

HES3 (B-12): sc-55587

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. 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.
3. Ishibashi, M., et al. 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.

CHROMOSOMAL LOCATION

Genetic locus: Hes3 (mouse) mapping to 4 E2.

SOURCE

HES3 (B-12) is a mouse monoclonal antibody raised against amino acids 41-175 of HES3 of mouse origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HES3 (B-12) is available conjugated to agarose (sc-55587 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-55587 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-55587 PE), fluorescein (sc-55587 FITC), Alexa Fluor® 488 (sc-55587 AF488), Alexa Fluor® 546 (sc-55587 AF546), Alexa Fluor® 594 (sc-55587 AF594) or Alexa Fluor® 647 (sc-55587 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-55587 AF680) or Alexa Fluor® 790 (sc-55587 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

RESEARCH USE

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

APPLICATIONS

HES3 (B-12) is recommended for detection of HES3 of mouse and rat 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HES3 siRNA (m): sc-37942, HES3 shRNA Plasmid (m): sc-37942-SH and HES3 shRNA (m) Lentiviral Particles: sc-37942-V.

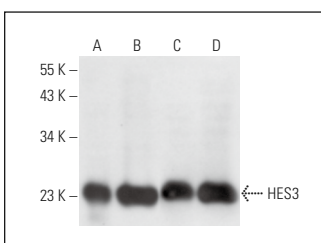
Molecular Weight of HES3: 22 kDa.

Positive Controls: mouse brain extract: sc-2253, rat cerebellum extract: sc-2398 or rat brain extract: sc-2392.

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. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



HES3 (B-12): sc-55587. Western blot analysis of HES3 expression in mouse brain (A), mouse cerebellum (B), rat brain (C) and rat cerebellum (D) tissue extracts.

SELECT PRODUCT CITATIONS

1. Fang, C., et al. 2019. HES3 enhances the malignant phenotype of lung cancer through upregulating cyclin D1, cyclin D3 and MMP7 expression. *Int. J. Med. Sci.* 16: 470-476.

STORAGE

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

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