SANTA CRUZ BIOTECHNOLOGY, INC.

EGFR (16F8): sc-81451

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.

REFERENCES

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.
3. Gullick, W.J., et al. 1986. Expression of epidermal growth factor receptors on human cervical, ovarian, and vulval carcinomas. Cancer Res. 46: 285-292.
4. Berger, M.S., et al. 1987. Epidermal growth factor receptors in lung tumours. J. Pathol. 152: 297-307.
5. Gamou, S., et al. 1988. Biosynthesis of the epidermal growth factor receptor in human squamous cell carcinoma lines: secretion of the truncated receptor is not common to epidermal growth factor receptor-hyperproducing cells. Cell Struct. Funct. 13: 25-38.
6. Fenstermaker, R.A. and Ciesielski, M.J. 2000. Deletion and tandem duplication of exons 2-7 in the epidermal growth factor receptor gene of a human malignant glioma. Oncogene 19: 4542-4548.
7. Rubin, I. and Yarden, Y. 2001. The basic biology of HER2. Ann. Oncol. 12: S3-S8.

CHROMOSOMAL LOCATION

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

STORAGE

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

SOURCE

EGFR (16F8) is a mouse monoclonal antibody rasied against amino acids 960-980 corresponding to the cytoplamic domain of EGFR of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 500 µl PBS with < 0.1% sodium azide, 1% gelatin, PEG and sucrose.

APPLICATIONS

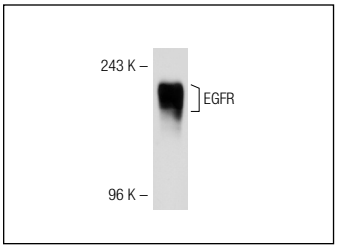
EGFR (16F8) is recommended for detection of EGFR of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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.

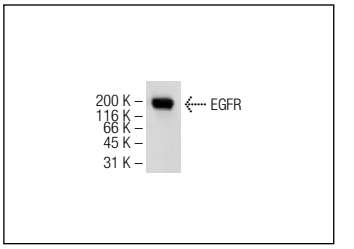
Molecular Weight of EGFR: 170 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201 or vanadate treated Hep G2 whole cell lysate.

DATA



EGFR (16F8): sc-81451. Western blot analysis of EGFR expression in A-431 whole cell lysate.



EGFR (16F8): sc-81451. Western blot analysis of EGFR expression in vanadate treated Hep G2 whole cell lysate.

SELECT PRODUCT CITATIONS

1. Shen, Z., et al. 2008. The kringle 1 domain of hepatocyte growth factor has antiangiogenic and antitumor cell effects on hepatocellular carcinoma. Cancer Res. 68: 404-414.
2. Zhu, Y., et al. 2010. MicroRNA-21 is involved in ionizing radiation-promoted liver carcinogenesis. Int. J. Clin. Exp. Med. 3: 211-222.

RESEARCH USE

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

PROTOCOLS

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