SANTA CRUZ BIOTECHNOLOGY, INC.

HSP 47 (E-1): sc-13150

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Heat shock proteins (HSPs) are ubiquitously expressed in all organisms. HSP 47, also known as colligin 1, serpinh1, collagen-binding protein 1 (CBP1) and gp46, is expressed in smooth muscle cells, specifically in the interstitial space between tubules, vascular smooth muscle and medullary rays. It is expressed constitutively in cells that synthesize collagen and is involved in collagen type I biosynthesis. Significantly, HSP 47 plays a vital role in folding and assembling collagen. A procollagen-specific molecular chaperone, HSP 47 resides in the endoplasmic reticulum of procollagen-producing cells and is essential for secretion of procollagen from cells. After insult, it acts as a stress response molecule to sequester abnormal procollagen. HSP 47 synthesis is induced by TGFβ and IL-1β.

CHROMOSOMAL LOCATION

Genetic locus: SERPINH1 (human) mapping to 11q13.5; Serpinh1 (mouse) mapping to 7 E2.

SOURCE

HSP 47 (E-1) is a mouse monoclonal antibody raised against amino acids 129-300 of HSP 47 of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HSP 47 (E-1) is available conjugated to agarose (sc-13150 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-13150 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-13150 PE), fluorescein (sc-13150 FITC), Alexa Fluor® 488 (sc-13150 AF488), Alexa Fluor® 546 (sc-13150 AF546), Alexa Fluor® 594 (sc-13150 AF594) or Alexa Fluor® 647 (sc-13150 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-13150 AF680) or Alexa Fluor® 790 (sc-13150 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

HSP 47 (E-1) is recommended for detection of HSP 47 of mouse, rat and human origin by Western Blotting (starting dilution 1:500, dilution range 1:500-1:5000), 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 solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HSP 47 siRNA (h): sc-35600, HSP 47 siRNA (m): sc-35601, HSP 47 shRNA Plasmid (h): sc-35600-SH, HSP 47 shRNA Plasmid (m): sc-35601-SH, HSP 47 shRNA (h) Lentiviral Particles: sc-35600-V and HSP 47 shRNA (m) Lentiviral Particles: sc-35601-V.

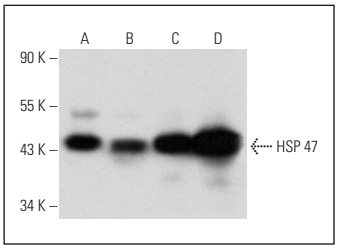
Molecular Weight of HSP 47: 47 kDa.

Positive Controls: L6 whole cell lysate: sc-364196, LADMAC whole cell lysate: sc-364189 or Sol8 cell lysate: sc-2249.

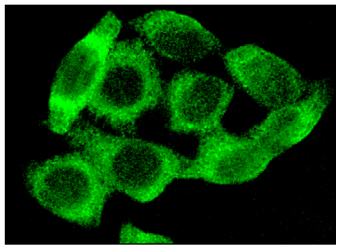
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



HSP 47 (E-1): sc-13150. Western blot analysis of HSP 47 expression in Sol8 (**A**), LADMAC (**B**), A-10 (**C**) and L6 (**D**) whole cell lysates.



HSP 47 (E-1): sc-13150. Immunofluorescence staining of methanol-fixed HeLa cells showing cytoplasmic staining.

SELECT PRODUCT CITATIONS

1. Chung, E. and Rylander, M.N. 2012. Response of preosteoblasts to thermal stress conditioning and osteoinductive growth factors. Cell Stress Chaperones 17: 203-214.
2. Lee, E.J., et al. 2012. The expression of HSPs, anti-oxidants, and cytokines in plasma and bronchoalveolar lavage fluid of patients with acute respiratory distress syndrome. Clin. Biochem. 45: 493-498.
3. Kobayashi, E., et al. 2014. MicroRNA expression and functional profiles of osteosarcoma. Oncology 86: 94-103.
4. Cowling, R.T., et al. 2017. Ascorbate starvation alters endoplasmic reticulum-resident enzymes in cardiac fibroblasts, priming them for increased procollagen secretion. J. Mol. Cell. Cardiol. 113: 1-8.
5. Puglia, M., et al. 2018. The proteome speciation of an immortalized cystic fibrosis cell line: new perspectives on the pathophysiology of the disease. J. Proteomics 170: 28-42.
6. Chern, Y., et al. 2020. Heat shock protein 47 promotes tumor survival and therapy resistance by modulating AKT signaling via PHLPP1 in colorectal cancer. Cancer Biol. Med. 17: 343-356.

STORAGE

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