



Sir3 (184C): sc-101612

BACKGROUND

Telomeric DNA is bound by the transcription regulator Rap1 (repressor activator protein 1, also designated Grf1). In addition to playing a role in silencing the HM mating-type loci, Rap1 is involved in the repression of genes located adjacent to the telomeres, a phenomenon known as telomere position effect (TPE). The silent information regulator proteins Sir2 (also designated Mar1), Sir3 (also designated Mar2, Ste8 or Cmt1) and Sir4 (also designated Ste9, Asd1 or Uth2) form a complex with Rap1. These proteins are essential for TPE silencing and HM structure. Sir1 is essential for silencing the HM mating-type loci, but it has no effect on Tpe. Tel1, a member of the PI 3-kinase family and a homolog of the human ataxia telangiectasia protein, is involved in controlling telomere length. Hdf1 (also referred to as Ku-70), a homolog of the mammalian Ku-70, also plays a role in maintaining telomere length.

REFERENCES

1. Kyrion, G., Liu, K., Liu, C. and Lustig, A.J. 1993. RAP1 and telomere structure regulate telomere position effects in *Saccharomyces cerevisiae*. *Genes Dev.* 7: 1146-1159.
2. Palladino, F., Laroche, T., Gilson, E., Axelrod, A., Pillus, L. and Gasser, S.M. 1993. Sir3 and Sir4 proteins are required for the positioning and integrity of yeast telomeres. *Cell* 75: 543-555.
3. Cockell, M., Palladino, F., Laroche, T., Kyrion, G., Liu, C., Lustig, A.J. and Gasser, S.M. 1995. The carboxy termini of Sir4 and Rap1 affect Sir3 localization: evidence for a multicomponent complex required for yeast telomeric silencing. *J. Cell Biol.* 129: 909-924.
4. Greenwell, P.W., Kronmal, S.L., Porter, S.E., Gassenhuber, J., Obermaier, B. and Petes, T.D. 1995. TEL1, a gene involved in controlling telomere length in *S. cerevisiae*, is homologous to the human ataxia telangiectasia gene. *Cell* 82: 823-829.
5. Porter, S.E., Greenwell, P.W., Ritchie, K.B. and Petes, T.D. 1996. The DNA-binding protein Hdf1p (a putative Ku homologue) is required for maintaining normal telomere length in *Saccharomyces cerevisiae*. *Nucleic Acids Res.* 24: 582-585.
6. Tsukamoto, Y., Kato, J.I. and Ikeda, H. 1997. Silencing factors participate in DNA repair and recombination in *Saccharomyces cerevisiae*. *Nature* 388: 900-903.

SOURCE

Sir3 (184C) is a mouse monoclonal antibody raised against Sir3 of *S. cerevisiae* origin.

PRODUCT

Each vial contains 100 µl ascites containing IgG₁ with < 0.1% sodium azide.

STORAGE

For immediate and continuous use, store at 4° C for up to one month. For sporadic use, freeze in working aliquots in order to avoid repeated freeze/thaw cycles. If turbidity is evident upon prolonged storage, clarify solution by centrifugation.

APPLICATIONS

Sir3 (184C) is recommended for detection of Sir3 of *S. cerevisiae* origin by Western Blotting (starting dilution to be determined by researcher, dilution range 1:100-1:5000) and solid phase ELISA (starting dilution to be determined by researcher, dilution range 1:30-1:5000).

SELECT PRODUCT CITATIONS

1. Zhang, S., Yu, X., Zhang, Y., Xue, X., Yu, Q., Zha, Z., Gogol, M., Workman, J.L. and Li, S. 2021. Metabolic regulation of telomere silencing by SESAME complex-catalyzed H3T11 phosphorylation. *Nat. Commun.* 12: 594.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.