

EGFR (F-2): sc-514995

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 (TGF α), 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

- Downward, J., et al. 1984. Autophosphorylation sites on the epidermal growth factor receptor. *Nature* 311: 483-485.
- 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.

SOURCE

EGFR (F-2) is a mouse monoclonal antibody raised against amino acids 107-272 mapping near the N-terminus of EGFR of human origin.

PRODUCT

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

APPLICATIONS

EGFR (F-2) is recommended for detection of EGFR of human origin by Western Blotting (starting dilution 1:100, dilution range 1:100-1:1000), immunoprecipitation [1-2 μ g per 100-500 μ g 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).

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

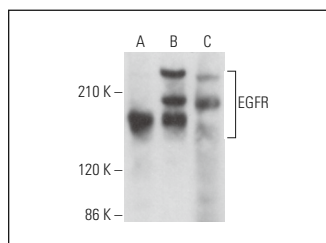
Molecular Weight of EGFR: 170 kDa.

Positive Controls: HeLa whole cell lysate: sc-2200, BT-20 cell lysate: sc-2223 or A-431 + EGF whole cell lysate: sc-2202.

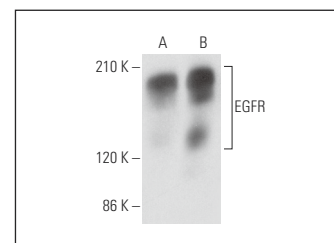
RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG κ BP-HRP: sc-516102 or m-IgG κ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 3) Immunofluorescence: use m-IgG κ BP-FITC: sc-516140 or m-IgG κ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

DATA



EGFR (F-2): sc-514995. Western blot analysis of EGFR expression in HeLa (A) and BT-20 (B) whole cell lysates and rat breast tissue extract (C).



EGFR (F-2): sc-514995. Western blot analysis of EGFR expression in MDA-MB-468 (A) and EGF treated A-431 (B) whole cell lysates.

SELECT PRODUCT CITATIONS

- Chen, Z., et al. 2016. Osimertinib (AZD9291) enhanced the efficacy of chemotherapeutic agents in ABCB1- and ABCG2-overexpressing cells *in vitro*, *in vivo*, and *ex vivo*. *Mol. Cancer Ther.* 15: 1845-1858.
- Guo, N., et al. 2018. MicroRNA-133a downregulated EGFR expression in human non-small cell lung cancer cells via AKT/ERK signaling. *Oncol. Lett.* 16: 6045-6050.
- Salehnia, Z., et al. 2019. Synthesis and characterisation of iron oxide nanoparticles conjugated with epidermal growth factor receptor (EGFR) monoclonal antibody as MRI contrast agent for cancer detection. *IET Nanobiotechnol.* 13: 400-406.

STORAGE

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

RESEARCH USE

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



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.