

# DEC1 (H-87): sc-135127

## BACKGROUND

Human DEC1, also known as SHARP2, is a 412 amino acid, basic helix-loop-helix (bHLH) containing protein that is involved in the control of proliferation and/or differentiation of several cell types including nerve cells, fibroblasts and chondrocytes. The bHLH region of DEC1 is structurally similar to the bHLH regions of the mammalian HES family, *Drosophila* Hairly and *Drosophila* enhancer of split m7. DEC1 is a novel direct target for cAMP in a wide range of cells, and is involved in the control of gene expression in cAMP-activated cells. Brief light impulses induce the expression of DEC1 in a phase-dependent manner. DEC1 is highly expressed in cartilage, intestine, lung and spleen. DEC1 and DEC2 play a role in regulating the mammalian molecular Clock by suppressing the transcription of specific Clock genes. Both DEC1 and DEC2 are detected in the suprachiasmatic nucleus in a circadian fashion.

## REFERENCES

1. Shen, M., et al. 1997. Molecular characterization of the novel basic helix-loop-helix protein DEC1 expressed in differentiated human embryo chondrocytes. *Biochem. Biophys. Res. Commun.* 236: 294-298.
2. Shen, M., et al. 2001. Induction of basic helix-loop-helix protein DEC1 (bHLHB2)/Stra13/Sharp2 in response to the cyclic adenosine mono-phosphate pathway. *Eur. J. Cell Biol.* 80: 329-334.
3. Fujimoto, K., et al. 2001. Molecular cloning and characterization of DEC2, a new member of basic helix-loop-helix proteins. *Biochem. Biophys. Res. Commun.* 280: 164-171.
4. Honma, S., et al. 2002. DEC1 and DEC2 are regulators of the mammalian molecular clock. *Nature* 419: 841-844.
5. Zawel, L., et al. 2002. DEC1 is a downstream target of TGF $\beta$  with sequence-specific transcriptional repressor activities. *Proc. Natl. Acad. Sci. USA* 99: 2848-2853.

## CHROMOSOMAL LOCATION

Genetic locus: BHLHB2 (human) mapping to 3p26.1; Bhlhb2 (mouse) mapping to 6 E2.

## SOURCE

DEC1 (H-87) is a rabbit polyclonal antibody raised against amino acids 326-412 mapping at the C-terminus of DEC1 of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## 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) or our catalog for detailed protocols and support products.

## APPLICATIONS

DEC1 (H-87) is recommended for detection of DEC1 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, 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).

DEC1 (H-87) is also recommended for detection of DEC1 in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for DEC1 siRNA (h): sc-106769, DEC1 siRNA (m): sc-142950, DEC1 shRNA Plasmid (h): sc-106769-SH, DEC1 shRNA Plasmid (m): sc-142950-SH, DEC1 shRNA (h) Lentiviral Particles: sc-106769-V and DEC1 shRNA (m) Lentiviral Particles: sc-142950-V.

Molecular Weight of DEC1: 43 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 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 goat anti-rabbit IgG-FITC: sc-2012 (dilution range: 1:100-1:400) or goat anti-rabbit IgG-TR: sc-2780 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## RESEARCH USE

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



Try **DEC1 (S-8): sc-101023**, our highly recommended monoclonal alternative to DEC1 (H-87).