SANTA CRUZ BIOTECHNOLOGY, INC.

Rad10 (yN-17): sc-26237

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The Power to Question

BACKGROUND

Multiple pathways promote short-sequence recombination in *Saccharomyces cerevisiae*. When gene conversion is initiated by a double-strand break (DSB), any nonhomologous DNA that may be present at the ends must be removed before new DNA synthesis can be initiated. Removal of a 3' nonhomologous tail in *S. cerevisiae* depends on the nucleotide excision repair endonuclease Rad1/Rad10, and also on the mismatch repair proteins Msh2 and Msh3 (2-4). Mre11, Rad50, and Xrs2, which encode the subunits of M/R/X, another complex with nuclease activity, are also crucially important for short-sequence recombination. Genetic evidence suggests that Rad1/10 and M/R/X act on the same class of substrates during Ssr. Msh2 and Msh3, which encode subunits of Msh2/3, a complex active during mismatch repair and recombination, play a more restricted role in Ssr. The Rad1/Rad10 endonuclease is required to trim intermediates formed during single-strand annealing. The Rad10 gene is required for the incision step of excision repair of UV-damaged DNA and for for mitotic recombination.

REFERENCES

1. Schiestl, R.H. and Prakash, S.1990. Rad10, an excision repair gene of *Saccharomyces cerevisiae*, is involved in the RAD1 pathway of mitotic recombination. Mol. Cell. Biol. 10: 2485-2491.
2. Sugawara, N., Paques, F., Colaiacovo, M. and Haber, J.E.1997. Role of *Saccharomyces cerevisiae* Msh2 and Msh3 repair proteins in double-strand break-induced recombination. Proc. Natl. Acad. Sci. USA 94: 9214-9219.
3. Paques, F. and Haber, J.E.1997. Two pathways for removal of nonhomologous DNA ends during double-strand break repair in *Saccharomyces cerevisiae*. Mol. Cell. Biol.17: 6765-6771.
4. Kang, L.E. and Symington, L.S. 2000. Aberrant double-strand break repair in Rad51 mutants of *Saccharomyces cerevisiae*. Mol. Cell. Biol.20: 9162-9172.
5. Kearney, H.M., Kirkpatrick, D.T., Gerton, J.L. and Petes, T.D. 2001. Meiotic recombination involving heterozygous large insertions in *Saccharomyces cerevisiae*: formation and repair of large, unpaired DNA loops. Genetics 158: 1457-1476.
6. Manthey, G.M. and Bailis, A.M.2002. Multiple pathways promote short-sequence recombination in *Saccharomyces cerevisiae*. Mol. Cell. Biol. 22: 5347-5356.

SOURCE

Rad10 (yN-17) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Rad10 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-26237 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

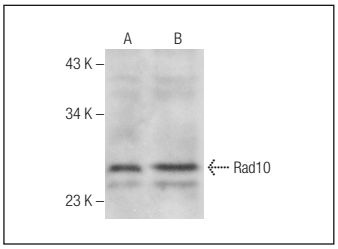
APPLICATIONS

Rad10 (yN-17) is recommended for detection of Rad10 of *Saccaromyces 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)] 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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Rad10 (yN-17): sc-26237. Western blot analysis of Rad10 expression in *Saccharomyces cerevisiae* yeast 20 µ (**A**) and *Saccharomyces cerevisiae* yeast 40 µ (**B**) whole cell lysates.

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.