

# HBP1 siRNA (h): sc-35532

## BACKGROUND

The HMG-box protein-1 (HBP1) is a member of the HMG family of transcription factors, which are characterized by the presence of a conserved protein motif, the high mobility group (HMG) 1 box, that mediates DNA binding. HBP1 binds to the tumor suppressor proteins Rb and p130 and initiates cell cycle arrest. Terminal cell differentiation requires this initial cell cycle arrest followed by the coordinated expression of genes defined as tissue-specific markers. Along with initiating the commitment to cell differentiation, the continued activity of HBP1 abrogates the expression of tissue-specific genes by associating with the MyoD proteins. In muscle cell differentiation, the MyoD family of transcription factors, which include Myf5, MyoD and myogenin, induce the expression of these cell-type specific proteins and contribute to the development of cell phenotypes. The progression of terminal differentiation is, therefore, dependent on both a decrease in HBP1 activity and the corresponding activation of MyoD-induced gene transcription.

## REFERENCES

1. Yee, S.P., et al. 1993. The regulation of myogenin gene expression during the embryonic development of the mouse. *Genes Dev.* 7: 1277-1289.
2. Lesage, F., et al. 1994. Expression cloning in K<sup>+</sup> transport defective yeast and distribution of HBP1, a new putative HMG transcriptional regulator. *Nucleic Acids Res.* 22: 3685-3688.
3. Lavender, P., et al. 1997. The HMG-box transcription factor HBP1 is targeted by the pocket proteins and E1A. *Oncogene* 14: 2721-2728.
4. Tevosian, S.G., et al. 1997. HBP1: a HMG box transcriptional repressor that is targeted by the retinoblastoma family. *Genes Dev.* 11: 383-396.

## CHROMOSOMAL LOCATION

Genetic locus: HBP1 (human) mapping to 7q22.3.

## PRODUCT

HBP1 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see HBP1 shRNA Plasmid (h): sc-35532-SH and HBP1 shRNA (h) Lentiviral Particles: sc-35532-V as alternate gene silencing products.

For independent verification of HBP1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-35532A, sc-35532B and sc-35532C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNases and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

HBP1 siRNA (h) is recommended for the inhibition of HBP1 expression in human cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10  $\mu$ M in 66  $\mu$ l. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

## GENE EXPRESSION MONITORING

HBP1 (G-8): sc-515281 is recommended as a control antibody for monitoring of HBP1 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 HBP1 gene expression knockdown using RT-PCR Primer: HBP1 (h)-PR: sc-35532-PR (20  $\mu$ l, 529 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

1. Chan, C.Y., et al. 2019. Matrix metalloproteinase-13 is a target gene of high-mobility group box-containing protein 1 in modulating oral cancer cell invasion. *J. Cell. Physiol.* 234: 4375-4384.
2. Chan, C.Y., et al. 2020. Regulatory role of transcription factor HBP1 in anticancer efficacy of EGFR inhibitor erlotinib in HNSCC. *Head Neck* 42: 2958-2967.

## RESEARCH USE

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

## PROTOCOLS

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