

Product name:	Rad17 (phospho Ser646) Rabbit Polyclonal Antibody
Cat number:	ABN05326
Conjugate:	Unconjugated
Size:	100µL
Clone:	Polyclonal
Concentration:	1mg/ml
Host:	Rabbit
Isotype:	IgG
Immunogen:	Synthesized phospho-peptide around the phosphorylation site of human Rad17 (phospho Ser646)
Reactivity:	Human,Mouse,Rat
Applications:	WB 1:500-1:2000,IHC 1:50-1:300,ELISA 1:2000-1:20000
Purification:	Affinity purification
Form:	Liquid
Buffer:	Liquid in PBS containing 50% glycerol, 0.5% BSA and 0.02% New type preservative N.
Storage:	Store at 4°C short term. Aliquot and store at -20°C for 12 months. Avoid freeze/thaw cycles.

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. Multiple alternatively spliced transcript variants of this gene, which encode four distinct protein isoforms, function: Essential for sustained cell growth, maintenance of chromosomal stability, and ATR-dependent checkpoint activation upon DNA damage. Has a weak ATPase activity required for binding to chromatin. Participates in the recruitment of the RAD1-RAD9-HUS1 complex onto chromatin, and in CHEK1 activation. May also serve as a sensor of DNA replication progression, and may be involved in homologous recombination. induction: By X-ray irradiation (isoform 1, isoform 3 and isoform 4). PTM: Phosphorylated. Phosphorylation on Ser-646 and Ser-656 is cell cycle-regulated, enhanced by genotoxic stress, and required for activation of checkpoint signaling. Phosphorylation is mediated by ATR upon UV or replication arrest, whereas it may be mediated both by ATR and ATM upon ionizing radiation. Phosphorylation on both sites is required for interaction with RAD1 but dispensable for interaction with RFC3 or RFC4. similarity: Belongs to the rad17/RAD24 family. subcellular location: Phosphorylated form redistributes to discrete nuclear foci upon DNA damage. subunit: Part of a DNA-binding complex containing RFC2, RFC3, RFC4 and RFC5. Interacts with RAD1 and RAD9 within the RAD1-RAD9-HUS1 complex. Interacts with RAD9B, POLE, NHP2L1 and MCM7. DNA damage promotes interaction with ATR or ATM and disrupts interaction with the RAD1-RAD9-HUS1 complex. tissue specificity: 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).