SANTA CRUZ BIOTECHNOLOGY, INC.

HSP 27 (m): 293T Lysate: sc-120910

BACKGROUND

The heat shock proteins (HSPs) comprise a group of highly conserved, abundantly expressed proteins with diverse functions, including the assembly and sequestering of multi-protein 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. Ritossa, F. 1962. A new puffing pattern induced by temperature shock and DNP in *Drosophila.* Experientia 18: 571-573.
2. Lemeaux, P.G., et al. 1978. Transient rates of synthesis of individual polypeptides in *E. coli* following temperature shifts. Cell 13: 427-434.
3. Kelley, P. and Schlesinger, M.J. 1978. The effect of amino acid analogues and heat shock on gene expression in chicken embryo fibroblasts. Cell 15: 1277-1286.
4. Schlesinger, M.J., et al., eds. 1982. Heat Shock: From Bacteria to Man. Cold Spring Harbor, NY: Cold Spring Harbor Laboratory.
5. Todd, M.J., et al. 1994. Dynamics of the chaperonin ATPase cycle: implications for facilitated protein folding. Science 265: 659-666.
6. Ciocca, D.R., et al. 1993. Biological and clinical implications of heat shock protein 27,000 (HSP 27): a review. J. Natl. Cancer Inst. 85: 1558-1570.
7. Freshney, N.W., et al. 1994. Interleukin-1 activates a novel protein kinase cascade that results in the phosphorylation of HSP 27. Cell 78: 1039-1049.
8. Mehlen, P., et al. 1995. Tumor necrosis factor-α induces change in the phosphorylation, cellular localization, and oligomerization of human HSP 27, a stress protein that confers cellular resistance to this cytokine. J. Cell. Biochem. 58: 248-259.
9. Satoh, J. and Kim, S.U. 1995. Cytokines and growth factors induce HSP 27 phosphorylation in human astrocytes. J. Neuropathol. Exp. Neurol. 54: 504-512.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Hspb1 (mouse) mapping to 5 G2.

PRODUCT

HSP 27 (m): 293T Lysate represents a lysate of mouse HSP 27 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

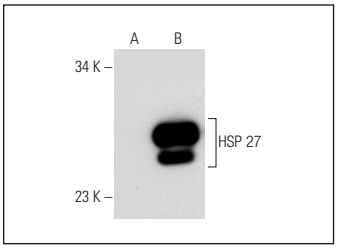
APPLICATIONS

HSP 27 (m): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive HSP 27 antibodies. Recommended use: 10-20 µl per lane.

Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

HSP 27 (HSP25-31): sc-51958 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse HSP 27 expression in HSP 27 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

DATA



HSP 27 (HSP25-31): sc-51958. Western blot analysis of HSP 27 expression in non-transfected: sc-117752 (**A**) and mouse HSP 27 transfected: sc-120910 (**B**) 293T whole cell lysates.

RESEARCH USE

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