SANTA CRUZ BIOTECHNOLOGY, INC.

Rad9 (yN-19): sc-6740

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The Power to Question

BACKGROUND

DNA damage results in the arrest of cell cycle progression, allowing the damaged DNA to be repaired prior to replication. Checkpoints exist at several cell cycle phase transitions to maintain this genetic integrity. Rad9, Rad17, Rad24 and Mec3 are involved in activating the G1 and G2 checkpoints. Pol2 (also known as Dun2), encoding the catalytic subunit of DNA polymerase epsilon, plays a role in activating the S phase checkpoint. The protein kinase Rad53 (also designated Spk1, Mec2 or Sad1) is essential for both G2 and S phase arrest. Activation of Rad53 is regulated by Mec1 (also known as Esr1 and Sad3), a homolog of the human ATM protein. Pds1 and Mad2 both regulate checkpoints associated with incomplete spindle replication. Dun1, another protein kinase, plays a role in transducing the DNA damage signal.

REFERENCES

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3. Abloussekhra, A., Vialard, J.E., Morrison, D.E., de la Torre-Ruiz, M.A., Cernakova, L., Fabre, F., and Lowndes, N.F. 1996. A novel role for the budding yeast RAD9 checkpoint gene in DNA damage-dependent transcription. EMBO J. 15: 3912-3922.
4. Navas, T.A., Sanchez, Y., and Elledge, S.J. 1996. RAD9 and DNA polymerase epsilon form parallel sensory branches for transducing the DNA damage checkpoint signal in *Saccharomyces cerevisiae*. Genes Dev. 10: 2632-2643.
5. Yamamoto, A., Guacci, V., and Koshland, D. 1996. Pds1p, an inhibitor of anaphase in budding yeast, plays a critical role in the APC and checkpoint pathway(s). J. Cell. Biol. 133: 99-110.
6. Longhese, M.P., Fraschini, R., Plevani, P., and Lucchini, G. 1996. Yeast pep3/mec3 mutants fail to delay entry into S phase and to slow DNA replication in response to DNA damage, and they define a functional link between Mec3 and DNA primase. Mol. Cell. Biol. 16: 3235-3244.
7. Lydall, D., Nikolsky, Y., Bishop, D.K., and Weinert, T. 1996. A meiotic recombination checkpoint controlled by mitotic checkpoint genes. Nature 383: 840-843.
8. Siede, W., Nusspaumer, G., Portillo, V., Rodriguez, R., and Friedberg, E.C. 1996. Cloning and characterization of RAD17, a gene controlling cell cycle responses to DNA damage in *Saccharomyces cerevisiae*. Nucl. Acids Res. 24: 1669-1675.
9. Sanchez, Y., Desany, B.A., Jones, W.J., Liu, Q., Wang, B., and Elledge, S.J. 1996. Regulation of RAD53 by the ATM-like kinases MEC1 and TEL1 in yeast cell cycle checkpoint pathways. Science 271: 357-360.

SOURCE

Rad9 (yN-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Rad9 of *Saccharomyces cerevisiae* origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-6740 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Rad9 (yN-19) is recommended for detection of Rad9 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of Rad9: 190-220 kDa.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048.

SELECT PRODUCT CITATIONS

1. Pike, B., et al. 2004. Rad53 kinase activation-independent replication checkpoint function of the N-terminal forkhead-associated (FHA1) domain. J. Biol. Chem. 279: 39636-39644.
2. Onnebo, S.M. and Saiardi, A. 2009. Inositol pyrophosphates modulate hydrogen peroxide signaling. Biochem. J. 423: 109-118.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.