SANTA CRUZ BIOTECHNOLOGY, INC.

Neu (F-11): sc-7301

SANTA CRUZ BIOTECHNOLOGY

The Power to Question

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.

CHROMOSOMAL LOCATION

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

SOURCE

Neu (F-11) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1220-1255 at the C-terminus of Neu of human origin.

PRODUCT

Each vial contains 200 µg IgG_{2a} kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Neu (F-11) is available conjugated to agarose (sc-7301 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-7301 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-7301 PE), fluorescein (sc-7301 FITC), Alexa Fluor® 488 (sc-7301 AF488), Alexa Fluor® 546 (sc-7301 AF546), Alexa Fluor® 594 (sc-7301 AF594) or Alexa Fluor® 647 (sc-7301 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-7301 AF680) or Alexa Fluor® 790 (sc-7301 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

In addition, Neu (F-11) is available conjugated to biotin (sc-7301 B), 200 µg/ml, for WB, IHC(P) and ELISA.

Blocking peptide available for competition studies, sc-7301 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

STORAGE

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

APPLICATIONS

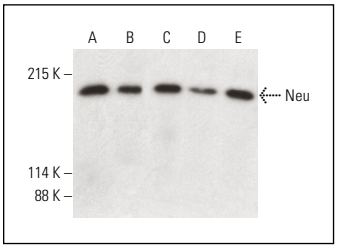
Neu (F-11) is recommended for detection of Neu gp185 of mouse, rat and human origin by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000), immunoprecipitation [1-2 µg per 100-500 µg of total protein (1 ml of cell lysate)], immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500), immunohistochemistry (including paraffin-embedded sections) (starting dilution 1:50, dilution range 1:50-1:500), flow cytometry (1 µg per 1 x 10^6 cells) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

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.

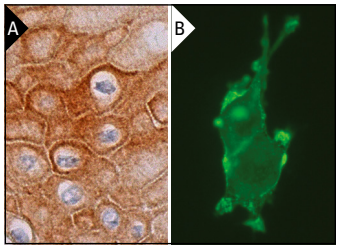
Molecular Weight of Neu: 185 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, SK-BR-3 cell lysate: sc-2218 or MDA-MB-231 cell lysate: sc-2232.

DATA



Neu (F-11): sc-7301. Western blot analysis of Neu expression in MDA-MB-231 (**A**), BT-20 (**B**), SK-BR-3 (**C**) and NIH/3T3 (**D**) whole cell lysates and human cervix tissue extract (**E**). Detection reagent used: m-IgG Fc BP-HRP: sc-525409.



Neu (F-11): sc-7301. Immunoperoxidase staining of formalin fixed, paraffin-embedded human uterine cervix tissue showing cytoplasmic and membrane staining of squamous epithelial cells (**A**). Immunofluorescence staining of methanol-fixed NIH/3T3 cells transfected with Neu showing membrane staining (**B**).

SELECT PRODUCT CITATIONS

1. Ma, C., et al. 2003. Overexpression of ErbB-2 enhances ethanol-stimulated intracellular signaling and invasion of human mammary epithelial and breast cancer cells *in vitro*. Oncogene 22: 5281-5290.
2. Yang, Y., et al. 2018. The novel dithiocarbamate, DpdtC suppresses HER2-overexpressed cancer cells by up-regulating NDRG1 via inactivation of HER2-ERK 1/2 signaling. Sci. Rep. 8: 3398.
3. Kosack, L., et al. 2019. The ERBB-STAT3 axis drives tasmanian devil facial tumor disease. Cancer Cell 35: 125-139.
4. Pereira, P.M.R., et al. 2020. HER2-targeted PET imaging and therapy of hyaluronan-masked HER2-overexpressing breast cancer. Mol. Pharm. 17: 327-337.

RESEARCH USE

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