

Product Information

Monoclonal Anti-Epidermal Growth Factor Receptor Clone 102618

produced in mouse, purified immunoglobulin

Catalog Number **E0532**

Product Description

Monoclonal Anti-Epidermal Growth Factor Receptor (isotype mouse IgG2b) is produced from a hybridoma clone 102618 resulting from the fusion of a mouse myeloma with B cells obtained from a mouse immunized with purified, NSO-derived, recombinant human epidermal growth factor receptor, extracellular domain (Gene ID: 1956). The IgG fraction of the tissue culture supernatant was purified by Protein G affinity chromatography.

Monoclonal Anti-Epidermal Growth Factor Receptor (EGF R) detects human EGF receptor. In immunoblotting, this antibody shows no cross-reactivity with recombinant mouse EGF R, recombinant human ErbB2, recombinant mouse ErbB2, recombinant human ErbB3, or recombinant human ErbB4.

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

EGF R, also known as ErbB1, is a type transmembrane glycoprotein receptor tyrosine kinase. Upon binding of one of the EGF family ligands, EGF R can form homodimers as well as heterodimers with ErbB2, ErbB3, or ErbB4. EGF R regulates cell proliferation, differentiation, motility, and apoptosis in a wide variety of cell types.

Activation of EGF receptor 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.¹ 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 EGF receptor 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 phosphotyrosine 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.²⁻⁴

Reagent

Supplied lyophilized from a 0.2 µm filtered solution in phosphate buffered saline with 5% trehalose.

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.

Preparation Instructions

Reconstitute with sterile or 0.2 µm filtered phosphate buffered saline. If 1 mL of PBS is used, the antibody concentration will be 500 µg/mL.

Storage/Stability

Store lyophilized product at -20 °C or below. Lyophilized samples are stable for twelve months from date of receipt when stored at -20 °C or below.

Upon reconstitution, the antibody can be stored at 2-8 °C for up to one month without detectable loss of activity. For extended storage, upon reconstitution, the solution should be frozen at -20 °C or below in working aliquots. Repeated freezing and thawing, or storage in "frost-free" freezers, is not recommended. If slight turbidity occurs upon prolonged storage, clarify the solution by centrifugation before use.

Product Profile

Immunoblotting: a working concentration of 1-2 µg/mL is recommended to detect human EGF R. Using a colorimetric detection system, the detection limit for recombinant human EGF R is ~25 ng/lane under non-reducing conditions. Use of this antibody under reducing conditions is not recommended. A chemiluminescent detection system will increase sensitivity by 5 to 50 fold.

Note: In order to obtain the best results in various assays, it is recommended that each individual user determine their working dilution by titration.

References

1. Wells, A., EGF receptor. *Int. J. Biochem. Cell Biol.*, **31**, 637-643 (1999).
2. Quan, X., et al., N terminus of Sos 1 Ras exchange factor: critical roles for the Dbl and pleckstrin homology domains. *Mol. Cell Biol.*, **18**, 771-778 (1998).
3. Lanzetti, L., et al., The Eps8 protein coordinates EGF receptor signaling through Rac and trafficking through Rab5. *Nature*, **408**, 374-377 (2000).
4. Poppleton, H.M., et al., Modulation of the protein tyrosine kinase activity and autophosphorylation of the epidermal growth factor receptor by its juxtamembrane region. *Arch. Biochem. Biophys.*, **363**, 227-236 (1999).

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