

## RAD51 Antibody

Purified Mouse Monoclonal Antibody (Mab) Catalog # AM8575b

### Specification

# **RAD51 Antibody - Product Information**

Application Primary Accession Reactivity Host Clonality Isotype Calculated MW WB,E <u>Q06609</u> Human Mouse monoclonal IgG2b,k 36966

## **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 recombinant protein between 1-339 amino acids from human RAD51.

**Dilution** WB~~1:4000 E~~Use at an assay dependent concentration.

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 (<u>HGNC:9817</u>)

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

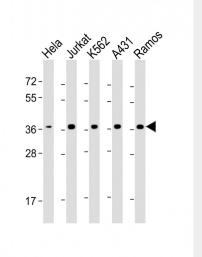
## **RAD51 Antibody - Protocols**

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

- <u>Western Blot</u>
- Blocking Peptides
- Dot Blot
- Immunohistochemistry
- Immunofluorescence
- Immunoprecipitation
- Flow Cytomety
- <u>Cell Culture</u>

RAD51 Antibody - Images





All lanes : Anti-RAD51 Antibody at 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  $\mu$ g 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.

# **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. 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.

## **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).