10320 Camino Santa Fe, Suite G
San Diego, CA 92121
Tel: 858.875.1900 Fax: 858.875.1999

EGFR mutant Antibody

Purified Mouse Monoclonal Antibody
Catalog # AO2322a

Product Information

Application	WB, IHC, FC, E
Primary Accession	P00533
Reactivity	Human
Host	Mouse
Clonality	Monoclonal
Clone Names	5G9B5
Isotype	IgG1
Calculated MW	134277
Description	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.
Immunogen	Purified recombinant fragment of human EGFR mutant (AA: 693-893) expressed in E. Coli.
Formulation	Purified antibody in PBS with 0.05% sodium azide

Additional Information

Gene ID	1956
Other Names	Epidermal growth factor receptor, 2.7.10.1, Proto-oncogene c-ErbB-1, Receptor tyrosine-protein kinase erbB-1, EGFR, ERBB, ERBB1, HER1
Dilution	WB~~1/500 - 1/2000 IHC~~1/200 - 1/1000 FC~~1/200 - 1/400 E~~1/10000
Storage	Maintain refrigerated at 2-8°C for up to 6 months. For long term storage store at -20°C in small aliquots to prevent freeze-thaw cycles.
Precautions	EGFR mutant 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}

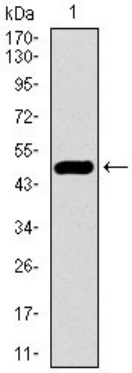
Function	Receptor tyrosine kinase binding ligands of the EGF family and activating several signaling cascades to convert extracellular cues into appropriate cellular responses (PubMed:10805725, PubMed:12297050, PubMed:12620237, PubMed:12873986, PubMed:15374980, PubMed:15590694, PubMed:17115032, PubMed:19560417, 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.

References

1. J Immunol. 2012 Dec 1;189(11):5230-9. 2. J Biol Chem. 2012 Oct 12;287(42):35201-11.

Images

Figure 1: Western blot analysis using EGFR mutant mAb against human EGFR mutant recombinant protein. (Expected MW is 36.9 kDa)



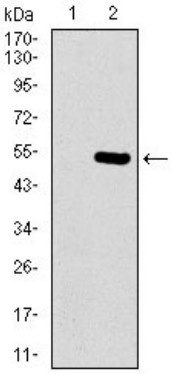


Figure 2: Western blot analysis using EGFR mutant mAb against HEK293 (1) and EGFR mutant (AA: 693-893)-hIgGFc transfected HEK293 (2) cell lysate.

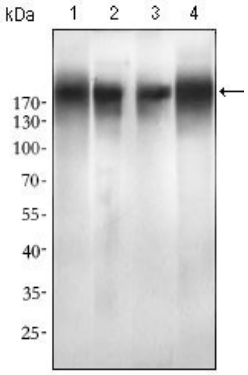


Figure 3: Western blot analysis using EGFR mutant mouse mAb against SPC-A-1 (1), A549 (2), HepG2 (3) and MCF-7 (4) cell lysate.

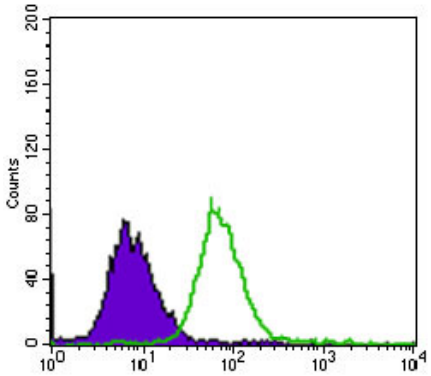


Figure 4: Flow cytometric analysis of HepG2 cells using EGFR mutant mouse mAb (green) and negative control (purple).

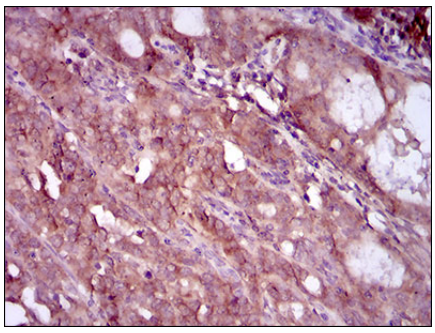
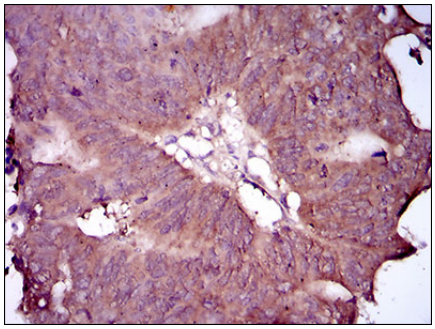


Figure 5: Immunohistochemical analysis of paraffin-embedded cervical cancer tissues using EGFR mutant mouse mAb with DAB staining.

Figure 6: Immunohistochemical analysis of paraffin-embedded rectum cancer tissues using EGFR mutant mouse mAb with DAB staining.



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