

PRODUCT INFORMATION



EGF (human, recombinant)

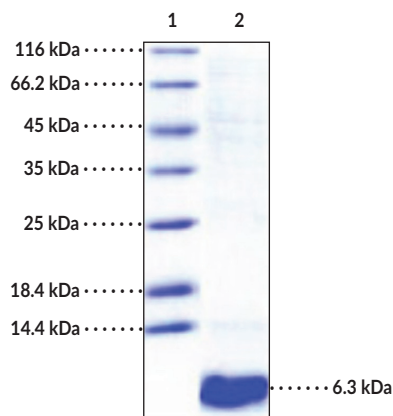
Item No. 32057

Overview and Properties

Synonyms:	Epidermal Growth Factor, URG, β -Urogastrone
Source:	Active recombinant human EGF expressed in <i>E. coli</i>
Amino Acids:	971-1023
Uniprot No.:	P01133
Molecular Weight:	6.3 kDa
Storage:	-80°C (as supplied)
Stability:	≥ 1 year
Purity:	$\geq 92\%$ estimated by SDS-PAGE
Supplied in:	Lyophilized from sterile PBS, pH 7.4, 5% trehalose, 5% mannitol, 0.01% tween-80
Bioactivity:	See figures for details

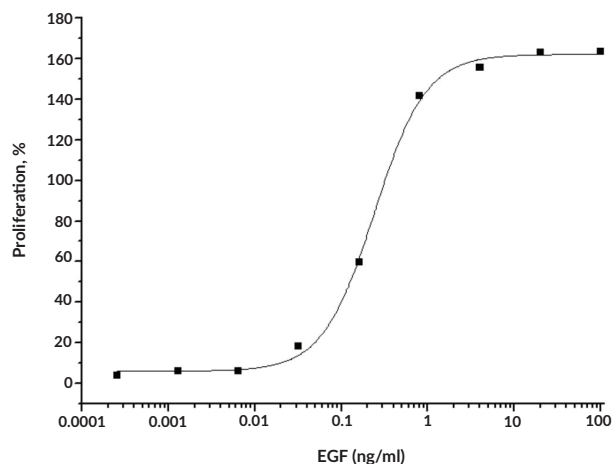
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

Images



Lane 1: MW Markers
Lane 2: EGF

SDS-PAGE Analysis of EGF.



Cell proliferation assay using BALB/c 3T3 mouse embryonic fibroblasts. The ED_{50} value for this effect is typically 0.15-0.75 ng/ml.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the complete Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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Description

Epidermal growth factor (EGF) is a polypeptide ligand for the EGF receptor (EGFR; Item No. 32026).^{1,2} It is synthesized as a 1,217 amino acid glycosylated transmembrane precursor protein from which mature, soluble EGF is formed by proteolysis. Mature EGF is a 53-amino acid polypeptide that contains six cysteine residues, which form three intramolecular disulfide bonds essential to the biological activity of EGF. EGF is synthesized in the brain, kidney, pancreas, small intestine, pituitary gland, and submaxillary gland and is found in various bodily fluids, including saliva, cerebrospinal fluid, blood, breast milk, and prostatic fluid.² Binding of EGF to the EGFR induces receptor dimerization, autophosphorylation, and intracellular signaling with roles in cell proliferation. In patients with early Parkinson's disease and Alzheimer's disease with amnesic mild cognitive impairment, low plasma EGF levels are predictive of future long-term cognitive decline.³ Plasma levels of EGF are reduced in pregnant woman infected with *T. cruzi* compared with uninfected pregnant controls.⁴ Exogenous application of EGF normalizes cortical GABAergic transmission and improves rotarod performance in the R6/2 transgenic mouse model of Huntington's disease.⁵ Probiotic administration of *E. coli* engineered to secrete human EGF induces epithelial barrier restoration in a mouse model of intestinal ulcers.⁶ Immunization with human EGF induces an anti-EGF antibody response and increased survival in mice with EGFR-expressing tumors.⁷ Cayman's EGF (human, recombinant) protein can be used for cell-based assay applications. This protein consists of 54 amino acids and has a calculated molecular mass of 6.3 kDa.

References

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6. Yu, M., Kim, J., Ahn, J.H., et al. Nononcogenic restoration of the intestinal barrier by *E. coli*-delivered human EGF. *JCI Insight* **4(16)**, e125166 (2019).
7. Ramos, T.C., Rodríguez, P.C., Vinageras, E.N., et al. CIMAvax EGF (EGF-P64K) vaccine for the treatment of non-small-cell lung cancer. *Expert Rev. Vaccines* **14(10)**, 1303-1311 (2015).

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