

Recombinant Human Epidermal Growth Factor

Catalog No.:	PA1011XC
Quantity:	1 mg
Concentration:	1 mg /ml
Background:	<p>Epidermal growth factor has a profound effect on the differentiation of specific cells in vivo and is a potent mitogenic factor for a variety of cultured cells of both ectodermal and mesodermal origin. The EGF precursor is believed to exist as a membrane-bound molecule which is proteolytically cleaved to generate the 53-amino acid peptide hormone that stimulates cells to divide.</p> <p>EGF stimulates the growth of various epidermal and epithelial tissues in vivo and in vitro and of some fibroblasts in cell culture.</p>
Species:	Human
Source:	E. coli, Escherichia coli.
Format:	<p>State: Sterile Filtered White lyophilized (freeze-dried) powder.</p> <p>Purity: >98% Greater than 98.0% as determined by:</p> <p>(a) Analysis by RP-HPLC.</p> <p>(b) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel.</p> <p>Buffer System: Recombinant EGF was lyophilized from a concentrated solution with no additives.</p> <p>Dimers: Less than 1% as determined by silver-stained SDS-PAGE gel analysis.</p> <p>Reconstitution: It is recommended to reconstitute the lyophilized Epidermal Growth Factor in sterile 18MΩ-cm H₂O not less than 100µg/ml, which can then be further diluted to other aqueous solutions.</p>
Description:	<p>Recombinant Human Epidermal Growth Factor produced in E.coli is a single, non-glycosylated, polypeptide chain containing 53 amino acids. The EGF is purified by proprietary chromatographic techniques.</p> <p>AA Sequence:</p> <p>The sequence of the first five N-terminal amino acids was determined and was found to be Asn-Ser-Asp-Ser-Glu, which agrees with the sequence of native human EGF. N-terminal methionine has been completely removed enzymatically.</p> <p>Biological Activity: This recombinant Human Epidermal Growth Factor is fully biologically active when compared to standards. The ED₅₀, calculated by the dose-dependant proliferation of murine BALB/c 3T3 cells (measured by 3H-thymidine uptake) is less than 0.1 ng/ml corresponding to a specific activity of 1 x 10⁷ Units/mg.</p> <p>Molecular weight: 6 kDa 6222 Dalton.</p>
Add. Information:	<p>EGF quantitation was carried out by two independent methods:</p> <p>1. UV spectroscopy at 280 nm using the absorbency value of 2.858 as the extinction coefficient for a 0.1% (1mg/ml) solution. This value is calculated by the PC GENE computer analysis program of protein sequences (IntelliGenetics).</p>

2. Analysis by RP-HPLC, using a standard solution of human EGF as a Reference Standard.

Storage:

Lyophilized Epidermal Growth Factor although stable at room temperature for 3 weeks, should be stored desiccated below -18 C. Upon reconstitution EGF should be stored at 4 C between 2-7 days and for future use below -18 C. For long term storage it is recommended to add a carrier protein (0.1% HSA or BSA). Please avoid freeze-thaw cycles.

General Readings:

1. Zhou Z, Harding PA. Amino-terminal deletion of heparin-binding epidermal growth factor-like growth factor4-127 stimulates cell proliferation but lacks insulin-like activity. *Cell Prolif.* 2007 Apr;40(2):213-30. PubMed PMID: 17472728.
2. Arpino G, Gutierrez C, Weiss H, Rimawi M, Massarweh S, Bharwani L, et al. Treatment of human epidermal growth factor receptor 2-overexpressing breast cancer xenografts with multiagent HER-targeted therapy. *J Natl Cancer Inst.* 2007 May 2;99(9):694-705. PubMed PMID: 17470737.
3. Expression of epidermal growth factor receptor, ezrin, hepatocyte growth factor, and c-Met in uveal melanoma: an immunohistochemical study. *Curr Eye Res* 2007 Mar;32(3):281-90
4. Oslislo A, Czuba Z, Sławska H, Kaźmierczak W, Król W. Decreased human milk concentration of epidermal growth factor after preterm delivery of intrauterine growth-restricted newborns. *J Pediatr Gastroenterol Nutr.* 2007 Apr;44(4):464-7. PubMed PMID: 17414145.
5. Warner BB, Ryan AL, Seeger K, Leonard AC, Erwin CR, Warner BW. Ontogeny of salivary epidermal growth factor and necrotizing enterocolitis. *J Pediatr.* 2007 Apr;150(4):358-63. PubMed PMID: 17382110.
6. Taha MA, Shokeir AA, Osman HG, Abd El-Aziz Ael-A, Farahat SE. Pelvi-ureteric junction obstruction in children: the role of urinary transforming growth factor-beta and epidermal growth factor. *BJU Int.* 2007 Apr;99(4):899-903. PubMed PMID: 17378848.