

## Anti-HB-EGF (human) antibody, monoclonal (4G10)

71-501 50 ug

**Background:** Heparin-binding epidermal growth factor-like growth factor (HB-EGF) is synthesized as a membrane-anchored precursor that is proteolytically cleaved to release the soluble mature growth factor, HB-EGF (1, 2). The former functions as juxtacrine and the latter as paracrine growth factor. Soluble HB-EGF shows several forms in Western blotting with apparent molecular weights 19~27 kDa due to heterogeneous O-glycosylation and N-terminal truncation. HB-EGF activates EGFR and ErbB4 and promotes the development in many tissues. In human ProHB-EGF is the cellular receptor for diphtheria toxin (3). Non-toxic mutant of diphtheria toxin, CRM197, inhibits HB-EGF function. As HB-EGF level is elevated in most ovarian cancer, CRM197 is being tested as an anticancer drug (4). The hybridoma clone 4G10 was established and characterized in the laboratory of Prof. E. Mekada of Osaka University, who is a leading scientist in this field (3, 4).

**Applications** The antibody can react with both soluble and cell-surface attached forms of HG-EGF.

- 1) Western blotting (0.2~1 ug/ml)
- 2) Immunoprecipitation (2 ug/ml)
- 3) Indirect immuno-fluorescence staining (5~10 ug/ml)

### Properties of the product

**Antigen:** Recombinant human HB-EGF ectodomain expressed in SF21 cell

**Antibody:** Mouse monoclonal antibody produced in serum-free medium and purified by combination of chromatography

**Isotype:** IgG1 (mouse)

**Epitope:** EGF domain

**Reactivity:** React with human, but not with mouse

**Form:** 1 mg/ml in PBS, 50% glycerol, filter-sterilized, azide-free

**Storage:** -20°C (long period: -80°C)

**Data Link** UniProtKB/Swiss-Prot [Q99075](#) (HBEGF\_HUMAN)

### References

1. Higashiyama S *et al* "A heparin-binding growth factor secreted by macrophage-like cells that is related to EGF" *Science* **251**: 936-939 (1991) PMID: [1840698](#)
2. Prenzel N *et al* "EGF receptor transactivation by G-protein-coupled receptors requires metalloproteinase cleavage of proHB-EGF" *Nature* **402**: 884-888 (1999) PMID: [10622253](#)
3. Iwamoto R *et al* "Heparin-binding EGF-like growth factor, which acts as the diphtheria toxin receptor, forms a complex with membrane protein DRAP27/CD9, which up-regulates functional receptors and diphtheria toxin sensitivity" *EMBO J* **13**: 2322-2330 (1994) PMID: [8194524](#)
4. Miyamoto S *et al* "Heparin-binding EGF-like growth factor is a promising target for ovarian cancer therapy" *Cancer Res* **64**:5720-5727 (2004) PMID: [15313912](#)

**Figure Identification of human HB-EGF by using anti-HB-EGF 4G10**

(a) Western blotting

Samples 1: Vero cell extract

Sample 2: Vero cells carrying human HB-EGF expression vector

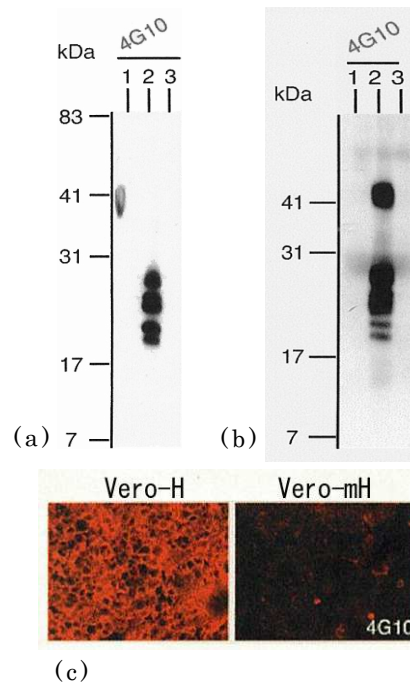
Sample 3: Vero cells carrying mouse HB-EGF expression vector

(b) Immunoprecipitation

Samples are the same as (a) except that the cell surface was biotinylated. After IP with the antibody, HRP-conjugated streptoavidin was used to detect the HB-EGF by WB.

(c) Immuno-cytochemistry

Samples: (Vero-H) Vero cells carrying human HB-EGF expression vector, (Vero-mH) Vero cells carrying mouse HB-EGF expression vector. Cells treated with antibody 4G10 were fixed with 4% PFA and reacted with Cys3 conjugated 2<sup>nd</sup> antibody.



**Related product: # [71-503](#) Anti-HB-EGF antibody, biotinylated**

**# [01-515](#) Diphtheria toxin mutant CRM197**

**# [01-517](#) Diphtheria toxin**