# Srs2 (yC-18): sc-11991



The Power to Question

#### **BACKGROUND**

Yeast origin of replication complex (Orc)1 and Orc2 (also designated Rrr1 or Sir5) bind to autonomously replicating sequences (ARS) and serve as an initiator proteins for DNA replication. The minichromosome maintenance (Mcm) proteins bind to chromatin and activate the ORC-ARS complex. Cdc6, involved in limiting DNA replication to once per cell cycle, binds to the ORC and is essential for the assembly of the Mcm proteins. The transcription factor Abf1 (also designated Obf1 or Baf1) also binds to the ARS and plays a role in gene silencing as well as in DNA replication. Replication factor C (Rfc)1-5 are required to load the replication clamp proliferating cell nuclear antigen onto primed DNA. Sag1-related sequence 2 (Srs2) is a DNA helicase involved in the maintenance of genome integrity and is required for the Rad1-dependent removal of long 3' tails. Sgs1 is a homologue of the human Bloom's syndrome and Werner's syndrome genes and interacts both physically and genetically with topoisomerase III. Myosin-like protein (Mlp)1 and 2 are nuclear envelope associated proteins that form nuclear pore-attached intranuclear filaments. Dpb11, an essential BRCT repeat protein, is required for chromosomal DNA replication and the S-phase checkpoint.

# REFERENCES

- Bell, S.P., Mitchell, J., Leber, J., Kobayashi, R. and Stillman, B. 1995. The multidomain structure of Orc1p reveals similarity to regulators of DNA replication and transcriptional silencing. Cell 83: 563-568.
- 2. McBroom, L.D.B. and Sadowski, P.D. 1995. Functional analysis of the ABF1-binding sites within the Ya regions of the MATa and HMRa loci of *Saccharomyces cerevisiae*. Curr. Genet. 28: 1-11.
- 3. Cocker, J.H., Piatti, S., Santocanale, C., Nasmyth, K. and Diffley, J.F.X. 1996. An essential role for the Cdc6 protein in forming the pre-replicative complexes of budding yeast. Nature 379: 180-182.
- 4. Donovan, S., Harwood, J., Drury, L.S. and Diffley, J.F.X. 1997. Cdc6p-dependent loading of Mcm proteins onto pre-replicative chromatin in budding yeast. Proc. Natl. Acad. Sci. USA 94: 5611-5616.
- 5. Strambio-de-Castillia, C., Blobel, G. and Rout, M.P. 1999. Proteins connecting the nuclear pore complex with the nuclear interior. J. Cell Biol. 144: 839-855.
- Gangloff, S., Soustelle, C. and Fabre, F. 2000. Homologous recombination is responsible for cell death in the absence of the Sgs1 and Srs2 helicases. Nat. Genet. 25: 192-194.
- Wu, L., Davies, S.L., North, P.S., Goulaouic, H., Riou, J.F., Turley, H., Gatter, K.C. and Hickson, I.D. 2000. The Bloom's syndrome gene product interacts with topoisomerase III. J. Biol. Chem. 275: 9636-9644.
- 8. Gomes, X.V., Gary, S.L. and Burgers, P.M. 2000. Overproduction in *Escherichia coli* and characterization of yeast replication factor C lacking the ligase homology domain. J. Biol. Chem. 275: 14541-14549.
- 9. Masumoto, H., Sugino, A. and Araki, H. 2000. Dpb11 controls the association between DNA polymerases  $\alpha$  and  $\epsilon$  and the autonomously replicating sequence region of budding yeast. 2000. Mol. Cell. Biol. 20: 2809-2817.

#### **SOURCE**

Srs2 (yC-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Srs2 of *Saccharomyces cerevisiae* origin.

## **PRODUCT**

Each vial contains 200  $\mu g$  IgG in 1.0 ml of PBS with <0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-11991 P, (100  $\mu$ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## **APPLICATIONS**

Srs2 (yC-18) is recommended for detection of Srs2 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**

- Chiolo, I., Carotenuto, W., Maffioletti, G., Petrini, J.H., Foiani, M. and Liberi, G. 2005. Srs2 and Sgs1 DNA helicases associate with MRE11 in different subcomplexes following checkpoint activation and Cdk1-mediated Srs2 phosphorylation. Mol. Cell. Biol. 25: 5738-5751.
- Liberi, G., Maffioletti, G., Lucca, C., Chiolo, I., Baryshnikova, A., Cotta-Ramusino, C., Lopes, M., Pellicioli, A., Haber, J.E. and Foiani, M. 2005. Rad51-dependent DNA structures accumulate at damaged replication forks in Sgs1 mutants defective in the yeast ortholog of BLM RecQ helicase. Genes Dev. 19: 339-350.
- Le Breton, C., Dupaigne, P., Robert, T., Le Cam, E., Gangloff, S., Fabre, F. and Veaute, X. 2008. Srs2 removes deadly recombination intermediates independently of its interaction with SUMO-modified PCNA. Nucleic Acids Res. 36: 4964-4974.
- Liu, J., Renault, L., Veaute, X., Fabre, F., Stahlberg, H. and Heyer, W.D. 2011. Rad51 paralogues Rad55-Rad57 balance the antirecombinase Srs2 in Rad51 filament formation. Nature 479: 245-248.

#### **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.