

# Rad9 (C-20): sc-10465

## BACKGROUND

DNA damage or incomplete replication of DNA results in the inhibition of cell cycle progression at the G<sub>1</sub> to S or G<sub>2</sub> to M phase checkpoints by conserved regulatory mechanisms. Chk1, Rad9 and Hus1 are involved in the signal transduction cascade that regulates cell cycle arrest at the G<sub>2</sub> checkpoint. Chk1 functions as an essential component in the G<sub>2</sub> phase DNA damage checkpoint, as it phosphorylates Cdc25C in response to DNA damage and thereby inhibits mitosis. Two related mammalian proteins, Hus1 and Rad9, share conserved sequence identity and function to the yeast homologs of the same names. *In vivo*, Rad9 is highly phosphorylated and directly associates with two other checkpoint control proteins, Rad1 and Hus1. Additionally, Rad9 associates with anti-apoptotic Bcl-2 family proteins Bcl-2 and Bcl-x<sub>L</sub>, but not with the pro-apoptotic Bax and Bad proteins. Overexpression of Rad9 induces apoptosis and indicates that Rad9 may have an additional role in regulating apoptosis after DNA damage.

## REFERENCES

1. Carr, A.M., et al. 1995. The Chk1 pathway is required to prevent mitosis following cell-cycle arrest at "start". *Curr. Biol.* 5: 1179-1190.
2. Lieberman, H.B., et al. 1996. A human homolog of the *Schizosaccharomyces pombe* Rad9<sup>+</sup> checkpoint control gene. *Proc. Natl. Acad. Sci. USA* 93: 13890-13895.
3. Sanchez, Y., et al. 1997. Conservation of the Chk1 checkpoint pathway in mammals: linkage of DNA damage to Cdk regulation through Cdc25. *Science* 277: 1497-1501.
4. O'Connell, M.J., et al. 1997. Chk1 is a Wee1 kinase in the G<sub>2</sub> DNA damage checkpoint inhibiting Cdc2 by Y15 phosphorylation. *EMBO J.* 16: 545-554.

## CHROMOSOMAL LOCATION

Genetic locus: RAD9A (human) mapping to 11q13.2; Rad9 (mouse) mapping to 19 A.

## SOURCE

Rad9 (C-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the C-terminus of Rad9 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-10465 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## 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.

## APPLICATIONS

Rad9 (C-20) is recommended for detection of Rad9 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], 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).

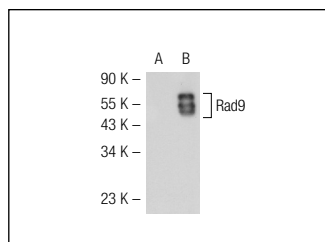
Rad9 (C-20) is also recommended for detection of Rad9 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for Rad9 siRNA (h): sc-36364, Rad9 siRNA (m): sc-36365, Rad9 shRNA Plasmid (h): sc-36364-SH, Rad9 shRNA Plasmid (m): sc-36365-SH, Rad9 shRNA (h) Lentiviral Particles: sc-36364-V and Rad9 shRNA (m) Lentiviral Particles: sc-36365-V.

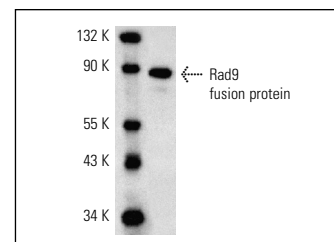
Molecular Weight of Rad9: 65 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, Rad9 (h): 293T Lysate: sc-113776 or KNRK whole cell lysate: sc-2214.

## DATA



Rad9 (C-20): sc-10465. Western blot analysis of Rad9 expression in non-transfected: sc-117752 (A) and human Rad9 transfected: sc-113776 (B) 293T whole cell lysates.



Rad9 (C-20): sc-10465. Western blot analysis of mouse recombinant Rad9 fusion protein.

## SELECT PRODUCT CITATIONS

1. Kamimura, K., et al. 2007. Lack of Bcl-11b tumor suppressor results in vulnerability to DNA replication stress and damages. *Oncogene* 26: 5840-5850.
2. Medhurst, A.L., et al. 2008. ATR and Rad17 collaborate in modulating Rad9 localisation at sites of DNA damage. *J. Cell Sci.* 121: 3933-3940.
3. Warmerdam, D.O., et al. 2010. Differential dynamics of ATR-mediated checkpoint regulators. *J. Nucleic Acids* 2010: 319142.
4. Li, D.Q., et al. 2010. Requirement of MTA1 in ATR-mediated DNA damage checkpoint function. *J. Biol. Chem.* 285: 19802-19812.

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Try **Rad9 (B-8): sc-74464** or **Rad9 (A-4): sc-74463**, our highly recommended monoclonal alternatives to Rad9 (C-20).