

Recombinant Human Epidermal Growth Factor

Catalog No.:	PA1011X
Quantity:	0.5 mg
Concentration:	1 mg /ml
Background:	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. EGF stimulates the growth of various epidermal and epithelial tissues in vivo and in vitro and of some fibroblasts in cell culture.
Species:	Human
Source:	E. coli, Escherichia coli.
Format:	State: Sterile Filtered White lyophilized (freeze-dried) powder. Purity: >98% Greater than 98.0% as determined by: (a) Analysis by RP-HPLC. (b) Analysis by reducing and non-reducing SDS-PAGE Silver Stained gel. Buffer System: Recombinant EGF was lyophilized from a concentrated solution with no additives. Dimers: Less than 1% as determined by silver-stained SDS-PAGE gel analysis. 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.
Description:	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. AA Sequence: 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. 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. Molecular weight: 6 kDa 6222 Dalton.
Add. Information:	EGF quantitation was carried out by two independent methods: 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).

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.