Anti-EGFR antibody [EGFR1] ab30

Overview

Product name | Anti-EGFR antibody [EGFR1]
Description | Mouse monoclonal [EGFR1] to EGFR
Host species | Mouse
Specificity | This antibody does not react with erbB-2, erbB-3 and erbB-4.
Tested applications | Suitable for: IHC-Fr, ICC/IF, IP, Flow Cyt, IHC - Wholemount
Unsuitable for: ELISA or WB
Species reactivity | Reacts with: Mouse, Horse, Human
Immunogen | Tissue, cells or virus corresponding to Human EGFR (extracellular). Human epidermoid carcinoma line A431; epitope mapped between aa 6-273 of human EGFR.
Epitope | Extracellular.
General notes | Recognises the external EGF-binding domain of the EGFR transmembrane glycoprotein. No effect on tyrosine kinase activity of EGFR.

Properties

Form | Liquid
Storage instructions | Shipped at 4°C. Store at +4°C short term (1-2 weeks). Upon delivery aliquot. Store at -20°C or -80°C. Avoid freeze / thaw cycle.
Storage buffer | Constituent: PBS
Purity | Protein A purified
Clonality | Monoclonal
Clone number | EGFR1
Myeloma | P3-NS1/1-Ag4-1
Isotype | IgG2b
Light chain type | kappa

Applications

Our Abpromise guarantee covers the use of ab30 in the following tested applications.
The application notes include recommended starting dilutions; optimal dilutions/concentrations should be determined by the end user.
Application notes
Is unsuitable for ELISA or WB.

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.

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
Lung cancer
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/UNK1 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.
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.

Target

Application | Abreviews | Notes | Notes
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IHC-Fr |  | Use at an assay dependent concentration. | 
ICC/IF |  | Use a concentration of 1 µg/ml. | 
IP | | Use at an assay dependent concentration. | 
Flow Cyt |  | Use 1µg for 10^6 cells. (unsuitable for fixed cells) | 
ab170192 - Mouse monoclonal IgG2b, is suitable for use as an isotype control with this antibody.
IHC - Wholemount |  | Use at an assay dependent concentration. | 

Application notes
Is unsuitable for ELISA or WB.

Target
Methylated. Methylation at Arg-1199 by PRMT5 stimulates phosphorylation at Tyr-1197.

**Cellular localization**


**Images**

ICC/IF image of ab30 stained HepG2 cells. The cells were 4% formaldehyde fixed (10 min) and then incubated in 1% BSA / 10% normal goat serum / 0.3M glycine in 0.1% PBS-Tween for 1h to permeabilise the cells and block non-specific protein-protein interactions. The cells were then incubated with the antibody (ab30, 1µg/ml) overnight at +4°C. The secondary antibody (green) was Alexa Fluor® 488 goat anti-mouse IgG (H+L) used at a 1/1000 dilution for 1h. Alexa Fluor® 594 WGA was used to label plasma membranes (red) at a 1/200 dilution for 1h. DAPI was used to stain the cell nuclei (blue) at a concentration of 1.43µM.

Overlay histogram showing HEK293 cells stained with ab30 (red line). The cells were incubated with the antibody (ab30, 1µg/1x10^6 cells) for 30 min at 4°C. The secondary antibody used was DyLight® 488 goat anti-mouse IgG (H+L) (ab96879) at 1/200 dilution for 30 min at 4°C. Isotype control antibody (black line) was mouse IgG2b [PLPV219] (ab91366, 2µg/1x10^6 cells) used under the same conditions. Acquisition of >5,000 events was performed. Please note that 4% paraformaldehyde (10 min) or methanol (5 min) fixation prior to antibody staining significantly decreased signal.

**Please note:** All products are "FOR RESEARCH USE ONLY AND ARE NOT INTENDED FOR DIAGNOSTIC OR THERAPEUTIC USE"

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