abcam

Product datasheet

# Recombinant human EGFR protein (Fc Chimera) ab84002

2 Images

## Description

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| **Product name** | Recombinant human EGFR protein (Fc Chimera) |
| **Biological activity** | The $ED_{50}$ of ab84002 is typically 60-100 ng/ml as measured by its ability to neutralize EGF mediated proliferation of murine NIH3T3 fibroblasts. |
| **Purity** | > 95 % SDS-PAGE. |
| **Expression system** | HEK 293 cells |
| **Accession** | P00533 |
| **Protein length** | Protein fragment |
| **Animal free** | No |
| **Nature** | Recombinant |
| **Species** | Human |
| **Sequence** | Theoretical sequence:<br>LEEKKVCQGTSNKLTQLGTFEDHFLSLQRMFNNCEVVLG<br>NLEITYVQR<br>NYDLSFLKTIQEVAGYVLIALNTVERIPLENLQIIRGNM<br>YYENSYALA<br>VLSNYDANKTGLKELPMRNLQEILHGAVRFSNNPALCNV<br>ESIQWRDIV<br>SSDFLSNMSMDFQNHLGSCQKCDPSCPNGSCWGAGEE<br>NC QKLTKIICA<br>QQCSGRCRGKSPSDCCHNQCAAGCTGPRESDCLVCRK<br>FR DEATCKDTC<br>PPLMLYNPTTYQMDVNPEGKYSFGATCVKKCPRNYVVTD<br>HGSCVRACG<br>ADSYEMEEDGVRKCKKCEGPCRKVCNGIGIGEFKDSLSI<br>NATNIKHFK<br>NCTSISGDLHILPVAFRGDSFTHTPPLDPQELDILKTVK<br>EITGFLLIQ<br>AWPENRTDLHAFENLEIIRGRTKQHGQFSLAVVSLNITS<br>LGLRSLKEI<br>SDGDVIISGNKNLCYANTINWKKLFGTSGQKTKIISNRG<br>ENSCKATGQ |

VCHALCSPEGCWGPEPRDCVSRSSNTKVDKKVEPKSC
DK THTCPPCPA
PELLGGPSVFLFPPKPKDTLMISRTPEVTCVVVDVSHED
PEVKFNWYV
DGVEVHNAKTKPREEQYNSTYRVVSVLTVLHQDWLNGKE
YKCKVSNKA
LPAPIEKTISKAKGQPREPQVYTLPPSRDELTKNQVSLT
CLVKGFYPS
DIAVEWESNGQPENNYKTTPPVLDSDGSFFLYSKLTVDK
SRWQQGNVF SCSVMHEALHNHYTQKSLSLSPGK

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| **Amino acids** | 1 to 525 |
| **Additional sequence information** | Fused with the Fc region of Human IgG1 at the C-terminus. |

## Specifications

Our **Abpromise guarantee** covers the use of **ab84002** in the following tested applications.

The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.

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| **Applications** | SDS-PAGE<br>Functional Studies |
| **Form** | Lyophilized |

## Preparation and Storage

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| **Stability and Storage** | Shipped at 4°C. After reconstitution store at -20ºC. Avoid freeze / thaw cycles.<br>Constituents: 1% Human serum albumin, 10% Trehalose<br>This product is an active protein and may elicit a biological response in vivo, handle with caution. |
| **Reconstitution** | It is recommended that 0.5 ml of sterile phosphate-buffered saline be added to the vial. Following reconstitution short-term storage at 4°C is recommended, with longer-term storage in aliquots at -18 to -20°C. Repeated freeze thawing is not recommended. |

