SANTA CRUZ BIOTECHNOLOGY, INC.

Xrs2 (yC-18): sc-26227

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The Power to Question

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 Nbs1/Xrs2. 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 DNA-damage sensitivity, genomic instability, telomere shortening and aberrant meiosis.

REFERENCES

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2. 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.
3. 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. Genetics158: 1457-1476.
4. Manthey, G.M., and Bailis, A.M. 2002. Multiple pathways promote short-sequence 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.
6. 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.

SOURCE

Xrs2 (yC-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Xrs2 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-26227 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Xrs2 (yC-18) is recommended for detection of Xrs2 of *Saccaromyces 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.

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.