SANTA CRUZ BIOTECHNOLOGY, INC.

p-Neu (6G7): sc-81507

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

BACKGROUND

Neu (ErbB-2 erythroblastic leukemia viral oncogene homolog 2, HER-2, NGL, TKR1, c-erb B2) oncogene was originally cloned from a rat neuroglioblastoma. Human Neu is referred to as HER-2 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 Mucin 4/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 an 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.

CHROMOSOMAL LOCATION

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

SOURCE

p-Neu (6G7) is a mouse monoclonal antibody raised against phosphopeptide corresponding to amino acid residues surrounding tyrosine 1248 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.

STORAGE

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

APPLICATIONS

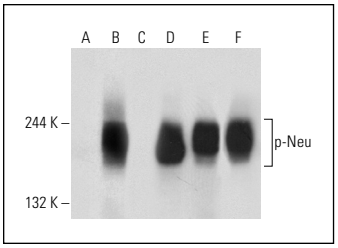
p-Neu (6G7) is recommended for detection of Tyr 1248 phosphorylated Neu of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) and immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)].

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

Molecular Weight of p-Neu: 138 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201, MDA-MB-231 cell lysate: sc-2232 or SK-BR-3 cell lysate: sc-2218.

DATA



Western blot analysis of Neu phosphorylation in untreated (**A**,**D**), EGF treated (**B**,**E**) and EGF and lambda protein phosphatase treated (**C**,**F**) A-431 whole cell lysates. Antibodies tested include p-Neu (6G7): sc-81507 (**A**,**B**,**C**) and Neu (C-18): sc-284 (**D**,**E**,**F**).

SELECT PRODUCT CITATIONS

1. Srivastava, S.K., et al. 2011. MicroRNA-150 directly targets MUC4 and suppresses growth and malignant behavior of pancreatic cancer cells. Carcinogenesis 32: 1832-1839.
2. Liu, N., et al. 2018. Increasing HER2 α2,6 sialylation facilitates gastric cancer progression and resistance via the Akt and ERK pathways. Oncol. Rep. 40: 2997-3005.
3. Dugaucquier, L., et al. 2020. The role of endothelial autocrine NRG1/ERBB4 signaling in cardiac remodeling. Am. J. Physiol. Heart Circ. Physiol. 319: H443-H455.
4. Li, Y., et al. 2021. Combination of curcumin and ginkgolide B inhibits cystogenesis by regulating multiple signaling pathways. Mol. Med. Rep. 23: 195.
5. Huang, J., et al. 2022. ZDHHC22-mediated mTOR palmitoylation restrains breast cancer growth and endocrine therapy resistance. Int. J. Biol. Sci. 18: 2833-2850.

RESEARCH USE

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