SANTA CRUZ BIOTECHNOLOGY, INC.

HSP 27 (G3.1): sc-59562

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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 (G3.1) is a mouse monoclonal anitbody raised against partially purified HSP 27 derived from MCF7 cytosol of human origin.

PRODUCT

Each vial contains 100 µg IgG_1 in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

HSP 27 (G3.1) 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) 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 siRNA (r): sc-270545, HSP 27 shRNA Plasmid (h): sc-29350-SH, HSP 27 shRNA Plasmid (m): sc-35598-SH, HSP 27 shRNA Plasmid (r): sc-270545-SH, HSP 27 shRNA (h) Lentiviral Particles: sc-29350-V, HSP 27 shRNA (m) Lentiviral Particles: sc-35598-V and HSP 27 shRNA (r) Lentiviral Particles: sc-270545-V.

Molecular Weight of HSP 27: 27 kDa.

Positive Controls: HSP 27 (m): 293T Lysate: sc-120910, HSP 27 (h): 293T Lysate: sc-174710 or ECV304 cell lysate: sc-2269.

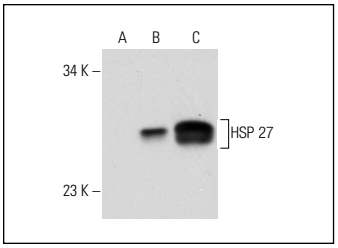
STORAGE

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

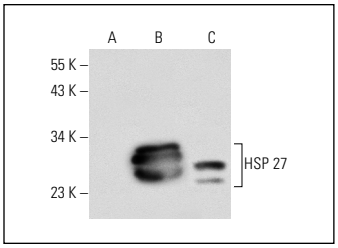
RESEARCH USE

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

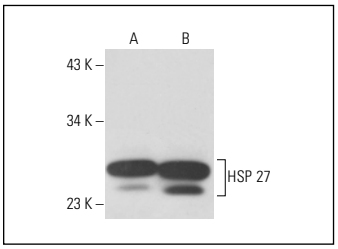
DATA



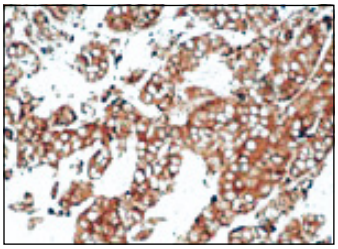
HSP 27 (G3.1): sc-59562. Western blot analysis of HSP 27 expression in non-transfected 293T: sc-117752 (**A**), mouse HSP 27 transfected 293T: sc-120910 (**B**) and ECV304 (**C**) whole cell lysates.



HSP 27 (G3.1): sc-59562. Western blot analysis of HSP 27 expression in non-transfected 293T: sc-117752 (**A**), human HSP 27 transfected 293T: sc-174710 (**B**) and HeLa (**C**) whole cell lysates.



HSP 27 (G3.1): sc-59562. Western blot analysis of HSP 27 expression in HeLa (**A**) and heat shock treated HeLa (**B**) whole cell lysates.



HSP 27 (G3.1): sc-59562. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human breast carcinoma tissue showing cytoplasmic localization.

SELECT PRODUCT CITATIONS

1. Jia, M. and Souchelnytskyi, S. 2011. Proteome profiling of heat shock of human primary breast epithelial cells, a dataset report. Cell Stress Chaperones 16: 459-467.
2. Prince, T., et al. 2018. Dual targeting of HSP70 does not induce the heat shock response and synergistically reduces cell viability in muscle invasive bladder cancer. Oncotarget 9: 32702-32717.
3. Maczynska, J., et al. 2019. Effect of electrochemotherapy with betulinic acid or cisplatin on regulation of heat shock proteins in metastatic human carcinoma cells *in vitro.* Oncol. Rep. 41: 3444-3454.
4. Yang, H., et al. 2021. Comparison of the effects of intraperitoneal injection with carbon tetrachloride on acute liver toxicity in male and female kunming mice. Med. Sci. Monit. 27: e931427.
5. Shkedi, A., et al. 2022. Selective vulnerabilities in the proteostasis network of castration-resistant prostate cancer. Cell Chem. Biol. 29: 490-501.e4.

CONJUGATES

See **HSP 27 (F-4): sc-13132** for HSP 27 antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.