

Rabbit anti-Human, Mouse RAD51 Polyclonal Antibody | anti-RAD51 antibody

RAD51 Antibody

CATALOG #	HOST	REACTIVITY	APPLICATIONS
AAA327392	Rabbit	Human, Mouse	ELISA, Immunocytochemistry, Immunofluorescence, Western Blot

PRODUCT SYNONYMS

RAD51; Polyclonal Antibody; RAD51 Antibody; BRCA1/BRCA2 containing complex; subunit 5; BRCC 5; BRCC5; DNA repair protein RAD51 homolog 1; DNA repair protein rhp51; FANCR; hRAD51; HsRAD51; HsT16930; MRMV2; Rad 51; RAD51 homolog (RecA homolog; E. coli) (S. cerevisiae); RAD51 homolog A; RAD51 homolog; RAD51 recombinase; S. cerevisiae; homolog of; RAD51_HUMAN; RAD51A; RECA; RecA like protein; RecA; E. coli; Recombination protein A; anti-RAD51 antibody

PRODUCT SPECIFICATIONS

Host	Rabbit
Reactivity	Human, Mouse
Clonality	Polyclonal
Isotype	IgG
Specificity	RAD51 antibody detects endogenous levels of total RAD51
Purity/Purification	The antiserum was purified by peptide affinity chromatography using SulfoLink Coupling Resin.
Form/Format	Liquid Phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.
Concentration	1mg/ml (varies by lot)
Sequence Length	340
Applicable Applications for anti-RAD51 antibody	ELISA, ICC (Immunocytochemistry), IF (Immunofluorescence), WB (Western Blot)
Immunogen	A synthesized peptide derived from human RAD51
Subcellular Location	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 FIGL1, 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.
Conjugation	Unconjugated
Preparation and Storage	Store at -20 degree C. Stable for 12 months from date of receipt.

IMAGES



IF (Immunofluorescence)

AAA327392 staining HeLa cells by IF/ICC. The sample were fixed with PFA and permeabilized in 0.1% Triton X-100, then blocked in 10% serum for 45 minutes at 25 degree C. The primary antibody was diluted at 1/200 and incubated with the sample for 1 hour at 37 degree C. An Alexa Fluor 594 conjugated goat anti-rabbit IgG (H+L) antibody, diluted at 1/600, was used as secondary antibody.



WB (Western Blot)

Western blot analysis of RAD51 using COLO205 whole cell lysates

ADDITIONAL INFORMATION

Related Product Information for anti-RAD51 antibody

Function: Plays an important role in homologous strand exchange, a key step in DNA repair through homologous recombination (HR) (PubMed:28575658). Binds to single and double-stranded DNA and exhibits DNA-dependent ATPase activity. 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. 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:26681308). 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. Also involved in interstrand cross-link repair (PubMed:26253028).

Subunit Structure: Forms linear homooligomers, giving rise to a RAD51 nucleoprotein filament, which is essential for strand-pairing reactions during DNA recombination. Interacts with BRCA1 and either directly or indirectly with p53. Interacts with XRCC3, RAD54L and RAD54B. Interacts with the BCDX2 subcomplex RAD51C:RAD51B. Interacts directly with PALB2 which may serve as a scaffold for a HR complex containing PALB2, BRCA2, RAD51C, RAD51 and XRCC3. Interacts with RAD51AP1 and RAD51AP2. Interacts with CHEK1, and this may require prior phosphorylation of CHEK1. Interacts with the MND1-PSMC3IP heterodimer. Found in a complex, at least composed of BLM, RAD51 and SPIDR; the complex formation is mediated by SPIDR. Interacts with SPIDR; the interaction is direct and recruits RAD51 to DNA damage sites. Interacts with FIGL1 (via N-terminal one-half region); the interaction is direct. Interacts with RAD51AP1 (via C-terminal region); the interaction is direct. Interacts with NABP2, RPA1, PALB2 and RAD51. Interacts with SWI5/C9orf119, and at lower level with SFR1/MEIR5. Interacts with hyperphosphorylated RPA2; this interaction is necessary for efficient recruitment to chromatin in response to DNA damage. Interacts with SWSAP1; involved in homologous recombination repair. Interacts with PARPBP, BRCA2 and RECQL5; these interactions interfere with the formation of the RAD51-DNA homologous recombination structure. Interacts with POLQ; POLQ acts as an inhibitor of homology-recombination repair (HR) pathway by limiting RAD51 accumulation at resected ends (PubMed:25642963). Interacts with FBXO18/FBH1 (PubMed:23393192). Interacts with POLN (PubMed:19995904). Interacts with RFWD3 (PubMed:28575658).

Post-translational Modifications: Ubiquitinated by the SCF(FBXO18) E3 ubiquitin ligase complex, regulating RAD51 subcellular location and preventing its association with DNA. Ubiquitinated by RFWD3 in response to DNA damage: ubiquitination leads to degradation by the proteasome, promoting homologous recombination (PubMed:28575658). Phosphorylated. Phosphorylation of Thr-309 by CHEK1 may enhance association with chromatin at sites of DNA damage and promote DNA repair by homologous recombination. Phosphorylation by ABL1 inhibits function.

Similarity: The nuclear localization may reside in the C-terminus (between 259 and 339 AA). Belongs to the RecA family. RAD51 subfamily.

NCBI AND UNIPROT INFORMATION

NCBI GI #	256017143
NCBI GeneID	5888
NCBI Accession #	NP_001157741.1
NCBI GenBank Nucleotide #	NM_001164269.1
UniProt Accession #	Q06609; Q6FHX9; Q6ZNA8; Q9BV60; B0FXP0; B2R8T6
Molecular Weight	Observed: 37 kDa Predicted: 37 kDa

NCBI Official Full Name	DNA repair protein RAD51 homolog 1 isoform 2
NCBI Official Synonym Full Names	RAD51 recombinase
NCBI Official Symbol	RAD51
NCBI Official Synonym Symbols	RECA; BRCC5; FANCR; MRMV2; HRAD51; RAD51A; HsRad51; HsT16930
NCBI Protein Information	DNA repair protein RAD51 homolog 1
UniProt Protein Name	DNA repair protein RAD51 homolog 1
UniProt Gene Name	RAD51
UniProt Synonym Gene Names	RAD51A; RECA; HsRAD51; hRAD51

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

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Online datasheet: <https://stage.aaabiotech.com/polyclonal/rad51-antibody-immunocytochemistry-immunofluorescence-western-blot-elisa/327392>