

# DEC2 (S-18): sc-25922

## BACKGROUND

Human DEC1 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* hairy, and 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. DEC2, also known as SHARP1, is highly expressed in skeletal muscle and brain. The gene encoding human DEC2 maps to chromosome 12p12.1. 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. Brief light impulses induce the expression of DEC1 in a phase-dependent manner.

## REFERENCES

1. Shen, M., Kawamoto, T., Yan, W., Nakamasu, K., Tamagami, M., Koyano, Y., Noshiro, M. and Kato, Y. 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., Kawamoto, T., Teramoto, M., Makihiro, S., Fujimoto, K., Yan, W., Noshiro, M. and Kato, Y. 2001. Induction of basic helix-loop-helix protein DEC1 (BHLHB2)/Stra13/Sharp2 in response to the cyclic adenosine monophosphate pathway. *Eur. J. Cell Biol.* 80: 329-334.
3. Fujimoto, K., Shen, M., Noshiro, M., Matsubara, K., Shingu, S., Hondo, K., Yoshida, E., Suardita, K., Matsuda, Y. and Kato, Y. 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., Kawamoto, T., Takagi, Y., Fujimoto, K., Sato, F., Noshiro, M., Kato, Y. and Honma, K. 2002. Dec1 and Dec2 are regulators of the mammalian molecular clock. *Nature* 419: 841-844.
5. LocusLink Report (LocusID: 8553). <http://www.ncbi.nlm.nih.gov/LocusLink/>

## CHROMOSOMAL LOCATION

Genetic locus: BHLHE41 (human) mapping to 12p12.1; Bhlhe41 (mouse) mapping to 6 G3.

## SOURCE

DEC2 (S-18) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of DEC2 of human origin.

## PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-25922 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

## RESEARCH USE

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

## APPLICATIONS

DEC2 (S-18) is recommended for detection of DEC2 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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).

DEC2 (S-18) is also recommended for detection of DEC2 in additional species, including canine, bovine and porcine.

Suitable for use as control antibody for DEC2 siRNA (h): sc-37769, DEC2 siRNA (m): sc-37770, DEC2 shRNA Plasmid (h): sc-37769-SH, DEC2 shRNA Plasmid (m): sc-37770-SH, DEC2 shRNA (h) Lentiviral Particles: sc-37769-V and DEC2 shRNA (m) Lentiviral Particles: sc-37770-V.

## RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (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) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

## 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.


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Try **DEC2 (E-4): sc-373763**, our highly recommended monoclonal alternative to DEC2 (S-18).