

Product datasheet

Mouse EGFR ELISA Kit ab201275

SimpleStep ELISA[®]

[1 References](#) [6 Images](#)

Overview

Product name Mouse EGFR ELISA Kit

Detection method Colorimetric

Precision

Intra-assay

Sample	n	Mean	SD	CV%
Serum	5			1.9%

Inter-assay

Sample	n	Mean	SD	CV%
Serum	3			8.5%

Sample type Cell culture supernatant, Serum, Hep Plasma, EDTA Plasma, Cit plasma

Assay type Sandwich (quantitative)

Sensitivity 60 pg/ml

Range 1.875 ng/ml - 120 ng/ml

Recovery

Sample specific recovery

Sample type	Average %	Range
Serum	102	97.1% - 106.7%
Cell culture media	116.1	114.3% - 119.3%
Hep Plasma	96.9	95.2% - 99.7%
EDTA Plasma	101.1	97.5% - 106%
Cit plasma	100.5	96.2% - 105%

Assay time 1h 30m

Assay duration	One step assay
Species reactivity	Reacts with: Mouse Does not react with: Goat, Cow, Pig
Product overview	<p>Abcam's EGFR <i>in vitro</i> SimpleStep ELISA™ (Enzyme-Linked Immunosorbent Assay) kit is designed for the quantitative measurement of EGFR protein in mouse cell culture supernatant, serum and plasma samples.</p> <p>The SimpleStep ELISA™ employs an affinity tag labeled capture antibody and a reporter conjugated detector antibody which immunocapture the sample analyte in solution. This entire complex (capture antibody/analyte/detector antibody) is in turn immobilized via immunoaffinity of an anti-tag antibody coating the well. To perform the assay, samples or standards are added to the wells, followed by the antibody mix. After incubation, the wells are washed to remove unbound material. TMB substrate is added and during incubation is catalyzed by HRP, generating blue coloration. This reaction is then stopped by addition of Stop Solution completing any color change from blue to yellow. Signal is generated proportionally to the amount of bound analyte and the intensity is measured at 450 nm. Optionally, instead of the endpoint reading, development of TMB can be recorded kinetically at 600 nm.</p> <p>Sensitivity:</p> <p>Samples diluted in Sample Diluent NS – 0.06 ng/mL Samples diluted in Sample Diluent 25 BS – 0.98 ng/mL</p>

Notes

EGFR is a receptor tyrosine kinase that binds ligands of the EGF family and activate several signaling cascades to convert extracellular cues into appropriate cellular responses. Known ligands include EGF, TGFA/TGF-alpha, amphiregulin, epigen/EPGN, BTC/betacellulin, epiregulin/EREG and HBEGF/heparin-binding EGF. The ligand binding triggers receptor homo- and/or hetero-dimerization and autophosphorylation on key cytoplasmic residues. The phosphorylated receptor recruits adapter proteins like GRB2 which in turn activates complex downstream signaling cascades. EGFR activates at least 4 major downstream signaling cascades including the RAS-RAF-MEK-ERK, PI3 kinase-AKT, PLC gamma-PKC and STATs modules. EGFR may also activate the NF-kappa-B signaling cascade. EGFR also directly phosphorylates other proteins like RGS16, activating its GTPase activity and probably coupling the EGF receptor signaling to the G protein-coupled receptor signaling. EGFR also phosphorylates MUC1 and increases its interaction with SRC and CTNNB1/beta-catenin. Endocytosis and inhibition of the activated EGFR by phosphatases like PTPRJ and PTPRK constitute immediate regulatory mechanisms. Upon EGF-binding EGFR phosphorylates EPS15 that regulates EGFR endocytosis and activity. Moreover, inducible feedback inhibitors including LRIG1, SOCS4, SOCS5 and ERRFI1 constitute alternative regulatory mechanisms for the EGFR signaling.

Platform Microplate (12 x 8 well strips)

Properties

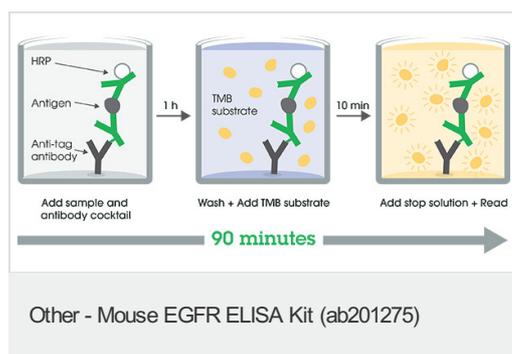
Storage instructions Store at +4°C. Please refer to protocols.

Components	1 x 96 tests
10X Mouse EGFR Capture Antibody	1 x 600µl
10X Mouse EGFR Detector Antibody	1 x 600µl

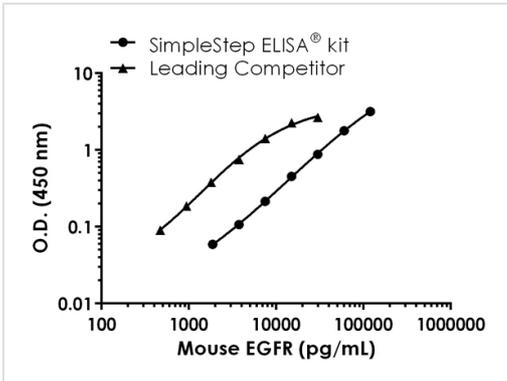
Components	1 x 96 tests
10X Wash Buffer PT (ab206977)	1 x 20ml
Antibody Diluent CP	1 x 6ml
Mouse EGFR Lyophilized Recombinant Protein	1 x 2 vials
Plate Seals	1 unit
Sample Diluent 25BS	1 x 20ml
Sample Diluent NS (ab193972)	1 x 50ml
SimpleStep Pre-Coated 96-Well Microplate (ab206978)	1 x 96 units
Stop Solution	1 x 12ml
TMB Development Solution	1 x 12ml

