

# **EGFR Antibody**

Purified Rabbit Polyclonal Antibody (Pab) Catalog # AP7628V

## **Product Information**

**Application** IHC-P, WB, E **Primary Accession** P00533 Reactivity Human Host Rabbit Clonality Polyclonal Isotype Rabbit IgG **Clone Names** RB14728 **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**This EGFR antibody is generated from rabbits immunized with EGFR his fusion

protein.

**Dilution** IHC-P~~1:100~500 WB~~1:1000 E~~Use at an assay dependent concentration.

**Format** Purified polyclonal antibody supplied in PBS with 0.09% (W/V) sodium azide.

This antibody is prepared by Saturated Ammonium Sulfate (SAS) precipitation

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 ( HGNC:3236)

**Synonyms** ERBB, ERBB1, HER1

**Function** Receptor tyrosine kinase binding ligands of the EGF family and activating

several signaling cascades to convert extracellular cues into appropriate cellular responses (PubMed:<u>10805725</u>, PubMed:<u>27153536</u>, PubMed:<u>2790960</u>, PubMed:<u>35538033</u>). 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 homoand/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 (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). 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**

EGFR is a transmembrane glycoprotein that is a member of a family of protein tyrosine kinases crucial in maintaining a normal balance in cell growth and development. A prototype member of the type 1 receptor tyrosine kinases, EGFR is encoded by the cellular oncogene cerbB1. EGFR has an extracellular ligand binding domain, a single transmembrane region, and cytoplasmic domain which is composed of a tyrosine kinase domain and a carboxy terminal domain. The carboxy terminal domain contains at least four tyrosine autophosphorylation sites. Increased production or activation of EGFR has been associated with poor prognosis in a variety of tumors. EGFR overexpression is observed in tumors of the head and neck, brain, bladder, stomach, breast, lung, endometrium, cervix, vulva, ovary, esophagus, stomach and in squamous cell carcinoma.

## References

Aifa, S., et al., Exp. Cell Res. 302(1):108-114 (2005).

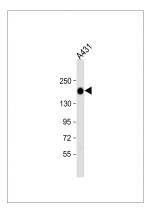
Adams, T.E., et al., Growth Factors 22(2):89-95 (2004).

Ichinose, J., et al., Biochem. Biophys. Res. Commun. 324(3):1143-1149 (2004).

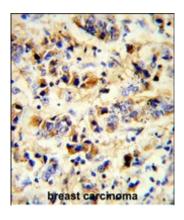
Kuribayashi, A., et al., Endocrinology 145(11):4976-4984 (2004).

Kapoor, G.S., et al., Mol. Cell. Biol. 24(2):823-836 (2004).

# **Images**



Anti-EGFR Antibody at 1:1000 dilution + A431 whole cell lysate Lysates/proteins at 20 µg per lane. Secondary Goat Anti-Rabbit IgG, (H+L), Peroxidase conjugated at 1/10000 dilution. Predicted band size: 134 kDa Blocking/Dilution buffer: 5% NFDM/TBST.



Formalin-fixed and paraffin-embedded human breast carcinoma reacted with EGFR Antibody, which was peroxidase-conjugated to the secondary antibody, followed by DAB staining. This data demonstrates the use of this antibody for immunohistochemistry; clinical relevance has not been evaluated.

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