

# RAD51 Antibody

Purified Mouse Monoclonal Antibody (Mab)  
Catalog # AM8578b

## Product Information

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<b>Application</b>	WB, E
<b>Primary Accession</b>	<a href="#">Q06609</a>
<b>Reactivity</b>	Human, Mouse
<b>Host</b>	Mouse
<b>Clonality</b>	monoclonal
<b>Isotype</b>	IgG2b,k
<b>Clone Names</b>	1690CT417.18.80
<b>Calculated MW</b>	36966

## Additional Information

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<b>Gene ID</b>	5888
<b>Other Names</b>	DNA repair protein RAD51 homolog 1, HsRAD51, hRAD51, RAD51 homolog A, RAD51, RAD51A, RECA
<b>Target/Specificity</b>	This RAD51 antibody is generated from a mouse immunized with a recombinant protein between 1-339 amino acids from the human RAD51.
<b>Dilution</b>	WB~1:2000-1:4000 E~Use at an assay dependent concentration.
<b>Format</b>	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.
<b>Storage</b>	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.
<b>Precautions</b>	RAD51 Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

## Protein Information

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<b>Name</b>	RAD51 ( <a href="#">HGNC:9817</a> )
<b>Synonyms</b>	RAD51A, RECA
<b>Function</b>	Plays an important role in homologous strand exchange, a key step in DNA repair through homologous recombination (HR) (PubMed: <a href="#">12205100</a> , PubMed: <a href="#">18417535</a> , PubMed: <a href="#">20231364</a> , PubMed: <a href="#">20348101</a> , PubMed: <a href="#">22325354</a> , PubMed: <a href="#">23509288</a> , PubMed: <a href="#">23754376</a> ,

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:[15226506](#), 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

## Background

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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. Part of a PALB2- scaffolded HR complex containing BRCA2 and RAD51C and which is thought to play a role in DNA repair by HR. Plays a role in regulating mitochondrial DNA copy number under conditions of oxidative stress in the presence of RAD51C and XRCC3.

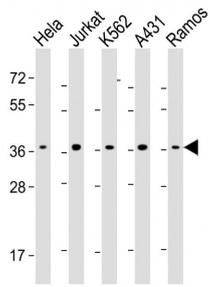
## References

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- 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).

## Images

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All lanes : Anti-RAD51 Antibody at 1:2000-1:4000 dilution  
 Lane 1: HeLa whole cell lysate Lane 2: Jurkat whole cell lysate Lane 3: K562 whole cell lysate Lane 4: A431 whole cell lysate Lane 5: Ramos whole cell lysate  
 Lysates/proteins at 20 µg per lane. Secondary Goat Anti-mouse IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 37 kDa Blocking/Dilution buffer: 5% NFDm/TBST.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.