

# HSP 60 (B-9): sc-271215

## 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 the regulation of protein folding. HSPs (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 constitutively expressed mitochondrial protein HSP 60 shares the ability to recognize and stabilize proteins during folding, assembly and disassembly with other HSP family members. The mitochondrial and cytosolic localization of HSP 60, combined with its binding and catalysis of folding of newly synthesized proteins destined for the mitochondrial matrix, classify this protein as a molecular chaperone. An additional role of HSP 60 is to act as a cell surface marker for  $\gamma/\delta$  T cell recognition.

## CHROMOSOMAL LOCATION

Genetic locus: HSPD1 (human) mapping to 2q33.1; Hspd1 (mouse) mapping to 1 C1.2.

## SOURCE

HSP 60 (B-9) is a mouse monoclonal antibody raised against amino acids 274-573 of HSP 60 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>1</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HSP 60 (B-9) is available conjugated to agarose (sc-271215 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-271215 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-271215 PE), fluorescein (sc-271215 FITC), Alexa Fluor<sup>®</sup> 488 (sc-271215 AF488), Alexa Fluor<sup>®</sup> 546 (sc-271215 AF546), Alexa Fluor<sup>®</sup> 594 (sc-271215 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-271215 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-271215 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-271215 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## APPLICATIONS

HSP 60 (B-9) is recommended for detection of HSP 60 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g 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 60 siRNA (h): sc-29351, HSP 60 siRNA (m): sc-35604, HSP 60 shRNA Plasmid (h): sc-29351-SH, HSP 60 shRNA Plasmid (m): sc-35604-SH, HSP 60 shRNA (h) Lentiviral Particles: sc-29351-V and HSP 60 shRNA (m) Lentiviral Particles: sc-35604-V.

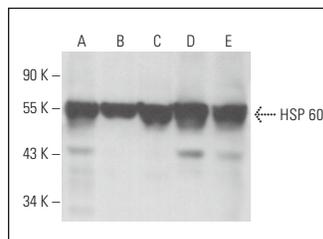
Molecular Weight of HSP 60: 60 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, A549 cell lysate: sc-2413 or F9 cell lysate: sc-2245.

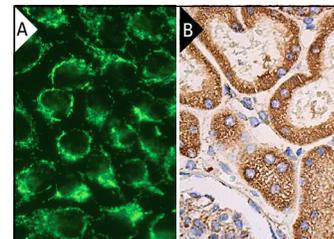
## STORAGE

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

## DATA



HSP 60 (B-9): sc-271215. Western blot analysis of HSP 60 expression in PC-12 (A), NIH/3T3 (B), F9 (C), A549 (D) and SH-SY5Y (E) whole cell lysates.



HSP 60 (B-9): sc-271215. Immunofluorescence staining of methanol-fixed HeLa cells showing mitochondrial localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human kidney tissue showing cytoplasmic staining of cells in tubules (B).

## SELECT PRODUCT CITATIONS

- Antczak, C., et al. 2014. A high content assay to assess cellular fitness. *Comb. Chem. High Throughput Screen.* 17: 12-24.
- Hwang, K.Y. and Choi, Y.B. 2015. Modulation of mitochondrial antiviral signaling by human herpesvirus 8 interferon regulatory factor 1. *J. Virol.* 90: 506-520.
- Huang, C.L., et al. 2016. Paraquat induces cell death through impairing mitochondrial membrane permeability. *Mol. Neurobiol.* 53: 2169-2188.
- Luévano-Martínez, L.A. and Kowaltowski, A.J. 2017. Topological characterization of the mitochondrial phospholipid scramblase 3. *FEBS Lett.* 591: 4056-4066.
- Di Nardo, A., et al. 2020. Phenotypic screen with TSC-deficient neurons reveals heat-shock machinery as a druggable pathway for mTORC1 and reduced cilia. *Cell Rep.* 31: 107780.
- Torrino, S., et al. 2021. Mechano-induced cell metabolism promotes microtubule glutamylation to force metastasis. *Cell Metab.* 33: 1342-1357.e10.
- Evinova, A., et al. 2022. Endoplasmic reticulum stress induces mitochondrial dysfunction but not mitochondrial unfolded protein response in SH-SY5Y cells. *Mol. Cell. Biochem.* 477: 965-975.
- Singh, P., et al. 2022. Role of a disease-associated ST3Gal-4 in non-small cell lung cancer. *Cell Biochem. Biophys.* 80: 781-793.
- Papadaki, V., et al. 2023. IQGAP1 mediates the communication between the nucleus and the mitochondria via NDUFS4 alternative splicing. *NAR Cancer* 5: zcad046.

## RESEARCH USE

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

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