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

Phospho-RAD9(S272) Antibody

Affinity Purified Rabbit Polyclonal Antibody (Pab)
Catalog # AP3223a

Product Information

Application	WB, IHC-P, E
Primary Accession	Q99638
Other Accession	Q4R5X9
Reactivity	Human
Predicted	Monkey
Host	Rabbit
Clonality	Polyclonal
Isotype	Rabbit IgG
Calculated MW	42547

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 phosphopeptide corresponding to amino acid residues surrounding S272 of 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 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	Phospho-RAD9(S272) Antibody 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.

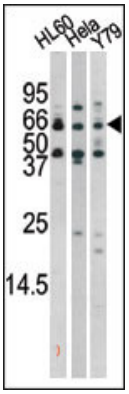
Background

Rad9 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.

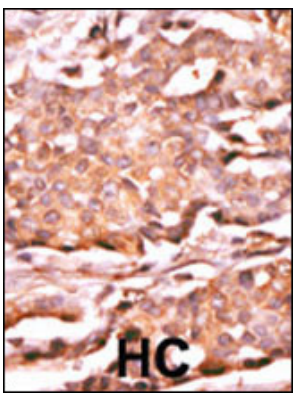
References

Maniwa, Y., et al., Cancer 103(1):126-132 (2005). Wang, W., et al., Proc. Natl. Acad. Sci. U.S.A. 101(48):16762-16767 (2004). Lindsey-Boltz, L.A., et al., (er) Nucleic Acids Res. 32(15):4524-4530 (2004). Toueille, M., et al., (er) Nucleic Acids Res. 32(11):3316-3324 (2004). Loegering, D., et al., J. Biol. Chem. 279(18):18641-18647 (2004).

Images



The anti-Phospho-Rad9-S272 Pab (Cat. #AP3223a) is used in Western blot to detect Phospho-Rad9-S272 in HL60 (left), Hela(middle), and Y79(right)tissue lysates.



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.

Citations

- The basic cleft of RPA70N binds multiple checkpoint proteins, including RAD9, to regulate ATR signaling.
- Tousled-like kinase-dependent phosphorylation of Rad9 plays a role in cell cycle progression and G2/M checkpoint exit.
- Efficient herpes simplex virus 1 replication requires cellular ATR pathway proteins.

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