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RAD51 Antibody
Purified Mouse Monoclonal Antibody (Mab)
Catalog # AW5075

Specification

RAD51 Antibody - Product Information

Application	**WB,E**
Primary Accession	Q06609
Reactivity	**Human, Mouse, Rat**
Host	**Mouse**
Clonality	**Monoclonal**
Calculated MW	**H=37,26,31 KDa**
Isotype	**IgG1,κ**
Antigen Source	**HUMAN**

RAD51 Antibody - Additional Information

Gene ID 5888

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

Dilution
WB~~1:1000

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

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). 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)

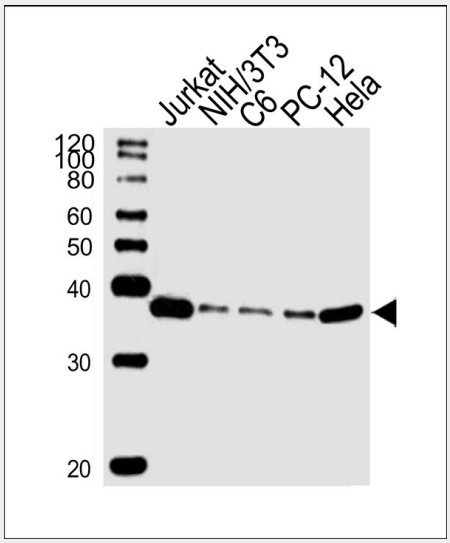
Tissue Location
Highly expressed in testis and thymus, followed by small intestine, placenta, colon, pancreas and ovary. Weakly expressed in breast

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 Cytomety
- Cell Culture

RAD51 Antibody - Images



Western blot analysis of lysates from Jurkat,mouse NIH/3T3,rat C6,rat PC-12,Hela cell line (from left to right), using RAD51 Antibody(Cat. #AW5075). AW5075 was diluted at 1:1000 at each lane. A goat anti-mouse IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody.

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).