

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 prosurvival 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:

Anti-phospho-ErbB3/HER3 (Tyr1289) antibody is a rabbit polyclonal antibody raised against the epitope surrounding and including Tyr1289 of human ErbB3/HER3 sequence.

Specificity and Sensitivity:

This affinity purified antibody detects endogenous phospho-human, mouse and rat ErbB3/HER3 proteins.

Storage Buffer: PBS and 30% glycerol

Storage:

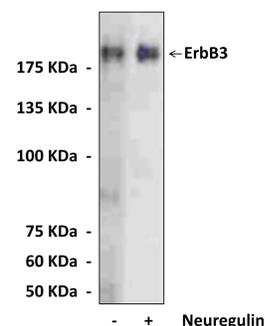
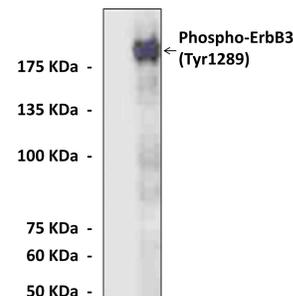
Store at -20°C for at least one year. Store at 4°C for frequent use. Avoid repeated freeze-thaw cycles.

APPLICATIONS

Application:	*Dilution:
WB	1:1000
IP	n/d
IHC (Paraffin)	n/d
ICC	n/d
FACS	n/d

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

QUALITY CONTROL DATA



T47D cells were stimulated with Neuregulin and subjected to Western Blot analysis using phospho-ErbB3/HER3 (Tyr1289) rabbit polyclonal antibody (Top), or ErbB3/HER3 antibody (Bottom).

