SANTA CRUZ BIOTECHNOLOGY, INC.

Hsp104 (yH-20): sc-23427

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The Power to Question

BACKGROUND

Hsp104 is a molecular chaperone required for stress tolerance and for maintenance of [psi+] prions in the budding yeast *Saccharomyces cerevisiae*. HSP104 is a hexameric protein with two AAA ATPase domains (N- and C-terminal nucleotide-binding domains NBD1 and NBD2, respectively) per monomer. NBD1 and NBD2 have very different catalytic properties, but each shows positive cooperativity in hydrolysis. Point mutations in either of the two nucleotide-binding domains (NBD) of Hsp104 (NBD1 and NBD2) eliminate its thermotolerance function *in vivo*. Hsp104 interacts with Hsp90 cochaperones in respiring yeast. The primary function of Hsp104 in prion propagation is to disassemble prion aggregates and generate the small prion seeds that initiate new rounds of prion propagation (possibly assisted by Hsp70-Ssa).

REFERENCES

1. Abbas-Terki, T., Donze, O., Briand, P.A., and Picard, D. 2001. Hsp104 interacts with Hsp90 cochaperones in respiring yeast. Mol. Cell Biol. 21: 7569-7575.
2. Ferreira, P.C., Ness, F., Edwards, S.R., Cox, B.S., and Tuite, M.F. 2001. The elimination of the yeast [PSI+] prion by guanidine hydrochloride is the result of Hsp104 inactivation. Mol. Microbiol. 40: 1357-1369.
3. Schirmer, E.C., Ware, D.M., Queitsch, C., Kowal, A.S., and Lindquist, S.L. 2001. Subunit interactions influence the biochemical and biological properties of Hsp104. Proc. Natl. Acad. Sci. USA 98: 914-919.
4. Wegrzyn, R.D., Bapat, K., Newnam, G.P., Zink, A.D., and Chernoff, Y.O. 2001. Mechanism of prion loss after Hsp104 inactivation in yeast. Mol. Cell Biol. 21: 4656-4669.
5. Hattendorf, D.A., and Lindquist, S.L. 2002. Analysis of the AAA sensor-2 motif in the C-terminal ATPase domain of Hsp104 with a site-specific fluorescent probe of nucleotide binding. Proc. Natl. Acad. Sci. USA 99: 2732-2737.
6. Hattendorf, D.A., and Lindquist, S.L. 2002. Cooperative kinetics of both Hsp104 ATPase domains and interdomain communication revealed by AAA sensor-1 mutants. Embo J. 21: 12-21.

SOURCE

Hsp104 (yH-20) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of Hsp104 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-23427 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

STORAGE

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

APPLICATIONS

Hsp104 (yH-20) is recommended for detection of Hsp104 of *Saccaromyces 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.

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.