

Product Information

Anti-Epidermal Growth Factor Receptor

produced in goat, affinity isolated antibody

E1282

Product Description

Anti-Epidermal Growth Factor Receptor (EGFR) is produced in goat using as immunogen purified, NSO-derived, recombinant mouse epidermal growth factor receptor, extracellular domain (Gene ID: 13649). Mouse EGFR specific IgG was purified by mouse EGFR affinity chromatography.

Anti-Epidermal Growth Factor Receptor recognizes mouse EGF receptor. The antibody may be used for the identification of the EGFR in various immunochemical techniques including immunoblotting, and immunohistochemistry.

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, single transmembrane domain, and cytoplasmic domain. EGF exerts its actions by binding to the EGF receptor, a 170 kDa protein.

EGFR, also known as ErbB1, is a type of transmembrane glycoprotein receptor tyrosine kinase. Upon binding of one of the EGF family ligands, EGFR can form homodimers as well as heterodimers with ErbB2, ErbB3, or ErbB4. EGFR 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 Safety Data Sheet for information regarding hazards and safe handling practices.

Preparation Instructions

Reconstitute with 0.2 µm filtered or sterile PBS. If 1 mL of phosphate buffered saline is used, the antibody concentration will be 0.1 mg/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 antibody concentration of 0.1-0.2 µg/mL is recommended to detect mouse EGFR. The detection limit for recombinant mouse EGFR is ~2 ng/lane and 20 ng/lane under non-reducing and reducing conditions, respectively.

Immunohistochemistry: a working concentration of 5-15 µg/mL is recommended to detect mouse EGFR in cells and tissues using a chromogenic detection of labeling.

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).

The life science business of Merck KGaA, Darmstadt, Germany operates as MilliporeSigma in the U.S. and Canada.

MilliporeSigma, and Sigma-Aldrich are trademarks of Merck KGaA, Darmstadt, Germany or its affiliates. All other trademarks are the property of their respective owners. Detailed information on trademarks is available via publicly accessible resources.

© 2023 Merck KGaA, Darmstadt, Germany and/or its affiliates. All Rights Reserved.

E1282dat Rev03/23

Notice

We provide information and advice to our customers on application technologies and regulatory matters to the best of our knowledge and ability, but without obligation or liability. Existing laws and regulations are to be observed in all cases by our customers. This also applies in respect to any rights of third parties. Our information and advice do not relieve our customers of their own responsibility for checking the suitability of our products for the envisaged purpose.

The information in this document is subject to change without notice and should not be construed as a commitment by the manufacturing or selling entity, or an affiliate. We assume no responsibility for any errors that may appear in this document.

Technical Assistance

Visit the tech service page at SigmaAldrich.com/techservice.

Terms and Conditions of Sale

Warranty, use restrictions, and other conditions of sale may be found at SigmaAldrich.com/terms.

Contact Information

For the location of the office nearest you, go to SigmaAldrich.com/offices.

**Millipore
SIGMA**