

SAC1 (C-12): sc-103182

BACKGROUND

The *Saccharomyces cerevisiae* SAC1 gene modulates yeast actin function and alleviates the essential requirement for phosphatidylinositol transfer protein (Sec14p) activity in Golgi secretory function. The SAC1 gene product (Sac1p) is an integral membrane lipid phosphatase of the endoplasmic reticulum (ER) and the Golgi complex and contains a Sac phosphatase domain. Sac1p functions in a wide range of cellular processes including inositol metabolism, actin cytoskeletal organization, endoplasmic reticulum ATP transport, phosphatidylinositol-phosphatidylcholine transfer protein function and multiple-drug sensitivity. Sac1p is an important regulator of microsomal ATP transport, providing a link between inositol phospholipid signaling and ATP-dependent processes in the yeast ER. Defects in Sac1p relieves the requirement for Sec14p by altering phospholipid metabolism to expand the pool of diacylglycerol in the Golgi. Sac1p dysfunction exerts its pleiotropic effects on yeast Golgi function, the organization of the actin cytoskeleton, and the cellular requirement for inositol, through altered metabolism of inositol glycerophospholipids. These effects suggest the secretory and cytoskeletal activities are coordinated to achieve proper spatial regulation of secretion in *S. cerevisiae*.

REFERENCES

1. Cleves, A.E., et al. 1989. Mutations in the SAC1 gene suppress defects in yeast Golgi and yeast actin function. *J. Cell Biol.* 109: 2939-2950.
2. Whitters, E.A., et al. 1993. Sac1p is an integral membrane protein that influences the cellular requirement for phospholipid transfer protein function and inositol in yeast. *J. Cell Biol.* 122: 79-94.
3. Kearns, B.G., et al. 1997. Essential role for diacylglycerol in protein transport from the yeast Golgi complex. *Nature* 387: 101-105.
4. Kochendorfer, K.U., et al. 1999. Sac1p plays a crucial role in microsomal ATP transport, which is distinct from its function in Golgi phospholipid metabolism. *EMBO J.* 18: 1506-1515.
5. Hughes, W.E., et al. 2000. Sac1 encodes a regulated lipid phosphoinositide phosphatase, defects in which can be suppressed by the homologous Inp52p and Inp53p phosphatases. *J. Biol. Chem.* 275: 801-808.
6. Nemoto, Y., et al. 2000. Functional characterization of a mammalian Sac1 and mutants exhibiting substrate-specific defects in phosphoinositide phosphatase activity. *J. Biol. Chem.* 275: 34293-34305.
7. Hughes, W.E., et al. 2000. Sac phosphatase domain protein. *Biochem. J.* 350: 337-352.

CHROMOSOMAL LOCATION

Genetic locus: SACM1L (human) mapping to 3p21.31; Sacm1l (mouse) mapping to 9 F4.

SOURCE

SAC1 (C-12) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of SAC1 of human origin.

RESEARCH USE

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

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-103182 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

SAC1 (C-12) is recommended for detection of SAC1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

SAC1 (C-12) is also recommended for detection of SAC1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for SAC1 siRNA (h): sc-78323, SAC1 siRNA (m): sc-153197, SAC1 shRNA Plasmid (h): sc-78323-SH, SAC1 shRNA Plasmid (m): sc-153197-SH, SAC1 shRNA (h) Lentiviral Particles: sc-78323-V and SAC1 shRNA (m) Lentiviral Particles: sc-153197-V.

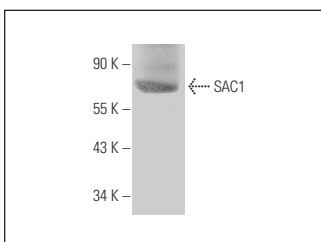
Molecular Weight of SAC1: 65 kDa.

Positive Controls: F9 cell lysate: sc-2245.

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



SAC1 (C-12): sc-103182. Western blot analysis of SAC1 expression in F9 whole cell lysate.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.