SANTA CRUZ BIOTECHNOLOGY, INC.

EGFR (R-1): sc-101

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.

CHROMOSOMAL LOCATION

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

SOURCE

EGFR (R-1) is a mouse monoclonal antibody raised against human epidermoid carcinoma cell line A-431, with epitope mapping between amino acids 6-273 of human EGFR.

PRODUCT

Each vial contains 200 µg IgG_{2b} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Also available azide-free for biological studies, sc-101 L, 200 µg/0.1 ml.

EGFR (R-1) is available conjugated to agarose (sc-101 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-101 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-101 PE), fluorescein (sc-101 FITC), Alexa Fluor® 488 (sc-101 AF488), Alexa Fluor® 546 (sc-101 AF546), Alexa Fluor® 594 (sc-101 AF594) or Alexa Fluor® 647 (sc-101 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-101 AF680) or Alexa Fluor® 790 (sc-101 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.

PROTOCOLS

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

APPLICATIONS

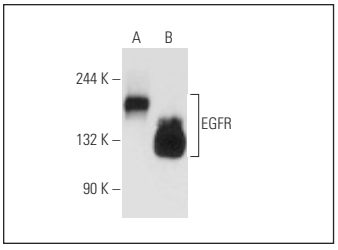
EGFR (R-1) is recommended for detection of EGFR of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10^6 cells).

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.

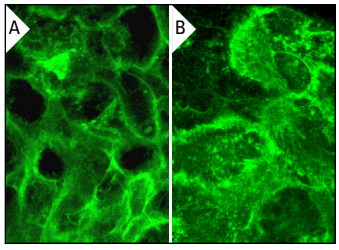
Molecular Weight of EGFR: 170 kDa.

Positive Controls: Hep G2 cell lysate: sc-2227, A-431 whole cell lysate: sc-2201 or A-431 + EGF whole cell lysate: sc-2202.

DATA



EGFR (R-1): sc-101. Western blot analysis of EGFR expression in BT-20 non-reducing buffer, not boiled (**A**) and A-431 non-reducing buffer, not boiled (**B**) whole cell lysates.



EGFR (R-1): sc-101. Immunofluorescence staining of methanol-fixed A-431 cells showing membrane localization (**A**,**B**).

SELECT PRODUCT CITATIONS

1. Prigent, S.A., et al. 1996. Enhanced tumorigenic behavior of glioblastoma cells expressing a truncated epidermal growth factor receptor is mediated through the Ras-Shc-Grb2 pathway. J. Biol. Chem. 271: 25639-25645.
2. Farjami, A., et al. 2019. Evaluation of the physicochemical and biological stability of cetuximab under various stress condition. J. Pharm. Pharm. Sci. 22: 171-190.
3. Swidergall, M., et al. 2021. Activation of EphA2-EGFR signaling in oral epithelial cells by *Candida albicans* virulence factors. PLoS Pathog. 17: e1009221.
4. Mikaelian, I., et al. 2022. EGFR-dependent aerotaxis is a common trait of breast tumour cells. J. Exp. Clin. Cancer Res. 41: 324.
5. Lungu, C., et al. 2023. Golgi screen identifies the RhoGEF Solo as a novel regulator of RhoB and endocytic transport. Traffic 24: 162-176.

RESEARCH USE

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