

Neu (9G6): sc-08

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. 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.
2. 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.

CHROMOSOMAL LOCATION

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

SOURCE

Neu (9G6) is a mouse monoclonal antibody mapping to an extracellular domain of Neu of human origin.

PRODUCT

Each vial contains 100 µg IgG₁ in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

APPLICATIONS

Neu (9G6) is recommended for detection of Neu gp185 of human origin by immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500) and flow cytometry (1 µg per 1 x 10⁶ cells).

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 Neu: 185 kDa.

Positive Controls: SK-BR-3 cell lysate: sc-2218.

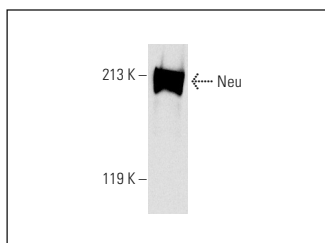
STORAGE

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

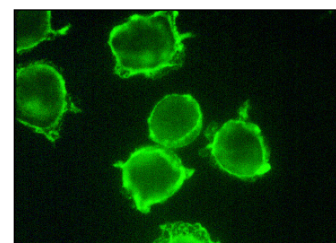
RESEARCH USE

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

DATA



Neu (9G6): sc-08. Western blot analysis of Neu expression in SK-BR-3 whole cell lysate.



Neu (9G6): sc-08. Immunofluorescence staining of methanol-fixed SK-BR-3 cells showing membrane localization.

SELECT PRODUCT CITATIONS

1. Bermingham-McDonogh, O., et al. 1996. Effects of GGF/neuregulins on neuronal survival and neurite outgrowth correlate with ErbB-2/Neu expression in developing rat retina. *Development* 122: 1427-1438.
2. Xu, C., et al. 2014. S100A14, a member of the EF-hand calcium-binding proteins, is overexpressed in breast cancer and acts as a modulator of HER2 signaling. *J. Biol. Chem.* 289: 827-837.
3. Asiaf, A., et al. 2015. Protein expression and methylation of MGMT, a DNA repair gene and their correlation with clinicopathological parameters in invasive ductal carcinoma of the breast. *Tumour Biol.* 36: 6485-6496.
4. Castagnola, P., et al. 2016. Identification of an HSP90 modulated multi-step process for ERBB2 degradation in breast cancer cells. *Oncotarget* 7: 85411-85429.
5. Peiris, D., et al. 2017. Cellular glycosylation affects Herceptin binding and sensitivity of breast cancer cells to doxorubicin and growth factors. *Sci. Rep.* 7: 43006.
6. Xu, J., et al. 2018. Estrogen receptor-α promoter methylation is a biomarker for outcome prediction of cisplatin resistance in triple-negative breast cancer. *Oncol. Lett.* 15: 2855-2862.
7. Alessandrini, F., et al. 2019. Eradication of glioblastoma by immunovirotherapy with a retargeted oncolytic HSV in a preclinical model. *Oncogene* 38: 4467-4479.
8. Zhang, J., et al. 2020. The deubiquitylase USP2 maintains ErbB-2 abundance via counteracting endocytic degradation and represents a therapeutic target in ErbB-2-positive breast cancer. *Cell Death Differ.* 27: 2710-2725.
9. Benedetti, F., et al. 2021. Bispecific antibodies with Fab-arms featuring exchanged antigen-binding constant domains. *Biochem. Biophys. Rep.* 26: 100959.

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.