Function	Receptor for EGF, but also for other members of the EGF family, as TGF-alpha, amphiregulin, betacellulin, heparin-binding EGF-like growth factor, GP30 and vaccinia virus growth factor. Is involved in the control of cell growth and differentiation. Phosphorylates MUC1 in breast cancer cells and increases the interaction of MUC1 with SRC and CTNNB1/beta-catenin. Isoform 2 may act as an antagonist of EGF action.
Tissue specificity	Ubiquitously expressed. Isoform 2 is also expressed in ovarian cancers.
Involvement in disease	Defects in EGFR are associated with lung cancer (LNCR) [MIM:211980].
Sequence similarities	Belongs to the protein kinase superfamily. Tyr protein kinase family. EGF receptor subfamily. Contains 1 protein kinase domain.
Post-translational modifications	Phosphorylation of Ser-695 is partial and occurs only if Thr-693 is phosphorylated. Monoubiquitinated and polyubiquitinated upon EGF stimulation; which does not affect tyrosine kinase activity or signaling capacity but may play a role in lysosomal targeting. Polyubiquitin linkage is mainly through 'Lys-63', but linkage through 'Lys-48', 'Lys-11' and 'Lys-29' also occur.
Cellular localization	Secreted and Cell membrane. Endoplasmic reticulum membrane. Golgi apparatus membrane. Nucleus membrane. Endosome. In response to EGF, translocated from the cell membrane to the nucleus via Golgi and ER. Co-localizes with TNK2 on the endosomes.

Images

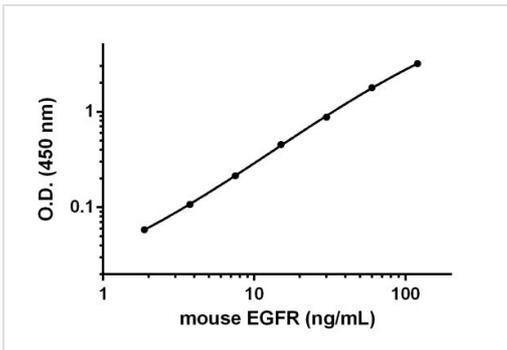


SimpleStep ELISA technology allows the formation of the antibody-antigen complex in one single step, reducing assay time to 90 minutes. Add samples or standards and antibody mix to wells all at once, incubate, wash, and add your final substrate. See protocol for a detailed step-by-step guide.



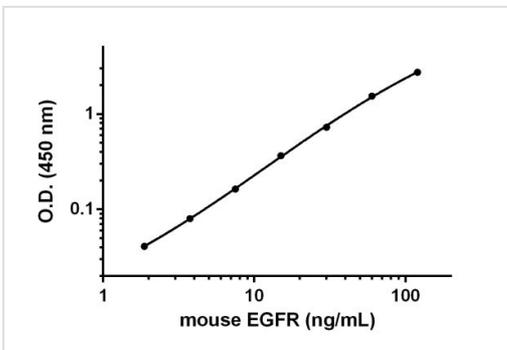
Mouse EGFR standard curve comparison data.

Standard curve comparison between mouse EGFR SimpleStep ELISA[®] kit and traditional ELISA kit from leading competitor. SimpleStep ELISA kit shows comparable sensitivity.



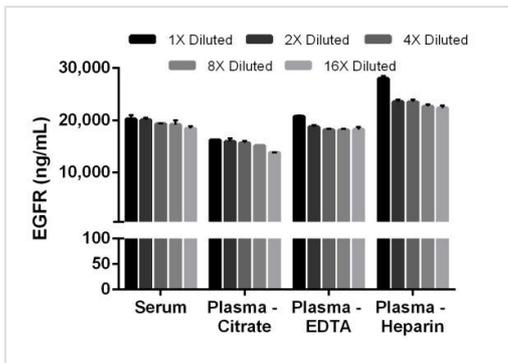
Example of EGFR standard curve prepared in Sample Diluent NS.

Background-subtracted data values (mean +/- SD) are graphed.



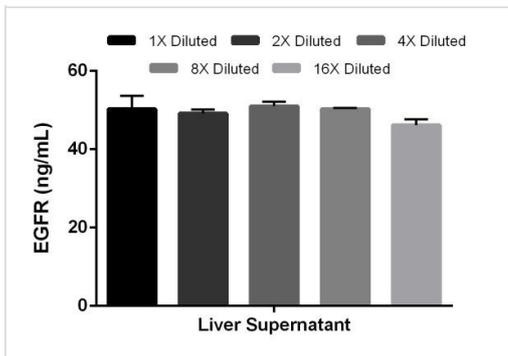
Example of EGFR standard curve prepared in Sample Diluent 25BS.

Background-subtracted data values (mean +/- SD) are graphed.



Interpolated concentrations of EGFR in mouse serum and plasma.

The concentrations of EGFR were measured in duplicates, interpolated from the EGFR standard curve and corrected for sample dilution. Note that 1X Diluted serum and plasma sample were 200X pre-diluted samples, The interpolated, dilution factor-corrected values are plotted (mean +/- SD, n=2).



Interpolated concentrations of EGFR in liver cell culture supernatant samples.

The concentrations of EGFR were measured in duplicates, interpolated from the EGFR standard curve and corrected for sample dilution. The interpolated, dilution factor-corrected values are plotted (mean +/- SD, n=2).

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