BACKGROUND

The c-erbB family of receptors includes four distinct receptors, namely c-erb B1 (EGF receptor), 2, 3 and 4 (HER1, 2, 3 and 4, respectively). The epidermal growth factor (EGF) and related peptides bind the ErbB receptors, inducing the formation of different homo- and heterodimers. Receptor dimerization promotes activation of the intrinsic kinase, leading to phosphorylation of specific tyrosines located in the ErbB's cytoplasmic region. These phosphorylated residues serve as docking sites for a variety of signaling molecules whose recruitment stimulates intracellular signaling cascades, which ultimately control diverse genetic programs.[1] In contrast to other receptor tyrosine kinases; the kinase domain of EGFR (ERBB1) does not require phosphorylation for activation. Consequently, the overall activation state of the receptor is controlled by constant balancing of activity favoring and activity suppressing actions within the receptor molecule. Influences of the membrane microenvironment and context dependent interactions with varying sets of signaling partners are superimposed on this system of intramolecular checks and balances.[2]

It was shown that EGFR overexpression and mutations occurred in many tumors. The EGFR is known to be involved in carcinogenetic processes such as cell proliferation, apoptosis, angiogenesis, cell motility, and metastasis. Preclinical and clinical studies have shown that targeting EGFR is a valid method for anticancer therapy.[3] Strategies aimed at inhibiting the EGFR pathway included different classes of compounds, with monoclonal antibodies and tyrosine kinase inhibitors being the most widely-investigated agents in cancer therapy.

References:
1. Holbro, T. & Hynes, N. E.: Annu Rev Pharmacol Toxicol. 44:195, 2004.
2. Warren, C.M. & Landgraf, R.: Cell Signal 18:923, 2006.
3. Arteaga, C. L.: Semin Oncol. 29(5 Suppl 14):3, 2002.

TECHNICAL INFORMATION

Source:
EGFR Antibody is a rabbit antibody raised against a short peptide from human EGFR sequence surrounding Tyr1068.

Specificity and Sensitivity:
This antibody detects endogenous total EGFR proteins in normal cell lysates without cross-reactivity with other family members.

Storage Buffer: Rabbit IgG in phosphate buffered saline (without Mg2+ and Ca2+), pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol.

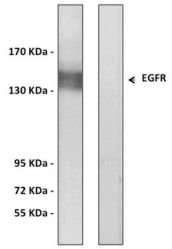
Storage:
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

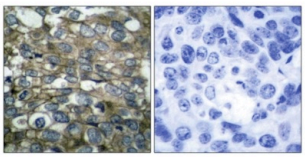
APPLICATIONS

Application:	*Dilution:
WB	1:500-1:1,000
IP	n/d
IHC	1:50-1:100
ICC	n/d
FACS	n/d

**Optimal dilutions must be determined by end user.*

QUALITY CONTROL DATA





Top: Immunoblotting analysis of extracts from A431 cells, treated with EGF 40?M 10′, using Anti-EGFR antibody. The lane on the left was treated with the Anti-EGFR antibody. The lane on the right (negative control) was treated with both Anti-EGFR antibody and the synthesized immunogen peptide.
Bottom: Immunoblotting analysis of extracts from A431 cells, treated with EGF 40?M 10′, using Anti-EGFR antibody. The lane on the left was treated with the Anti-EGFR antibody. The lane on the right (negative control) was treated with both Anti-EGFR antibody and the synthesized immunogen peptide.