SANTA CRUZ BIOTECHNOLOGY, INC.

p-EGFR (10G12): sc-81487

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

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2. Hunter, T. 1984. The epidermal growth factor receptor gene and its product. Nature 311: 414-416.
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4. Ward, C.W., Gough, K.H., Rashke, M., Wan, S.S., Tribbick, G. and Wang, J.X. 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.
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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.

STORAGE

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

CHROMOSOMAL LOCATION

Genetic locus: EGFR (human) mapping to 7p11.2.

SOURCE

p-EGFR (10G12) is a mouse monoclonal antibody raised against a synthetic phosphopeptide surrounding Tyrosine 1148 of EGFR of human origin.

PRODUCT

Each vial contains 50 µg IgG_3 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, PEG and sucrose.

APPLICATIONS

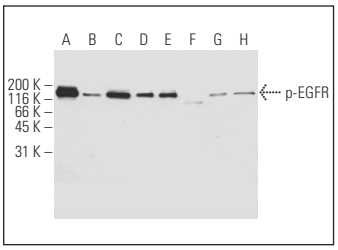
p-EGFR (10G12) is recommended for detection of Tyrosine 1148 phosphorylated EGFR of human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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

Molecular Weight of p-EGFR: 170 kDa.

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

DATA



p-EGFR (10G12): sc-81487. Western blot analysis of EGFR phosphorylation in EGF stimulated A-431 (**A**), A549 (**B**), SK-OV-3 (**C**), OVCAR-5 (**D**), HaCaT (**E**), PC-3 (**F**), HeLa (**G**) and Hep G2 (**H**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Ha Thi, H.T., Kim, H.Y., Lee, Y.J., Kim, S.J. and Hong, S. 2018. SMAD7 in keratinocytes promotes skin carcinogenesis by activating ATM-dependent DNA repair and an EGFR-mediated cell proliferation pathway. Carcinogenesis 40: 112-120.
2. Jiang, Y., Cai, Y., Shao, W., Li, F., Guan, Z., Zhou, Y., Tang, C. and Feng, S. 2019. MicroRNA-144 suppresses aggressive phenotypes of tumor cells by targeting ANO1 in colorectal cancer. Oncol. Rep. 41: 2361-2370.

RESEARCH USE

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