SANTA CRUZ BIOTECHNOLOGY, INC.

EGFR (3H2094): sc-71033

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.

CHROMOSOMAL LOCATION

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

SOURCE

EGFR (3H2094) 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.

APPLICATIONS

EGFR (3H2094) 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, SK-BR-3 cell lysate: sc-2218 or T98G cell lysate: sc-2294.

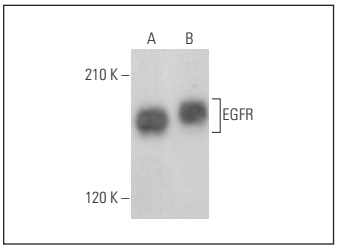
RESEARCH USE

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

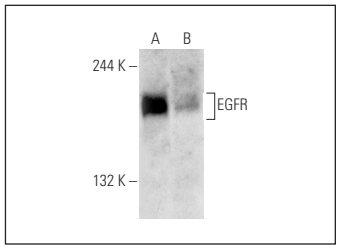
STORAGE

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

DATA



EGFR (3H2094): sc-71033. Western blot analysis of EGFR expression in HeLa (**A**) and SK-BR-3 (**B**) whole cell lysates.



EGFR (3H2094): sc-71033. Western blot analysis of EGFR expression in untreated (**A**) and 17-AAG (sc-200641) treated (**B**) T98G whole cell lysates. Note down regulation of EGFR expression in lane **B**.

SELECT PRODUCT CITATIONS

1. Koutras, A., et al. 2009. Antiproliferative effect of exemestane in lung cancer cells. Mol. Cancer 8: 109.
2. McNulty, D.E., et al. 2011. MAPK scaffold IQGAP1 binds the EGF receptor and modulates its activation. J. Biol. Chem. 286: 15010-15021.
3. Yamaguchi, G., et al. 2012. Isolation of miRNAs that target EGFR mRNA in human lung cancer. Biochem. Biophys. Res. Commun. 420: 411-416.
4. Liu, P., et al. 2012. A single ligand is sufficient to activate EGFR dimers. Proc. Natl. Acad. Sci. USA 109: 10861-10866.
5. Zhen, Q., et al. 2015. MicroRNA-200a targets EGFR and c-Met to inhibit migration, invasion, and gefitinib resistance in non-small cell lung cancer. Cytogenet. Genome Res. 146: 1-8.
6. Hou, C., et al. 2017. MicroRNA-509 acts as a tumor suppressor in tongue squamous cell carcinoma by targeting epidermal growth factor receptor. Mol. Med. Rep. 16: 7245-7252.
7. Zarredar, H., et al. 2018. Combination therapy with KRAS siRNA and EGFR inhibitor AZD8931 suppresses lung cancer cell growth *in vitro*. J. Cell. Physiol. 234: 1560-1566.
8. Lin, J.Z., et al. 2018. Efficacy of gefitinib-celecoxib combination therapy in docetaxel-resistant prostate cancer. Oncol. Rep. 40: 2242-2250.
9. Aury-Landas, J., et al. 2019. The antitumoral effect of the S-adenosylhomocysteine hydrolase inhibitor, 3-deazaneplanocin A, is independent of EZH2 but is correlated with EGFR downregulation in chondrosarcomas. Cell. Physiol. Biochem. 53: 731-745.

CONJUGATES

See **EGFR (A-10): sc-373746** for EGFR antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor® 488, 546, 594, 647, 680 and 790.