Cytokines

Human Recombinant HBEGF, ACF

Heparin-binding EGF-like growth factor, animal component-free

Catalog #	78191	10 µg
	78191.1	100 µg
	78191.2	1000 µg

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Product Description

Heparin-binding epidermal growth factor (EGF)-like growth factor (HBEGF) is a member of the EGF family (Nishi & Klagsbrun). HBEGF promotes blastocyst adhesion to the uterine wall (Iwamoto & Mekada). It also plays a role in smooth muscle cell hyperplasia and brain injury (Nishi & Klagsburn). HBEGF produced by CD4+ T cells promotes wound healing by stimulating migration and proliferation of keratinocytes, fibroblasts, and smooth muscle cells (Blotnick et al.). It binds to EGFR, ErbB4, ErbB2, and ErbB3, activating the PI3K/AKT signaling cascade (Iwamoto & Mekada). HBEGF is produced in a variety of cells, where it contributes to physiological and pathological processes. HBEGF is overexpressed in ovarian, breast, gastric, colorectal, pancreatic, and endometrial cancers, which likely contributes to pathogenesis (Miyata et al.). This product is animal component-free.

Product Information

Alternative Names:	Diptheria toxin receptor, DT-R, DTS, HB-EGF, Heparin-binding EGF-like growth factor, Heparin-binding epidermal growth factor, Heparin-binding epidermal growth factor-like growth factor, Proheparin-binding EGF-like growth factor
Accession Number:	Q99075
Amino Acid Sequence:	MDLQEADLDL LRVTLSSKPQ ALATPNKEEH GKRKKKGKGL GKKRDPCLRK YKDFCIHGEC KYVKELRAPS CICHPGYHGE RCHGLSL
Predicted Molecular Mass:	9.9 kDa
Species:	Human
Cross Reactivity:	Reported to be species-specific
Formulation:	Lyophilized from a sterile-filtered solution containing sodium phosphate, pH 7.5.
Source:	E. coli

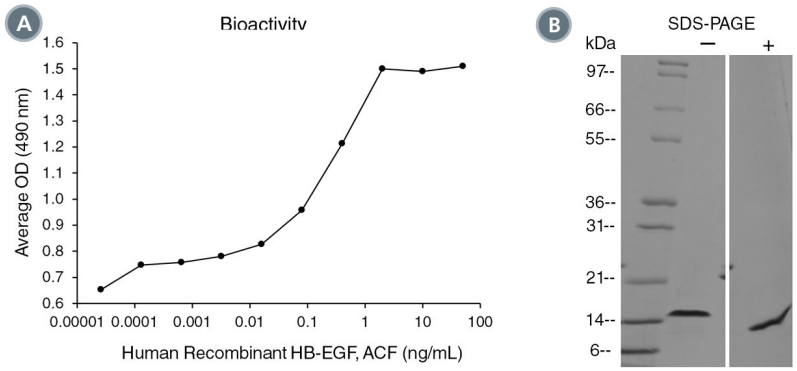
Specifications

Activity:	The specific activity is ≥ 1.0 x 10^6 units/mg (EC50 ≤ 1 ng/mL) as determined by a cell proliferation assay using BALB/c 3T3 cells.
Purity:	≥ 95%
Endotoxin Level:	Measured by kinetic Limulus amebocyte lysate (LAL) analysis and is ≤ 1 EU/µg protein.

Preparation and Storage

Storage:	Store at -20°C to -80°C.
Stability:	Stable as supplied for 12 months from date of receipt.
Preparation:	Centrifuge vial before opening. Reconstitute the product in sterile water to at least 0.1 mg/mL by pipetting the solution down the sides of the vial. Do not vortex. OPTIONAL: After reconstitution, if product will not be used immediately, dilute with concentrated bovine serum albumin (BSA) to a final BSA concentration of 0.1%. The effect of storage of stock solution on product performance should be tested for each application. As a general guide, do not store at 2 - 8°C for more than 1 month or at -80°C for more than 3 months. Avoid repeated freeze-thaw cycles.

Data



(A) The biological activity of Human Recombinant HBEGF, ACF was tested by its ability to promote proliferation of BALB/c 3T3 cells. Cell proliferation was measured using a fluorometric assay method. The EC50 is defined as the effective concentration of the growth factor at which cell proliferation is at 50% of maximum. The EC50 in the example above is 0.167 ng/mL.
(B) 1 µg of Human Recombinant HBEGF, ACF was resolved with SDS-PAGE under reducing (+) and non-reducing (-) conditions and visualized by Coomassie Blue staining. Human Recombinant HBEGF, ACF has a predicted molecular mass of 9.9 kDa.

Related Products

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References

Blotnick S et al. (1994) T lymphocytes synthesize and export heparin-binding epidermal growth factor-like growth factor and basic fibroblast growth factor, mitogens for vascular cells and fibroblasts: differential production and release by CD4+ and CD8+ T cells. Proc Natl Acad Sci USA 91(8): 2890–94.
Iwamoto R & Mekada E. (2000) Heparin-binding EGF-like growth factor: a juxtacrine growth factor. Cytokine Growth Factor Rev 11(4): 335–44.
Miyata K et al. (2012) Regulatory mechanisms of the HB-EGF autocrine loop in inflammation, homeostasis, development and cancer. Anticancer Res 32(6): 2347–52.
Nishi E & Klagsbrun M. (2004) Heparin-binding epidermal growth factor-like growth factor (HB-EGF) is a mediator of multiple physiological and pathological pathways. Growth Factors 22(4): 253–60.