

Epidermal Growth Factor ELISA Kit | EGF elisa kit

Epidermal Growth Factor (EGF)

CATALOG #
AAA77842

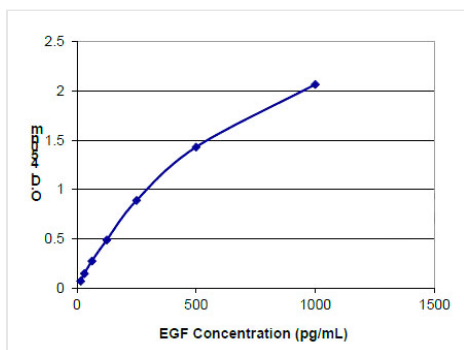
PRODUCT SYNONYMS

Epidermal Growth Factor; Epidermal Growth Factor (EGF); EGF elisa kit

PRODUCT SPECIFICATIONS

Specificity	This sandwich ELISA recognises both natural and recombinant human EGF. This kit exhibits no detectable cross-reactivity with human; IL-8, IL-1beta, MCAF, TGF-alpha, TGF-beta, SAA, MCP-3, TNF-alpha, RANTES, EPO, M-CSF, GM-CSF, and FGF.
Sequence Length	53
Samples	Serum, plasma, cell culture supernatant, urine, and other biological fluids
Assay Type	Quantitative Sandwich
Intra-assay Precision	To determine within-run precision, three different samples of known concentration were assayed by using 17-20 replicates in 1 assay.
Inter-assay Precision	To determine between-run precision, three different samples of known concentration were assayed by using replicates on 20 different assays.

IMAGES



Standard Curve (Sample)

