SANTA CRUZ BIOTECHNOLOGY, INC.

HEB (D-3): sc-28364

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Differentiation of myogenic cells is regulated by multiple positively and negatively acting factors. One well characterized family of helix-loop-helix (HLH) proteins known to play an important role in the regulation of muscle cell development includes Myo D, myogenin, Myf-5 and Myf-6 (also designated MRF-4 or herculin). Myo D transcription factors form heterodimers with products of a more widely expressed family of bHLH genes, the E family, which consists of at least three distinct genes: E2A, IF2 and HEB. Myo D-E heterodimers bind avidly to consensus (CANNTG) E box target sites that are functionally important elements in the upstream regulatory sequences of many muscle-specific terminal differentiation genes. Both homo- and hetero-oligomers of these proteins are able to distinguish very closely related E box proteins and are believed to play important roles in lineage specific gene expression.

REFERENCES

1. Wright, W.E., et al. 1989. Myogenin, a factor regulating myogenesis, has a domain homologous to MyoD. Cell 56: 607-617.
2. Murre, C., et al. 1989. Interactions between heterologous helix-loop-helix proteins generate complexes that bind specifically to a common DNA sequence. Cell 58: 537-544.
3. Braun, T., et al. 1989. A novel human muscle factor related to but distinct from MyoD1 induces myogenic conversion in 10T1/2 fibroblasts. EMBO J. 8: 701-709.

CHROMOSOMAL LOCATION

Genetic locus: TCF12 (human) mapping to 15q21.3; Tcf12 (mouse) mapping to 9 D.

SOURCE

HEB (D-3) is a mouse monoclonal antibody raised against amino acids 31-160 of HEB of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 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-28364 X, 200 µg/0.1 ml.

HEB (D-3) is available conjugated to agarose (sc-28364 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-28364 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-28364 PE), fluorescein (sc-28364 FITC), Alexa Fluor® 488 (sc-28364 AF488), Alexa Fluor® 546 (sc-28364 AF546), Alexa Fluor® 594 (sc-28364 AF594) or Alexa Fluor® 647 (sc-28364 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-28364 AF680) or Alexa Fluor® 790 (sc-28364 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

HEB (D-3) is recommended for detection of HEB 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).

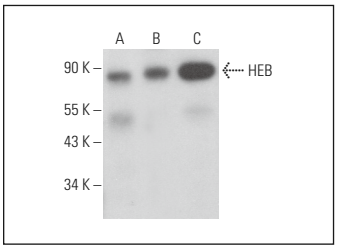
Suitable for use as control antibody for HEB siRNA (h): sc-35552, HEB siRNA (m): sc-35553, HEB shRNA Plasmid (h): sc-35552-SH, HEB shRNA Plasmid (m): sc-35553-SH, HEB shRNA (h) Lentiviral Particles: sc-35552-V and HEB shRNA (m) Lentiviral Particles: sc-35553-V.

HEB (D-3) X TransCruz antibody is recommended for Gel Supershift and ChIP applications.

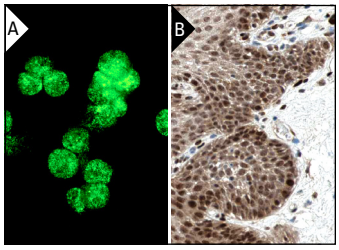
Molecular Weight of HEB: 85 kDa.

Positive Controls: MOLT-4 nuclear extract: sc-2151, BC_3H1 cell lysate: sc-2299 or Sol8 cell lysate: sc-2249.

DATA



HEB (D-3): sc-28364. Western blot analysis of HEB expression in MOLT-4 nuclear extract (**A**) and Sol8 (**B**) and BC_3H1 (**C**) whole cell lysates.



HEB (D-3): sc-28364. Immunofluorescence staining of methanol-fixed Jurkat cells showing nuclear localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human oral mucosa tissue showing nuclear staining of surface epithelial cells. Kindly provided by The Swedish Human Protein Atlas (HPA) program (**B**).

SELECT PRODUCT CITATIONS

1. Fan, C.S., et al. 2018. Osteopontin-integrin engagement induces HIF-1α-TCF12-mediated endothelial-mesenchymal transition to exacerbate colorectal cancer. Oncotarget 9: 4998-5015.
2. Rao, C., et al. 2020. The transcription factor E2A drives neural differentiation in pluripotent cells. Development 147: dev184093.
3. Singh, A., et al. 2022. Tcf12 and NeuroD1 cooperatively drive neuronal migration during cortical development. Development 149: dev200250.
4. Pang, Y., et al. 2023. TCF12 deficiency impairs the proliferation of glioblastoma tumor cells and improves survival. Cancers 15: 2033.
5. Mihai, A., et al. 2023. E protein binding at the Tcra enhancer promotes Tcra repertoire diversity. Front. Immunol. 14: 1188738.

RESEARCH USE

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