

# HSPB7 (F-4): sc-393739

## 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 small HSPs, the immunophilins and the HSP 110 family. HSPB7 (heat shock 27 kDa protein family, member 7), also known as cvHSP (cardiovascular heat shock protein) or heat shock protein  $\beta$ -7, is a member of the small HSP (sHSP) family expressed in heart and skeletal muscle. Members of the sHSP family contain a conserved C-terminal  $\alpha$ -crystallin domain and typically function in homo- or heteromeric complexes. The sHSPs bind to denatured proteins and are responsible for preventing the aggregation of these proteins. In response to muscle fiber transformation and in muscular dystrophy, the expression levels of HSPB7 are drastically increased, suggesting that HSPB7 may be a useful target in therapeutic strategies for preventing age-related muscle wasting.

## REFERENCES

1. Krief, S., et al. 1999. Identification and characterization of cvHSP. A novel human small stress protein selectively expressed in cardiovascular and Insulin-sensitive tissues. *J. Biol. Chem.* 274: 36592-36600.
2. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610692: World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
3. Kappé, G., et al. 2003. The human genome encodes 10  $\alpha$ -crystallin-related small heat shock proteins: HSPB1-10. *Cell Stress Chaperones* 8: 53-61.

## CHROMOSOMAL LOCATION

Genetic locus: HSPB7 (human) mapping to 1p36.13; Hspb7 (mouse) mapping to 4 E1.

## SOURCE

HSPB7 (F-4) is a mouse monoclonal antibody raised against amino acids 1-170 representing full length HSPB7 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.

HSPB7 (F-4) is available conjugated to agarose (sc-393739 AC), 500  $\mu$ g/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393739 HRP), 200  $\mu$ g/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393739 PE), fluorescein (sc-393739 FITC), Alexa Fluor<sup>®</sup> 488 (sc-393739 AF488), Alexa Fluor<sup>®</sup> 546 (sc-393739 AF546), Alexa Fluor<sup>®</sup> 594 (sc-393739 AF594) or Alexa Fluor<sup>®</sup> 647 (sc-393739 AF647), 200  $\mu$ g/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor<sup>®</sup> 680 (sc-393739 AF680) or Alexa Fluor<sup>®</sup> 790 (sc-393739 AF790), 200  $\mu$ g/ml, for Near-Infrared (NIR) WB, IF and FCM.

## RESEARCH USE

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

## APPLICATIONS

HSPB7 (F-4) is recommended for detection of HSPB7 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HSPB7 siRNA (h): sc-78757, HSPB7 siRNA (m): sc-105547, HSPB7 shRNA Plasmid (h): sc-78757-SH, HSPB7 shRNA Plasmid (m): sc-105547-SH, HSPB7 shRNA (h) Lentiviral Particles: sc-78757-V and HSPB7 shRNA (m) Lentiviral Particles: sc-105547-V.

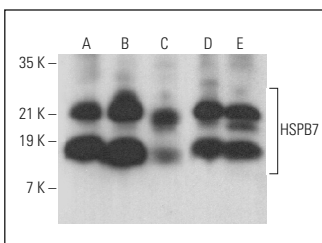
Molecular Weight of HSPB7: 25 kDa.

Positive Controls: human heart extract: sc-363763, rat skeletal muscle extract: sc-364810 or human skeletal muscle extract: sc-363776.

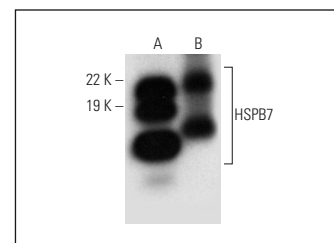
## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker<sup>™</sup> Molecular Weight Standards: sc-2035, UltraCruz<sup>®</sup> 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-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



HSPB7 (F-4): sc-393739. Western blot analysis of HSPB7 expression in human heart (A), human fetal muscle (B), mouse skeletal muscle (C), rat skeletal muscle (D) and rat postnatal heart (E) tissue extracts.



HSPB7 (F-4): sc-393739. Western blot analysis of HSPB7 expression in human heart (A) and human skeletal muscle (B) tissue extracts.

## SELECT PRODUCT CITATIONS

1. Adriaenssens, E., et al. 2023. Small heat shock proteins operate as molecular chaperones in the mitochondrial intermembrane space. *Nat. Cell Biol.* E-published.

## STORAGE

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

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