ADDITIONAL INFORMATION

Related Product Information for EGF elisa kit	Intended Uses: This Human EGF ELISA kit is to be used for the in vitro quantitative determination of human epidermal growth factor (EGF) concentrations in serum, plasma, cell culture supernatant, urine, and other biological fluids. This kit is intended FOR LABORATORY RESEARCH USE ONLY. Principle of the Assay: This EGF enzyme-linked immunosorbent assay (ELISA) applies a technique called a quantitative sandwich immunoassay. The microtiter plate provided in this kit has been pre-coated with a monoclonal specific for EGF. Standards or samples are then added to the appropriate microtiter plate wells and incubated. EGF, if present, will bind and become immobilized by the antibody pre-coated on the wells. The microtiter plate wells are thoroughly washed to remove unbound EGF and other components of sample. In order to quantitate the amount of EGF present in the sample, a standardized preparation of horseradish peroxidase (HRP)-conjugated monoclonal antibody specific for EGF is added to each well to "sandwich" the EGF immobilized during the first incubation. The microtiter plate then undergoes a second incubation. The wells are thoroughly washed to remove all unbound HRP-conjugated antibodies and a TMB (3,3',5,5' tetramethyl-benzidine) substrate solution is added to each well. The enzyme (HRP) and substrate are allowed to react over a short incubation period. Only those wells that contain EGF and enzyme-conjugated antibody will exhibit a change in colour. The enzyme-substrate reaction is terminated by the addition of a sulphuric acid solution and the colour change is measured spectrophotometrically at a wavelength of 450 nm +/- 2 nm. In order to measure the concentration of EGF in the samples, this kit contains two calibration diluents (Calibrator Diluent I for serum/plasma testing and Calibrator Diluent II for cell culture supernatant/ urine testing). According to the testing system, the provided standard is diluted (2-fold) with the appropriate Calibrator Diluent and assayed at the same time as the samples. This allows the operator to produce a standard curve of Optical Density (O.D.) versus EGF concentration (pg/mL). The concentration of EGF in the samples is then determined by comparing the O.D. of the samples to the standard curve. Background/Introduction: Epidermal growth factor (EGF), a polypeptide mitogen, was first observed in 1959 by Cohen and Levi-Montalcini while studying Nerve Growth Factor (NGF) in snake venom extracts.¹ It was subsequently isolated and purified from mouse submandibular glands. When injected into new-born mice this new factor caused precocious eyelid opening and incisor eruption.^{2,3} EGF was further purified, based on its ability to induce the proliferation of basal skin cells.⁴ Also, a potent inhibitor of gastric acid secretion was identified and isolated from the urine of a pregnant women, and named human beta-urogastrone. It was shown that this protein was very similar to purified human EGF.^{5,6} The cDNA cloning of mature EGF revealed that this polypeptide (6 kDa, 53 amino acids) belonged to a family of growth factors (TGF-α, vaccinia virus growth factor and amphiregulin) that bind to the same 160-185 kDa family of cell surface receptors. Structurally EGF is homologous to TGF-α.^{7,8,9} Mature EGF is formed when the large precursor molecule (pre-EGF), a transmembrane protein (130 kDa, 1217 amino acids) which contains at least seven EGF-like sequences is cleaved. Within this precursor molecule, it is the sequence closest to the C-terminus of the mRNA that represents the coding region for the mature, soluble EGF sequence.^{7,10} The uncleaved precursor shows biological activity and is capable of binding to the EGF receptor.^{11,12} The physiological significance of the EGF precursor, nor the mechanisms of its processing into mature EGF have yet to be illustrated. However it is a source for soluble EGF and may be involved in cell to cell signalling or "juxacrine" action by negotiating intercellular communication between membrane-anchored EGF and cells with EGF receptors on their surfaces.^{7,11} A soluble form of the EGF precursor molecule has been shown to be a heparin-binding protein, upon cleavage and release of the precursor extracellular domain.¹² EGF is found in a variety of bodily fluids and tissues, but lower amounts are generally found in the latter. Substantial quantities of EGF are seen in saliva, bile, pancreatic juice, amniotic fluid, mammary fluids and secretions, gastric and duodenal contents, prostatic and seminal fluids, and urine.^{7,11} Lower amounts of EGF can be found in whole blood and platelet poor plasma, when compared to other body fluids. EGF may be released from platelets during blood coagulation, since EGF levels are increased in serum, when compared to plasma.¹³ EGF stimulates the growth of many tissues³ and contributes to a wide variety of in vitro and in vivo biological effects, which are varied and depend on the target tissue. In vivo, EGF promotes angiogenesis, liver regeneration, epithelial development, acceleration of wound healing, and inhibits gastric acid secretion.⁹ It has been shown that EGF in vitro promotes colony formation of epithelial cells in culture,¹⁴ suppress insulin-induced glucokinase (hexokinase IV) activity,¹⁵ promotes chemomigration of prostate tumor cell line⁽¹⁶⁾ and is a mitogen for fibroblasts and endothelial cells.¹⁷⁻¹⁸ Thus, EGF may play a role in human health and disease and could have potential therapeutic role in wound healing, regeneration of liver tissue and repair, embryonic and infant development, and prevention of vaccinia virus infection.⁹
Product Categories/Family for EGF elisa kit	ELISA Kits for Human Cytokines and Receptors

NCBI AND UNIPROT INFORMATION

NCBI GI #	46242544
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NCBI GeneID	1950
Molecular Weight	129,746 Da
NCBI Official Full Name	epidermal growth factor, partial
NCBI Official Synonym Full Names	epidermal growth factor
NCBI Official Symbol	EGF
NCBI Official Synonym Symbols	URG; HOMG4
NCBI Protein Information	pro-epidermal growth factor; beta-urogastrone
UniProt Protein Name	Pro-epidermal growth factor
UniProt Gene Name	EGF
UniProt Entry Name	EGF_HUMAN

For Research Use Only. Not for use in diagnostic or therapeutic procedures. Small volumes of product may become entrapped in the seal of the vial during shipment and storage; if necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the cap.

AAA Biotech | Tel: +1 (619) 604-9440 | Fax: +1 (619) 604-9441 | contact@aaabiotech.com
Online datasheet: <https://www.aaabiotech.com/egf-elisa-kits/epidermal-growth-factor/77842>