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Product Information

Anti-phospho-Epidermal Growth Factor Receptor [pTyr^{1068}]
produced in rabbit, affinity isolated antibody

Catalog Number **E6154**

Synonym: Anti-phospho-EGFR (pTyr^{1068})

Product Description

Anti-phospho-Epidermal Growth Factor Receptor [pTyr^{1068}] is produced in rabbit using a synthetic phosphorylated peptide derived from the region of EGFR that contains tyrosine 1068 as immunogen. The sequence is conserved in human and rat. The antiserum is affinity purified using epitope-specific affinity chromatography. The antibody is preadsorbed to remove any reactivity toward either a non-phosphorylated EGFR peptide or a phosphorylated tyrosine peptide, irrespective of the sequence.

The antibody specifically recognizes epidermal growth factor receptor phosphorylated at tyrosine 1068 (170 kDa). The antibody detects human and rat EGFR [pTyr^{1068}]. It has been used in immunoblotting applications.[1]

The epidermal growth factor (EGF) family of receptor tyrosine kinases consists of four receptors, EGFR (ErbB1), ErbB2 (neu), ErbB3, and ErbB4. Members of the EGFR family contain 3 domains: an extracellular domain that is involved in ligand binding and receptor dimerization, a single transmembrane domain and a cytoplasmic domain. EGF exerts its actions by binding to the EGFR, a 170 kDa protein.

Activation of EGFR results in initiation of diverse cellular pathways. In response to toxic environmental stimuli, or to EGF binding to the receptor, the EGFR forms homo- or heterodimers with other family members.[2] Each dimeric receptor complex initiates a distinct signaling pathway by recruiting different Src homology 2 (SH2) containing effector proteins. Dimerization results in auto-phosphorylation on various residues within the cytoplasmic domain, as well as phosphorylation of intracellular substrates, initiating a downstream cascade of events. The activated EGFR dimer forms a complex with the adaptor protein Grb that is coupled to the guanine nucleotide releasing factor, SOS. The Grb-SOS complex can either bind directly to phospho-tyrosine sites or indirectly through Shc. These protein interactions bring SOS in close proximity to Ras, allowing for Ras activation. This subsequently activates the Erk and JNK signaling pathways that, in turn, activate transcription factors, such as c-fos, AP-1 and ELK-1, resulting in increased gene expression and cell proliferation.[3-5]

Tyrosine 1068 is situated within the cytoplasmic domain of the receptor. It is an autophosphorylation site, which upon phosphorylation allows binding of Grb2 and activation of the Ras-Raf-ERK1 & 2 signaling pathway.[4]

Reagent

The antibody is supplied as a solution in Dulbecco's phosphate buffered saline with 50% glycerol, 1.0 mg/mL BSA and 0.05% sodium azide.

Precautions and Disclaimer

This product is for R&D use only, not for drug, household, or other uses. Please consult the Material Safety Data Sheet for information regarding hazards and safe handling practices.

Storage/Stability

Store at –20 °C. Due to the presence of 50% glycerol the antibody will remain in solution. For extended storage, centrifuge the vial briefly before opening and prepare working aliquots. To ensure accurate dilutions mix gently, remove excess solution from pipette tip with clean absorbent paper, pipette slowly. The antibody is stable for at least six months when stored appropriately. Working dilutions should be discarded if not used within 12 hours.

Product Profile

Immunoblotting: a recommended working dilution of 1:1,000 is determined using EGF-stimulated and non-stimulated NIH3T3 cells expressing human EGFR.

Note: In order to obtain best results in different techniques and preparations we recommend determining optimal working concentration by titration test.

References

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2. Wells, A., EGF receptor. *Int. J. Biochem. Cell Biol*., **31**, 637-643 (1999).
3. Quan, X., et al., N terminus of Sos 1 Ras exchange factor: critical roles for the Dbl and plecstrin homology domains. *Mol. Cell Biol*., **18**, 771-778 (1998).
4. Lanzetti, L., et al., The Eps8 protein coordinates EGF receptor signaling through Rac and trafficking through Rab5**.** *Nature*, **408**, 374-377 (2000).
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