SANTA CRUZ BIOTECHNOLOGY, INC.

Ssa1/2 (yT-14): sc-23752

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The Power to Question

BACKGROUND

The translocation of proteins across the yeast ER membrane requires ATP hydrolysis and the action of DnaK (also designated Hsp70) and DnaJ homologues. At least ten members of the heat-shock protein 70 (HSP70) family are found in the budding yeast *Saccharomyces cerevisiae*. In *S. cerevisiae* the cytosolic HSP70s that promote post-translational translocation are the products of the Ssa gene family. The Ssa subfamily of HSP70 molecular chaperones in *S. cerevisiae* has four members, encoded by Ssa1, Ssa2, Ssa3, and Ssa4. Deletion of the two constitutively expressed genes, Ssa1 and Ssa2, results in cells which are slow growing and temperature sensitive. Constitutively expressed members of the yeast cytoplasmic Ssa subfamily, Ssa1 and Ssa2, display overlapping functions in the transport of aminopeptidase 1. Ssa1 is the most extensively studied cytosolic HSP70, as it plays essential functions in protein folding and translocation across the endoplasmic reticulum (ER) and mitochondrial membranes in combination with its J-domain partner Ydj1, and facilitates ER-associated degredation (ERAD). Heat-shock protein 40 (Hsp40) transiently interacts with HSP70 and facilitates HSP70 functions in these processes within cells.

REFERENCES

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2. McClellan, A.J. and Brodsky, J.L. 2000. Mutation of the ATP-binding pocket of Ssa1 indicates that a functional interaction between Ssa1p and Ydj1p is required for post-translational translocation into the yeast endoplasmic reticulum. Genetics 156: 501-512.
3. Satyanarayana, C., Schroder-Kohne, S., Craig, E.A., Schu, P.V. and Horst, M. 2000. Cytosolic HSP70s are involved in the transport of aminopeptidase 1 from the cytoplasm into the vacuole. FEBS Lett. 470: 232-238.
4. Frydman, J. 2001. Folding of newly translated proteins *in vivo*: the role of molecular chaperones. Annu. Rev. Biochem. 70: 603-647.
5. Qian, X., Li, Z. and Sha, B. 2001. Cloning, expression, purification and preliminary X-ray crystallographic studies of yeast Hsp40 Sis1 complexed with HSP70 Ssa1 C-terminal lid domain. Acta Crystallogr. D Biol. Crystallogr. 57: 748-750.
6. Kabani, M., Beckerich, J.M. and Brodsky, J.L. 2002. Nucleotide exchange factor for the yeast HSP70 molecular chaperone Ssa1p. Mol. Cell. Biol. 22: 4677-4689.

SOURCE

Ssa1/2 (yT-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping near the C-terminus of Ssa1 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-23752 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

Ssa1/2 (yT-14) is recommended for detection of Ssa1 and Ssa2 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 or our catalog for detailed protocols and support products.