

PRODUCT INFORMATION



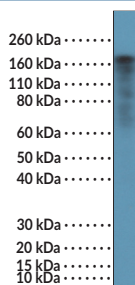
EGFR Rabbit Monoclonal Antibody (Clone RM493)

Item No. 42845

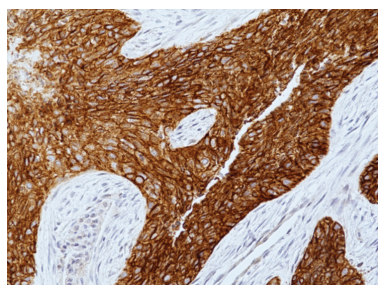
Overview and Properties

Contents:	This vial contains 100 µl of protein A-affinity purified monoclonal antibody.
Synonyms:	Epidermal Growth Factor Receptor, ErbB-1, HER1
Immunogen:	Recombinant human EGFR extracellular domain
Cross Reactivity:	(+) EGFR
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:	RM493
Host:	Rabbit
Isotype:	IgG
Applications:	Immunohistochemistry (IHC) and Western blot (WB); the recommended starting dilution is 1:100-1:1,000 for IHC and 1:1,000-1:10,000 for WB. Other applications were not tested, therefore optimal working concentration/dilution should be determined empirically.

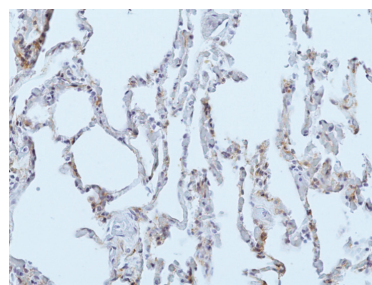
Images



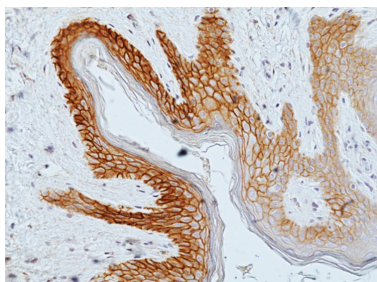
WB of A431 cell lysates using EGFR Rabbit Monoclonal Antibody (Clone RM493) at a dilution of 1:1,000.



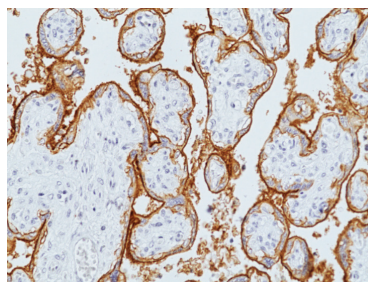
Immunohistochemical staining of formalin-fixed and paraffin-embedded human lung squamous carcinoma tissue using EGFR Rabbit Monoclonal Antibody (Clone RM493) at a dilution of 1:100.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human normal lung tissue using EGFR Rabbit Monoclonal Antibody (Clone RM493) at a dilution of 1:100.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human normal skin tissue using EGFR Rabbit Monoclonal Antibody (Clone RM493) at a dilution of 1:100.



Immunohistochemical staining of formalin-fixed and paraffin-embedded human normal placenta tissue using EGFR Rabbit Monoclonal Antibody (Clone RM493) at a dilution of 1:100.

WARNING
THIS PRODUCT IS FOR RESEARCH ONLY - NOT FOR HUMAN OR VETERINARY DIAGNOSTIC OR THERAPEUTIC USE.

SAFETY DATA
This material should be considered hazardous until further information becomes available. Do not ingest, inhale, get in eyes, on skin, or on clothing. Wash thoroughly after handling. Before use, the user must review the [complete](#) Safety Data Sheet, which has been sent via email to your institution.

WARRANTY AND LIMITATION OF REMEDY
Buyer agrees to purchase the material subject to Cayman's Terms and Conditions. Complete Terms and Conditions including Warranty and Limitation of Liability information can be found on our website.

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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 Rabbit Monoclonal Antibody (Clone RM493) 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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