

Neu (42): sc-136294

BACKGROUND

The EGF receptor family comprises several related receptor tyrosine kinases that are frequently overexpressed in a variety of carcinomas. Members of this receptor family include EGFR (HER1), Neu (ErbB-2, HER2), ErbB-3 (HER3) and ErbB-4 (HER4), which form either homodimers or heterodimers upon ligand binding. Neu, a glycoprotein, undergoes transactivation upon heterodimerization with other EGF receptor family members. Neu heterodimerization with ErbB-3 recruits heregulin, which induces phosphoinositide (PI) 3-kinase activation. Activation of Neu potentiates tumor cell motility and protease secretion and invasion, and also modulates cell cycle checkpoint function, DNA repair and apoptotic responses. Amplification and/or overexpression of Neu occurs in 20-30% of breast carcinomas. Measurement of increased Neu expression can be a predictor of disease prognosis. Neu may also prove to be a promising target for therapeutic agents.

REFERENCES

1. Rubin, I. and Yarden, Y. 2001. The basic biology of HER2. *Ann. Oncol.* 12: S3-S8.
2. Eccles, S.A. 2001. The role of c-ErbB-2/HER2/Neu in breast cancer progression and metastasis. *J. Mammary Gland Biol. Neoplasia* 6: 393-406.
3. Hellyer, N.J., et al. 2001. Heregulin-dependent activation of phosphoinositide 3-kinase and Akt via the ErbB-2/ErbB-3 co-receptor. *J. Biol. Chem.* 276: 42153-42161.
4. Ukita, Y., et al. 2002. Gene amplification and mRNA and protein overexpression of c-ErbB-2 (HER-2/Neu) in human intrahepatic cholangiocarcinoma as detected by fluorescence *in situ* hybridization, *in situ* hybridization, and immunohistochemistry. *J. Hepatol.* 36: 780-785.
5. Hayes, D.F. and Thor, A.D. 2002. c-ErbB-2 in breast cancer: development of a clinically useful marker. *Semin. Oncol.* 29: 231-245.
6. Baxevasian, C.N., et al. 2002. HER-2/Neu-derived peptide epitopes are also recognized by cytotoxic CD3⁺CD56⁺ (natural killer T) lymphocytes. *Int. J. Cancer* 98: 864-872.
7. Cho, H.S., et al. 2003. Structure of the extracellular region of HER-2 alone and in complex with the Herceptin Fab. *Nature* 421: 756-760.

CHROMOSOMAL LOCATION

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

SOURCE

Neu (42) is a mouse monoclonal antibody raised against amino acids 182-373 of Neu of rat origin.

PRODUCT

Each vial contains 50 µg IgG_{2b} in 0.5 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

RESEARCH USE

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

APPLICATIONS

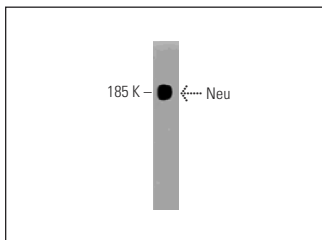
Neu (42) is recommended for detection of Neu of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)] and immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

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.

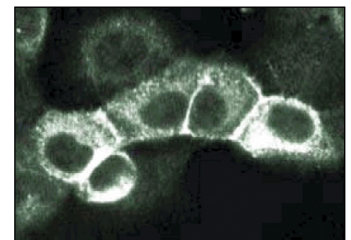
Molecular Weight of Neu: 185 kDa.

Positive Controls: A-431 whole cell lysate: sc-2201 or MCF7 whole cell lysate: sc-2206.

DATA



Neu (42): sc-136294. Western blot analysis of Neu expression in A-431 whole cell lysate.




Neu (42): sc-136294. Immunofluorescence staining of A-431 cells showing cytoplasmic and membrane localization.

STORAGE

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

PROTOCOLS

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



CONJUGATES

See **Neu (3B5): sc-33684** for Neu antibody conjugates, including AC, HRP, FITC, PE, and Alexa Fluor[®] 488, 546, 594, 647, 680 and 790.