SANTA CRUZ BIOTECHNOLOGY, INC.

p-HSP 27 (Ser 82): sc-12923

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

1. Landry, J., et al. 1992. Human HSP 27 is phosphorylated at Serines 78 and 82 by heat shock and mitogen-activated kinases that recognize the same amino acid motif as S6 kinase II. J. Biol. Chem. 267: 794-803.
2. Stokoe, D., et al. 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., et al. 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., et al. 1994. Interleukin-1 activates a novel protein kinase cascade that results in the phosphorylation of HSP 27. Cell 78: 1039-1049.
5. 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.

CHROMOSOMAL LOCATION

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

SOURCE

p-HSP 27 (Ser 82) is available as either goat (sc-12923) or rabbit (sc-12923-R) polyclonal affinity purified antibody raised against a short amino acid sequence containing Ser 82 phosphorylated HSP 27 of human 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-12923 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.

RESEARCH USE

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

APPLICATIONS

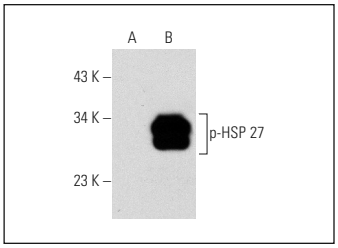
p-HSP 27 (Ser 82) is recommended for detection of Ser 82 phosphorylated HSP 27 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

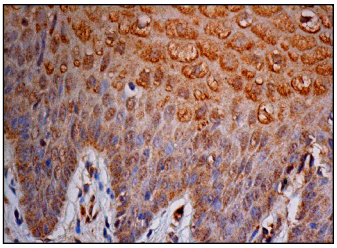
Molecular Weight of p-HSP 27: 27 kDa.

Positive Controls: HSP 27 (h): 293T Lysate: sc-174710, ECV304 cell lysate: sc-2269 or HeLa whole cell lysate: sc-2200.

DATA



p-HSP 27 (Ser 82): sc-12923. Western blot analysis of HSP 27 phosphorylation in non-transfected: sc-117752 (**A**) and human HSP 27 transfected: sc-174710 (**B**) 293T whole cell lysates.



p-HSP 27 (Ser 82): sc-12923. Immunoperoxidase staining of formalin fixed, paraffin-embedded human vagina tissue showing cytoplasmic and nuclear staining of squamous epithelial cells.

SELECT PRODUCT CITATIONS

1. Somara, S., et al. 2004. Tropomyosin interacts with phosphorylated HSP 27 in agonist-induced contraction of smooth muscle. Am. J. Physiol., Cell Physiol. 286: C1290-C1301.
2. Jomary, C., et al. 2006. Inactivation of the Akt survival pathway during photoreceptor apoptosis in the retinal degeneration mouse. Invest. Ophthalmol. Vis. Sci. 47: 1620-1629.
3. Shreeram, S., et al. 2006. Regulation of ATM/p53-dependent suppression of Myc-induced lymphomas by Wip1 phosphatase. J. Exp. Med. 203: 2793-2799.
4. Shreeram, S., et al. 2006. Regulation of ATM/p53-dependent suppression of Myc-induced lymphomas by Wip1 phosphatase. J. Exp. Med. 203: 2793-2799.