SANTA CRUZ BIOTECHNOLOGY, INC.

HES1 (m2): 293T Lysate: sc-120760

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 homolog 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 homolog 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). HES1 and HES2 are expressed in a variety of adult and embryonic tissues.

REFERENCES

1. Sasai, Y., Kageyama, R., Tagawa, Y., Shigemoto, R. and Nakanishi, S. 1992. Two mammalian helix-loop-helix factors structurally related to *Drosophila* Hairy and Enhancer of split. Genes Dev. 6: 2620-2634.
2. Akazawa, C., Sasai, Y., Nakanishi, S. and Kageyama, R. 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.
3. Ishibashi, M., Sasai, Y., Nakanishi, S. and Kageyama, R. 1993. Molecular characterization of HES2, a mammalian helix-loop-helix factor structurally related to *Drosophila* Hairy and Enhancer of split. Eur. J. Biochem. 215: 645-652.
4. Takebayashi, K., Sasai, Y., Sakai, Y., Watanabe, T., Nakanishi, S. and Kageyama, R. 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., Ohsako, S. and Caudy, M. 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. and Stifani, S. 1996. Molecular interaction between TLE1 and the carboxyl-terminal domain of HES1 containing the WRPW motif. Biochem. Biophys. Res. Commun. 223: 701-705.
7. Lobe, C.G. 1997. Expression of the helix-loop-helix factor, HES3, during embryo development suggests a role in early midbrain-hindbrain patterning. Mech. Dev. 62: 227-237.
8. Bae, S., Bessho, Y., Hojo, M. and Kageyama, R. 2000. The bHLH gene HES6, an inhibitor of HES1, promotes neuronal differentiation. Development 127: 2933-2943.

STORAGE

Store at -20° C. Repeated freezing and thawing should be minimized. Sample vial should be boiled once prior to use. Non-hazardous. No MSDS required.

CHROMOSOMAL LOCATION

Genetic locus: Hes1 (mouse) mapping to 16 B2.

PRODUCT

HES1 (m2): 293T Lysate represents a lysate of mouse HES1 transfected 293T cells and is provided as 100 µg protein in 200 µl SDS-PAGE buffer.

APPLICATIONS

HES1 (m2): 293T Lysate is suitable as a Western Blotting positive control for mouse reactive HES1 antibodies. Recommended use: 10-20 µl per lane.

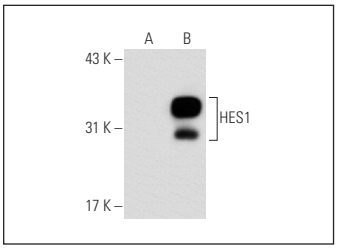
Control 293T Lysate: sc-117752 is available as a Western Blotting negative control lysate derived from non-transfected 293T cells.

HES1 (F-10): sc-165996 is recommended as a positive control antibody for Western Blot analysis of enhanced mouse HES1 expression in HES1 transfected 293T cells (starting dilution 1:100, dilution range 1:100-1:1,000).

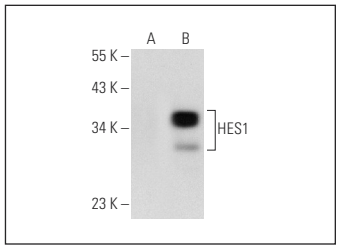
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ 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.

DATA



HES1 (F-10): sc-165996. Western blot analysis of HES1 expression in non-transfected: sc-117752 (**A**) and mouse HES1 transfected: sc-120760 (**B**) 293T whole cell lysates.



HES1 (A-12): sc-166378. Western blot analysis of HES1 expression in non-transfected: sc-117752 (**A**) and mouse HES1 transfected: sc-120760 (**B**) 293T whole cell lysates.

RESEARCH USE

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

PROTOCOLS

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