

HES4 (N-15): sc-13857

BACKGROUND

The *Drosophila* Hairy and Enhancer of split genes encode basic helix-loop-helix (bHLH) transcriptional repressors that function in the Notch signaling pathway and control segmentation and neural development during embryogenesis. The mammalian homologues of *Drosophila* Hairy and Enhancer of split are the HES gene family members, HES1–6, which also encode bHLH transcriptional repressors that regulate myogenesis and neurogenesis. The HES family members form a complex with TLE, the mammalian homologue of Groucho, and this interaction is mediated by the carboxy terminal WRPW motif of the HES proteins. The HES/TLE complex functions by directly binding to DNA, instead of interfering with activator proteins. Most HES family members, including HES1 and HES5, preferentially bind to the N box (CACNAG) as opposed to the E box (CANNTG). HES2 binds to both N and E box sites, while HES6 does not bind DNA. Rather, HES6 inhibits HES1 activity, thereby promoting transcription. HES1 and HES2 are expressed in a variety of adult and embryonic tissues. HES3 is expressed exclusively in cerebellar Purkinje cells, and HES5 is found solely in the nervous system. HES6 is produced in brain as well as in the limb buds of developing embryos.

REFERENCES

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2. Sasai, Y., et al. 1992. Two mammalian helix-loop-helix factors structurally related to *Drosophila* Hairy and Enhancer of split. *Genes Dev.* 6: 2620-2634.
3. Ishibashi, M., et al. 1993. Molecular characterization of HES-2, a mammalian helix-loop-helix factor structurally related to *Drosophila* Hairy and Enhancer of split. *Eur. J. Biochem.* 215: 645-652.
4. Takebayashi, K., et al. 1994. Structure, chromosomal locus, and promoter analysis of the gene encoding the mouse helix-loop-helix factor HES1. Negative autoregulation through the multiple N box elements. *J. Biol. Chem.* 269: 5150-5156.
5. Fisher, A.L., et al. 1996. The WRPW motif of the Hairy-related basic helix-loop-helix repressor proteins acts as a 4-amino-acid transcription repression and protein-protein interaction domain. *Mol. Cell. Biol.* 16: 2670-2677.
6. Grbavec, D., et al. 1996. Molecular interaction between TLE1 and the carboxyl-terminal domain of HES1 containing the WRPW motif. *Biochem. Biophys. Res. Commun.* 223: 701-705.
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CHROMOSOMAL LOCATION

Genetic locus: HES4 (human) mapping to 1p36.33.

RESEARCH USE

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

SOURCE

HES4 (N-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of HES4 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-13857 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

Available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13857 X, 200 µg/0.1 ml.

APPLICATIONS

HES4 (N-15) is recommended for detection of HES4 of 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).

HES4 (N-15) is also recommended for detection of HES4 in additional species, including canine and bovine.

Suitable for use as control antibody for HES4 siRNA (h): sc-37943, HES4 shRNA Plasmid (h): sc-37943-SH and HES4 shRNA (h) Lentiviral Particles: sc-37943-V.

HES4 (N-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of HES4: 24 kDa.

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 or our catalog for detailed protocols and support products.