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ProductInformation

Anti-RAD9
produced in rabbit, IgG fraction of antiserum

Catalog Number **R7404**

Product Description

Anti-RAD9 is developed in rabbit using a synthetic peptide corresponding to amino acids 376-391 of human RAD9, conjugated to KLH via an N-terminal added cysteine residue, as immunogen. The immunizing peptide corresponds to RAD9A and is not present in RAD9B. Whole antiserum is fractionated and then further purified by ion-exchange chromatography to provide the IgG fraction of antiserum that is essentially free of other rabbit serum proteins.

Anti-RAD9 specifically recognizes recombinant RAD9 (50 and 60 kDa) by immunoblotting. Staining of the RAD9 band in immunoblotting is specifically inhibited by the immunizing peptide.

DNA damage checkpoints are biochemical pathways that delay or arrest cell cycle progression in response to DNA damage.[1, 2] Key checkpoint regulators are conserved between yeast and humans. For instance, cloning of the human ATM gene revealed significant homology with its yeast counterparts.[4] ATM and ATR, which are central players in the checkpoint signaling pathway, are considered sensors being activated by IR or UV radiation, respectively. ATM is activated in response to double-strand breaks, whereas ATR is activated in response to stalled replication forks and to a variety of damage that causes distortions and single strands.[1, 5] RAD1, RAD9, HUS1, and RAD17 are sensor proteins as well.[6] RAD1, RAD9, and HUS1 form a stable radioresponsive checkpoint complex, commonly known as 9-1-1 and participates in human cellular responses to DNA damage.[5-8] 9-1-1 holds structural and functional similarity to the sliding clamp proliferating cell nuclear antigen (PCNA), and can be recruited to the sites of DNA damage by RAD17-RFC where it attracts specialized DNA polymerases and other DNA repair effectors.[6-10] The 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. RAD9 is found to possess 3' to 5' exonuclease activity, which may contribute to its role in sensing and repairing DNA damage.[10] RAD9 can be phosphorylated by ATM in response to DNA damage, an event important to G1/S control. In addition, it mediates S-phase checkpoint activation by regulating the phosphorylation of RAD17, Chk1, Chk2 and SmC1 in response to replication block and DNA damage.[5]

Reagent

Supplied as a solution in 0.01 M phosphate buffered saline, pH 7.4, containing 15 mM sodium azide.

Precautions and Disclaimer

Due to the sodium azide content, a material safety data sheet (MSDS) for this product has been sent to the attention of the safety officer of your institution. Consult the MSDS for information regarding hazardous and safe handling practices.

Storage/Stability

For continuous use, store at 2-8 °C for up to one month. For extended storage, freeze in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a working dilution of 1:500-1:1,000 is recommended using extracts of 293T cells transfected with RAD9.

Note: In order to obtain the best results using various techniques and preparations, we recommend determining the optimal working dilutions by titration.

References

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