SANTA CRUZ BIOTECHNOLOGY, INC.

p-EGFR (6D372): sc-71776

The Power to Question

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 TGFα 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. Hunter, T. 1984. The epidermal growth factor receptor gene and its product. Nature 311: 414-416.
2. Reynolds, F.H. Jr., Todaro, G.J., Fryling, C. and Stephenson, J.R. 1981. Human transforming growth factors induces tyrosine phosphorylation of EGF receptors. Nature 292: 259-262.
3. Batzer, A.G., Rotin, D., Urena, J.M., Skolnik, E.Y. and Schlessinger, J. 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., Gough, K.H., Rashke, M., Wan, S.S., Tribbick, G. and Wang, J. 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, platlet-derived growth factor, and fibroblast growth factor. J. Biol. Chem. 271: 5603-5609.
5. Rojas, M., Yao, S. and Lin, Y.Z. 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., Reuter, C.W. and Weber, M.J. 1996. Identification of sites on epidermal growth factor receptors which are phosphorylated by pp60^{src} *in vitro*. Biochim. Biophys. Acta 1312: 85-93.
7. Sakaguchi, K., Okabayashi, Y., Kido, Y., Kimura, S., Matsumura, Y., Inushima, K. and Kasuga, M. 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., Beguinot, L. and Bishayee, S. 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 7p11.2; Egfr (mouse) mapping to 11 A2.

SOURCE

p-EGFR (6D372) is a mouse monoclonal antibody raised against an EGFR phosphopeptide of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, PEG and sucrose.

APPLICATIONS

p-EGFR (6D372) is recommended for detection of Tyr 1045 phosphorylated EGFR of mouse, rat, human and canine origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000).

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, EGF treated SK-N-SH whole cell lysate.

SELECT PRODUCT CITATIONS

1. Wu, Y., Sun, W., Kong, Y., Liu, B., Zeng, M. and Wang, W. 2018. Restoration of microRNA-130b expression suppresses osteosarcoma cell malignant behavior *in vitro*. Oncol. Lett. 16: 97-104.

STORAGE

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

RESEARCH USE

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

PROTOCOLS

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

See **EGFR (A-10): sc-373746** for EGFR antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.