SANTA CRUZ BIOTECHNOLOGY, INC.

Sum1 (yN-20): sc-26441

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The Power to Question

BACKGROUND

The meiotic recombination checkpoint, which is triggered by defects in recombination or chromosome synapsis, arrests sporulating cells of *Saccharomyces cerevisiae* at pachytene by preventing accumulation of active Clb-Cdc28. Two known targets of the meiotic recombination checkpoint are NDT80 and Sum1. Ndt80 is an activator of a set of middle sporulation-specific genes (MSGs), which includes CLB genes and genes involved in spore wall formation. Sum1, for supressor of mar1, is a repressor of NDT80 and some MSGs. Activation of the checkpoint leads to inhibition of Ndt80 activity and to stabilization of Sum1. Sum1 is a component of the yeast eIF3 translation initiation complex. Sum1 is a highly conserved WD-repeat protein that suppresses S-M checkpoint mutants and inhibits the osmotic stress cell cycle response in yeast. The overexpression of Sum1 results in reduced global translation. Sum1 is cytoplasmic under normal growth conditions, but rapidly relocalizes to cytoplasmic foci after osmotic and thermal stress. After heat shock, Sum1 stably colocalizes with the 26S proteasome at the nuclear periphery.

REFERENCES

1. Klar, A.J., et al. 1985. Sum1, an apparent positive regulator of the cryptic mating-type loci in *Saccharomyces cerevisiae*. Genetics 111: 745-758.
2. Humphrey, T. and Enoch, T. 1998. Sum1, a highly conserved WD-repeat protein, suppresses S-M checkpoint mutants and inhibits the osmotic stress cell cycle response in fission yeast. Genetics 148: 1731-1742.
3. Lindgren, A., et al. 2000. The pachytene checkpoint in *Saccharomyces cerevisiae* requires the Sum1 transcriptional repressor. EMBO J. 19: 6489-6497.
4. Pak, J. and Segall, J. 2002. Regulation of the premiddle and middle phases of expression of the NDT80 gene during sporulation of *Saccharomyces cerevisiae*. Mol. Cell. Biol. 22: 6417-6429.
5. Pak, J. and Segall, J. 2002. Role of Ndt80, Sum1 and Swe1 as targets of the meiotic recombination checkpoint that control exit from pachytene and spore formation in *Saccharomyces cerevisiae*. Mol. Cell. Biol. 22: 6430-6440.
6. Dunand-Sauthier, I., et al. 2002. Sum1, a component of the fission yeast eIF3 translation initiation complex, is rapidly relocalized during environmental stress and interacts with components of the 26S proteasome. Mol. Biol. Cell 13: 1626-1640.

SOURCE

Sum1 (yN-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the N-terminus of Sum1 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-26441 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Sum1 (yN-20) is recommended for detection of Sum1 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.

SELECT PRODUCT CITATIONS

1. Corbi, D., et al. 2014. Multisite phosphorylation of the Sum1 transcriptional repressor by S-phase kinases controls exit from meiotic prophase in yeast. Mol. Cell. Biol. 34: 2249-2263.

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.