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RAD17 Antibody (Center)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11700c

Product Information

Application	WB, FC, E
Primary Accession	O75943
Other Accession	NP_579916.1, NP_002864.1, NP_579917.1, NP_579918.1, NP_579922.1, NP_579920.1, NP_579919.1, N
Reactivity	Human
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB20035
Calculated MW	77055
Antigen Region	218-246

Additional Information

Gene ID	5884
Other Names	Cell cycle checkpoint protein RAD17, hRad17, RF-C/activator 1 homolog, RAD17, R24L
Target/Specificity	This RAD17 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 218-246 amino acids from the Central region of human RAD17.
Dilution	WB~~1:1000 FC~~1:10~50 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	RAD17 Antibody (Center) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	RAD17 {ECO:0000303|PubMed:9878245, ECO:0000312|HGNC:HGNC:9807}
Function	Essential for sustained cell growth, maintenance of chromosomal stability, and ATR-dependent checkpoint activation upon DNA damage

(PubMed:10208430, PubMed:11418864, PubMed:11687627, PubMed:11799063, PubMed:12672690, PubMed:14624239, PubMed:15235112). Has a weak ATPase activity required for binding to chromatin (PubMed:10208430, PubMed:11418864, PubMed:11687627, PubMed:11799063, PubMed:12672690, PubMed:14624239, PubMed:15235112). Participates in the recruitment of the 9-1-1 (RAD1-RAD9-HUS1) complex and RHNO1 onto chromatin, and in CHEK1 activation (PubMed:21659603). Involved in homologous recombination by mediating recruitment of the MRN complex to DNA damage sites (PubMed:24534091). May also serve as a sensor of DNA replication progression (PubMed:12578958, PubMed:14500819, PubMed:15538388).

Cellular Location

Nucleus. Chromosome Note=Phosphorylated form redistributes to discrete nuclear foci upon DNA damage (PubMed:11799063). Localizes to DNA double-strand breaks (DSBs) (PubMed:24534091).

Tissue Location

Overexpressed in various cancer cell lines and in colon carcinoma (at protein level). Isoform 2 and isoform 3 are the most abundant isoforms in non irradiated cells (at protein level) Ubiquitous at low levels. Highly expressed in testis, where it is expressed within the germinal epithelium of the seminiferous tubuli Weakly expressed in seminomas (testicular tumors)

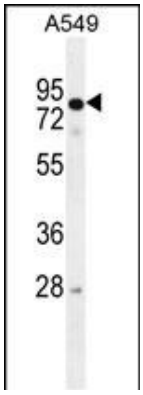
Background

The protein encoded by this gene is highly similar to the gene product of Schizosaccharomyces pombe rad17, a cell cycle checkpoint gene required for cell cycle arrest and DNA damage repair in response to DNA damage. This protein shares strong similarity with DNA replication factor C (RFC), and can form a complex with RFCs. This protein binds to chromatin prior to DNA damage and is phosphorylated by the checkpoint kinase ATR following damage. This protein recruits the RAD1-RAD9-HUS1 checkpoint protein complex onto chromatin after DNA damage, which may be required for its phosphorylation. The phosphorylation of this protein is required for the DNA-damage-induced cell cycle G2 arrest, and is thought to be a critical early event during checkpoint signaling in DNA-damaged cells. Eight alternatively spliced transcript variants of this gene, which encode four distinct proteins, have been reported. Two pseudogenes, located on chromosomes 7 and 13, have been identified.

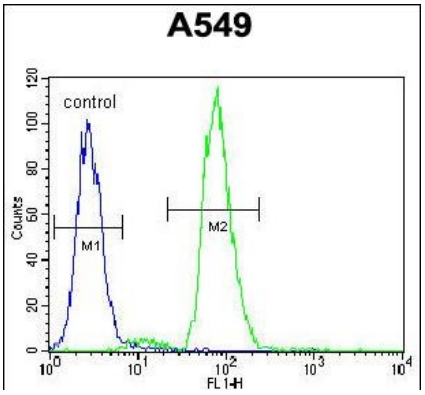
References

Zhang, L., et al. EMBO J. 29(10):1726-1737(2010)
Vega, A., et al. Gynecol. Oncol. 112(1):210-214(2009)
Beretta, G.L., et al. Cancer Lett. 266(2):194-202(2008)
Zhao, M., et al. Head Neck 30(1):35-42(2008)
Rodriguez-Bravo, V., et al. Cancer Res. 66(17):8672-8679(2006)

Images



RAD17 Antibody (Center) (Cat. #AP11700c) western blot analysis in A549 cell line lysates (35ug/lane).This demonstrates the RAD17 antibody detected the RAD17 protein (arrow).



RAD17 Antibody (Center) (Cat. #AP11700c) flow cytometric analysis of A549 cells (right histogram) compared to a negative control cell (left histogram).FITC-conjugated goat-anti-rabbit secondary antibodies were used for the analysis.