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ProductInformation

Anti-RAD17 (C-terminal)
produced in rabbit, affinity isolated antibody

Catalog Number **R8029**

Product Description

Anti RAD17 (C-terminal) is developed in rabbit using a synthetic peptide corresponding to amino acids 623-640 of human RAD17 (isoform 2), conjugated to KLH via an N-terminal added cysteine residue, as immunogen. The immunizing peptide is present in isoforms 1 to 4 of RAD17. The antibody is affinity purified on the immunizing peptide immobilized on agarose.

Anti RAD17 (C-terminal) specifically recognizes RAD17 (70 kDa and 75 kDa). Applications include immunoblotting, immunoprecipitation, and immunofluorescence. Staining of the RAD17 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 throughout eukaryotes. For instance, cloning of the human ATM gene revealed significant homology with its yeast counterparts.[3, 4] The sensors ATM and ATR, which are central players in the checkpoint signaling pathway are 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 damages that cause distortions and single strands.[1, 5] RAD1, RAD9, HUS1, and RAD17 are sensor proteins as well.[6] RAD9, RAD1, and HUS1 form a stable radioresponsive checkpoint complex, commonly known as 9-1-1, which participates in cellular responses to DNA damage.[5-8] 9-1-1 might be recruited to sites of DNA damage or replication block by a RAD17/RF-C (Replication factor C) complex, where it attracts specialized DNA polymerases and other DNA repair effectors.[9] Treatment of human cells with genotoxic agents induced ATM/ATR dependent phosphorylation of RAD17 at Ser^{635} and Ser^{645}, suggesting that phosphorylation of RAD17 is a critical event during checkpoint signaling in DNA-damaged cells.[10] Eight alternative spliced transcript variants of the gene, which encode four distinct proteins, have been reported.[11] RAD17 has been reported in colon, breast and non-small cell lung carcinoma.[12-14]

Reagent

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

Antibody concentration: ~1.0 mg/mL

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 concentration of 0.5-1.0 µg/mL is recommended using HeLa cell lysates. It is recommended that the antibody be diluted in phosphate buffered saline containing 5% non-fat dry milk and 0.05 % TWEEN® 20.

Indirect immunofluorescence: a working concentration of 5-10 µg/mL is recommended using HEK293-T cells fixed with methanol-acetone.

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

References

1. Sancar, A., et al., *Annu. Rev. Biochem.*, **73**, 39-85 (2004).
2. Elledge, S.J., *Science*, **274**, 1664-1672 (1996).
3. Weinert, T., *Cell*, **94**, 555-558 (1998).
4. Savitsky, K., et al., *Science*, **268**, 1749-1753 (1995).

5. Abraham, T., *Genes Dev.*, **15**, 2177-2196 (2001).
6. Volkmer, E., and Karnitz, L.M., *J. Biol. Chem.*, **274**, 567-570 (1999).
7. Freire, R., et al., *Genes Dev.*, **12**, 2560-2573 (1998).
8. Dang, T., et al., *Genes Cells*, **10**, 287-290 (2005).
9. Dahm, K., and Hubscher, U., *Oncogene*, **21**, 7710-7719 (2002).
10. Bao, S., et al., Nature, **411**, 969-974 (2001).
11. Chen, M.S., et al., *Gene*, **277**, 145-152 (2001).
12. Bao, S., et al., *Cancer Res.*, **59**, 2023-2028 (1999)
13. Kataoka, A., et al., *Clin. Cancer Res.*, **7**, 2815-2820 (2001).
14. Wang, X., et al., *Cancer Res.*, **61**, 7417-7421 (2001).

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