SANTA CRUZ BIOTECHNOLOGY, INC.

p-HSP 27 (Ser 15): sc-101699

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

HSP 27 is a constitutively expressed cytoplasmic protein that co-localizes to the nucleus upon stress-induced insult. Heat shock, cytokines and hormones are among the factors that stimulate the synthesis of HSP 27. The intracellular concentration of the mammalian heat shock protein, HSP 27, increases several-fold after heat shock and other metabolic stresses, and is closely associated with the acquisition of thermotolerance. MAP kinase-activated protein kinase-2 phosphorylates HSP 27 on serine residues Ser 15, Ser 78 and Ser 82, which are phosphorylated *in vivo* in response to growth factors and heat shock. Ser 15, Ser 78 and Ser 82 occur in the sequence motif RXXS, which is recognized by ribosomal protein S6 kinase II.

REFERENCES

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2. Stokoe, D., Engel, K., Campbell, D.G., Cohen, P. and Gaestel, M. 1992. Identification of MAPKAP kinase 2 as a major enzyme responsible for the phosphorylation of the small mammalian heat shock proteins. FEBS Lett. 313: 307-313.
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. Freshney, N.W., Rawlinson, L., Guesdon, F., Jones, E., Cowley, S., Hsuan, J. and Saklatvala, J. 1994. Interleukin-1 activates a novel protein kinase cascade that results in the phosphorylation of HSP 27. Cell 78: 1039-1049.
5. Mehlen, P., Mehlen, A., Guillet, D., Preville, X. and Arrigo, A.P. 1995. Tumor necrosis factor a 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.
6. 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.

CHROMOSOMAL LOCATION

Genetic locus: HSPB1 (human) mapping to 7q11.23; Hspb1 (mouse) mapping to 5 G2.

SOURCE

p-HSP 27 (Ser 15) is a rabbit polyclonal antibody raised against a short amino acid sequence containing phosphorylated Ser 15 of HSP 27 of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

p-HSP 27 (Ser 15) is recommended for detection of Ser 15 phosphorylated HSP 27 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 and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

Suitable for use as control antibody for HSP 27 siRNA (h): sc-29350, HSP 27 siRNA (m): sc-35598, HSP 27 shRNA Plasmid (h): sc-29350-SH, HSP 27 shRNA Plasmid (m): sc-35598-SH, HSP 27 shRNA (h) Lentiviral Particles: sc-29350-V and HSP 27 shRNA (m) Lentiviral Particles: sc-35598-V.

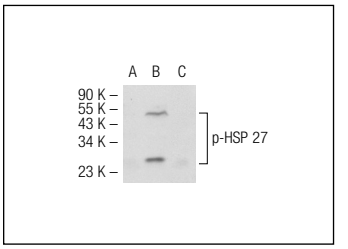
Molecular Weight of p-HSP 27: 27 kDa.

Positive Controls: UV-treated HeLa whole cell lysate or human breast carcinoma tissue.

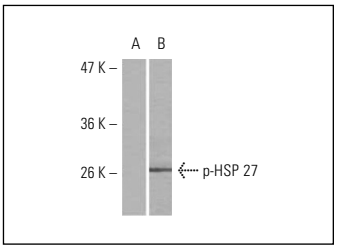
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941. 4) Immunohistochemistry: use ImmunoCruz™: sc-2051 or ABC: sc-2018 rabbit IgG Staining Systems.

DATA



p-HSP 27 (Ser 15): sc-101699. Western blot analysis of HSP 27 phosphorylation in untreated (**A**), heat shocked (**B**) and heat shocked and lambda protein phosphatase treated (**C**) HeLa whole cell lysates.



p-HSP 27 (Ser 15): sc-101699. Western blot analysis of phosphorylated HSP 27 expression in untreated (**A**) and UV-treated (**B**) HeLa whole cell lysates.

STORAGE

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

PROTOCOLS

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