SANTA CRUZ BIOTECHNOLOGY, INC.

p-Rad17 (Ser 646): sc-32842

SANTA CRUZ BIOTECHNOLOGY

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 G_1 and G_2 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 G_2 and S phase arrest. Activation of Rad53 is regulated by Mec1 (also known as Esr1 and Sad3), an 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. The phosphorylation of Serines 635 and 645 of human Rad17 is cell cycle regulated and is required for G_1/S checkpoint activation in response to DNA damage.

REFERENCES

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2. Zhou, Z., et al. 1993. Dun1 encodes a protein kinase that controls the DNA damage response in yeast. Cell 75: 1119-1127.1.
3. Abloussekhra, A., et al. 1996. A novel role for the budding yeast Rad9 checkpoint gene in DNA damage-dependent transcription. EMBO J. 15: 3912-3922.
4. Siede, W., et al. 1996. Cloning and characterization of Rad17, a gene controlling cell cycle responses to DNA damage in *Saccharomyces cerevisiae*. Nucleic Acids Res. 24: 1669-1675.
5. Lydall, D., et al. 1996. A meiotic recombination checkpoint controlled by mitotic checkpoint genes. Nature 383: 840-843.
6. Longhese, M.P., et al. 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. Navas, T.A., et al. 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.
8. Sanchez, Y., et al. 1996. Regulation of Rad53 by the ATM-like kinases Mec1 and Tel1 in yeast cell cycle checkpoint pathways. Science 271: 357-360.
9. Yamamoto, A., et al. 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.

CHROMOSOMAL LOCATION

Genetic locus: RAD17 (human) mapping to 5q13.2; Rad17 (mouse) mapping to 13 D1.

RESEARCH USE

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

SOURCE

p-Rad17 (Ser 646) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Ser 646 phosphorylated Rad17 of human 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-32842 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-Rad17 (Ser 646) is recommended for detection of Ser 646 phosphorylated Rad17 of human origin, Ser 647 phosphorylated Rad17 of mouse origin, correspondingly phosphorylated Rad17 of rat, equine, bovine and porcine origin, and correspondingly phosphorylated Rad17 isoforms of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

p-Rad17 (Ser 646) is also recommended for detection of correspondingly phosphorylated Rad17 in additional species, including equine, bovine and porcine.

Suitable for use as control antibody for Rad17 siRNA (h): sc-36358, Rad17 siRNA (m): sc-36359, Rad17 shRNA Plasmid (h): sc-36358-SH, Rad17 shRNA Plasmid (m): sc-36359-SH, Rad17 shRNA (h) Lentiviral Particles: sc-36358-V and Rad17 shRNA (m) Lentiviral Particles: sc-36359-V.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

STORAGE

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