

p-EGFR (Tyr 1110): sc-16804

BACKGROUND

Epidermal growth factors mediate their effects on cell growth through interactions with a cell surface glycoprotein designated EGFR (EGF receptor). Binding of EGF or TGF α to EGFR activates tyrosine-specific protein kinase activity intrinsic to EGFR. The carboxy terminal tyrosine residues on EGFR, Tyr 1092 and Tyr 1173, designated Tyr 1196 in rat, 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 1092 and Tyr 1110 in human and mouse or Tyr 1109 in rat, 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 1092 and Tyr 1110 is required for conformational change in the C-terminal tail of EGFR. Tyr 1092, Tyr 1173 and Tyr 1110 are also designated Tyr 1068, Tyr 1197, and Tyr 1086, respectively.

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.

CHROMOSOMAL LOCATION

Genetic locus: EGFR (human) mapping to 7p11.2; Egfr (mouse) mapping to 11 A2.

SOURCE

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

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).

RESEARCH USE

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

APPLICATIONS

p-EGFR (Tyr 1110) is recommended for detection of Tyr 1110 phosphorylated EGF receptor of human and mouse origin and Tyr 1109 phosphorylated EGFR of rat origin (also designated as Tyr 1086) 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).

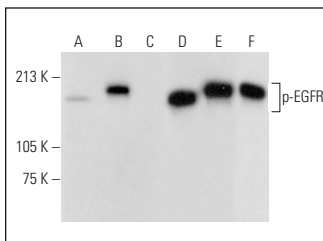
p-EGFR (Tyr 1110) is also recommended for detection of correspondingly phosphorylated EGF receptor in additional species, including equine, canine, bovine and porcine.

Suitable for use as control antibody for EGFR siRNA (h): sc-29301, EGFR siRNA (m): sc-29302, EGFR siRNA (r): sc-108050, EGFR shRNA Plasmid (h): sc-29301-SH, EGFR shRNA Plasmid (m): sc-29302-SH, EGFR shRNA Plasmid (r): sc-108050-SH, EGFR shRNA (h) Lentiviral Particles: sc-29301-V, EGFR shRNA (m) Lentiviral Particles: sc-29302-V and EGFR shRNA (r) Lentiviral Particles: sc-108050-V.

Molecular Weight of p-EGFR: 170 kDa.

Positive Controls: A-431 + EGF whole cell lysate: sc-2202, SK-N-SH cell lysate: sc-2410 or A-431 whole cell lysate: sc-2201.

DATA



Western blot analysis of EGFR phosphorylation in untreated (A,D), EGF treated (B,E) and EGF and lambda protein phosphatase (sc-200312A) treated (C,F) A-431 whole cell lysates. Antibodies tested include p-EGFR (Tyr 1110): sc-16804 (A,B,C) and EGFR (1005): sc-03 (D,E,F).

SELECT PRODUCT CITATIONS

1. Hammoud, L., et al. 2009. Tissue inhibitor of metalloproteinase-3 inhibits neonatal mouse cardiomyocyte proliferation via EGFR/JNK/SP-1 signaling. *Am. J. Physiol., Cell Physiol.* 296: C735-C745.

STORAGE

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

PROTOCOLS

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