



Rad59 (yN-19): sc-26195

BACKGROUND

The Rad59 gene in *S. cerevisiae* encodes a protein involved in the single-strand annealing pathway of homologous recombination and required for normal levels of resistance to ionizing radiation. Rad59 anneals complementary DNA strands at a rate not accelerated by the single-stranded DNA binding factor RPA and shows a higher binding affinity for single-stranded DNA than double-stranded DNA. Rad59 deletion mutants are defective for single-strand annealing of short, homologous sequences. The Rad59 protein plays a role in removing nonhomologous sequences from the ends of single-stranded DNA when it invades a homologous DNA template. Although Rad59 has strand-annealing activity *in vitro*, this activity is insufficient to promote strand annealing *in vivo* in the absence of Rad52. Rad52 and Rad59 act in the same recombination pathway either as a complex or through overlapping functions in which Rad59 appears to augment the activity of Rad52. Rad59 also plays a role in ectopic gene conversion that depends on the presence of Rad52.

REFERENCES

1. Jablonovich, Z., Liefshitz, B., Steinlauf, R., Kupiec, M. 1999. Characterization of the role played by the Rad59 gene of *Saccharomyces cerevisiae* in ectopic recombination. *Current Genetics* 36: 13-20.
2. Petukhova, G., Stratton, S.A., Sung, P. 1999. Single strand DNA binding and annealing activities in the yeast recombination factor Rad59. *J. Biol. Chem.* 274: 33839-33842.
3. Sugawara, N., Ira, G., Haber, J.E. 2000. DNA length dependence of the single-strand annealing pathway and the role of *Saccharomyces cerevisiae* Rad59 in double-strand break repair. *Mol. Cell Biol.* 20: 5300-5309.
4. Davis, A.P., Symington, L.S. 2001. The yeast recombinational repair protein Rad59 interacts with Rad52 and stimulates single-strand annealing. *Genetics* 159: 515-525.
5. Signon, L., Malkova, A., Naylor, M.L., Klein, H., Haber, J.E. 2001. Genetic requirements for Rad51 and Rad54-independent break-induced replication repair of a chromosomal double-strand break. *Mol. Cell. Biol.* 21: 2048-2056.

SOURCE

Rad59 (yN-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping at the N-terminus of Rad59 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-26195 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.

APPLICATIONS

Rad59 (yN-19) is recommended for detection of Rad59 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).

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.

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.