

BACKGROUND

ErbB3, or HER3, is a member of the epidermal growth factor receptor (EGFR) family of receptor tyrosine kinases, which includes EGFR, ErbB2, ErbB3, and ErbB4. These receptors play important roles in many normal developmental processes and are often over-expressed or mutated in human cancer.¹ ErbB3 is unique in that its tyrosine kinase domain is functionally defective, thereby requiring a heterodimerization partner for activity. It is activated by ligands, by other ErbB and non-ErbB receptors, other kinases, and by other novel mechanisms. Ligand binding stimulates homodimerization and heterodimerization of EGFR family members. The dimerization facilitates cross-phosphorylation of tyrosines within the cytoplasmic domains, resulting in binding sites for downstream effector proteins. Downstream, it interacts prominently with the phosphoinositol 3-kinase/ AKT survival/ mitogenic pathway, but also with GRB, SHC, SRC, ABL, rasGAP, SYK and the transcription regulator EBP1.² There are likely important, but poorly understood, roles for its nuclear localization and for secreted isoforms.³

ErbB3 is a preferred heterodimerization partner for ErbB2, and the ErbB2/ErbB3 heterodimer is highly biologically active and pro-tumorigenic *in vitro*.⁴ ErbB2 and ErbB3 are often co-overexpressed in breast, ovarian, colorectal, and bladder cancers. Once activated, ErbB3 is strongly linked to pro-survival signaling through the phosphatidylinositol 3'-kinase (PI3K)/Akt pathway. Phosphorylation of Tyr1289 on ErbB3 provides a docking site for the p85 subunit of phosphatidylinositol 3'-kinase.⁵

References:

1. Hamid, O.: J Am Pharm Assoc. 44:52-58, 2004.
2. Fuller, S. J. et al: J Mol Cell Cardiol. 44:831-854, 2008.
3. Koumakpayi, I.H. et al: Clin. Cancer Res. 12:2730-7, 2006.
4. Erjala, K. et al: Clin Cancer Res 12:4103-4111, 2006.
5. Hellyer, N.J. et al: J Biol Chem, 276:42153-42161, 2001.

TECHNICAL INFORMATION

Source:

ErbB3/HER3 Antibody is a mouse monoclonal antibody raised against purified recombinant human ErbB3 extracellular domain expressed in 293 cells.

Specificity and Sensitivity:

This antibody detects endogenous ErbB3/HER3 proteins without cross-reactivity with other family members.

Storage Buffer: PBS and 30% glycerol

Storage:

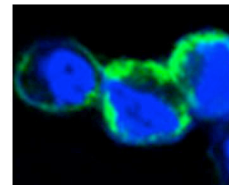
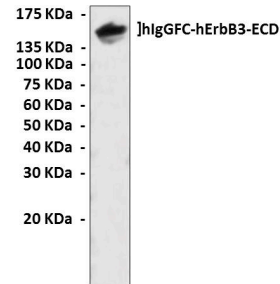
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1: 1000
IP	n/d
IHC	1:200
ICC	1:200
FACS	n/d

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

QUALITY CONTROL DATA



Top: Western Blot detection of ErbB3/HER3 protein in 293 cell lysate containing hlgGFC-hErbB3-ECD fusion protein (135 kDa) using ErbB3/HER3 Antibody.
Bottom: This antibody also stains 293 cells expressing hlgGFC-hErbB3-ECD fusion protein in confocal immunofluorescent analysis.

