

# Human EGF / Epidermal Growth Factor Protein

Catalog Number: GMP-10605-HNAE



Sino Biological  
Biological Solution Specialist

## General Information

### Gene Name Synonym:

Epidermal Growth Factor; HOMG4; URG

### Protein Construction:

A DNA sequence encoding the mature form of human EGF (NP\_001954.2) (Asn 971-Arg 1023) was expressed and purified with an initial Met at the N-terminus.

**Source:** Human

**Expression Host:** E. coli

## QC Testing

**Purity:** > 95 % as determined by SDS-PAGE

### Bio Activity:

**Measured in a cell proliferation assay using Balb/c 3T3 mouse embryonic fibroblasts. The EC<sub>50</sub> for this effect is typically 0.1-0.5 ng/mL. The specific activity of Recombinant Human EGF is approximately 1.9 × 10<sup>3</sup> IU/μg, which is calibrated against human EGF WHO International Standard (NIBSC code: 91/530).**

### Endotoxin:

< 0.01 EU per μg of the protein as determined by the LAL method

### Stability:

Samples are stable for up to twelve months from date of receipt at -70 °C

**Predicted N terminal:** Met

### Molecular Mass:

The recombinant human EGF consists of 54 amino acids and has a calculated molecular mass of 6.3 kDa.

### Formulation:

Lyophilized from sterile PBS, pH 7.4

Normally 5 % - 8 % trehalose, mannitol and 0.01% Tween80 are added as protectants before lyophilization. Specific concentrations are included in the hardcopy of COA. Please contact us for any concerns or special requirements.

## Usage Guide

### Storage:

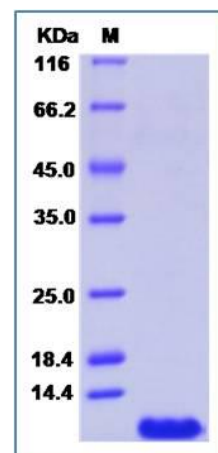
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

**Avoid repeated freeze-thaw cycles.**

### Reconstitution:

Detailed reconstitution instructions are sent along with the products.

## SDS-PAGE:



## Protein Description

EGF is the founding member of the EGF-family of proteins. Members of this protein family have highly similar structural and functional characteristics. EGF contains 9 EGF-like domains and 9 LDL-receptor class B repeats. Human EGF is a 645-Da protein with 53 amino acid residues and three intramolecular disulfide bonds. As a low-molecular-weight polypeptide, EGF was first purified from the mouse submandibular gland, but since then it was found in many human tissues including submandibular gland, parotid gland. It can also be found in human platelets, macrophages, urine, saliva, milk, and plasma. EGF is a growth factor that stimulates the growth of various epidermal and epithelial tissues in vivo and in vitro and of some fibroblasts in cell culture. It results in cellular proliferation, differentiation, and survival. Salivary EGF, which seems also regulated by dietary inorganic iodine, also plays an important physiological role in the maintenance of oro-esophageal and gastric tissue integrity. EGF acts by binding with high affinity to epidermal growth factor receptor on the cell surface and stimulating the intrinsic protein-tyrosine kinase activity of the receptor. The tyrosine kinase activity, in turn, initiates a signal transduction cascade that results in a variety of biochemical changes within the cell - a rise in intracellular calcium levels, increased glycolysis and protein synthesis, and increases in the expression of certain genes including the gene for EGFR - that ultimately lead to DNA synthesis and cell proliferation.

## References

- 1.Chen JX, *et al.* (2011) Involvement of c-Src/STAT3 signal in EGF-induced proliferation of rat spermatogonial stem cells. *Mol Cell Biochem.* 358(1-2):67-73.
- 2.Guo Y, *et al.* (2012) Correlations among ERCC1, XPB, UBE2I, EGF, TAL2 and ILF3 revealed by gene signatures of histological subtypes of patients with epithelial ovarian cancer. *Oncol Rep.* 27(1):286-92.
- 3.Kim S, *et al.* (2012) Smad7 acts as a negative regulator of the epidermal growth factor (EGF) signaling pathway in breast cancer cells. *Cancer Lett.* 314(2):147-54.

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**For US Customer: Fax: 267-657-0217**

**● Tel: 215-583-7898**

**Global Customer: Fax :+86-10-5862-8288**

**● Tel:+86-400-890-9989 ●**

**<http://www.sinobiological.com>**