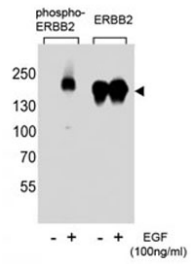
Phospho-ErbB2 (pY1221) Antibody / Signaling Docking Site Marker (F52419)

Catalog No.	Formulation	Size
F52419-0.4ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.4 ml
F52419-0.08ML	In 1X PBS, pH 7.4, with 0.09% sodium azide	0.08 ml

Bulk quote request

Availability	1-3 business days
Species Reactivity	Human
Format	Antigen affinity purified
Host	Rabbit
Clonality	Polyclonal (rabbit origin)
Isotype	Rabbit Ig
Purity	Antigen affinity
UniProt	P04626
Applications	Western blot: 1:1000-2000
Limitations	This Phospho-ErbB2 (pY1221) Antibody / Signaling Docking Site Marker is available for research use only.



Phospho-ErbB2 (pY1221) Antibody EGF-Stimulated WB. Western blot analysis of human A431 cell lysates treated with or without EGF (100 ng/ml) using Phospho-ErbB2 (pY1221) Antibody demonstrates a band at approximately 185 kDa in EGF-stimulated samples, consistent with the predicted molecular weight of phosphorylated ErbB2 / HER2, while untreated samples show reduced signal; parallel detection with a non-phospho ErbB2 antibody confirms total receptor expression across conditions, supporting phosphorylation-dependent signaling at Tyr1221.

Description

ErbB2 receptor tyrosine kinase 2 (ERBB2), also known as HER2, undergoes phosphorylation at multiple intracellular tyrosine residues that regulate the initiation of signaling cascades and downstream pathway activation. Phospho-ErbB2 (pY1221) antibody, also referred to as phospho-HER2 antibody and phospho-ERBB2 antibody in the literature, detects phosphorylation at tyrosine 1221, a site involved in recruitment of adaptor proteins that initiate HER2-mediated signaling. For analysis of downstream HER2 signaling propagation, see our Phospho-ErbB2 (pY1222) antibody.

Phosphorylation at Y1221 occurs within a conserved intracellular motif that facilitates binding of SH2 domain-containing proteins. These interactions enable activation of downstream signaling pathways such as PI3K/AKT and MAPK, which regulate cell proliferation, survival, and metabolic activity. As a result, phosphorylation at this residue is closely associated with the initiation phase of HER2 signaling, where adaptor recruitment and pathway engagement begin.

HER2-driven signaling plays a major role in tumor biology, particularly in cancers characterized by ERBB2 amplification such as breast carcinoma. In these contexts, phosphorylation at Y1221 contributes to formation of signaling complexes that promote tumor cell growth and survival. Detection of this phosphorylation site provides insight into early receptor activation and pathway engagement prior to full signal amplification.

Y1221 is located in close proximity to Y1222 and functions as part of a coordinated phosphorylation cluster that regulates adaptor binding and signal propagation. While Y1221 supports recruitment of signaling proteins, adjacent residues contribute to sustained signaling and pathway amplification, highlighting the importance of this region in controlling HER2 signaling dynamics.

Because phosphorylation at Y1221 occurs early in the activation process, detection of this site can be used to study initial signaling responses following receptor engagement. This is particularly useful in experimental systems examining ligand-independent activation, receptor dimerization, or early signaling kinetics.

Phospho-specific detection of ERBB2 at Y1221 enables analysis of receptor activation at an early stage, complementing detection of downstream phosphorylation sites such as Y1248. This distinction allows researchers to differentiate between signaling initiation and later stages of pathway activation.

For detection of activated HER2 phosphorylation, see our HER2 phospho antibody (pY1248).

Application Notes

Titration of the Phospho-ErbB2 (pY1221) Antibody / Signaling Docking Site Marker may be required due to differences in protocols and secondary/substrate sensitivity.

Immunogen

This phospho-ErbB2 antibody was produced from rabbits immunized with a KLH conjugated synthetic phosphopeptide corresponding to amino acid residues surrounding pY1221 of the human protein.

Storage

Aliquot the phospho-ErbB2 antibody and store frozen at -20oC or colder. Avoid repeated freeze-thaw cycles.

Alternate Names

Phospho-ErbB2 (pY1221) antibody, phospho-HER2 Tyr1221 antibody, ERBB2 pY1221 antibody, HER2 docking site antibody

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