SANTA CRUZ BIOTECHNOLOGY, INC.

Rad52 (y-300): sc-50445

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Rad52 family members (Rad50, Rad51B/C/D, Rad52, Rad54, MRE11) mediate DNA double-strand break repair (DSBR) for DNA damage that otherwise could cause cell death, mutation or neoplastic transformation. Rad51 (RECA, BRCC5) interacts with BRCA1 and BRCA2 to influence subcellular localization and cellular response to DNA damage. BRCA2 inactivation may be a key event leading to genomic instability and tumorigenesis from deregulation of Rad51. Rad52 forms a heptameric ring that binds single-stranded DNA ends and catalyzes DNA-DNA interaction necessary for the annealing of complementary strands. Rad52 can interact with Rad51. Rad54A of the DEAD-like helicase superfamily binds to double-strand DNA and induces a DNA topological change, which is thought to facilitate homologous DNA pairing and stimulate DNA recombination. Rad54B of the DEAD-like helicase superfamily binds to double-stranded DNA and displays ATPase activity in the presence of DNA. Rad54B is abundant in testis and spleen, and mutations of this gene occur in primary lymphoma and colon cancer.

REFERENCES

1. Tsukamoto, Y., et al. 1996. Effects of mutations of Rad50, Rad51, Rad52, and related genes on illegitimate recombination in *Saccharomyces cerevisiae*. Genetics 142: 383-391.
2. Zhong, Q., et al. 2002. Deficient nonhomologous end-joining activity in cell-free extracts from BRCA1-null fibroblasts. Cancer Res. 62: 3966-3970.
3. Lisby, M., et al. 2003. Co-localization of multiple DNA double-strand breaks at a single Rad52 repair centre. Nat. Cell Biol. 5: 572-577.
4. Sugawara, N., et al. 2003. *In vivo* roles of Rad52, Rad54, and Rad55 proteins in Rad51-mediated recombination. Mol. Cell 12: 209-219.
5. O'Connor, M.S., et al. 2004. The human Rap1 protein complex and modulation of telomere length. J. Biol. Chem. 279: 28585-28591.
6. Miyazaki, T., et al. 2004. *In vivo* assembly and disassembly of Rad51 and Rad52 complexes during double-strand break repair. EMBO J. 23: 939-949.
7. Wu, Y., et al. 2006. DNA annealing mediated by Rad52 and Rad59 proteins. J. Biol. Chem. 281: 15441-15449.

SOURCE

Rad52 (y-300) is a rabbit polyclonal antibody raised against amino acids 205-504 mapping at the C-terminus of Rad52 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.

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

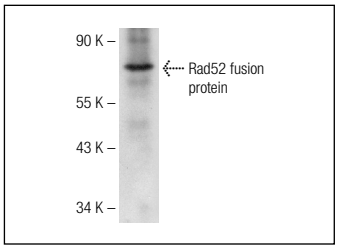
Rad52 (y-300) is recommended for detection of Rad52 of *Saccharomyces cerevisiae* origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Molecular Weight of Rad52: 69 kDa.

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 A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) 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.

DATA



Rad52 (y-300): sc-50445. Western blot analysis of goat recombinant Rad52 fusion protein.

SELECT PRODUCT CITATIONS

1. Lin, Y.H., et al. 2009. Recruitment of Rad51 and Rad52 to short telomeres triggers a Mec1-mediated hypersensitivity to double-stranded DNA breaks in senescent budding yeast. PLoS ONE 4: e8224.

PROTOCOLS

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