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Anti-Rad51 Rabbit Monoclonal Antibody

Catalog # ABO13618

Product Information

Application	WB, IP, FC
Primary Accession	Q06609
Host	Rabbit
Isotype	Rabbit IgG
Reactivity	Rat, Human, Mouse
Clonality	Monoclonal
Format	Liquid
Description	Anti-Rad51 Rabbit Monoclonal Antibody . Tested in WB, Flow Cytometry, IP applications. This antibody reacts with Human, Mouse, Rat.

Additional Information

Gene ID	5888
Other Names	DNA repair protein RAD51 homolog 1, HsRAD51, hRAD51, RAD51 homolog A, RAD51 (HGNC:9817), RAD51A, RECA
Calculated MW	36966
Application Details	WB 1:500-1:2000 IP 1:50 FC 1:50
Subcellular Localization	Nucleus. Cytoplasm. Cytoplasm, perinuclear region. Mitochondrion matrix. Cytoplasm, cytoskeleton, microtubule organizing center, centrosome. Colocalizes with RAD51AP1 and RPA2 to multiple nuclear foci upon induction of DNA damage. DNA damage induces an increase in nuclear levels. Together with FIGNL1, redistributed in discrete nuclear DNA damage-induced foci after ionizing radiation (IR) or camptothecin (CPT) treatment. Accumulated at sites of DNA damage in a SPIDR-dependent manner.
Tissue Specificity	Highly expressed in testis and thymus, followed by small intestine, placenta, colon, pancreas and ovary. Weakly expressed in breast.
Source	Eukaryota
Contents	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
Clone Names	Clone: CAE-18
Immunogen	A synthesized peptide derived from human Rad51
Purification	Affinity-chromatography

Storage	Store at -20°C for one year. For short term storage and frequent use, store at 4°C for up to one month. Avoid repeated freeze-thaw cycles.

Protein Information

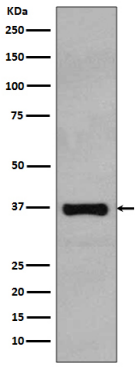
Name	RAD51 {ECO:0000303|PubMed:8358431, ECO:0000312|HGNC:HGNC:9817}
Function	Homologous DNA recombinase that catalyzes strand exchange, a key step in DNA repair through homologous recombination (HR) (PubMed:12205100, PubMed:12442171, PubMed:15937124, PubMed:17515904, PubMed:17515903, PubMed:18417535, PubMed:19303847, PubMed:20231364, PubMed:20348101, PubMed:22325354, PubMed:23509288, PubMed:23754376, PubMed:24141787, PubMed:26681308, PubMed:27941124, PubMed:28575658, PubMed:32640219, PubMed:37499663, PubMed:38509361, PubMed:7988572). Binds to single-stranded DNA (ssDNA) in an ATP-dependent manner to form nucleoprotein filaments which are essential for the homology search and strand exchange (PubMed:12205100, PubMed:15937124, PubMed:17515904, PubMed:17515903, PubMed:18417535, PubMed:19303847, PubMed:15226506, PubMed:20231364, PubMed:20348101, PubMed:23509288, PubMed:23754376, PubMed:26681308, PubMed:28575658, PubMed:37499663, PubMed:39636933, PubMed:41166468, PubMed:38509361, PubMed:7988572). 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:19303847, PubMed:20231364, PubMed:20348101, PubMed:23509288, PubMed:23754376, PubMed:26681308, PubMed:28575658, PubMed:38459011). RAD51 targeting to ssDNA promotes removal of replication protein-A (RPA) from ssDNA and stabilization of RAD51-ssDNA filaments by blocking ATP hydrolysis (PubMed:20729859). Nucleosomal DNA is peeled from the histone surface by the RAD51 filament (PubMed:38509361). Recruited to resolve stalled replication forks during replication stress (PubMed:27797818, PubMed:31844045). Also required for homologous recombination during meiosis by acting as an non-catalytic accessory factor for DMC1 recombinase, enabling proper chromosome pairing and crossing over (By similarity). 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	Chromosome. Nucleus. Cytoplasm. Cytoplasm, perinuclear region. Mitochondrion matrix. 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). In germ cells, during meiotic prcess, binds single-stranded DNA (ssDNA) away from the break site (By similarity) {ECO:0000250|UniProtKB:Q08297,

ECO:0000269|PubMed:20154705, ECO:0000269|PubMed:23401855, ECO:0000269|PubMed:23509288, ECO:0000269|PubMed:23754376, ECO:0000269|PubMed:26811421, ECO:0000269|PubMed:26833090, ECO:0000269|PubMed:27797818, ECO:0000269|PubMed:31844045}

Tissue Location

Highly expressed in testis and thymus, followed by small intestine, placenta, colon, pancreas and ovary (PubMed:18417535) Weakly expressed in breast (PubMed:18417535)

Images



Western blot analysis of Rad51 expression in HeLa cell lysate.

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