SANTA CRUZ BIOTECHNOLOGY, INC.

HB9 (F-5): sc-515769

BACKGROUND

The HB9 homeobox transcription factor regulates gene expression during embryonic development and also in specific adult tissues. HB9 gene mutations are implicated in Curriano syndrome, which is characterized by a triad consisting of a presacral tumor, sacral agenesis and anorectal malformation. In human bone marrow cells, HB9 expression directly correlates with CD34 expression. Furthermore, HB9 expression increases in $CD34^+$ cells that are treated with IL-3 and granulocyte macrophage-colony-stimulating factor. Early in murine development, HB9 is expressed in pancreatic buds (dorsal and ventral) with subsequent expression in differentiating β cells in the islets of Langerhans. The dorsal lobe of the pancreas fails to form in $HB9^-$ mice; the resultant pancreas has smaller islets of Langerhans and less β cells than normal pancreas. The HB9 gene is expressed in the human adult pancreas. In the developing vertebrate embryo, the HB9 gene plays an essential role in motor neuron differentiation. The motor columns of $HB9^-$ mice are disorganized, lacking phrenic and abducens nerves and exhibiting intercostal nerve defects.

CHROMOSOMAL LOCATION

Genetic locus: MNX1 (human) mapping to 7q36.3; Mnx1 (mouse) mapping to 5 B1.

SOURCE

HB9 (F-5) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 179-203 within an internal region of HB9 of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

HB9 (F-5) is available conjugated to agarose (sc-515769 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-515769 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-515769 PE), fluorescein (sc-515769 FITC), Alexa Fluor® 488 (sc-515769 AF488), Alexa Fluor® 546 (sc-515769 AF546), Alexa Fluor® 594 (sc-515769 AF594) or Alexa Fluor® 647 (sc-515769 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-515769 AF680) or Alexa Fluor® 790 (sc-515769 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

APPLICATIONS

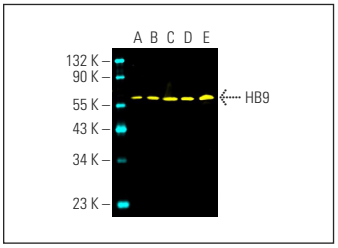
HB9 (F-5) is recommended for detection of HB9 of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for HB9 siRNA (h): sc-38667, HB9 siRNA (m): sc-38668, HB9 shRNA Plasmid (h): sc-38667-SH, HB9 shRNA Plasmid (m): sc-38668-SH, HB9 shRNA (h) Lentiviral Particles: sc-38667-V and HB9 shRNA (m) Lentiviral Particles: sc-38668-V.

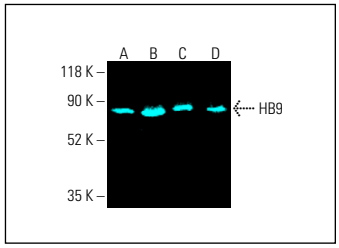
STORAGE

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

DATA



HB9 (F-5) Alexa Fluor® 488: sc-515769 AF488. Direct fluorescent western blot analysis of HB9 expression in Raji (**A**), MOLT-4 (**B**) and Hep G2 (**C**) nuclear extracts and NAMALWA (**D**) and HL-60 (**E**) whole cell lysates. Blocked with UltraCruz® Blocking Reagent: sc-516214. Cruz Marker™ Molecular Weight Standards detected with Cruz Marker MW Tag-Alexa Fluor® 647: sc-516791.



HB9 (F-5): sc-515769. Fluorescent western blot analysis of HB9 expression in Raji (**A**), MOLT-4 (**B**), Hep G2 (**C**) and SW480 (**D**) nuclear extracts. Blocked with UltraCruz® Blocking Reagent: sc-516214. Detection reagent used: m-IgG_{2a} BP-CFL 647: sc-542738.

SELECT PRODUCT CITATIONS

1. Thier, M.C., et al. 2019. Identification of embryonic neural plate border stem cells and their generation by direct reprogramming from adult human blood cells. Cell Stem Cell 24: 166-182.e13.
2. Fang, M.Y., et al. 2019. Small-molecule modulation of TDP-43 recruitment to stress granules prevents persistent TDP-43 accumulation in ALS/FTD. Neuron 103: 802-819.e11.
3. Nango, H., et al. 2020. Highly efficient conversion of motor neuron-like NSC-34 cells into functional motor neurons by prostaglandin E2. Cells 9: 1741.
4. Mahmoodi, N., et al. 2020. Microtubule stabilizer epothilone B as a motor neuron differentiation agent for human endometrial stem cells. Cell Biol. Int. 44: 1168-1183.
5. Mahmoodi, N., et al. 2021. Improving motor neuron-like cell differentiation of hEnSCs by the combination of epothilone B loaded PCL microspheres in optimized 3D collagen hydrogel. Sci. Rep. 11: 21722.
6. Kato, Y. and Sakamoto, K. 2021. Niclosamide affects intracellular TDP-43 distribution in motor neurons, activates mitophagy, and attenuates morphological changes under stress. J. Biosci. Bioeng. 132: 640-650.

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.