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EGFR Antibody

Purified Mouse Monoclonal Antibody (Mab)
Catalog # AM7628b

Product Information

Application	WB, IHC-P, FC, E
Primary Accession	P00533
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Isotype	IgG1κ
Clone Names	51CT78.40.5
Calculated MW	134277

Additional Information

Gene ID	1956
Other Names	Epidermal growth factor receptor, Proto-oncogene c-ErbB-1, Receptor tyrosine-protein kinase erbB-1, EGFR, ERBB, ERBB1, HER1
Target/Specificity	Purified His-tagged EGFR protein(Fragment) was used to produced this monoclonal antibody.
Dilution	WB~~1:500~2000 IHC-P~~1:100~500 FC~~1:10~50 E~~Use at an assay dependent concentration.
Format	Purified monoclonal antibody supplied in PBS with 0.09% (W/V) sodium azide. This antibody is purified through a protein G column, followed by dialysis against PBS.
Storage	Maintain refrigerated at 2-8°C for up to 2 weeks. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	EGFR Antibody is for research use only and not for use in diagnostic or therapeutic procedures.

Protein Information

Name	EGFR {ECO:0000303|PubMed:32926474, ECO:0000312|HGNC:HGNC:3236}
Function	Receptor tyrosine kinase binding ligands of the EGF family and activating several signaling cascades to convert extracellular cues into appropriate cellular responses (PubMed:10805725, PubMed:12297050, PubMed:12620237, PubMed:12873986, PubMed:15374980, PubMed:15590694, PubMed:17115032, PubMed:19560417,

	PubMed:21258366, PubMed:27153536, PubMed:2790960, PubMed:35538033, PubMed:9488479). Known ligands include EGF, TGFA/TGF-alpha, AREG, epigen/EPGN, BTC/betacellulin, epiregulin/EREG and HBEGF/heparin-binding EGF (PubMed:12297049, PubMed:15611079, PubMed:17909029, PubMed:20837704, PubMed:27153536, PubMed:2790960, PubMed:7679104, PubMed:8144591, PubMed:9419975). Ligand binding triggers receptor homo- and/or heterodimerization and autophosphorylation on key cytoplasmic residues (PubMed:10026169, PubMed:17349580, PubMed:18046415, PubMed:19560417, PubMed:19836242). The phosphorylated receptor recruits adapter proteins like GRB2 which in turn activates complex downstream signaling cascades (PubMed:10026169, PubMed:17349580, PubMed:18046415, PubMed:19560417, PubMed:19836242). Activates at least 4 major downstream signaling cascades including the RAS-RAF-MEK-ERK, PI3 kinase-AKT, PLCgamma-PKC and STATs modules (PubMed:27153536). May also activate the NF-kappa-B signaling cascade (PubMed:11116146). 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 (PubMed:11602604). Also phosphorylates MUC1 and increases its interaction with SRC and CTNNB1/beta-catenin (PubMed:11483589). Positively regulates cell migration via interaction with CCDC88A/GIV which retains EGFR at the cell membrane following ligand stimulation, promoting EGFR signaling which triggers cell migration (PubMed:20462955). Acts as a positive regulator of cGAS-STING signaling by mediating tyrosine phosphorylation of STING1, promoting production of type I interferon (IFN-alpha and IFN-beta), while inhibiting STING1 ability to regulate autophagy (PubMed:32926474). Plays a role in enhancing learning and memory performance (By similarity). Plays a role in mammalian pain signaling (long-lasting hypersensitivity) (By similarity).
Cellular Location	Cell membrane; Single-pass type I membrane protein. Endoplasmic reticulum membrane; Single-pass type I membrane protein. Golgi apparatus membrane; Single-pass type I membrane protein. Nucleus membrane; Single-pass type I membrane protein Endosome Endosome membrane. Nucleus. Note=In response to EGF, translocated from the cell membrane to the nucleus via Golgi and ER (PubMed:17909029, PubMed:20674546). Endocytosed upon activation by ligand (PubMed:17182860, PubMed:17909029, PubMed:27153536, PubMed:2790960). Colocalized with GPER1 in the nucleus of estrogen agonist-induced cancer-associated fibroblasts (CAF) (PubMed:20551055)
Tissue Location	Ubiquitously expressed. Isoform 2 is also expressed in ovarian cancers.

Background

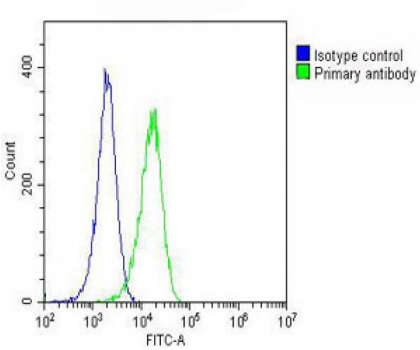
The protein encoded by this gene is a transmembrane glycoprotein that is a member of the protein kinase superfamily. This protein is a receptor for members of the epidermal growth factor family. EGFR is a cell surface protein that binds to epidermal growth factor. Binding of the protein to a ligand induces receptor dimerization and tyrosine autophosphorylation and leads to cell proliferation. Mutations in this gene are associated with lung cancer. Multiple alternatively spliced transcript variants that encode different protein isoforms have been found for this gene.

