**Background:** The ErbB2 (HER2) proto-oncogene encodes a 185 kDa transmembrane, receptor-like glycoprotein with intrinsic tyrosine kinase activity (1). While ErbB2 lacks an identified ligand, ErbB2 kinase activity can be activated in the absence of a ligand when overexpressed and through heteromeric associations with other ErbB family members (2). Amplification of the ErbB2 gene and overexpression of its product are detected in almost 40% of human breast cancers (3). Binding of the c-Cbl ubiquitin ligase to ErbB2 at Tyr1112 leads to ErbB2 poly-ubiquitination and enhances degradation of this kinase (4). ErbB2 is a key therapeutic target in the treatment of breast cancer and other carcinomas and targeting the regulation of ErbB2 degradation by the c-Cbl-regulated proteolytic pathway is one potential therapeutic strategy. Phosphorylation of the kinase domain residue Tyr877 of ErbB2 (homologous to Tyr416 of pp60c-Src) may be involved in regulating ErbB2 biological activity. The major autophosphorylation sites in ErbB2 are Tyr1248 and Tyr1221/1222, phosphorylation of these sites couples ErbB2 to the Ras-Raf-MAP kinase signal transduction pathway (1,5).

**Specificity/Sensitivity:** HER2/ErbB2 (29D8) Rabbit mAb detects endogenous levels of total ErbB2 protein. This antibody does not cross-react with related kinases.

**Source/Purification:** Monoclonal antibody is produced by immunizing animals with a synthetic peptide corresponding to residues surrounding tyrosine 1248 of human ErbB2 protein.

**Background References:**

**Recommended Antibody Dilutions:**
- Western blotting: 1:1000
- Immunoprecipitation: 1:100
- Immunohistochemistry (Paraffin): 1:400
- Immunohistochemistry (Frozen): 1:400†
- Immunofluorescence (IF-IC): 1:200
- Immunofluorescence (IF-F): 1:200
- Flow cytometry: 1:200

*Species cross-reactivity is determined by western blot.*

**Anti-rabbit secondary antibodies must be used to detect this antibody.**

For product specific protocols and a complete listing of recommended companion products please see the product web page at www.cellsignal.com
Immunohistochemical analysis of paraffin-embedded SKBR3 (high HER2) (left), MDA-MB-453 (moderate HER2) (middle) and MDA-MB-468 (low HER2) (right), using HER2/ErbB2 (29D8) Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human breast carcinoma using HER2/ErbB2 (29D8) antibody in the presence of control peptide (left) or HER2/ErbB2 Blocking Peptide #1059 (right).

Flow cytometric analysis of MCF7 cells using HER2/ErbB2 (29D8) Rabbit mAb (blue) compared to a nonspecific negative control antibody (red).

Immunohistochemical analysis of frozen SKOV-3 xenograft using HER2/ErbB2 (29D8) Rabbit mAb.

Immunohistochemical analysis of paraffin-embedded human breast carcinoma, using HER2/ErbB2 (29D8) Rabbit mAb.