3050 Spruce Street, St. Louis, MO 63103 USA
Tel: (800) 521-8956 (314) 771-5765 Fax: (800) 325-5052 (314) 771-5757
email: techservice@sial.com sigma-aldrich.com

Product Information

**Epidermal Growth Factor, human
animal component free
recombinant, expressed in *E. coli***

Catalog Number **E5036**
Storage Temperature –20 °C

CAS RN 62253-63-8
Synonyms: EGF, Urogastrone

Product Description

Epidermal Growth Factor (EGF) is a small mitogenic polypeptide (~6 kDa), which is present in many mammalian species and is distributed throughout a wide number of tissues and body fluids.[1] Human EGF is identical to β-urogastrone, a polypeptide which was recognized and isolated on the basis of its ability to inhibit gastric acid secretion.[2]

EGF 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 location of 3 intrachain disulfide bonds in recombinant human EGF is identical to that of mouse EGF.[3] EGF is homologous to a sequence contained in a 19 kDa protein of vaccinia virus,[5] which appears to utilize the EGF receptor to gain entry into cells.[6] EGF is mitogenic for a variety of epidermal and epithelial cells, including fibroblasts, glial cells, mammary epithelial cells, vascular and corneal endothelial cells, bovine granulosa, rabbit chondrocytes, HeLa cells, and SV40-3T3 cells.[1]

This product is lyophilized from a 0.2 μm-filtered solution of phosphate buffered saline, pH 7.4.

The product was prepared from raw materials verified to be of animal-free origin.

Purity: ≥97% (SDS-PAGE)

EC_{50}: 0.08–0.8 ng/mL

The biological activity of recombinant, human EGF is measured by its ability to stimulate the mouse fibroblast cell line BALB/3T3. The EC_{50} is defined as the effective concentration of growth factor that elicits a 50% increase in cell growth in a cell based bioassay.

Endotoxin level: ≤1EU/μgP

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute the contents of the vial to 1 mg/mL using 0.2 μm-filtered 10 mM acetic acid.

Storage/Stability

Store the product at –20 °C. When stored at –20 °C, the product is stable for at least 2 years. After reconstitution, store at 2–8 °C for a maximum of 1 month. For extended storage freeze in working aliquots at –70 °C or –20 °C. Repeated freezing and thawing is not recommended.

References

1. Carpenter, G., and Cohen, S., Rapid enhancement of protein phosphorylation in A-431 cell membrane preparations by epidermal growth factor. Annu. Rev. Biochem., **48**, 193-216 (1979).
2. Gregory, H., Isolation and structure of urogastrone and its relationship to epidermal growth factor. Nature, **257**, 325-327 (1975).
3. George-Nascimento, C. et al., Characterization of recombinant human epidermal growth factor produced in yeast. Biochemistry, **27**, 797-802 (1988).
4. Todaro, G.J. et al., Transforming growth factors produced by certain human tumor cells: polypeptides that interact with epidermal growth factor receptors. Proc. Natl. Acad. Sci. USA, **77**, 5258-5262 (1980).
5. Blomquist, M.C. et al., Vaccinia virus 19-kilodalton protein: relationship to several mammalian proteins, including two growth factors. Proc. Natl. Acad. Sci. USA, **81**, 7363-7367 (1984).
6. Eppstein, D.A. et al., Epidermal growth factor receptor occupancy inhibits vaccinia virus infection. Nature, **318**, 663-665 (1985).

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