

# HES1 (E-5): sc-166410

## 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., et al. 1992. Two mammalian helix-loop-helix factors structurally related to *Drosophila* Hairy and enhancer of split. *Genes Dev.* 6: 2620-2634.
2. 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.

## CHROMOSOMAL LOCATION

Genetic locus: HES1 (human) mapping to 3q29; Hes1 (mouse) mapping to 16 B2.

## SOURCE

HES1 (E-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 237-261 near the C-terminus of HES1 of human origin.

## PRODUCT

Each vial contains 200 µg IgG<sub>2b</sub> kappa light chain 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-166410 X, 200 µg/0.1 ml.

HES1 (E-5) is available conjugated to agarose (sc-166410 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-166410 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-166410 PE), fluorescein (sc-166410 FITC), Alexa Fluor® 488 (sc-166410 AF488), Alexa Fluor® 546 (sc-166410 AF546), Alexa Fluor® 594 (sc-166410 AF594) or Alexa Fluor® 647 (sc-166410 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-166410 AF680) or Alexa Fluor® 790 (sc-166410 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-166410 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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## STORAGE

Store at 4° C, \*\*DO NOT FREEZE\*\*. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

## APPLICATIONS

HES1 (E-5) is recommended for detection of HES1 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

HES1 (E-5) is also recommended for detection of HES1 in additional species, including bovine and porcine.

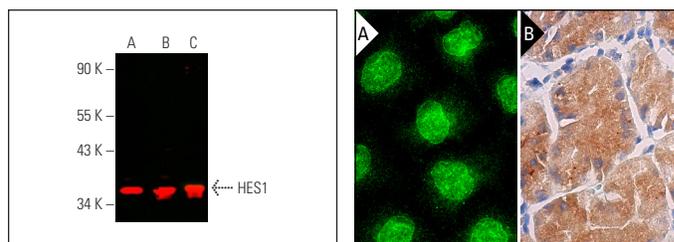
Suitable for use as control antibody for HES1 siRNA (h): sc-37938, HES1 siRNA (m): sc-37939, HES1 siRNA (r): sc-270146, HES1 shRNA Plasmid (h): sc-37938-SH, HES1 shRNA Plasmid (m): sc-37939-SH, HES1 shRNA Plasmid (r): sc-270146-SH, HES1 shRNA (h) Lentiviral Particles: sc-37938-V, HES1 shRNA (m) Lentiviral Particles: sc-37939-V and HES1 shRNA (r) Lentiviral Particles: sc-270146-V.

HES1 (E-5) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

Molecular Weight of HES1: 35 kDa.

Positive Controls: THP-1 cell lysate: sc-2238, CCRF-CEM cell lysate: sc-2225 or HeLa nuclear extract: sc-2120.

## DATA



HES1 (E-5) Alexa Fluor® 790: sc-166410 AF790. Direct near-infrared western blot analysis of HES1 expression in THP-1 (A) and CCRF-CEM (B) whole cell lysates and HeLa nuclear extract (C). Blocked with UltraCruz® Blocking Reagent: sc-516214.

HES1 (E-5): sc-166410. Immunofluorescence staining of methanol-fixed HeLa cells showing nuclear localization (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human stomach tissue showing cytoplasmic staining of glandular cells (B).

## SELECT PRODUCT CITATIONS

1. Zhao, X., et al. 2012. Derivation of myoepithelial progenitor cells from bipotent mammary stem/progenitor cells. *PLoS ONE* 7: e35338.
2. Shah, S., et al. 2018. Dynamics and spatial genomics of the nascent transcriptome by intron seqFISH. *Cell* 174: 363-376.e16.
3. Das, A., et al. 2019. A novel triazole NMK-T-057 induces autophagic cell death in breast cancer cells by inhibiting  $\gamma$ -secretase-mediated activation of Notch-signaling. *J. Biol. Chem.* 294: 6733-6750.

## RESEARCH USE

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