

Recombinant Human EGF Protein

Catalog Number: GMP-TL613

Product Name

Generic Name	Recombinant Human EGF Protein
Synonym	URG, HOMG4

Product Information

Protein sequence	P01133-1 was expressed with a His-tag at the C-terminus.
Expression Host	HEK293 cells
QC Testing Purity	> 90 % as determined by SDS-PAGE
Activity	Measured in a cell proliferation assay using Balb/c 3T3 cells. The ED ₅₀ for this effect is ≤ 3 ng/mL.
Endotoxin Level	< 0.1 EU per 1 µg of the protein by the LAL method.
Molecular Mass	Predicts a molecular mass of 7.0 kD.
Formulation	Lyophilized from sterile PBS, pH 7.4. Normally 6 % mannitol are added as protectants before lyophilization.
Stability & Storage	24 months at 2 °C to 8 °C in lyophilized state.
	6 months at -20 °C under sterile conditions after reconstitution.
	12 months at -80 °C under sterile conditions after reconstitution.
	Recommend to aliquot the protein into smaller quantities after reconstituting with water for injection, normal saline or PBS, and keep the diluted concentration above 100 µg/mL.
	Avoid repeated freeze-thaw cycles.

Background

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. 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. EGF is widely used as a mitogen in the culture of neural stem cells in vitro, and it can be used as an inducer to promote the differentiation of neural stem cells into neurons, astrocytes, and oligodendrocytes.

References

- 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.
- 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.
- 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 .