

## EGF Protein, Human, Recombinant (His)

### General Information

Synonyms:	epidermal growth factor;Urogastrone;URG
Protein Construction:	Asn971-Arg1023
Species:	Human
Expression Host:	E. coli
Accession:	P01133
Molecular Weight:	~7.2 kDa (Reducing conditions)

### QC Testing

Biological Activity:	ED 50 < 0.2 ng/ml, as determined by a cell proliferation assay using Balb/c 3T3 cells, corresponding to a specific activity of $\geq 5.0 \times 10^6$ units/mg.
Purity:	> 95% as determined by SDS-PAGE
Endotoxin:	< 0.2 EU/ $\mu$ g of protein as determined by the LAL method.
Formulation:	Lyophilized from a 0.2 $\mu$ m filtered solution in PBS.

### Preparation and Storage

#### Reconstitution:

Reconstitute the lyophilized protein in sterile deionized water. The product concentration should not be less than 100  $\mu$ g/ml. Before opening, centrifuge the tube to collect powder at the bottom. After adding the reconstitution buffer, avoid vortexing or pipetting for mixing.

#### Stability & Storage:

Upon receiving, this product remains stable for up to 6 months at lower than -70°C. Upon reconstitution, the product should be stable for up to 1 week at 4°C or up to 3 months at -20°C. For long term storage it is recommended that a carrier protein (example 0.1% BSA) be added. Avoid repeated freeze-thaw cycles.

Actual storage temperature shall be subject to the COA.

#### Shipping:

In general, lyophilized powders are shipped with blue ice, while solutions are shipped with dry ice.

### Protein Background

Epidermal Growth Factor (EGF) is a potent growth factor that stimulates the proliferation of various epidermal and epithelial cells. Additionally, EGF has been shown to inhibit gastric secretion, and to be involved in wound healing. EGF signals through the EGF receptor (EGFR) also known as erbB1, is a class I tyrosine kinase receptor. This receptor also binds with TGF- $\alpha$  and VGF (vaccinia virus growth factor). EGF-receptor binding results in cellular proliferation, differentiation, and survival. EGF is a low-molecular-weight polypeptide first purified from the mouse submandibular gland, but since then found in many human tissues including submandibular gland, parotid gland. 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. The biological effects of salivary EGF include healing of oral and gastroesophageal ulcers, inhibition of gastric acid secretion, stimulation of DNA synthesis as well as mucosal protection from intraluminal injurious factors such as gastric acid, bile acids, pepsin, and trypsin and to physical, chemical and bacterial agents.

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