

### Instruction Manual

<b>Catalog Number</b>	C-60169A
<b>Description</b>	<p>Human Recombinant Epidermal Growth Factor, (rhEGF) is a small mitogenic polypeptide which is present in many mammalian species and is distributed throughout a wide number of tissues and body fluids. EGF stimulates the proliferation and differentiation of epithelial cells from skin, cornea, lung and tracheal tissue and the gastrointestinal tract. EGF also promotes growth and migration of keratinocytes and enhances the proliferation of fibroblasts and embryonic cells. It is a member of a growth factor family which is characterized by the presence of 6 conserved cysteine motifs that form three disulfide bonds. The biological effects of EGF are mediated by a specific transmembrane receptor (EGF-R). The binding of EGF to EGFR will induce receptor dimerization, which is required for activating the tyrosine kinase in the receptor cytoplasmic domain. Thus, EGF triggers several signal transduction pathways including JAK/STAT, Ras/ERK and PI3K/AKT pathways. EGF plays an important role in wound healing and organogenesis. In addition to its proliferative effects, it participate of a variety of other bioactivities, including effects on cytoskeletal organization, cell migration and the synthesis and turnover of extracellular matrix molecules. Therefore, hEGF has wide application prospects in clinical and cosmetic fields.</p> <p>Recombinant human EGF contains 53 amino acids and an N-terminal 6 a.a. histidine tag for a total length of 59 a.a. and has a predicted molecular mass of 7 kDa. The recombinant protein migrates with an apparent molecular mass of 9.5 kDa in SDS-PAGE.</p> <p>The product carries no pyrogenic or pro-inflammatory contaminants, as assayed with monocyte activation test using Human 10-plex Cytokine Assay measuring IL-6, TNF-alpha and IL-1beta induction.</p>
<b>Quantity</b>	100 µg
<b>Molecular Mass</b>	7 kDa
<b>Specific Activity</b>	> 1.0 x 10 <sup>6</sup> IU/mg
<b>Source</b>	Produced in the endosperm tissue of barley grain ( <i>Hordeum vulgare</i> ).
<b>Purity</b>	Greater than 95% (determined by SDS-PAGE analysis).
<b>Endotoxin Level</b>	Endotoxin level is less than 0.005ng per µg of rec. EGF (0.05 EU/µg).
<b>Biological Activity</b>	Each batch of recombinant EGF is tested for bioactivity and verified to have comparable activity to a commercial source. Bioactivity recombinant human EGF is assayed by measuring its dose dependent effect on proliferation of 3T3 cells. The ED <sub>50</sub> for this effect using EGF is typically <0.1 ng/ml, corresponding to a specific activity >10 x10 <sup>6</sup> units/mg. Optimal concentration should be determined for specific applications and cell lines.
<b>Formulation</b>	Recombinant human EGF is lyophilized from a sterile-filtered protein solution in PBS (pH 7.2).
<b>Reconstitution</b>	Please Note: Always centrifuge product briefly before opening vial. The lyophilized rHu EGF should be reconstituted in sterile, ultra-pure water to a concentration of 0.1 - 0.5 mg/ml. This solution can then be diluted into other aqueous buffers and stored at -20°C for future use. At higher concentrations the solubility may be reduced and multimers generated. Optimal concentration should be determined for specific application.
<b>Storage &amp; Stability</b>	The lyophilized protein, though stable at room temperature for up to 3 weeks, should be stored desiccated at -20°C. Reconstituted rHu EGF should be used immediately or stored in undiluted working aliquots at -20°C. For long term storage, it is recommended to add a carrier protein (0.1% endotoxin-free HSA or BSA; e.g. Cat.No. C-69500A). Avoid repeated freeze-thaw cycles.

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