

HSP 27 (F-4): sc-13132

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 colocalizes 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.

REFERENCES

1. Ritossa, F. 1962. A new puffing pattern induced by temperature shock and DNP in *Drosophila*. *Experientia* 18: 571-573.
2. Lemeaux, P.G., et al. 1978. Transient rates of synthesis of individual polypeptides in *E. coli* following temperature shifts. *Cell* 13: 427-434.
3. Kelley, P. and Schlesinger, M.J. 1978. The effect of amino acid analogues and heat shock on gene expression in chicken embryo fibroblasts. *Cell* 15: 1277-1286.

CHROMOSOMAL LOCATION

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

SOURCE

HSP 27 (F-4) is a mouse monoclonal antibody raised against amino acids 32-108 of HSP 27 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HSP 27 (F-4) is available conjugated to agarose (sc-13132 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13132 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13132 PE), fluorescein (sc-13132 FITC), Alexa Fluor[®] 488 (sc-13132 AF488), Alexa Fluor[®] 546 (sc-13132 AF546), Alexa Fluor[®] 594 (sc-13132 AF594) or Alexa Fluor[®] 647 (sc-13132 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor[®] 680 (sc-13132 AF680) or Alexa Fluor[®] 790 (sc-13132 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

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STORAGE

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

APPLICATIONS

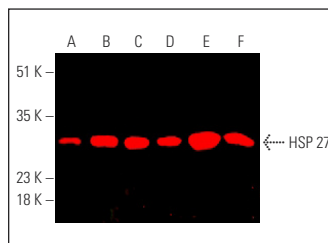
HSP 27 (F-4) is recommended for detection of HSP 27 of mouse, rat and human origin by Western Blotting (starting dilution 1:5,000, dilution range 1:5000-1:20,000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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 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.

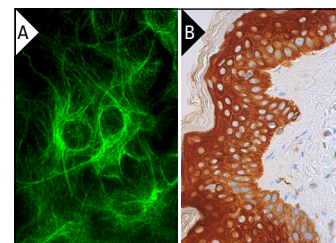
Molecular Weight of HSP 27: 27 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, MCF7 whole cell lysate: sc-2206 or HUV-EC-C whole cell lysate: sc-364180.

DATA



HSP 27 (F-4): sc-13132. Near-infrared western blot analysis of HSP 27 expression in human esophagus (A) and human heart (B) tissue extracts and TE671 (C), A-431 (D), MCF7 (E) and HUV-EC-C (F) whole cell lysates. Blocked with UltraCruz[®] Blocking Reagent: sc-516214. Detection reagent used: m-IgGκ BP-CFL 790: sc-516181.



HSP 27 (F-4): sc-13132. Immunofluorescence staining of formalin-fixed Hep G2 cells showing cytoskeletal localization (A). HSP 27 (F-4) HRP: sc-13132 HRP. Direct immunoperoxidase staining of formalin fixed, paraffin-embedded human skin tissue showing cytoplasmic staining of keratinocytes, Langerhans cells and melanocytes. Blocked with 0.25X UltraCruz[®] Blocking Reagent: sc-516214 (B).

SELECT PRODUCT CITATIONS

1. Gu, S., et al. 2004. Global investigation of p53-induced apoptosis through quantitative proteomic profiling using comparative amino acid-coded tagging. *Mol. Cell. Proteomics* 3: 998-1008.
2. D'Amore, C., et al. 2022. KDM2A and KDM3B as potential targets for the rescue of F508del-CFTR. *Int. J. Mol. Sci.* 23: 9612.
3. Zhou, Y., et al. 2023. Cellular stress induces non-canonical activation of the receptor tyrosine kinase EphA2 through the p38-MK2-RSK signaling pathway. *J. Biol. Chem.* 299: 104699.
4. Tang, D.W., et al. 2024. HSP 90/LSD1 dual inhibitors against prostate cancer as well as patient-derived colorectal organoids. *Eur. J. Med. Chem.* 278: 116801.

RESEARCH USE

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