SANTA CRUZ BIOTECHNOLOGY, INC.

p-EGFR (12A3): sc-57542

SANTA CRUZ BIOTECHNOLOGY

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.

CHROMOSOMAL LOCATION

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

SOURCE

p-EGFR (12A3) 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 (12A3) is recommended for detection of Tyr 845 phosphorylated EGFR of mouse, rat and 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)]; non cross-reactive with the non-phosphorylated EGFR nor with unrelated Tyrosine-phosphorylated proteins.

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

RESEARCH USE

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

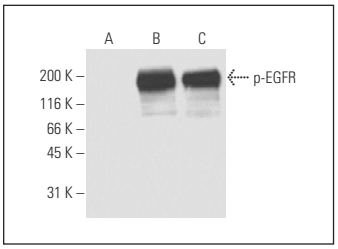
PROTOCOLS

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

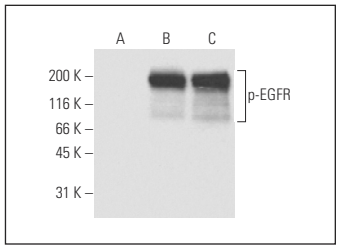
STORAGE

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

DATA



p-EGFR (12A3): sc-57542. Western blot analysis of EGFR phosphorylation in non-stimulated (**A**), EGF stimulated (**B**) and pervanadate treated (**C**) Hep G2 whole cell lysates.



p-EGFR (12A3): sc-57542. Western blot analysis of EGFR phosphorylation in non-stimulated (**A**), EGF-stimulated (**B**) and pervanadate treated (**C**) A549 whole cell lysates.

SELECT PRODUCT CITATIONS

1. Dittmann, K., et al. 2008. The radioprotector Bowman-Birk proteinase inhibitor stimulates DNA repair via epidermal growth factor receptor phosphorylation and nuclear transport. Radiother. Oncol. 86: 375-382.
2. Dittmann, K., et al. 2009. Radiation-induced lipid peroxidation activates Src kinase and triggers nuclear EGFR transport. Radiother. Oncol. 92: 379-382.
3. Kang, J.H., et al. 2011. MUC5AC expression through bidirectional communication of Notch and epidermal growth factor receptor pathways. J. Immunol. 187: 222-229.
4. Belobrov, S., et al. 2019. Functional and molecular effects of a green tea constituent on oral cancer cells. J. Oral Pathol. Med. 48: 604-610.
5. Huang, X., et al. 2020. Gangliosides and CD82 inhibit the motility of colon cancer by downregulating the phosphorylation of EGFR at different tyrosine sites and signaling pathways. Mol. Med. Rep. 22: 3994-4002.
6. Hanaoka, M. and Domae, E. 2021. IL-1α released from oral epithelial cells upon candidalysin exposure initiates an early innate epithelial response. Int. Immunol. 33: 161-170.
7. Li, Y., et al. 2021. Podocyte EGFR inhibits autophagy through upregulation of rubicon in type II diabetic nephropathy. Diabetes 70: 562-576.
8. Li, K., et al. 2022. Stimulation of Let-7 maturation by metformin improved the response to tyrosine kinase inhibitor therapy in an m^6A dependent manner. Front. Oncol. 11: 731561.
9. Sim, M.S., et al. 2022. Lysophosphatidylserine induces MUC5AC production via the feedforward regulation of the TACE-EGFR-ERK pathway in airway epithelial cells in a receptor-independent manner. Int. J. Mol. Sci. 23: 3866.