SANTA CRUZ BIOTECHNOLOGY, INC.

p-EGFR (F-3): sc-377547

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.

REFERENCES

1. Reynolds, F.H., Jr., et al. 1981. Human transforming growth factors induces 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.

CHROMOSOMAL LOCATION

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

SOURCE

p-EGFR (F-3) is a mouse monoclonal antibody raised against a sequence containing Tyr 1092 phosphorylated EGFR of human origin.

PRODUCT

Each vial contains 200 µg IgG_1 kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

p-EGFR (F-3) is available conjugated to agarose (sc-377547 AC), 500 µg/ 0.25 ml agarose in 1 ml, for IP; to HRP (sc-377547 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-377547 PE), fluorescein (sc-377547 FITC), Alexa Fluor® 488 (sc-377547 AF488), Alexa Fluor® 546 (sc-377547 AF546), Alexa Fluor® 594 (sc-377547 AF594) or Alexa Fluor® 647 (sc-377547 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-377547 AF680) or Alexa Fluor® 790 (sc-377547 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-377547 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

p-EGFR (F-3) is recommended for detection of Tyr 1092 phosphorylated EGFR of mouse and human origin and Tyr 1091 phosphorylated EGFR of rat origin (also designated as Tyr 1068) by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg 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).

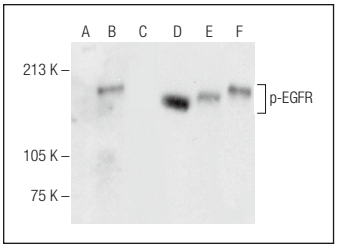
p-EGFR (F-3) is also recommended for detection of correspondingly phosphorylated EGFR in additional species, including canine.

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

Molecular Weight of p-EGFR: 170 kDa.

Positive Controls: 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 (F-3): sc-377547 (**A**,**B**,**C**) and EGFR (1005): sc-03 (**D**,**E**,**F**).

SELECT PRODUCT CITATIONS

1. Guo, F. and Yan, C.Y. 2015. Effect of SecinH3 on lung injury induced by sepsis of rats. Asian Pac. J. Trop. Med. 8: 1049-1054.
2. Pan, Y., et al. 2016. miR-646 is a key negative regulator of EGFR pathway in lung cancer. Exp. Lung Res. 42: 286-295.
3. Jabbarzadeh Kaboli, P., et al. 2019. Antitumor effects of berberine against EGFR, ERK1/2, P38 and Akt in MDA-MB231 and MCF-7 breast cancer cells using molecular modelling and *in vitro* study. Pharmacol. Rep. 71: 13-23.
4. Cárdenas, S., et al. 2020. GPR75 receptor mediates 20-HETE-signaling and metastatic features of androgen-insensitive prostate cancer cells. Biochim. Biophys. Acta Mol. Cell Biol. Lipids 1865: 158573.
5. Scutera, S., et al. 2021. *Bartonella henselae* persistence within mesenchymal stromal cells enhances endothelial cell activation and infectibility that amplifies the angiogenic process. Infect. Immun. 89: e0014121.

RESEARCH USE

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