Revision 3

Store at -20C
#4784

# Phospho-HER3/ErbB3 (Tyr1222) (50C2) Rabbit mAb

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3 Trask Lane | Danvers | Massachusetts | 01923 | USA

**For Research Use Only. Not for Use in Diagnostic Procedures.**

| Applications: | Reactivity: | Sensitivity: | MW (kDa): | Source/Isotype: | UniProt ID: | Entrez-Gene Id: |
|---|---|---|---|---|---|---|
| WB | H M | Endogenous | 185 | Rabbit IgG | #P21860 | 2065 |

## Product Usage Information

| Application | Dilution |
|---|---|
| Western Blotting | 1:1000 |

## Storage

Supplied in 10 mM sodium HEPES (pH 7.5), 150 mM NaCl, 100 µg/ml BSA, 50% glycerol and less than 0.02% sodium azide. Store at –20°C. Do not aliquot the antibody.

## Specificity / Sensitivity

Phospho-HER3/ErbB3 (Tyr1222) (50C2) Rabbit mAb detects endogenous HER3/ErbB3 proteins only when phosphorylated at tyrosine 1222. The antibody does not cross-react with other tyrosine phosphorylated receptor tyrosine kinases.

## Source / Purification

Monoclonal antibody is produced by immunizing animals with a synthetic phosphopeptide corresponding to residues surrounding Tyr1222 of human HER3/ErbB3.

## Background

HER3/ErbB3 is a member of the ErbB receptor protein tyrosine kinase family, but it lacks tyrosine kinase activity. Tyrosine phosphorylation of ErbB3 depends on its association with other ErbB tyrosine kinases. Upon ligand binding, heterodimers form between ErbB3 and other ErbB proteins, and ErbB3 is phosphorylated on tyrosine residues by the activated ErbB kinase (1,2). There are at least 9 potential tyrosine phosphorylation sites in the carboxy-terminal tail of ErbB3. These sites serve as consensus binding sites for signal transducing proteins, including Src family members, Grb2, and the p85 subunit of PI3 kinase, which mediate ErbB downstream signaling (3). Both Tyr1222 and Tyr1289 of ErbB3 reside within a YXXM motif and participate in signaling to PI3K (4).

Investigators have found that ErbB3 is highly expressed in many cancer cells (5) and activation of the ErbB3/PI3K pathway is correlated with malignant phenotypes of adenocarcinomas (6). Research studies have demonstrated that in tumor development, ErbB3 may function as an oncogenic unit together with other ErbB members (e.g., ErbB2 requires ErbB3 to drive breast tumor cell proliferation) (7). Thus, investigators view inhibiting interaction between ErbB3 and ErbB tyrosine kinases as a novel strategy for anti-tumor therapy.

## Background References

1. Yarden, Y. and Sliwkowski, M.X. (2001) *Nat Rev Mol Cell Biol* 2, 127-37.
2. Guy, P.M. et al. (1994) *Proc Natl Acad Sci U S A* 91, 8132-6.
3. Songyang, Z. et al. (1993) *Cell* 72, 767-78.
4. Kim, H.H. et al. (1994) *J Biol Chem* 269, 24747-55.
5. Sithanandam, G. et al. (2003) *Carcinogenesis* 24, 1581-92.
6. Kobayashi, M. et al. (2003) *Oncogene* 22, 1294-301.
7. Holbro, T. et al. (2003) *Proc Natl Acad Sci U S A* 100, 8933-8.

## Species Reactivity

Species reactivity is determined by testing in at least one approved application (e.g., western blot).

## Western Blot Buffer

IMPORTANT: For western blots, incubate membrane with diluted primary antibody in 5% w/v nonfat dry milk, 1X TBS, 0.1% Tween® 20 at 4°C with gentle shaking, overnight.

## Applications Key

**WB:** Western Blotting

## Cross-Reactivity Key

**H:** human **M:** mouse **R:** rat **Hm:** hamster **Mk:** monkey **Vir:** virus **Mi:** mink **C:** chicken **Dm:** D. melanogaster **X:** Xenopus **Z:** zebrafish **B:** bovine **Dg:** dog **Pg:** pig **Sc:** S. cerevisiae **Ce:** C. elegans **Hr:** horse **GP:** Guinea Pig **Rab:** rabbit **All:** all species expected

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