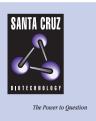
SANTA CRUZ BIOTECHNOLOGY, INC.

Mre11 (yD-20): sc-26244



BACKGROUND

Multiple pathways promote short-sequence recombination (SSR) 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. Also important for SSR, is the Mre11 complex (also known as M/R/X), which is a multisubunit nuclease composed of Mre11, Rad50 and Xrs2/Nbs1. Genetic evidence suggests that Rad1/10 and M/R/X act on the same class of substrates during SSR. The Mre11 complex plays a central role in chromosomal maintenance and functions in homologous recombination, telomere maintenance and sister chromatid association. Mutations in the genes that encode components of the Mre11 complex result in DNAdamage sensitivity, genomic instability, telomere shortening and aberrant meiosis. Although the purified protein exhibits 3' to 5' exonuclease and endonuclease activities in vitro, Mre11 is implicated in the 5' to 3' resection of duplex ends in vivo.

REFERENCES

- Sugawara, N., Paques, F., Colaiacovo, M., and Haber, J.E. 1997. Role of Saccharomyces cerevisiae Msh2 and Msh3 repair proteins in doublestrand break-induced recombination. Proc Natl Acad Sci U S A.94: 9214-9219. 9256462.
- Paques, F., and Haber, J.E. 1997. Two pathways for removal of nonhomologous DNA ends during double-strand break repair in *Saccharomyces cere*visiae. Mol. Cell. Biol.17: 6765-6771.
- 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.
- Manthey, G.M., and Bailis, A.M. 2002. Multiple pathways promote shortsequence recombination in *Saccharomyces cerevisiae*. Mol. Cell. Biol. 22: 5347-5356.5.
- D'Amours, D., and Jackson, S.P. 2002. The Mre11 complex: at the crossroads of DNA repair and checkpoint signalling. Nat. Rev. Mol. Cell Biol. 3: 317-327.
- Hopfner, K.P., Craig, L., Moncalian, G., Zinkel, R.A., Usui, T., Owen, B.A., Karcher, A., Henderson, B., Bodmer, J.L., McMurray, C.T., et al. 2002. The Rad50 zinc-hook is a structure joining Mre11 complexes in DNA recombination and repair. Nature 418: 562-566.
- Moreau, S., Morgan, E.A., and Symington, L.S.2001. Overlapping functions of the *Saccharomyces cerevisiae* Mre11, Exo1 and Rad27 nucleases in DNA metabolism. Genetics 159: 1423-1433.

SOURCE

Mre11 (yD-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Mre11 of *Saccharomyces cerevisiae* origin.

PRODUCT

Each vial contains 200 μg lgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-26244 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Mre11 (yD-20) is recommended for detection of Mre11 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-2033 and Western Blotting Luminol Reagent: sc-2048.

STORAGE

Store at 4° C, **D0 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.