

p-EGFR (Tyr 1110): sc-16804

BACKGROUND

Epidermal growth factor mediates its effects on cell growth through its interaction with a cell surface glycoprotein designated the EGF receptor. Binding of EGF or TGF α to the EGF receptor activates tyrosine-specific protein kinase activity intrinsic to the EGF receptor. The carboxy-terminal tyrosine residues on EGFR, Tyr 1068 and Tyr 1173, are the major sites of autophosphorylation, which occurs as a result of EGF binding. Once activated, EGFR mediates the binding of the phosphotyrosine binding (PTB) domain of GRB2 through direct interactions with Tyr 1068 and Tyr 1086 and through indirect interactions with Tyr 1173 in the Ras signaling pathway. Tyr 1173 of EGFR also functions as a kinase substrate. Phosphorylation of Tyr 992, Tyr 1068 and Tyr 1086 is required for conformational change in the C-terminal tail of the EGF receptor.

REFERENCES

1. Reynolds, F.H., Jr., et al. 1981. Human transforming growth factors induce tyrosine phosphorylation of EGF receptors. *Nature* 292: 259-262.
2. Hunter, T. 1984. The epidermal growth factor receptor gene and its product. *Nature* 311: 414-416.
3. Batzer, A.G., et al. 1994. Hierarchy of binding site for GRB2 and Shc on the epidermal growth factor receptor. *Mol. Cell. Biol.* 14: 5192-5201.
4. Ward, C.W., et al. 1996. Systematic mapping of potential binding sites for Shc and GRB2 SH2 domains on insulin receptor substrate-1 and the receptors for insulin, epidermal growth factor, platelet-derived growth factor and fibroblast growth factor. *J. Biol. Chem.* 271: 5603-5609.
5. Rojas, M., et al. 1996. Controlling epidermal growth factor (EGF)-stimulated Ras activation in intact cells by a cell-permeable peptide mimicking phosphorylated EGF receptor. *J. Biol. Chem.* 271: 27456-27461.
6. Wright, J.D., et al. 1996. Identification of sites on epidermal growth factor receptors which are phosphorylated by pp60src *in vitro*. *Biochim. Biophys. Acta* 1312: 85-93.
7. Sakaguchi, K., et al. 1998. Shc phosphotyrosine-binding domain dominantly interacts with epidermal growth factor receptors and mediates Ras activation in intact cells. *Mol. Endocrinol.* 12: 536-543.
8. Bishayee, A., et al. 1999. Phosphorylation of Tyrosine 992, 1068 and 1086 is required for conformational change of the human epidermal growth factor receptor c-terminal tail. *Mol. Biol. Cell* 10: 525-536.

CHROMOSOMAL LOCATION

Genetic locus: EGFR (human) mapping to 7p12; Egfr (mouse) mapping to 11 A1-A4.

SOURCE

p-EGFR (Tyr 1110) is a goat polyclonal antibody raised against a short amino acid sequence containing phosphorylated Tyr 1110 of EGFR of human origin.

STORAGE

Store at 4° C, ****DO NOT FREEZE****. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

PRODUCT

Each vial contains 200 μ g IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Blocking peptide available for competition studies, sc-16804 P, (100 μ g peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% BSA).

APPLICATIONS

p-EGFR (Tyr 1110) is recommended for detection of Tyr 1086 phosphorylated EGF receptor of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1–2 μ g per 100–500 μ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

Suitable for use as control antibody for EGFR siRNA (h): sc-29301 and EGFR siRNA (m): sc-29302.

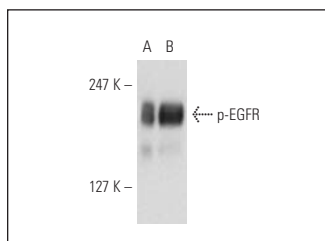
Molecular Weight of p-EGFR: 170 kDa.

Positive Controls: A-431-EGF whole cell lysate: sc-2202 or A-431 whole cell lysate: sc-2201.

RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use donkey anti-goat IgG-HRP: sc-2020 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible donkey anti-goat IgG-HRP: sc-2033 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent) and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use donkey anti-goat IgG-FITC: sc-2024 (dilution range: 1:100-1:400) or donkey anti-goat IgG-TR: sc-2783 (dilution range: 1:100-1:400) with UltraCruz™ Mounting Medium: sc-24941.

DATA



p-EGFR (Tyr 1110): sc-16804. Western blot analysis of EGFR phosphorylation in A-431 + EGF (A) and phosphoenriched A-431 + EGF (B) whole cell lysates.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.