

Rad51 Polyclonal Antibody

Catalog # AP72148

Product Information

Application	WB, IHC-P
Primary Accession	Q06609
Reactivity	Human, Mouse
Host	Rabbit
Clonality	Polyclonal
Calculated MW	36966

Additional Information

Gene ID	5888
Other Names	RAD51; RAD51A; RECA; DNA repair protein RAD51 homolog 1; HsRAD51; hRAD51; RAD51 homolog A
Dilution	WB~~Western Blot: 1/500 - 1/2000. Immunohistochemistry: 1/100 - 1/300. ELISA: 1/20000. Not yet tested in other applications. IHC-P~~N/A
Format	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.09% (W/V) sodium azide.
Storage Conditions	-20°C

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 , 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)

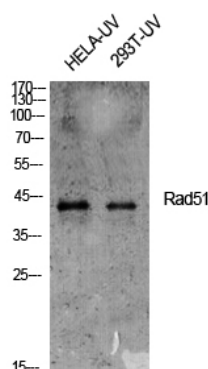
Tissue Location

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

Background

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](#)).

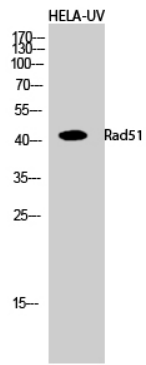
Images



Western Blot analysis of various cells using Rad51 Polyclonal Antibody diluted at 1 : 500 cells nucleus extracted by Minute TM Cytoplasmic and Nuclear Fractionation kit (SC-003, Inventbiotech, MN, USA).

Western Blot analysis of HELA-UV cells using Rad51 Polyclonal Antibody diluted at 1 : 500 cells nucleus extracted by Minute TM Cytoplasmic and Nuclear

Fractionation kit (SC-003, Invent biotech, MN, USA).



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