SANTA CRUZ BIOTECHNOLOGY, INC.

HSP 27 (M-20): sc-1049

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.

CHROMOSOMAL LOCATION

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

SOURCE

HSP 27 (M-20) is available as either goat (sc-1049) or rabbit (sc-1049-R) polyclonal affinity purified antibody raised against a peptide mapping near the C-terminus of HSP 27 of mouse 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-1049 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as agarose conjugate for immunoprecipitation, sc-1049 AC, 500 µg/0.25 ml agarose in 1 ml.

APPLICATIONS

HSP 27 (M-20) is recommended for detection of 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). HSP 27 (M-20) is also recommended for detection of HSP 27 in additional species, including equine, canine, bovine and porcine.

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.

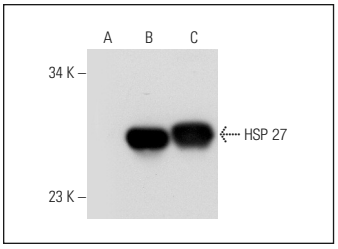
Molecular Weight of HSP 27: 27 kDa.

Positive Controls: HSP 27 (m): 293T Lysate: sc-120910, HeLa whole cell lysate: sc-2200 or ECV304 cell lysate: sc-2269.

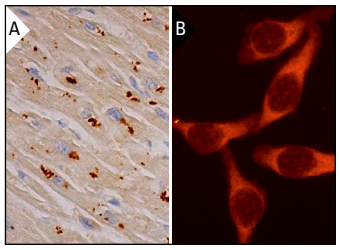
STORAGE

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

DATA



HSP 27 (M-20): sc-1049. Western blot analysis of HSP 27 expression in non-transfected 293T: sc-117752 (**A**), mouse HSP 27 transfected 293T: sc-120910 (**B**) and ECV304 (**C**) whole cell lysates.



Immunofluorescence staining of methanol-fixed HeLa cells. Note cytoplasmic fluorescein immunostaining (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes (**B**). Antibodies tested include HSP 27 (M-20): sc-1049 (**A**) and HSP 27 (M-20)-R: sc-1049-R (**B**).

SELECT PRODUCT CITATIONS

1. Giasson, B.I., et al. 1999. Activation of stress-activated protein kinases correlates with neurite outgrowth induced by protease inhibition in PC12 cells. J. Neurochem. 72: 1081-1087.
4. Vinit, S., et al. 2011. Distinct expression of c-Jun and HSP27 in axotomized and spared bulbospinal neurons after cervical spinal cord injury. J. Mol. Neurosci. 45: 119-133.
5. Choi, S.H., et al. 2011. Altered cross-linking of HSP27 by zerumbone as a novel strategy for overcoming HSP27-mediated radioresistance. Int. J. Radiat. Oncol. Biol. Phys. 79: 1196-1205.
6. Sela, I., et al. 2011. The proteomic profile of hereditary inclusion body myopathy. PLoS ONE 6: e16334.
7. Fujita, R., et al. 2011. Hsp-27 induction requires POU4F2/Brn-3b TF in doxorubicin-treated breast cancer cells, whereas phosphorylation alters its cellular localisation following drug treatment. Cell Stress Chaperones 16: 427-439.
8. Sanchez-Niño, M.D., et al. 2012. HSP27/HSPB1 as an adaptive podocyte antiapoptotic protein activated by high glucose and angiotensin II. Lab. Invest. 92: 32-45.

RESEARCH USE

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