

# HSPB7 (SQ-37): sc-100759

## 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

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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.
4. Fontaine, J.M., et al. 2003. The sperm outer dense fiber protein is the 10th member of the superfamily of mammalian small stress proteins. *Cell Stress Chaperones* 8: 62-69.
5. Sun, X., et al. 2004. Interaction of human HSP 22 (HSPB8) with other small heat shock proteins. *J. Biol. Chem.* 279: 2394-2402.
6. Fontaine, J.M., et al. 2005. Interactions of HSP 22 (HSPB8) with HSP 20,  $\alpha$ B-crystallin, and HSPB3. *Biochem. Biophys. Res. Commun.* 337: 1006-1011.
7. Doran, P., et al. 2006. Proteome analysis of the dystrophin-deficient MDX diaphragm reveals a drastic increase in the heat shock protein cvHSP. *Proteomics* 6: 4610-4621.
8. Doran, P., et al. 2007. Aging skeletal muscle shows a drastic increase in the small heat shock proteins  $\alpha$ B-crystallin/HSPB5 and cvHSP/HSPB7. *Eur. J. Cell Biol.* 86: 629-640.
9. Doran, P., et al. 2007. Proteomic profiling of pathological and aged skeletal muscle fibres by peptide mass fingerprinting. *Int. J. Mol. Med.* 19: 547-564.

## CHROMOSOMAL LOCATION

Genetic locus: HSPB7 (human) mapping to 1p36.13.

## RESEARCH USE

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

## SOURCE

HSPB7 (SQ-37) is a mouse monoclonal antibody raised against recombinant HSPB7 of human origin.

## PRODUCT

Each vial contains 100  $\mu$ g IgG<sub>2a</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

HSPB7 (SQ-37) is recommended for detection of HSPB7 of human origin by 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).

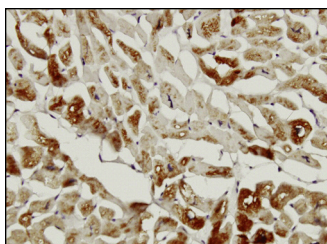
Suitable for use as control antibody for HSPB7 siRNA (h): sc-78757, HSPB7 shRNA Plasmid (h): sc-78757-SH and HSPB7 shRNA (h) Lentiviral Particles: sc-78757-V.

Molecular Weight of HSPB7: 25 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended:  
1) 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 (SQ-37): sc-100759. Immunoperoxidase staining of formalin-fixed, paraffin-embedded human heart tissue showing cytoplasmic localization.

## STORAGE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.