

HSP 27 (H-77): sc-9012

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 (H-77) is a rabbit polyclonal antibody raised against amino acids 32-108 of 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.

APPLICATIONS

HSP 27 (H-77) 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 (H-77) is also recommended for detection of HSP 27 in additional species, including 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: ECV304 cell lysate: sc-2269, HeLa + heat shock cell lysate: sc-2272 or HeLa whole cell lysate: sc-2200.

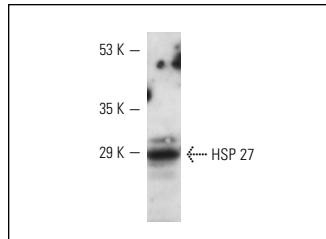
STORAGE

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

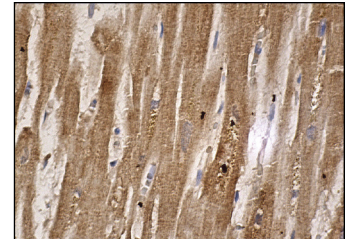
RESEARCH USE

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

DATA



HSP 27 (H-77): sc-9012. Western blot analysis of HSP 27 expression in HeLa whole cell lysate.



HSP 27 (H-77): sc-9012. Immunoperoxidase staining of formalin fixed, paraffin-embedded human heart muscle tissue showing cytoplasmic staining of myocytes.

SELECT PRODUCT CITATIONS

- Rashmi, R., et al. 2003. Human colon cancer cells differ in their sensitivity to curcumin-induced apoptosis and heat shock protects them by inhibiting the release of apoptosis-inducing factor and caspases. *FEBS Lett.* 538: 19-24.
- Shinoda, S., et al. 2003. Formation of a tumour necrosis factor receptor 1 molecular scaffolding complex and activation of apoptosis signal-regulating kinase 1 during seizure-induced neuronal death. *Eur. J. Neurosci.* 17: 2065-2076.
- Dietrich, J.B., et al. 2007. Cocaine induces the expression of homer 1b/c, homer 3a/b, and hsp 27 proteins in rat cerebellum. *Synapse* 61: 587-594.
- Faber, M.J., et al. 2007. Time dependent changes in cytoplasmic proteins of the right ventricle during prolonged pressure overload. *J. Mol. Cell. Cardiol.* 43: 197-209.
- Pinthus, J.H., et al. 2007. Androgen induces adaptation to oxidative stress in prostate cancer: implications for treatment with radiation therapy. *Neoplasia* 9: 68-80.
- Lee, Y.H., et al. 2008. Differential effect of oxidative stress on the apoptosis of early and late passage human diploid fibroblasts: implication of heat shock protein 60. *Cell Biochem. Funct.* 26: 502-508.
- Li, Z., et al. 2009. Proteomic profiling reveals comprehensive insights into adrenergic receptor-mediated hypertrophy in neonatal rat cardiomyocytes. *Proteomics Clin. Appl.* 3: 1407-1421.
- Li, Z., et al. 2013. Heat shock protein 70 acts as a potential biomarker for early diagnosis of heart failure. *PLoS ONE* 8: e67964.



Try **HSP 27 (F-4): sc-13132** or **HSP 27 (G3.1): sc-59562**, our highly recommended monoclonal alternatives to HSP 27 (H-77). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **HSP 27 (F-4): sc-13132**.