SANTA CRUZ BIOTECHNOLOGY, INC.

HSP 27 (Ser 15): sc-24564

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The heat shock proteins (HSPs) comprise a group of highly conserved, abundantly expressed proteins with diverse functions, including the assembly and sequestering of multiprotein complexes, transportation of nascent polypeptide chains across cellular membranes and regulation of protein folding. Heat shock proteins (also known as molecular chaperones) fall into six general families: HSP 90, HSP 70, HSP 60, the low molecular weight HSPs, the immunophilins and the HSP 110 family. The low molecular weight family includes HSP 10, HSP 20, HSP 27, HSP 32 and HSP 40. HSP 27 is a constitutively expressed cytoplasmic protein that co-localizes to the nucleus upon stress induced by insult. Heat, cytokines and hormones are among the factors that stimulate the synthesis of HSP 27. *In vitro*, HSP 27 becomes highly phosphorylated following exposure to stress. The discovery that HSP 27 is regulated by hormones such as estrogen has led to studies establishing a relationship between HSP 27 and breast cancer.

REFERENCES

1. Schlesinger, M.J., Ashburner, M. and Tissieres, A. 1982. Heat Shock: from Bacteria to Man. Cold Spring Harbor, NY: Cold Spring Harbor Laboratory.
2. Zeilstra-Ryalls, J., Fayet, O. and Georgopoulos, C. 1991. The universally conserved GroE (HSP 60) chaperonins. Annu. Rev. Microbiol. 45: 301-325.
3. Ciocca, D.R., Oesterreich, S., Chamness, G.C., McGuire, W.L. and Fuqua, S.A. 1993. Biological and clinical implications of heat shock protein 27,000 (HSP 27): a review. J. Natl. Cancer Inst. 85: 1558-1570.
4. Georgopoulos, C. and Welch, W.J. 1993. Role of the major heat shock proteins as molecular chaperones. Annu. Rev. Cell Biol. 9: 601-634.
5. Todd, M.J., Viitanen, P.V. and Lorimer, G.H. 1994. Dynamics of the chaperonin ATPase cycle: implications for facilitated protein folding. Science 265: 659-666.

CHROMOSOMAL LOCATION

Genetic locus: HSPB1 (human) mapping to 7q22; Hspb1 (mouse) mapping to 5 G2.

SOURCE

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PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS containing 0.1% sodium azide and 0.2% gelatin.

Blocking peptide available for competition studies, sc-24564 P, (100 µg peptide in 0.5 ml PBS containing 0.1% sodium azide and 100 µg BSA)

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.

APPLICATIONS

HSP 27 (Ser 15) is recommended for detection of HSP 27 of origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

Molecular Weight of HSP 27: 27 kDa.

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) 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.

PROTOCOLS

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