Revision 2

Store at -20C

#72528

Human EGF Recombinant Protein

100 µg

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MW (kDa):	UniProt ID:	Entrez-Gene Id:
6.2	#P01133	1950

Background

Epidermal growth factor (EGF) is a small polypeptide hormone that has mitogenic properties *in vivo* and *in vitro* and affects the growth and/or differentiation of many cell types. EGF elicits biological responses by binding to its cell surface receptor, which is a transmembrane glycoprotein containing a cytoplasmic protein tyrosine kinase (PTK) (1,2). The binding of EGF to EGF receptor induces dimerization of the receptor, autophosphorylation, and activation of downstream signaling components (3). The integrated biological responses to EGF signaling are pleiotropic, including mitogenesis or apoptosis, enhanced cell motility, protein secretion, and differentiation or dedifferentiation. In addition to being implicated in organ morphogenesis, maintenance, and repair, research studies have correlated upregulated EGF receptor signaling with progression to invasion and metastasis in a wide variety of tumors (4-6). Thus, investigators have identified EGF receptor and its downstream signaling molecules as targets for therapeutic interventions in wound repair and cancer (4-6). EGF is derived from a 160 kDa precursor protein with an N-terminal extracellular domain, an EGF growth factor sequence, a transmembrane domain, and an extracellular tail (7). Once synthesized, the precursor can be stored or processed into EGF growth factor depending on different tissue/organ conditions.

Endotoxin

Endotoxin levels are less than or equal to 1 EU / 1 µg hEGF.

Purity

A greater than or equal to 95% purity was determined by SDS-PAGE.

Source / Purification

Recombinant human EGF was expressed in *E. coli* and is supplied in a lyophilized form.

Bioactivity

The bioactivity of recombinant hEGF was determined in a BALB/c 3T3 cell proliferation assay. The ED_{50} of each lot is less than or equal to 100 pg/mL.

Background References

1. Wells, A. (1999) *Int. J. Biochem. Cell. Biol.* 31, 637-643.
2. Boulougouris, P. and Elder, J. (2001) *Anticancer Res.* 21, 2769-2775.
3. Schlessinger, J. (2002) *Cell* 110, 669-672.
4. Sarries, C. et al. (2002) *Pharmacogenomics* 3, 763-780.
5. Lorimer, I.A. (2002) *Curr. Cancer Drug Targets* 2, 91-102.
6. Ghaneh, P. et al. (2002) *J. Hepatobiliary Pancreat. Surg.* 9, 1-11.
7. Maréchal, H. et al. (1999) *Am J Physiol* 276, C734-46.

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