Miltenyi Biotec

Human EGF
research grade

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1. Description

Products Human EGF, research grade.

Recombinant human epidermal growth factor.

Content in µg	Order no.
100	130-093-825

Biological activity The ED_{50} is ≤2 ng/mL corresponding to an activity of ≥0.5×10^6 IU/mg.

▲ **Note:** The ED_{50} is determined by proliferation assay using 3T3 cells.[1] The proliferation assay was calibrated with the international standard for human EGF (NIBSC code 91/530) provided by the WHO/National Institute for Biological Standards and Control.

Primary structure Single, non-glycosylated polypeptide chain (54 amino acid residues).

Molecular mass 6.4 kDa.

Source Produced in *E. coli*.

Product format Lyophilized from a filtered (0.2 µm) buffer solution.

Stabilizer Mannitol and trehalose.

Purity >95% as determined by SDS-PAGE analysis.

Endotoxin level Low endotoxin (<1.0 EU/µg cytokine) as determined by Limulus Amebocyte Lysate (LAL) assay.

Storage Lyophilized Human EGF, research grade should be stored at –20 °C. The expiration date is indicated on the vial label. Upon reconstitution aliquots should be stored at –20 °C or below. Avoid repeated freeze-thaw cycles.

Reconstitution It is recommended to reconstitute lyophilized Human EGF, research grade with deionized sterile-filtered water to a final concentration of 0.1–1.0 mg/mL in a minimal volume of 100 µL. Further dilutions should be prepared with 0.1% bovine serum albumin (BSA) or human serum albumin (HSA) in phosphate-buffered saline.

1.1 Background information

Epidermal growth factor (EGF) is the prototype of the large family of EGF-like proteins with a common structural motif comprising three intramolecular disulfide bonds. EGF is produced by various cell types like mammary gland cells, gut epithelial cells, and cells in the nervous system and the kidney. Production of EGF is induced by testosterone and inhibited by estrogens. EGF stimulates the proliferation and differentiation of mesenchymal cells, acts as a mitogen for fibroblasts, epithelial and endothelial cells, and promotes colony formation of epidermal cells.

1.2 Applications

Human EGF can be used for a variety of applications, including:

- Proliferation and differentiation of a wide variety of cell types deriving from ectoderm and mesoderm.

Optimal concentration for a specific application should be determined by a dose-response experiment.

2. References

1. Diaz-Guerra E. *et al.* (2012) Intrinsic cues and hormones control mouse mammary epithelial tree size. FASEB J. 26 (9): 3844–3853.
2. Robinson, C. J. and Gaines-Das, R. (1996) The international standard for epidermal growth factor (EGF): comparison of candidate preparations by *in vitro* bioassays and immunoassays. National Institute for Biological Standards and Control. Growth Factors 13: 163–170.

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