

Overview

Synonyms	Heparin Binding EGF-like growth factor, HBEGF, Diphtheria toxin receptor, DTR
Description	Heparin-binding EGF-like growth factor (HB-EGF) is a member of the EGF family of proteins that in humans is encoded by the HBEGF gene. HB-EGF-like growth factor is synthesized as a membrane-anchored mitogenic and chemotactic glycoprotein. An epidermal growth factor produced by monocytes and macrophages, due to an affinity for heparin is termed HB-EGF. It has been shown to play a role in wound healing, cardiac hypertrophy and heart development and function. First identified in the conditioned media of human macrophage-like cells, HB-EGF is an 87 amino acid glycoprotein which displays highly regulated gene expression. Ectodomain shedding results in the soluble mature form of HB-EGF which influences the mitogenicity and chemotactic factors for smooth muscle cells and fibroblasts. The transmembrane form of HB-EGF is the unique receptor for diphtheria toxin and functions in juxtacrine signaling in cells. Both forms of HB-EGF participate in normal physiological processes and in pathological processes including tumor progression and metastasis, organ hyperplasia, and atherosclerotic disease. HB-EGF can bind two locations on cell surfaces, heparan sulfate proteoglycans and EGF-receptor effecting cell to cell interactions.
Species Source	Human <i>E. coli</i>
Biological Activity	Fully biologically active when compared to standard. The ED ₅₀ as determined by a cell proliferation assay using murine Balb/c 3T3 cells is less than 1 ng/ml, corresponding to a specific activity of > 1.0 × 10 ⁶ IU/mg.
Sequence	DLQEADLDLL RVTLSKPKQA LATPNKEEHG KRKKKGKGLG KKRDPCLRKY KDFCIHGCEK YVKELRAPSC ICHPGYHGER CHGLSL

Properties

Measured Molecular Weight	Approximately 9.7 kDa, a single non-glycosylated polypeptide chain containing 86 amino acids.
Purity	> 97 % by SDS-PAGE and HPLC analyses.
Formulation	Lyophilized from a 0.2 µm filtered concentrated solution in 20 mM PB, pH 7.4, 130 mM NaCl.
Reconstitution	We recommend that this vial be briefly centrifuged prior to opening to bring the contents to the bottom. Reconstitute in sterile distilled water or aqueous buffer containing 0.1 % BSA to a concentration of 0.1-1.0 mg/ml. Stock solutions should be apportioned into working aliquots and stored at -20 °C. Further dilutions should be made in appropriate buffered solutions.
Endotoxin Level	Less than 1 EU/µg of rHuHB-EGF as determined by LAL method.
Physical Appearance	Sterile Filtered White lyophilized (freeze-dried) powder.
Storage	This lyophilized preparation is stable at 2-8 °C, but should be kept at -20 °C for long term storage, preferably desiccated. Upon reconstitution, the preparation is stable for up to one week at 2-8 °C. For maximal stability, apportion the reconstituted preparation into working aliquots and store at -20 °C to -70 °C. Avoid repeated freeze/thaw cycles.

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