## General Info

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| **Function** | Receptor tyrosine kinase binding ligands of the EGF family and activating 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. Ligand binding triggers receptor homo- and/or heterodimerization and autophosphorylation on key cytoplasmic residues. The phosphorylated receptor recruits adapter proteins like GRB2 which in turn activates complex downstream signaling cascades. Activates at least 4 major downstream signaling cascades including the RAS-RAF-MEK-ERK, PI3 kinase-AKT, PLCgamma-PKC and STATs modules. May also activate the NF-kappa-B signaling cascade. 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. Also phosphorylates MUC1 and increases its interaction with SRC and CTNNB1/beta-catenin.<br>Isoform 2 may act as an antagonist of EGF action. |
| **Tissue specificity** | Ubiquitously expressed. Isoform 2 is also expressed in ovarian cancers. |

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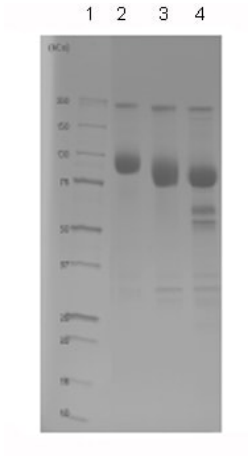
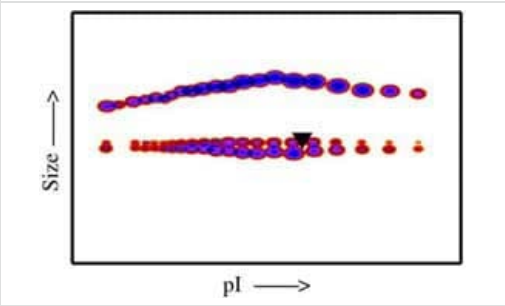
| **Involvement in disease** | Lung cancer<br>Inflammatory skin and bowel disease, neonatal, 2 |
| **Sequence similarities** | Belongs to the protein kinase superfamily. Tyr protein kinase family. EGF receptor subfamily. Contains 1 protein kinase domain. |
| **Post-translational modifications** | Phosphorylation at Ser-695 is partial and occurs only if Thr-693 is phosphorylated. Phosphorylation at Thr-678 and Thr-693 by PRKD1 inhibits EGF-induced MAPK8/JNK1 activation. Dephosphorylation by PTPRJ prevents endocytosis and stabilizes the receptor at the plasma membrane. Autophosphorylation at Tyr-1197 is stimulated by methylation at Arg-1199 and enhances interaction with PTPN6. Autophosphorylation at Tyr-1092 and/or Tyr-1110 recruits STAT3. Dephosphorylated by PTPN1 and PTPN2.<br>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 occurs. Deubiquitination by OTUD7B prevents degradation. Ubiquitinated by RNF115 and RNF126. Methylated. Methylation at Arg-1199 by PRMT5 stimulates phosphorylation at Tyr-1197. |
| **Cellular localization** | Secreted and Cell membrane. Endoplasmic reticulum membrane. Golgi apparatus membrane. Nucleus membrane. Endosome. Endosome membrane. Nucleus. In response to EGF, translocated from the cell membrane to the nucleus via Golgi and ER. Endocytosed upon activation by ligand. Colocalized with GPER1 in the nucleus of estrogen agonist-induced cancer-associated fibroblasts (CAF). |

## Images




SDS-PAGE - Recombinant human EGFR protein (Fc Chimera) (ab84002)

Lane 1 – MW markers; Lane 2 – ab84002; Lane 3 – ab84002 treated with PNGase F to remove potential N-linked glycans; Lane 4 – ab84002 treated with a glycosidase cocktail to remove potential N and O-linked glycans. Approximately 5 µg of protein was loaded per lane; Gel was stained using Deep Purple™.
Drop in MW after treatment with PNGase F indicates presence of N-linked glycans. A further drop in MW after treatment with the glycosidase cocktail indicates the presence of O-linked glycans. Additional bands in lane 3 and lane 4 are glycosidase enzymes.




Functional Studies - Recombinant human EGFR protein (Fc Chimera) (ab84002)

Post-translational modifications result in protein heterogeneity. The densitometry scan demonstrates the purified human cell expressed protein exists in multiple glycoforms, which differ according to their level of post-translational modification.
The triangle indicates theoretical pI and MW of the protein.



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