

# PRODUCT INFORMATION

## EGF (human, recombinant; Fc-tagged)

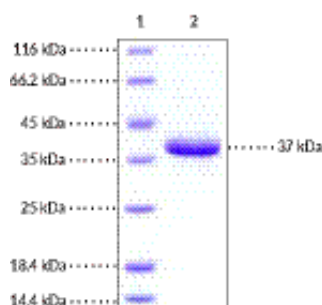
Item No. 32025

### Overview and Properties

<b>Synonyms:</b>	β-Urogastrone, Epidermal Growth Factor, URG
<b>Source:</b>	Active recombinant N-terminal human IgG1 Fc-tagged EGF expressed in HEK293 cells
<b>Amino Acids:</b>	971-1023
<b>Uniprot No.:</b>	P01133
<b>Molecular Weight:</b>	33 kDa
<b>Storage:</b>	-80°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Purity:</b>	≥90% estimated by SDS-PAGE
<b>Supplied in:</b>	Lyophilized from sterile PBS, pH 7.4
<b>Endotoxin Testing:</b>	<1.0 EU/μg, determined by the LAL endotoxin assay
<b>Bioactivity:</b>	See figures for details

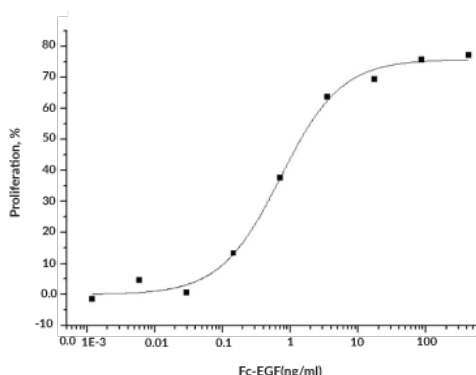
Information represents the product specifications. Batch specific analytical results are provided on each certificate of analysis.

### Image(s)



Lane 1: MW Markers  
Lane 2: EGF (Fc-tagged)

SDS-PAGE Analysis of EGF (Fc-tagged). This protein has a calculated molecular weight of 33 kDa. It has an apparent molecular weight of approximately 37 kDa by SDS-PAGE under reducing conditions due to glycosylation.



Cell proliferation of BALB/c 3T3 MEFs in Response to EGF. Measured in a cell proliferation assay using BALB/c 3T3 mouse embryonic fibroblast cells. The ED<sub>50</sub> value for this effect is typically 0.3-1.5 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**  
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## Description

Epidermal growth factor (EGF) is a polypeptide ligand for the EGF receptor (EGFR; Item No. 32026).<sup>1,2</sup> 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.<sup>2</sup> 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.<sup>3</sup> Plasma levels of EGF are reduced in pregnant woman infected with *T. cruzi* compared with uninfected pregnant controls.<sup>4</sup> Exogenous application of EGF normalizes cortical GABAergic transmission and improves rotarod performance in the R6/2 transgenic mouse model of Huntington's disease.<sup>4</sup> Probiotic administration of *E. coli* engineered to secrete human EGF induces epithelial barrier restoration in a mouse model of intestinal ulcers.<sup>6</sup> Immunization with human EGF induces an anti-EGF antibody response and increased survival in mice with EGFR-expressing tumors.<sup>7</sup> Cayman's EGF (human, recombinant) protein can be used for cell-based assay applications. This protein is a disulfide-linked homodimer. The reduced monomer, comprised of mature EGF (amino acids 971-1023) fused to human IgG1 Fc at its N-terminus, consists of 290 amino acids and has a calculated molecular weight of 33 kDa. As a result of glycosylation, the monomer migrates at approximately 37 kDa by SDS-PAGE under reducing conditions.

## 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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