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RAD51C Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP14962c

Product Information

Application	WB, E
Primary Accession	O43502
Other Accession	NP_478123.1, NP_002867.1
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB34613
Calculated MW	42190
Antigen Region	169-198

Additional Information

Gene ID	5889
Other Names	DNA repair protein RAD51 homolog 3, R51H3, RAD51 homolog C, RAD51-like protein 2, RAD51C, RAD51L2
Target/Specificity	This RAD51C antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 169-198 amino acids from the Central region of human RAD51C.
Dilution	WB~~1:1000 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein A column, followed by peptide affinity purification.
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	RAD51C Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	RAD51C
Synonyms	RAD51L2
Function	Essential for the homologous recombination (HR) pathway of DNA repair.

	Involved in the homologous recombination repair (HRR) pathway of double-stranded DNA breaks arising during DNA replication or induced by DNA-damaging agents. Part of the RAD51 paralog protein complexes BCDX2 and CX3 which act at different stages of the BRCA1- BRCA2-dependent HR pathway. Upon DNA damage, BCDX2 seems to act downstream of BRCA2 recruitment and upstream of RAD51 recruitment; CX3 seems to act downstream of RAD51 recruitment; both complexes bind predominantly to the intersection of the four duplex arms of the Holliday junction (HJ) and to junction of replication forks. The BCDX2 complex was originally reported to bind single-stranded DNA, single- stranded gaps in duplex DNA and specifically to nicks in duplex DNA. The BCDX2 subcomplex RAD51B:RAD51C exhibits single-stranded DNA- dependent ATPase activity suggesting an involvement in early stages of the HR pathway. Involved in RAD51 foci formation in response to DNA damage suggesting an involvement in early stages of HR probably in the invasion step. Has an early function in DNA repair in facilitating phosphorylation of the checkpoint kinase CHEK2 and thereby transduction of the damage signal, leading to cell cycle arrest and HR activation. Participates in branch migration and HJ resolution and thus is important for processing HR intermediates late in the DNA repair process; the function may be linked to the CX3 complex. Part of a PALB2-scaffolded HR complex containing BRCA2 and which is thought to play a role in DNA repair by HR. Protects RAD51 from ubiquitin-mediated degradation that is enhanced following DNA damage. Plays a role in regulating mitochondrial DNA copy number under conditions of oxidative stress in the presence of RAD51 and XRCC3. Contributes to DNA cross- link resistance, sister chromatid cohesion and genomic stability. Involved in maintaining centrosome number in mitosis.
Cellular Location	Nucleus. Cytoplasm Cytoplasm, perinuclear region Mitochondrion. Note=DNA damage induces an increase in nuclear levels. Accumulates in DNA damage induced nuclear foci or RAD51C foci which is formed during the S or G2 phase of cell cycle. Accumulation at DNA lesions requires the presence of NBN/NBS1, ATM and RPA
Tissue Location	Expressed in a variety of tissues, with highest expression in testis, heart muscle, spleen and prostate

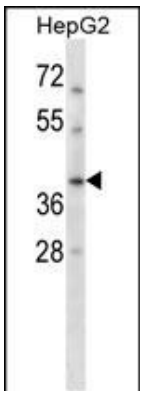
Background

This gene is a member of the RAD51 family of related genes, which encode strand-transfer proteins thought to be involved in recombinational repair of damaged DNA and in meiotic recombination. This gene product interacts with two other DNA repair proteins, encoded by RAD51B and XRCC3, but not with itself. The protein copurifies with XRCC3 protein in a complex, reflecting their endogenous association and suggesting a cooperative role during recombinational repair. This gene is one of four localized to a region of chromosome 17q23 where amplification occurs frequently in breast tumors. Overexpression of the four genes during amplification has been observed and suggests a possible role in tumor progression. Alternative splicing has been observed for this gene and two variants encoding different isoforms have been identified.

References

Zheng, Y., et al. Breast Cancer Res. Treat. (2010) In press :
Briggs, F.B., et al. Am. J. Epidemiol. 172(2):217-224(2010)
Monsees, G.M., et al. Breast Cancer Res. Treat. (2010) In press :
Meindl, A., et al. Nat. Genet. 42(5):410-414(2010)
Vaz, F., et al. Nat. Genet. 42(5):406-409(2010)

Images



RAD51C Antibody (Center) (Cat. #AP14962c) western blot analysis in HepG2 cell line lysates (35ug/lane).This demonstrates the RAD51C antibody detected the RAD51C protein (arrow).

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.