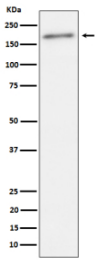
Phospho-ErbB2 (pTyr1221/pTyr1222) Antibody / HER2 / NEU [clone 31E43] (FY12766)

Catalog No.	Formulation	Size
FY12766	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA	100 ul

Recombinant RABBIT MONOCLONAL

Bulk quote request

Availability	2-3 weeks
Species Reactivity	Human
Format	Liquid
Host	Rabbit
Clonality	Recombinant Rabbit Monoclonal
Isotype	Rabbit IgG
Clone Name	31E43
Purity	Affinity-chromatography
Buffer	Rabbit IgG in phosphate buffered saline, pH 7.4, 150mM NaCl, 0.02% sodium azide and 50% glycerol, 0.4-0.5mg/ml BSA.
UniProt	P04626
Applications	Western blot: 1:500-1:2000
Limitations	This Phospho-ErbB2 (pTyr1221/Tyr1222) antibody is available for research use only.



Western blot analysis of Phospho-ErbB2(pY1221 + pY1222) expression in human SKBR3 cell lysate using Phospho-ErbB2 (pTyr1221/pTyr1222) antibody. A single band is detected at approximately 190â€“200 kDa, consistent with the phosphorylated, full-length form of the ErbB2/HER2 receptor.

Description

Phospho-ErbB2 (pTyr1221/pTyr1222) antibody detects ErbB2, encoded by the ERBB2 gene, when phosphorylated at tyrosines 1221 and 1222. ErbB2 is also commonly called HER2, NEU, proto-oncogene Neu, and CD340. It is a member

of the epidermal growth factor receptor family of receptor tyrosine kinases. Unlike other family members, ErbB2 has no direct ligand but is the preferred dimerization partner for EGFR, ErbB3, and ErbB4. Upon dimerization, its intracellular tyrosine kinase domain auto-phosphorylates specific residues, including Tyr1221 and Tyr1222. These phosphorylation sites recruit adaptor proteins such as Grb2 and Shc, activating MAPK and PI3K pathways that drive cell proliferation, survival, and differentiation.

Phospho-ErbB2 (pTyr1221/pTyr1222) antibody is widely applied in cancer biology, molecular signaling, and translational research. HER2 amplification and overexpression are defining features of aggressive breast cancer subtypes, as well as subsets of gastric, ovarian, and lung cancers. Detecting phosphorylation at Tyr1221 and Tyr1222 provides direct evidence of receptor activation, going beyond total expression levels. This allows researchers to distinguish tumors with active HER2 signaling from those with mere overexpression.

Validated applications for Phospho-ErbB2 (pTyr1221/pTyr1222) antibody include western blotting, immunohistochemistry, and immunofluorescence. In western blot assays, it identifies activated HER2 distinct from total receptor. Immunohistochemistry highlights receptor activation in tumor tissue sections, while immunofluorescence visualizes membrane localized receptor complexes in cultured cells. Together, these methods provide comprehensive tools for studying receptor activity at multiple biological scales.

Phosphorylation of HER2 at Tyr1221 and Tyr1222 is central to downstream signaling. These residues recruit adaptors that activate the Ras MAPK cascade, promoting proliferation, and the PI3K Akt pathway, enhancing survival and metabolism. Persistent phosphorylation drives oncogenesis by conferring growth advantage, resistance to apoptosis, and metastatic potential. Phospho-ErbB2 (pTyr1221/pTyr1222) antibody enables researchers to quantify this activation and study how it is regulated by dimerization partners, extracellular ligands, and therapeutic inhibitors.

HER2 targeted therapies, including trastuzumab, pertuzumab, and tyrosine kinase inhibitors such as lapatinib, directly modulate phosphorylation at these sites. Monitoring Tyr1221 and Tyr1222 phosphorylation provides a pharmacodynamic biomarker of drug response. This application is critical in translational medicine, where phospho specific antibodies can guide therapeutic development and precision oncology strategies.

HER2 signaling extends beyond cancer. It plays roles in cardiac physiology, where HER2 signaling supports cardiomyocyte survival, and in development, where it regulates tissue morphogenesis. Abnormal phosphorylation patterns may therefore impact not only tumors but also cardiac and developmental biology. Phospho-ErbB2 (pTyr1221/pTyr1222) antibody supports research across these diverse biological areas.

Phospho-ErbB2 (pTyr1221/pTyr1222) antibody from NSJ Bioreagents provides strong specificity and sensitivity for this critical phosphorylation event. Its validated performance ensures accurate detection of activated HER2 in cancer and signaling research, supporting both fundamental studies and translational therapeutic development.

Application Notes

Optimal dilution of the Phospho-ErbB2 (pTyr1221/pTyr1222) antibody should be determined by the researcher.

Immunogen

A synthesized peptide derived from human Phospho-ErbB2(pY1221 + pY1222) was used as the immunogen for the Phospho-ErbB2 (pTyr1221/Tyr1222) antibody.

Storage

Store the Phospho-ErbB2 (pTyr1221/pTyr1222) antibody at -20oC.

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