



## Top3 (yD-20): sc-26752

### BACKGROUND

In budding yeast, loss of Topoisomerase III, encoded by the Top3 gene, leads to a genomic instability phenotype that includes slow growth, hyper-sensitivity to genotoxic agents, mitotic hyper-recombination, increased chromosome missegregation, and meiotic failure. The *Saccharomyces cerevisiae* Top3 gene is highly conserved in evolution. The RecQ DNA helicase, yeast Sgs1, forms a complex with Topoisomerase III (Top3) and functions during DNA replication to restart forks that have paused due to DNA damage or topological stress. The N-terminal region of Sgs1, which interacts with Top3, is required for complementation of MMS sensitivity and suppression of hyper-recombination in Sgs1 disruptants. Slow growth and other defects of Top3 mutants are suppressed by mutation of Sgs1. Sgs1 is a homologue of the human Bloom's syndrome and Werner's syndrome genes.

### REFERENCES

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3. Kaliraman, V., Mullen, J.R., Fricke, W.M., Bastin-Shanower, S.A., and Brill, S.J. 2001. Functional overlap between Sgs1-Top3 and the Mms4-Mus81 endonuclease. *Genes Dev.* 15: 2730-2740.
4. Ui, A., et al. 2001. The N-terminal region of Sgs1, which interacts with Top3, is required for complementation of MMS sensitivity and suppression of hyper-recombination in Sgs1 disruptants. *Mol. Genet. Genomics* 265: 837-850.
5. Shor, E., Gangloff, S., Wagner, M., Weinstein, J., Price, G., and Rothstein, R. 2002. Mutations in homologous recombination genes rescue Top3 slow growth in *Saccharomyces cerevisiae*. *Genetics* 162: 647-662.
6. Oakley, T.J., Goodwin, A., Chakraverty, R.K., and Hickson, I.D. 2002. Inactivation of homologous recombination suppresses defects in Topoisomerase III-deficient mutants. *DNA Repair (Amst.)* 1: 463-482.
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### SOURCE

Top3 (yD-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Top3 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-26752 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

### APPLICATIONS

Top3 (yD-20) is recommended for detection of Top3 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](http://www.scbt.com) or our catalog for detailed protocols and support products.