PRODUCT INFORMATION

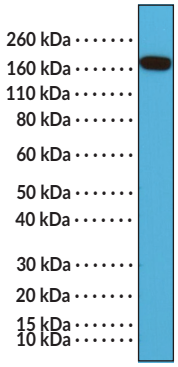
EGFR (C-Term) Rabbit Monoclonal Antibody (Clone RM294)

Item No. 32235

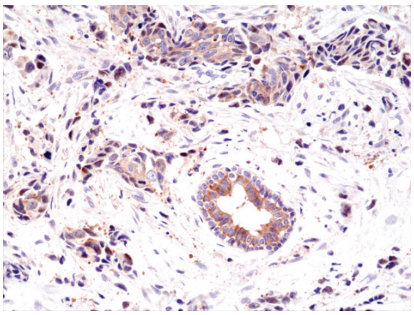
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	Epidermal Growth Factor Receptor, ErbB-1, HER1
Immunogen:	Peptide from the C-terminal region of human EGFR
Cross Reactivity:	(+) EGFR; (-) HER2, HER3, HER4
Species Reactivity:	(+) Human
Form:	Liquid
Storage:	-20°C (as supplied)
Stability:	≥1 year
Storage Buffer:	PBS with 50% glycerol, 1% BSA, and 0.09% sodium azide
Clone:	RM294
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:200-1:500 for IHC and 1:100-1:200 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

Images



WB of HeLa cell lysates using EGFR (C-Term) Rabbit Monoclonal Antibody (Clone RM294) at a dilution of 1:200.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human breast cancer tissue using EGFR (C-Term) Rabbit Monoclonal Antibody (Clone RM294) at a dilution of 1:200.

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Description

Epidermal growth factor receptor (EGFR), also known as HER1 and ErbB1, is a cell surface receptor and member of the EGF family of receptor tyrosine kinases with roles in cell proliferation, differentiation, and survival.[1,2] It is a 170 kDa transmembrane receptor composed of an intracellular tyrosine kinase domain, a transmembrane lipophilic segment, and an extracellular domain that is expressed in epithelial, mesenchymal, and neuronal tissues.[1-3] Under unstimulated conditions, EGFR is an auto-inhibited monomer in the plasma membrane.[1] Upon canonical ligand binding, EGFR undergoes homodimerization or heterodimerization with HER2, HER3, or HER4, which induces a conformational change in the cytoplasmic domain that facilitates autophosphorylation and intracellular signaling. EGFR inhibits autophagy under nutrient-rich growth conditions and, conversely, induces autophagy under serum-starved conditions by interacting with the autophagy inhibitor Rubicon to induce its dissociation from Beclin-1. Overexpression of EGFR is found in multiple solid tumors, including renal, breast, ovarian, and head and neck cancer, as well as non-small cell lung cancer (NSCLC).[2] $EGFR^{L858R}$ is associated with increased susceptibility to tyrosine kinase inhibition and cell death, while $EGFR^{T790M}$ is associated with kinase inhibitor resistance in NSCLC.[4] Inhibition of EGFR reduces angiotensin II-induced cardiac hypertrophy in mice.[5] Cayman's EGFR (C-Term) Rabbit Monoclonal Antibody (Clone RM294) can be used for immunohistochemistry (IHC) and Western blot (WB) applications.

References

1. Sigismund, S., Avanzato, D., and Lanzetti, L. Emerging functions of the EGFR in cancer. *Mol. Oncol.* **12(1)**, 3-20 (2018).
2. Herbst, R.S. Review of epidermal growth factor receptor biology. *Int. J. Radiat. Oncol. Biol. Phys.* **59(2 Suppl)**, 21-26 (2004).
3. Yano, S., Kondo, K., Yamaguchi, M., *et al.* Distribution and function of EGFR in human tissue and the effect of EGFR tyrosine kinase inhibition. *Anticancer Res.* **23(5A)**, 3639-3650 (2003).
4. Jia, Y., Yun, C.H., Park, E., *et al.* Overcoming EGFR(T790M) and EGFR(C797S) resistance with mutant-selective allosteric inhibitors. *Nature* **534(7605)**, 129-132 (2016).
5. Peng, K., Tian, X., Qian, Y., *et al.* Novel EGFR inhibitors attenuate cardiac hypertrophy induced by angiotensin II. *J. Cell. Mol. Med.* **20(3)**, 482-494 (2016).

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