

p-Neu (Tyr 1221/1222): sc-101694

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

1. Akiyama, T., et al. 1991. The transforming potential of the *c-ErbB-2* protein is regulated by its autophosphorylation at the carboxyl-terminal domain. *Mol. Cell. Biol.* 11: 833-842.
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.
6. Thor, A.D., et al. 2000. Activation (tyrosine phosphorylation) of ErbB-2 (HER-2/Neu): a study of incidence and correlation with outcome in breast cancer. *J. Clin. Oncol.* 18: 3230-3239.

CHROMOSOMAL LOCATION

Genetic locus: ERBB2 (human) mapping to 17q12.

SOURCE

p-Neu (Tyr 1221/1222) is a rabbit polyclonal antibody raised against a short amino acid sequence containing Tyr 1221/1222 phosphorylated Neu of human origin.

PRODUCT

Each vial contains 100 µg IgG in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

p-Neu (Tyr 1221/1222) is recommended for detection of Tyr 1221/1222 phosphorylated Neu of human 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 shRNA Plasmid (h): sc-29405-SH and Neu shRNA (h) Lentiviral Particles: sc-29405-V.

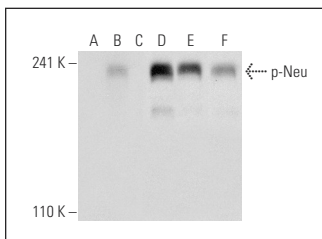
Molecular Weight of p-Neu: 185 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, SK-BR-3 cell lysate: sc-2218 or A-431 + EGF whole cell lysate: sc-2202.

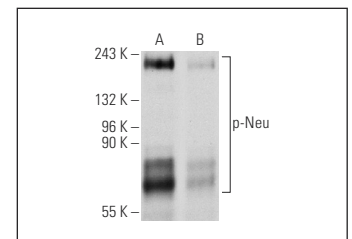
RECOMMENDED SECONDARY REAGENTS

To ensure optimal results, the following support (secondary) reagents are recommended: 1) Western Blotting: use goat anti-rabbit IgG-HRP: sc-2004 (dilution range: 1:2000-1:100,000) or Cruz Marker™ compatible goat anti-rabbit IgG-HRP: sc-2030 (dilution range: 1:2000-1:5000), Cruz Marker™ Molecular Weight Standards: sc-2035, TBS Blotto B Blocking Reagent: sc-2335 (use 50 mM NaF, sc-24988, as diluent), Western Blotting Luminol Reagent: sc-2048 and Lambda Phosphatase: sc-200312A. 2) Immunoprecipitation: use Protein A/G PLUS-Agarose: sc-2003 (0.5 ml agarose/2.0 ml).

DATA



Western blot analysis of Neu phosphorylation in untreated (A, D), Neuregulin-1 treated (B, E) and Neuregulin-1 and lambda protein phosphatase (sc-200312A) treated (C, F) T-47D whole cell lysates. Antibodies tested include p-Neu (Tyr 1221/1222): sc-101694 (A, B, C) and Neu (3B5): sc-33684 (D, E, F).



p-Neu (Tyr 1221/1222): sc-101694. Western blot analysis of Neu phosphorylation in EGF treated (A) and EGF and lambda protein phosphatase treated (B) A-431 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.

PROTOCOLS

See our web site at www.scbt.com or our catalog for detailed protocols and support products.