SANTA CRUZ BIOTECHNOLOGY, INC.

EGFR (F4): sc-53274

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

The EGF receptor family comprises several related receptor tyrosine kinases that are frequently overexpressed in a variety of carcinomas. Members of this receptor family include EGFR (HER1), Neu (ErbB-2, HER2), ErbB-3 (HER3) and ErbB-4 (HER4), which form either homodimers or heterodimers upon ligand binding. Exons in the EGFR gene product are frequently either deleted or duplicated to produce deletion mutants (DM) or tandem duplication mutants (TDM), respectively, which are detected at various molecular weights. EGFR binds several ligands, including epidermal growth factor (EGF), transforming growth factor α (TGFα), amphiregulin and heparin binding-EGF (HB-EGF). Ligand binding promotes the internalization of EGFR via clathrin-coated pits and its subsequent degradation in response to its intrinsic tyrosine kinase. EGFR is involved in organ morphogenesis and maintenance and repair of tissues, but upregulation of EGFR is associated with tumor progression. The oncogenic effects of EGFR include initiation of DNA synthesis, enhanced cell growth, invasion and metastasis. Abrogation of EGFR results in cell cycle arrest, apoptosis or dedifferentiation of cancer cells, suggesting that EGFR may be an effective therapeutic target.

REFERENCE

1. Downward, J., et al. 1984. Autophosphorylation sites on the epidermal growth factor receptor. Nature 311: 483-485.
2. Gullick, W.J., et al. 1985. Antibodies to the autophosphorylation sites of the epidermal growth factor receptor protein-tyrosine kinase as probes of structure and function. EMBO J. 4: 2869-2877.

CHROMOSOMAL LOCATION

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

SOURCE

EGFR (F4) is a mouse monoclonal antibody raised against amino acids 985-996 of 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.

EGFR (F4) is available conjugated to agarose (sc-53274 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-53274 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-53274 PE), fluorescein (sc-53274 FITC), Alexa Fluor® 488 (sc-53274 AF488), Alexa Fluor® 546 (sc-53274 AF546), Alexa Fluor® 594 (sc-53274 AF594) or Alexa Fluor® 647 (sc-53274 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-53274 AF680) or Alexa Fluor® 790 (sc-53274 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

STORAGE

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

APPLICATIONS

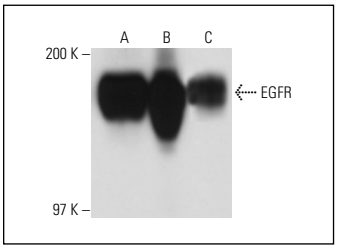
EGFR (F4) is recommended for detection of EGFR of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500).

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.

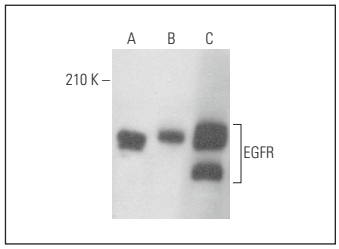
Molecular Weight of EGFR: 170 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, SCC-4 whole cell lysate: sc-364363 or MCF7 whole cell lysate: sc-2206.

DATA



EGFR (F4): sc-53274. Western blot analysis of EGFR expression in untreated A-431 (**A**), EGF treated A-431 (**B**) and SCC-4 (**C**) whole cell lysates.



EGFR (F4): sc-53274. Western blot analysis of EGFR expression in HeLa (**A**), SK-BR-3 (**B**) and MCF7 (**C**) whole cell lysates.

SELECT PRODUCT CITATIONS

1. Yoon, S.J., et al. 2006. Epidermal growth factor receptor tyrosine kinase is modulated by GM3 interaction with N-linked GlcNAc termini of the receptor. Proc. Natl. Acad. Sci. USA 103: 18987-18991.
2. Aboushousha, T., et al. 2018. Differential expression of RAGE, EGFR and Ki-67 in primary tumors and lymph node deposits of breast carcinoma. Asian Pac. J. Cancer Prev. 19: 2269-2277.
3. Gurdal, H., et al. 2019. Partial agonistic effect of cetuximab on epidermal growth factor receptor and Src kinase activation in triple-negative breast cancer cell lines. Int. J. Oncol. 54: 1345-1356.
4. Sato, K., et al. 2021. Simultaneous CK2/TNIK/DYRK1 inhibition by 108600 suppresses triple negative breast cancer stem cells and chemotherapy-resistant disease. Nat. Commun. 12: 4671.
5. Yang, K.S., et al. 2022. Propofol induces apoptosis and ameliorates 5-fluorouracil resistance in OSCC cells by reducing the expression and secretion of amphiregulin. Mol. Med. Rep. 25: 36.

RESEARCH USE

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