10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

Rad9 Antibody (S387)

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP11518a

Product Information

Application	WB, IHC-P, IF, E
Primary Accession	Q99638
Other Accession	Q4R5X9, NP_004575.1
Reactivity	Human, Rat, Mouse
Predicted	Monkey
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB29524
Calculated MW	42547
Antigen Region	365-391

Additional Information

Gene ID	5883
Other Names	Cell cycle checkpoint control protein RAD9A, hRAD9, DNA repair exonuclease rad9 homolog A, RAD9A
Target/Specificity	This Rad9 antibody is generated from rabbits immunized with a KLH conjugated synthetic peptide between 365-391 amino acids from human Rad9.
Dilution	WB~~1:1000 IHC-P~~1:100~500 IF~~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	Rad9 Antibody (S387) is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	RAD9A
Function	Component of the 9-1-1 cell-cycle checkpoint response complex that plays a

major role in DNA repair (PubMed:10713044, PubMed:17575048, PubMed:20545769, PubMed:21659603, PubMed:31135337). The 9-1-1 complex is recruited to DNA lesion upon damage by the RAD17- replication factor C (RFC) clamp loader complex (PubMed:21659603). Acts then as a sliding clamp platform on DNA for several proteins involved in long-patch base excision repair (LP-BER) (PubMed:21659603). The 9-1- 1 complex stimulates DNA polymerase beta (POLB) activity by increasing its affinity for the 3'-OH end of the primer-template and stabilizes POLB to those sites where LP-BER proceeds; endonuclease FEN1 cleavage activity on substrates with double, nick, or gap flaps of distinct sequences and lengths; and DNA ligase I (LIG1) on long-patch base excision repair substrates (PubMed:21659603). The 9-1-1 complex is necessary for the recruitment of RHNO1 to sites of double-stranded breaks (DSB) occurring during the S phase (PubMed:21659603). RAD9A possesses 3'->5' double stranded DNA exonuclease activity (PubMed:10713044).

Cellular Location Nucleus.

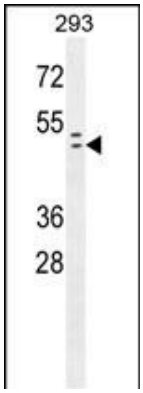
Background

This gene product is highly similar to Schizosaccharomyces pombe rad9, a cell cycle checkpoint protein required for cell cycle arrest and DNA damage repair in response to DNA damage. This protein is found to possess 3' to 5' exonuclease activity, which may contribute to its role in sensing and repairing DNA damage. It forms a checkpoint protein complex with RAD1 and HUS1. This complex is recruited by checkpoint protein RAD17 to the sites of DNA damage, which is thought to be important for triggering the checkpoint-signaling cascade. Use of alternative polyA sites has been noted for this gene.

References

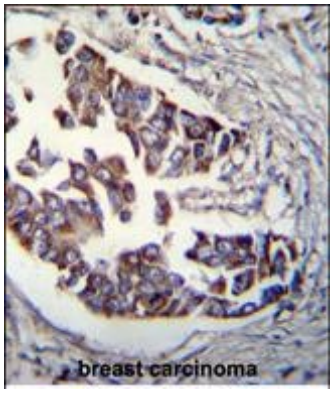
Bailey, S.D., et al. Diabetes Care 33(10):2250-2253(2010)
Takeishi, Y., et al. Genes Cells 15(7):761-771(2010)
Greer Card, D.A., et al. J. Biol. Chem. 285(20):15653-15661(2010)
Bai, H., et al. DNA Repair (Amst.) 9(5):478-487(2010)
Sierant, M.L., et al. Cell Cycle 9(3):548-556(2010)

Images

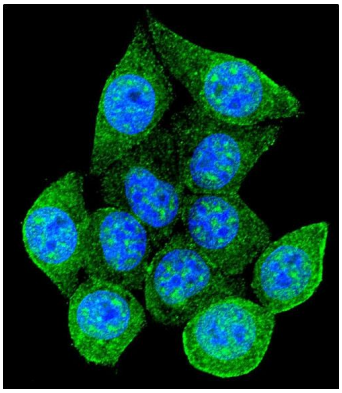


Rad9 Antibody (pS387) (Cat. #AP11518a) western blot analysis in 293 cell line lysates (35ug/lane).This demonstrates the Rad9 antibody detected the Rad9 protein (arrow).

Rad9 Antibody (S387) (Cat. #AP11518a)immunohistochemistry analysis in formalin fixed and paraffin embedded human breast carcinoma followed by peroxidase conjugation of the secondary antibody and DAB staining.This data demonstrates the use of Rad9 Antibody (S387) for immunohistochemistry.



Clinical relevance has not been evaluated.



Confocal immunofluorescent analysis of Rad9 Antibody (S387)(Cat#AP11518a) with 293 cell followed by Alexa Fluor 488-conjugated goat anti-rabbit lgG (green). DAPI was used to stain the cell nuclear (blue).