SANTA CRUZ BIOTECHNOLOGY, INC.

HB-EGF (H-1): sc-365182

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Heparin binding epidermal-like growth factor (HB-EGF), a member of the EGF family of mitogens, binds to the EGF receptor (EGFR) and to heparin sulfate proteoglycans on the cell surface. HB-EGF was originally isolated from medium conditioned by the growth of the human histocytic lymphoma cell U-937 on the basis of its heparin-binding ability and its mitogenic activity for Balb-3T3 fibroblasts. The HB-EGF gene encodes a 208 amino acid precursor containing a signal peptide and transmembrane domain. Mature HB-EGF is a soluble protein 86 amino acids in length and results from the enzymatic cleavage of the membrane bound precursor. The membrane-bound form of HB-EGF has been identified as the diphtheria toxin receptor. Preincubation of vero cells with phorbol 12-myristate 13-acetate (PMA) induces the proteolytic cleavage of HB-EGF outside the membrane anchor.

REFERENCES

1. Higashiyama, S., et al. 1991. A heparin-binding growth factor secreted by macrophage-like cells that is related to EGF. Science 251: 936-939.
2. Mitamura, T., et al. 1995. Diphtheria toxin binds to the epidermal growth factor (EGF)-like domain of human heparin-binding EGF-like growth factor/ diphtheria toxin receptor and inhibits specifically its mitogenic activity. J. Biol. Chem. 270: 1015-1019.

CHROMOSOMAL LOCATION

Genetic locus: HBEGF (human) mapping to 5q31.3; Hbegf (mouse) mapping to 18 B2.

SOURCE

HB-EGF (H-1) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 183-213 within a C-terminal cytoplasmic domain of HB-EGF of mouse 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.

HB-EGF (H-1) is available conjugated to agarose (sc-365182 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-365182 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-365182 PE), fluorescein (sc-365182 FITC), Alexa Fluor® 488 (sc-365182 AF488), Alexa Fluor® 546 (sc-365182 AF546), Alexa Fluor® 594 (sc-365182 AF594) or Alexa Fluor® 647 (sc-365182 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-365182 AF680) or Alexa Fluor® 790 (sc-365182 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-365182 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

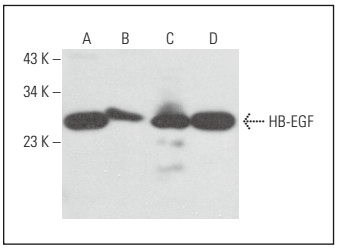
HB-EGF (H-1) is recommended for detection of precursor HB-EGF of mouse, rat and human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution 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 HB-EGF siRNA (h): sc-39420, HB-EGF siRNA (m): sc-39421, HB-EGF shRNA Plasmid (h): sc-39420-SH, HB-EGF shRNA Plasmid (m): sc-39421-SH, HB-EGF shRNA (h) Lentiviral Particles: sc-39420-V and HB-EGF shRNA (m) Lentiviral Particles: sc-39421-V.

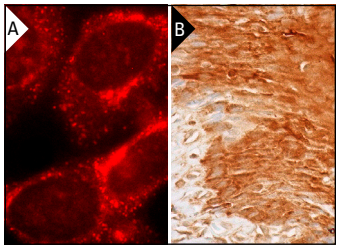
Molecular Weight of HB-EGF: 22 kDa.

Positive Controls: RAW 264.7 whole cell lysate: sc-2211, NIH/3T3 whole cell lysate: sc-2210 or EOC 20 whole cell lysate: sc-364187.

DATA



HB-EGF (H-1): sc-365182. Western blot analysis of HB-EGF expression in RAW 264.7 (**A**), NIH/3T3 (**B**), TK-1 (**C**) and EOC 20 (**D**) whole cell lysates.



HB-EGF (H-1): sc-365182. Immunofluorescence staining of methanol-fixed NIH/3T3 cells showing cytoplasmic localization (**A**). Immunoperoxidase staining of formalin fixed, paraffin-embedded human esophagus tissue showing membrane and cytoplasmic staining of squamous epithelial cells (**B**).

SELECT PRODUCT CITATIONS

1. Li, P., et al. 2019. Roles for HB-EGF in mesenchymal stromal cell proliferation and differentiation during skeletal growth. J. Bone Miner. Res. 34: 295-309.
2. Aldaregia, J., et al. 2020. Erbb4 is required for cerebellar developmentand malignant phenotype of medulloblastoma. Cancers 12: 997.
3. Wu, D., et al. 2021. An acetyl-histone vulnerability in PI3K/Akt inhibition-resistant cancers is targetable by both BET and HDAC inhibitors. Cell Rep. 34: 108744.
4. Tian, S., et al. 2022. Targeted intracellular delivery of Cas13 and Cas9 nucleases using bacterial toxin-based platforms. Cell Rep. 38: 110476.
5. Gheibi, P., et al. 2023. Association between uterine toxicity induced by chlorpyrifos and downregulation of heparin-binding epidermal growth factor and L-selectin genes. Vet. Res. Forum 14: 45-52.
6. Linnerbauer, M., et al. 2024. The astrocyte-produced growth factor HB-EGF limits autoimmune CNS pathology. Nat. Immunol. 25: 432-447.

RESEARCH USE

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