SANTA CRUZ BIOTECHNOLOGY, INC.

Msh6 (yC-19): sc-26937

SANTA CRUZ BIOTECHNOLOGY

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. Msh2 and Msh3, which function in mitotic recombination, recognize not only heteroduplex loops and mismatched basepairs, but also branched DNA structures with a free 3' tail (1-4). Msh2 and Msh6 form a protein complex required to repair mismatches generated during DNA replication. Yeast Msh2-Msh6 interact asymmetrically with the DNA through base-specific stacking and hydrogen bonding interactions and backbone contacts. The importance of these contacts decreases with increasing distance from the mismatch, implying that interactions at or near the mismatch are important for binding in a kinked DNA conformation.

REFERENCES

1. Saparbaev, M., Prakash, L., and Prakash, S.1996. Requirement of mismatch repair genes MSH2 and MSH3 in the Rad1-Rad10 pathway of mitotic recombination in *Saccharomyces cerevisiae*. Genetics 142: 727-736.
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. Selva, E.M., Maderazo, A.B., and Lahue, R.S.1997. Differential effects of the mismatch repair genes MSH2 and MSH3 on homeologous recombination in *Saccharomyces cerevisiae*. Mol. Gen. Genet. 257: 71-82.
5. Drotschmann, K., Yang, W., Brownewell, F.E., Kool, E.T., and Kunkel, T.A. 2001. Asymmetric recognition of DNA local distortion. Structure-based functional studies of eukaryotic Msh2-Msh6. J. Biol. Chem. 276: 46225-46229.
6. Drotschmann, K., Hall, M.C., Shcherbakova, P.V., Wang, H., Erie, D.A., Brownewell, F.R., Kool, E.T., and Kunkel, T.A. 2002. DNA binding properties of the yeast Msh2-Msh6 and Mlh1-Pms1 heterodimers. Biol. Chem. 383: 969-975.

SOURCE

Msh6 (yC-19) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Msh6 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-26937 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Msh6 (yC-19) is recommended for detection of Msh6 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.

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.