

HES2 (S-15): sc-13851

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

1. Akazawa, C., et al. 1992. Molecular characterization of a rat negative regulator with a basic helix-loop-helix structure predominantly expressed in the developing nervous system. *J. Biol. Chem.* 267: 21879-21885.
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.

CHROMOSOMAL LOCATION

Genetic locus: HES2 (human) mapping to 1p36.31-p36.11; Hes2 (mouse) mapping to 4 E2.

SOURCE

HES2 (S-15) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of HES2 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin. Also available as TransCruz reagent for Gel Supershift and ChIP applications, sc-13851 X, 200 µg/0.1 ml.

Blocking peptide available for competition studies, sc-13851 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HES2 (S-15) is recommended for detection of HES2 isoform 1 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).

Suitable for use as control antibody for HES2 siRNA (h): sc-37940, HES2 siRNA (m): sc-37941, HES2 shRNA Plasmid (h): sc-37940-SH, HES2 shRNA Plasmid (m): sc-37941-SH, HES2 shRNA (h) Lentiviral Particles: sc-37940-V and HES2 shRNA (m) Lentiviral Particles: sc-37941-V.

HES2 (S-15) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of HES2: 14 kDa.

Positive Controls: KNRK nuclear extract: sc-2141, K-562 nuclear extract: sc-2130 or PC-3 nuclear extract: sc-2152.

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.

RESEARCH USE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **HES2 (H-8): sc-514711** or **HES2 (A-4): sc-166705**, our highly recommended monoclonal alternatives to HES2 (S-15).