SANTA CRUZ BIOTECHNOLOGY, INC.

p-Neu (9E10): sc-81509

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The Power to Question

BACKGROUND

Neu (v-ErbB-2 erythroblastic leukemia viral oncogene homolog 2, HER-2, NGL, TKR1, c-ErbB-2) oncogene was originally cloned from a rat neuroglioblastoma. Human Neu is referred to as HER2 since the protein structure resembles human epidermal growth factor receptor (HER). ErbB-2 refers to a high level of similarity to ErbB (avian erythroblastosis oncogene B), later found to code for EGFR (HER). Tyr 1248 phosphorylated Neu localizes with Mucin4/ sialomucin complex at the apical surfaces of ductal and alveolar cells in rodent lactating gland. Phosphorylation of Neu at Tyr 1139 promotes association of GRB2 and GRB7 through a Src homology 2 (SH2) domain-dependent interaction, and contributes to the etiology of certain breast, gastric and esophageal cancers, and testicular germ cell tumors. Neu phosphorylation on Tyr 1221 and Tyr 1248 promotes association of Shc (SH2 domain-containing transforming protein 1) through an SH2 domain. Neu phosphorylation at Tyr 1196 and Tyr 1248 promotes association of Shc through a PTB (phosphotyrosine binding) domain. SH2 and PTB domains recognize tyrosine phosphorylated proteins in a sequence-specific fashion and transduce extracellular signals via subcellular targeting, directing assembly of complexes and modulating enzymatic activity.

REFERENCES

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2. Xie, Y., et al. 1995. Tyrosine phosphorylation of Shc proteins and formation of Shc/GRB2 complex correlate to the transformation of NIH/3T3 cells mediated by the point-mutation activated Neu. Oncogene 10: 2409-2413.
3. Ricci, A., et al. 1995. Analysis of protein-protein interactions involved in the activation of the Shc/GRB2 pathway by the ErbB-2 kinase. Oncogene 11: 1519-1529.
4. Janes, P.W., et al. 1997. Structural determinants of the interaction between the ErbB-2 receptor and the Src homology 2 domain of GRB7. J. Biol. Chem. 272: 8490-8497.
5. Alroy, I., et al. 1999. Neu differentiation factor stimulates phosphorylation and activation of the Sp1 transcription factor. Mol. Cell. Biol. 19: 1961-1972.
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7. Zhou, B.P., et al. 2001. HER-2/Neu induces p53 ubiquitination via Akt-mediated MDM2 phosphorylation. Nat. Cell Biol. 3: 973-982.
8. Xia, W., et al. 2004. Phosphorylation/cytoplasmic localization of $p21^{Cip1/WAF1}$ is associated with HER2/Neu overexpression and provides a novel combination predictor for poor prognosis in breast cancer patients. Clin. Cancer Res. 10: 3815-3824.

CHROMOSOMAL LOCATION

Genetic locus: ERBB2 (human) mapping to 17q12; Erbb2 (mouse) mapping to 11 D.

SOURCE

p-Neu (9E10) is a mouse monoclonal antibody raised against a phosphopeptide corresponding to amino acid residues surrounding Ser 1113 of Neu of human origin.

PRODUCT

Each vial contains 50 µg IgG_1 in 0.5 ml of PBS with < 0.1% sodium azide, 0.1% gelatin, PEG and sucrose.

APPLICATIONS

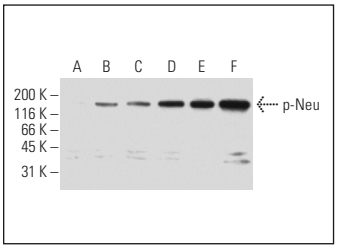
p-Neu (9E10) is recommended for detection of Ser 1113 phosphorylated Neu of human origin, and correspondingly phosphorylated Ser 1114 Neu of mouse origin and correspondingly phosphorylated Ser 1115 Neu of rat origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

Suitable for use as control antibody for Neu siRNA (h): sc-29405, Neu siRNA (m): sc-29406, Neu siRNA (r): sc-108038, Neu shRNA Plasmid (h): sc-29405-SH, Neu shRNA Plasmid (m): sc-29406-SH, Neu shRNA Plasmid (r): sc-108038-SH, Neu shRNA (h) Lentiviral Particles: sc-29405-V, Neu shRNA (m) Lentiviral Particles: sc-29406-V, Neu shRNA (r) Lentiviral Particles: sc-108038-V.

Molecular Weight of p-Neu: 138 kDa.

Positive Controls: serum starved PMA-treated A-431 whole cell lysate, serum starved bradykinin-treated A-431 whole cell lysate or serum starved pervanadate-treated A-431 whole cell lysate.

DATA



p-Neu (9E10): sc-81509. Western blot analysis of Neu phosphorylation in serum starved A-431 (**A**), and serum starved A-431 cells treated for 15 minutes with TGFβ (**B**), bradykinin (**C**), pervanadate (**D**), Anisomycin (**E**) and PMA (**F**) whole cell lysates.

STORAGE

Store at 4° C, **DO NOT FREEZE**. Stable for one year from the date of shipment. Non-hazardous. No MSDS required.

RESEARCH USE

For research use only, not for use in diagnostic procedures.