EGFR Protein, Rat (HEK293, His)

Cat. No.:	HY-P72990
Synonyms:	Epidermal growth factor receptor; EGFR; ERBB; ERBB1; HER1
Species:	Rat
Source:	HEK293
Accession:	E7CXR8 (L25-S646)
Gene ID:	24329
Molecular Weight:	93-110 kDa

PROPERTIES

AA Sequence

L E E K K V C Q G T S N R L T Q L G T F E D H F L S L Q R M F N N C E V V L G N
L E I T Y V Q R N Y D L S F L K T I Q E V A G Y V L I A L N T V E R I P L E N L
Q I I R G N A L Y E N T Y A L A V L S N Y G T N K T G L R E L P M R N L Q E I L
I G A V R F S N N P I L C N M E T I Q W R D I V Q D V F L S N M S M D V Q R H L
T G C P K C D P S C P N G S C W G R G E E N C Q K L T K I I C A Q Q C S R R C R
G R S P S D C C H N Q C A A G C T G P R E S D C L V C H R F R D E A T C K D T C
P P L M L Y N P T T Y Q M D V N P E G K Y S F G A T C V K K C P R N Y V V T D H
G S C V R A C G P D Y Y E V E E D G V S K C K K C D G P C R K V C N G I G I G E
F K D T L S I N A T N I K H F K Y C T A I S G D L H I L P V A F K G D S F T R T
P P L D P R E L E I L K T V K E I T G F L L I Q A W P E N W T D L H A F E N L E
I I R G R T K Q H G Q F S L A V V G L N I T S L G L R S L K E I S D G D V I I S
G N R N L C Y A N T I N W K K L F G T P N Q K T K I M N N R A E K D C K A T N H
V C N P L C S S E G C W G P E P T D C V S C Q N V S R G R E C V D K C N I L E G
E P R E F V E N S E C I Q C H P E C L P Q T M N I T C T G R G P D N C I K C A H
Y V D G P H C V K T C P S G I M G E N N T L V W K F A D A N N V C H L C H A N C
T Y G C A G P G L K G C Q Q P E G P K I P S

Biological Activity	1. Measured by its ability to bind human EGF-Fc in a functional ELISA. 2. Measured by its binding ability in a functional ELISA. Immobilized EGFR at 1 μg/ml can bind Anti-EGFR antibody, the ED_{50} of human EGFR protein is 1.873 ng/mL, corresponding to a specific activity is 5.34×10^5 units/mg.
Appearance	Lyophilized powder.
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4 or 20 mM PB, 150 mM NaCl, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is

	recommended to freeze aliquots at -20°C or -80°C for extended storage.
Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	The EGFR protein, a receptor tyrosine kinase, binds ligands of the EGF family, including EGF, TGFA/TGF-alpha, AREG, epigen/EPGN, BTC/betacellulin, epiregulin/EREG, and HBEGF/heparin-binding EGF. This interaction initiates cascades that convert extracellular signals into cellular responses, involving receptor homo- and/or heterodimerization and autophosphorylation on key cytoplasmic residues. The phosphorylated receptor recruits adapter proteins like GRB2, activating downstream signaling cascades, including RAS-RAF-MEK-ERK, PI3 kinase-AKT, PLCgamma-PKC, and STATs modules. Additionally, EGFR may trigger the NF-kappa-B signaling cascade and directly phosphorylate proteins like RGS16, activating its GTPase activity, and potentially linking EGF receptor signaling to G protein-coupled receptor signaling. Furthermore, EGFR phosphorylates MUC1, enhancing its interaction with SRC and CTNNB1/beta-catenin. It positively regulates cell migration through interaction with CCDC88A/GIV, retaining EGFR at the cell membrane post-ligand stimulation, thereby promoting EGFR signaling and triggering cell migration. Beyond its canonical functions, EGFR contributes to enhancing learning and memory performance and plays a role in mammalian pain signaling, with isoform 2 potentially acting as an antagonist to EGF action[1][2][3][4][5].

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