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RAD9 Antibody (BH3 Domain Specific)

Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP1318a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q99638
Other Accession	Q4R5X9, NP_004575
Reactivity	Human
Predicted	Monkey
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Clone Names	RB0965, RB0966
Calculated MW	42547
Antigen Region	1-30

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 1-30 amino acids from human RAD9.
Dilution	WB~~1:1000 IHC-P~~1:100~500 E~~Use at an assay dependent concentration.
Format	Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation followed by dialysis against PBS.
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 (BH3 Domain Specific) 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.

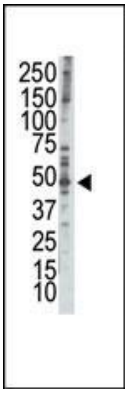
Background

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

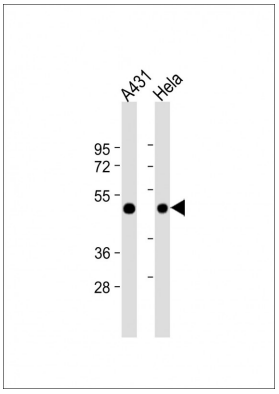
Hopkins, K.M., et al., Cancer Res. 63(17):5291-5298 (2003).
Greer, D.A., et al., Cancer Res. 63(16):4829-4835 (2003).
St Onge, R.P., et al., J. Biol. Chem. 278(29):26620-26628 (2003).
Roos-Mattjus, P., et al., J. Biol. Chem. 278(27):24428-24437 (2003).
Yoshida, K., et al., EMBO J. 22(6):1431-1441 (2003).

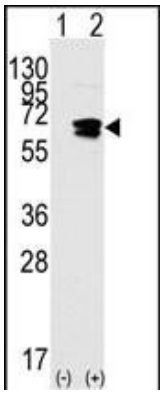
Images



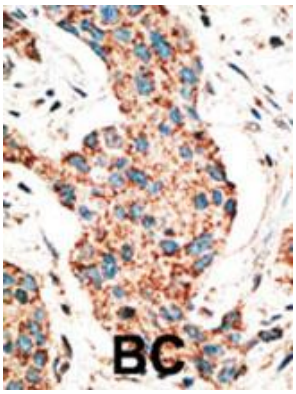
Western blot analysis of anti-Rad9 BH3 domain Pab (Cat. #AP1318a) in HL-60 cell lysate. Rad9 BH3 domain (arrow) was detected using purified Pab. Secondary HRP-anti-rabbit was used for signal visualization with chemiluminescence.

All lanes : Anti-RAD9 Antibody (BH3 Domain Specific) at 1:4000 dilution Lane 1: A431 whole cell lysate Lane 2: Hela whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size : 43 kDa Blocking/Dilution buffer: 5% NFDM/TBST.





Western blot analysis of Rad9(arrow) using rabbit polyclonal Rad9 BH3 domain Pab (Cat. #AP1318a). 293 cell lysates (2 ug/lane) either nontransfected (Lane 1) or transiently transfected with the Rad9 gene (Lane 2) (Origene Technologies).



Formalin-fixed and paraffin-embedded human cancer tissue reacted with the primary antibody, which was peroxidase-conjugated to the secondary antibody, followed by AEC staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated. BC = breast carcinoma; HC = hepatocarcinoma.