

Neu (A-2): sc-393712

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 hetero-dimerization 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 (A-2) is a mouse monoclonal antibody specific for an epitope mapping between amino acids 1180-1197 within a C-terminal cytoplasmic domain of Neu of human origin.

PRODUCT

Each vial contains 200 µg IgG₁ kappa light chain in 1.0 ml of PBS with < 0.1% sodium azide and 0.1% gelatin.

Neu (A-2) is available conjugated to agarose (sc-393712 AC), 500 µg/0.25 ml agarose in 1 ml, for IP; to HRP (sc-393712 HRP), 200 µg/ml, for WB, IHC(P) and ELISA; to either phycoerythrin (sc-393712 PE), fluorescein (sc-393712 FITC), Alexa Fluor® 488 (sc-393712 AF488), Alexa Fluor® 546 (sc-393712 AF546), Alexa Fluor® 594 (sc-393712 AF594) or Alexa Fluor® 647 (sc-393712 AF647), 200 µg/ml, for WB (RGB), IF, IHC(P) and FCM; and to either Alexa Fluor® 680 (sc-393712 AF680) or Alexa Fluor® 790 (sc-393712 AF790), 200 µg/ml, for Near-Infrared (NIR) WB, IF and FCM.

Blocking peptide available for competition studies, sc-393712 P, (100 µg peptide in 0.5 ml PBS containing < 0.1% sodium azide and 0.2% stabilizer protein).

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STORAGE

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

APPLICATIONS

Neu (A-2) is recommended for detection of Neu of mouse, rat and human origin by Western Blotting (starting dilution 1:100, 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) and solid phase ELISA (starting dilution 1:30, dilution range 1:30-1:3000).

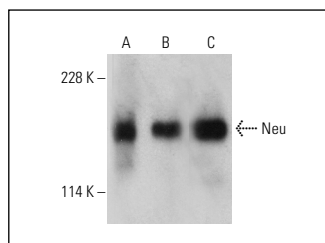
Neu (A-2) is also recommended for detection of Neu in additional species, including equine.

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.

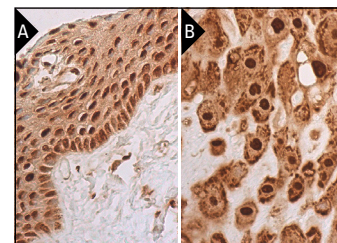
Molecular Weight of Neu: 185 kDa.

Positive Controls: NIH/3T3 whole cell lysate: sc-2210, MDA-MB-231 cell lysate: sc-2232 or MCF7 whole cell lysate: sc-2206.

DATA



Neu (A-2) HRP: sc-393712 HRP. Direct western blot analysis of Neu expression in NIH/3T3 (A), MDA-MB-231 (B) and MCF7 (C) whole cell lysates.



Neu (A-2): sc-393712. Immunoperoxidase staining of formalin fixed, paraffin-embedded human uterine cervix tissue showing cytoplasmic and nuclear staining of squamous epithelial cells (A). Immunoperoxidase staining of formalin fixed, paraffin-embedded human placenta tissue showing cytoplasmic, membrane and nuclear staining of decidual cells (B).

SELECT PRODUCT CITATIONS

1. De Santis, R., et al. 2014. Efficacy of aerosol therapy of lung cancer correlates with EGFR paralysis induced by AvidinOX-anchored biotinylated cetuximab. *Oncotarget* 5: 9239-9255.
2. He, Y.H., et al. 2021. ERα determines the chemo-resistant function of mutant p53 involving the switch between lincRNA-p21 and DDB2 expressions. *Mol. Ther. Nucleic Acids* 25: 536-553.
3. Maadi, H. and Wang, Z. 2022. A novel mechanism underlying the inhibitory effects of trastuzumab on the growth of HER2-positive breast cancer cells. *Cells* 11: 4093.

RESEARCH USE

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