

# PRODUCT INFORMATION



## EGFR(DomainIII)ChimericMonoclonalAntibody(Cloneh-R3(Nimotuzumab)) Item No. 37167

### Overview and Properties

<b>Contents:</b>	This vial contains 200 µg of protein A-affinity purified monoclonal antibody.
<b>Synonyms:</b>	Epidermal Growth Factor Receptor, ErbB-1, HER1
<b>Immunogen:</b>	This antibody was generated by humanization of the murine antibody R3, raised against EGFR purified from placenta membranes.
<b>Cross Reactivity:</b>	(+) EGFR Domain III
<b>Species Reactivity:</b>	(+) Human
<b>Uniprot No.:</b>	P00533
<b>Form:</b>	Liquid
<b>Storage:</b>	-20°C (as supplied)
<b>Stability:</b>	≥1 year
<b>Storage Buffer:</b>	PBS with 0.02% ProClin™ 300
<b>Clone:</b>	h-R3 (Nimotuzumab)
<b>Host:</b>	Chimeric Monoclonal Antibody
<b>Isotype:</b>	IgG1κ
<b>Applications:</b>	Flow cytometry (FC) and Immunohistochemistry (IHC); The optimal working concentration/dilution should be determined empirically.

### 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.<sup>1,2</sup> 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.<sup>1-3</sup> Under unstimulated conditions, EGFR is an auto-inhibited monomer in the plasma membrane.<sup>1</sup> 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).<sup>2</sup> EGFR<sup>L858R</sup> is associated with increased susceptibility to tyrosine kinase inhibition and cell death, while EGFR<sup>T790M</sup> is associated with kinase inhibitor resistance in NSCLC.<sup>4</sup> Inhibition of EGFR reduces angiotensin II-induced cardiac hypertrophy in mice.<sup>5</sup> Cayman's EGFR (Domain III) Chimeric Monoclonal Antibody (Clone h-R3 (Nimotuzumab)) was produced recombinantly from the original humanized R3 antibody and can be used for flow cytometry (FC) and immunohistochemistry (IHC) applications.<sup>6</sup>

### References

1. Sigismund, S., Avanzato, D., and Lanzetti, L. *Mol. Oncol.* **12(1)**, 3-20 (2018).
2. Herbst, R.S. *Int. J. Radiat. Oncol. Biol. Phys.* **59(2 Suppl)**, 21-26 (2004).
3. Yano, S., Kondo, K., Yamaguchi, M., et al. *Anticancer Res.* **23(5A)**, 3639-3650 (2003).
4. Jia, Y., Yun, C.H., Park, E., et al. *Nature* **534(7605)**, 129-132 (2016).
5. Peng, K., Tian, X., Qian, Y., et al. *J. Cell. Mol. Med.* **20(3)**, 482-494 (2016).
6. Fernandez, A., Spitzer, E., Perez, R., et al. *J. Cell. Biochem.* **49(2)**, 157-165 (1992).

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.

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