

Human EGF / Epidermal Growth Factor Protein

Catalog Number: 10605-HNAE

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) (Asn971-Arg1023) 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. ≥ 95 % as determined by SEC-HPLC.

Bio Activity:

1. iPSC-derived human vascular organoids (Day 7) were cultured with FGF2 (Cat#10014-HNAE), VEGFA (Cat# 11066-HNAH), EGF (Cat#10605-HNAE). Red arrows represent vascular organoids. Image taken at 10x magnification. (Routinely tested)

2. Measured in a cell proliferation assay using Balb/C 3T3 mouse embryonic fibroblasts. The ED50 for this effect is typically 0.02-0.2ng/ml.

3. Western blot analysis of extracts from serum-starved HeLa, untreated (-) or treated with EGF (Cat # 10605-HNAE) (10 ng/mL, 30min) using Phospho-EGF Receptor (Tyr1068) rabbit monoclonal Antibody (Cat# 110463-R0027) at 1:2000 dilution (upper), or Anti-EGFR Antibody, Rabbit Polyclonal (Cat# 100372-T32) at 1:2000 dilution (lower) (Routinely tested).

Endotoxin:

< 5 EU per mg of the protein.

Predicted N terminal: Met

Molecular Mass:

The recombinant human EGF consisting of 54 amino acids and has a calculated molecular mass of 6.35 kDa as estimated in SDS-PAGE under reducing conditions.

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

Stability & Storage:

Samples are stable for twelve months from date of receipt at -20°C to -80°C.

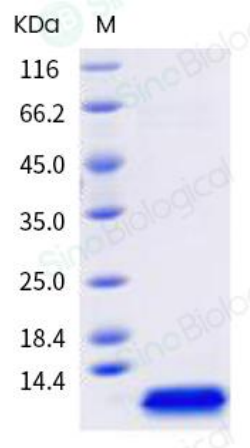
Store it under sterile conditions at -20°C to -80°C upon receiving. Recommend to aliquot the protein into smaller quantities for optimal storage.

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 6045-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.