



# HSPB2 shRNA (m) Lentiviral Particles: sc-146101-V

## BACKGROUND

The heat shock proteins (HSPs) comprise a group of highly conserved, abundantly expressed proteins with diverse functions, including the assembly and sequestering of multi-protein complexes, transportation of nascent polypeptide chains across cellular membranes and regulation of protein folding. HSPB2 (heat shock 27 kDa protein 2), also known as HSP 27 or MKBP, is a 182 amino acid protein that belongs to the heat shock protein family and is expressed preferentially in heart and skeletal muscle. Localized to mitochondria, HSPB2 functions as an ATP-dependent chaperone protein that plays a role in the refolding of denatured proteins and may also interact with the Actin cytoskeleton and prevent apoptotic cell death. HSPB2 is abundantly expressed in several cancer cell lines, suggesting that HSPB2 may be an important factor in tumor transformation and metastasis.

## REFERENCES

1. Suzuki, A., et al. 1998. MKBP, a novel member of the small heat shock protein family, binds and activates the myotonic dystrophy protein kinase. *J. Cell Biol.* 140: 1113-1124.
2. Concannon, C.G., et al. 2003. On the role of HSP 27 in regulating apoptosis. *Apoptosis* 8: 61-70.
3. Wen, F.C., et al. 2003. Down-regulation of heat shock protein 27 in neuronal cells and non-neuronal cells expressing mutant Ataxin-3. *FEBS Lett.* 546: 307-314.
4. Mao, H., et al. 2003. HSP 72 inhibits focal adhesion kinase degradation in ATP-depleted renal epithelial cells. *J. Biol. Chem.* 278: 18214-18220.
5. Parcellier, A., et al. 2003. HSP 27 is a ubiquitin-binding protein involved in I $\kappa$ B $\alpha$  proteasomal degradation. *Mol. Cell. Biol.* 23: 5790-5802.

## CHROMOSOMAL LOCATION

Genetic locus: Hspb2 (mouse) mapping to 9 A5.3.

## PRODUCT

HSPB2 shRNA (m) Lentiviral Particles are concentrated, transduction-ready viral particles containing a target-specific construct that encodes a 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each vial contains 200  $\mu$ l frozen stock containing  $1.0 \times 10^6$  infectious units of virus (IFU) in Dulbecco's Modified Eagle's Medium with 25 mM HEPES pH 7.3. Suitable for 10-20 transductions. Also see HSPB2 siRNA (m): sc-146101 and HSPB2 shRNA Plasmid (m): sc-146101-SH as alternate gene silencing products.

## RESEARCH USE

The purchase of this product conveys to the buyer the nontransferable right to use the purchased amount of the product and all replicates and derivatives for research purposes conducted by the buyer in his laboratory only (whether the buyer is an academic or for-profit entity). The buyer cannot sell or otherwise transfer (a) this product (b) its components or (c) materials made using this product or its components to a third party, or otherwise use this product or its components or materials made using this product or its components for Commercial Purposes.

## APPLICATIONS

HSPB2 shRNA (m) Lentiviral Particles is recommended for the inhibition of HSPB2 expression in mouse cells.

## SUPPORT REAGENTS

Control shRNA Lentiviral Particles: sc-108080. Available as 200  $\mu$ l frozen viral stock containing  $1.0 \times 10^6$  infectious units of virus (IFU); contains an shRNA construct encoding a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA.

## GENE EXPRESSION MONITORING

HSPB2 (F-9): sc-514154 is recommended as a control antibody for monitoring of HSPB2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) 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® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor HSPB2 gene expression knockdown using RT-PCR Primer: HSPB2 (m)-PR: sc-146101-PR (20  $\mu$ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## BIOSAFETY

Lentiviral particles can be employed in standard Biosafety Level 2 tissue culture facilities (and should be treated with the same level of caution as with any other potentially infectious reagent). Lentiviral particles are replication-incompetent and are designed to self-inactivate after transduction and integration of shRNA constructs into genomic DNA of target cells.

## STORAGE

Store lentiviral particles at -80° C. Stable for at least one year from the date of shipment. Once thawed, particles can be stored at 4° C for up to one week. Avoid repeated freeze thaw cycles.

## PROTOCOLS

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