

# EGFR (EGFR.1): sc-80543

## 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  $\alpha$  (TGF $\alpha$ ), 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.

## CHROMOSOMAL LOCATION

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

## SOURCE

EGFR (EGFR.1) is a mouse monoclonal antibody mapping to a cell surface domain of the EGF receptor of human origin.

## PRODUCT

Each vial contains 200  $\mu$ g IgG<sub>2b</sub> kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

## APPLICATIONS

EGFR (EGFR.1) is recommended for detection of EGFR of mouse, rat and human origin by immunoprecipitation [1-2  $\mu$ g per 100-500  $\mu$ g of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1  $\mu$ g per 1 x 10<sup>6</sup> cells).

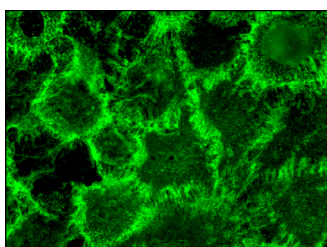
Suitable for use as control antibody for EGFR siRNA (h): sc-29301, EGFR siRNA (m): sc-29302, EGFR siRNA (r): sc-108050, EGFR shRNA Plasmid (h): sc-29301-SH, EGFR shRNA Plasmid (m): sc-29302-SH, EGFR shRNA Plasmid (r): sc-108050-SH, EGFR shRNA (h) Lentiviral Particles: sc-29301-V, EGFR shRNA (m) Lentiviral Particles: sc-29302-V and EGFR shRNA (r) Lentiviral Particles: sc-108050-V.

Molecular Weight of EGFR: 170 kDa.

## RECOMMENDED SUPPORT REAGENTS

To ensure optimal results, the following support reagents are recommended: 1) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml). 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz<sup>®</sup> Mounting Medium: sc-24941 or UltraCruz<sup>®</sup> Hard-set Mounting Medium: sc-359850.

## DATA



EGFR (EGFR.1): sc-80543. Immunofluorescence staining of formalin-fixed A-431 cells showing membrane localization.

## SELECT PRODUCT CITATIONS

1. Cheng, C.Y., et al. 2014. Inhibitory effects of scutellarein on proliferation of human lung cancer A549 cells through ERK and NF $\kappa$ B mediated by the EGFR pathway. *Chin. J. Physiol.* 57: 182-187.
2. Wan, J., et al. 2017. Anti-EGFR antibody conjugated silica nanoparticles as probes for lung cancer detection. *Exp. Ther. Med.* 14: 3407-3412.
3. Wu, Y., et al. 2018. Restoration of microRNA-130b expression suppresses osteosarcoma cell malignant behavior *in vitro*. *Oncol. Lett.* 16: 97-104.
4. Ha, S.J., et al. 2018. Syringic acid prevents skin carcinogenesis via regulation of NoX and EGFR signaling. *Biochem. Pharmacol.* 154: 435-445.
5. Pei, Y., et al. 2019. Ursolic acid suppresses the biological function of osteosarcoma cells. *Oncol. Lett.* 18: 2628-2638.
6. Tong, X., et al. 2019. Suhuang antitussive capsules-ameliorative effects on LPS-induced sputum obstruction in mice through promoting HGF secretion. *Front. Pharmacol.* 10: 1422.

## 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<sup>®</sup> 488, 546, 594, 647, 680 and 790.