C and XRCC3.

RAD51 Antibody - References

- Shinohara A., et al. *Nat. Genet.* 4:239-243(1993).
- Yoshimura Y., et al. *Nucleic Acids Res.* 21:1665-1665(1993).
- Schmutte C., et al. *Cancer Res.* 59:4564-4569(1999).
- Wang W.W., et al. *Cancer Epidemiol. Biomarkers Prev.* 10:955-960(2001).
- Park J.Y., et al. *Nucleic Acids Res.* 36:3226-3234(2008).