References

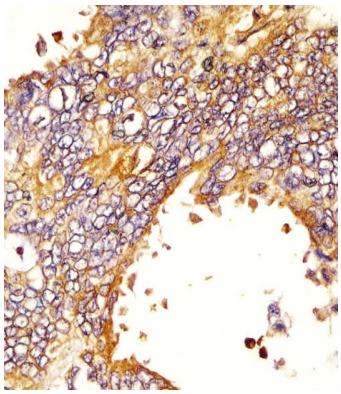
Complex Mutations in the Epidermal Growth Factor Receptor Gene in Non-small Cell Lung Cancer. Hata A, et al. J Thorac Oncol, 2010 Aug 30. PMID 20808254. EGFR signaling is differentially activated in patient-derived glioblastoma stem cells. Howard BM, et al. J Exp Ther Oncol, 2010. PMID 20734923. [EGFR Mutations Detection in Non-small Cell Lung Cancer Tissues by Real-time PCR and DNA Sequencing.] Li Y, et al. Zhongguo Fei Ai Za Zhi, 2009 Dec 20. PMID 20723379. [Detection and Its Clinical Significance of EGFR Gene

Mutation and Gene Amplification in 187 Patients with Non-small Cell Lung Cancer.] Liu H, et al. Zhongguo Fei Ai Za Zhi, 2009 Dec 20. PMID 20723374. Effect of gefitinib on the survival of patients with recurrence of lung adenocarcinoma after surgery: A retrospective case-matching cohort study. Katayama T, et al. Surg Oncol, 2010 Aug 10. PMID 20705455.

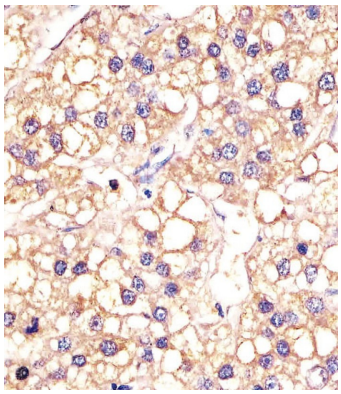
Images



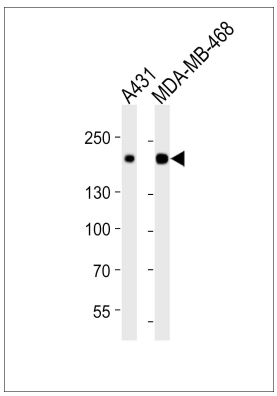
Overlay histogram showing Hela cells stained with AM7628b(green line). The cells were fixed with 2% paraformaldehyde (10 min) and then permeabilized with 90% methanol for 10 min. The cells were then icubated in 2% bovine serum albumin to block non-specific protein-protein interactions followed by the antibody (AM7628b, 1:25 dilution) for 60 min at 37ºC. The secondary antibody used was Goat-Anti-Mouse IgG, DyLight® 488 Conjugated Highly Cross-Adsorbed(OJ192088) at 1/200 dilution for 40 min at 37ºC. Isotype control antibody (blue line) was mouse IgG1 (1µg/1x10^6 cells) used under the same conditions. Acquisition of >10, 000 events was performed.



AM7628b staining EGFR in human lung adenocarcinoma sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 3% BSA for 0. 5 hour at room temperature; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody (1/25) for 1 hours at 37°C. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.



AM7628b staining EGFR in human hepatic carcinoma sections by Immunohistochemistry (IHC-P - paraformaldehyde-fixed, paraffin-embedded sections). Tissue was fixed with formaldehyde and blocked with 3% BSA for 0. 5 hour at room temperature; antigen retrieval was by heat mediation with a citrate buffer (pH6). Samples were incubated with primary antibody (1/25) for 1 hours at 37°C. A undiluted biotinylated goat polyvalent antibody was used as the secondary antibody.



Western blot analysis of lysates from A431, MDA-MB-468 cell line (from left to right), using EGFR Antibody(Cat. #AM7628b). AM7628b was diluted at 1:1000 at each lane. A goat anti-mouse IgG H&L(HRP) at 1:10000 dilution was used as the secondary antibody. Lysates at 20µg per lane.

Please note: All products are 'FOR RESEARCH USE ONLY. NOT FOR USE IN DIAGNOSTIC OR THERAPEUTIC PROCEDURES'.