

HB-EGF (C-14): sc-21593

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 histiocytic lymphoma cell U937 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

- Higashiyama, S., et al. 1991. A heparin-binding growth factor secreted by macrophage-like cells that is related to EGF. *Science* 251: 936-939.
- 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.
- Modjtahedi, H. and Dean, C. 1995. The binding of HB-EGF to tumour cells is blocked by mAbs which act as EGF and TGF α antagonists. *Biochem. Biophys. Res. Comm.* 207: 389-397.
- Lee, Y.J., et al. 1995. Increased expression of heparin binding epidermal growth-factor-like growth factor mRNA in the kidney of streptozotocin-induced diabetic rats. *Biochem. Biophys. Res. Comm.* 207: 216-222.
- Nakamura, K., et al. 1995. Membrane-anchored heparin-binding EGF-like growth factor (HB-EGF) and diphtheria toxin receptor-associated protein (DRAP27)/CD9 form a complex with integrin α 3 β 1 at cell-cell contact sites. *J. Cell Biol.* 129: 1691-1705.
- Lanzrein, M., et al. 1995. Diphtheria toxin endocytosis and membrane translocation are dependent on the intact membrane-anchored receptor (HB-EGF precursor): studies on the cell-associated receptor cleaved by a metalloprotease in phorbol-ester-treated cells. *Biochem. J.* 310: 285-289.
- Goishi, K., et al. 1995. Phorbol ester induces the rapid processing of cell surface heparin-binding EGF-like growth factor: conversion from juxtacrine to paracrine growth factor activity. *Mol. Biol. Cell* 6: 967-980.

CHROMOSOMAL LOCATION

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

SOURCE

HB-EGF (C-14) is an affinity purified goat polyclonal antibody raised against a peptide mapping within an internal region of HB-EGF of human origin.

RESEARCH USE

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

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-21593 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

HB-EGF (C-14) is recommended for detection of precursor and mature HB-EGF of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), 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 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.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto A Blocking Reagent: sc-2333 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

SELECT PRODUCT CITATIONS

- Morris, Z.S., et al. 2009. Aberrant epithelial morphology and persistent epidermal growth factor receptor signaling in a mouse model of renal carcinoma. *Proc. Natl. Acad. Sci. USA* 106: 9767-9772.

STORAGE

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

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.



Try **HB-EGF (G-11): sc-74441** or **HB-EGF (H-1): sc-365182**, our highly recommended monoclonal alternatives to HB-EGF (C-14). Also, for AC, HRP, FITC, PE, Alexa Fluor® 488 and Alexa Fluor® 647 conjugates, see **HB-EGF (G-11): sc-74441**.