SANTA CRUZ BIOTECHNOLOGY, INC.

# Neu siRNA (h): sc-29405

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*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.

## CHROMOSOMAL LOCATION

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

## PRODUCT

Neu siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Neu shRNA Plasmid (h): sc-29405-SH and Neu shRNA (h) Lentiviral Particles: sc-29405-V as alternate gene silencing products.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Neu siRNA (h) is recommended for the inhibition of Neu expression in human cells.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

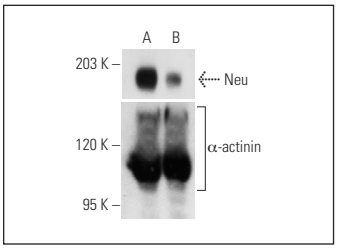
## GENE EXPRESSION MONITORING

Neu (3B5): sc-33684 is recommended as a control antibody for monitoring of Neu gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Neu gene expression knockdown using RT-PCR Primer: Neu (h)-PR: sc-29405-PR (20 µl, 425 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## DATA




Neu siRNA (h): sc-29405. Western blot analysis of Neu expression in non-transfected control (**A**) and Neu siRNA transfected (**B**) A-431 cells. Blot probed with Neu (C-18): sc-284. α-actinin (H-2): sc-17829 used as specificity and loading control.

## SELECT PRODUCT CITATIONS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3. Li, Y.W., et al. 2011. Furanodienone induces cell cycle arrest and apoptosis by suppressing EGFR/HER2 signaling in HER2-overexpressing human breast cancer cells. Cancer Chemother. Pharmacol. 68: 1315-1323.
4. Ma, S., et al. 2016. Ferroptosis is induced following siramesine and lapatinib treatment of breast cancer cells. Cell Death Dis. 7: e2307.
5. Shu, T., et al. 2017. Down-regulation of HECTD3 by HER2 inhibition makes serous ovarian cancer cells sensitive to platinum treatment. Cancer Lett. 411: 65-73.
6. Shin, D.H., et al. 2018. Dual targeting of ERBB2/ERBB3 for the treatment of SLC3A2-NRG1-mediated lung cancer. Mol. Cancer Ther. 17: 2024-2033.
7. Aihara, Y., et al. 2019. Algal photoprotection is regulated by the E3 ligase CUL4-DDB1$^{DET1}$. Nat. Plants 5: 34-40.
8. Liu, H., et al. 2021. Erb-B2 Receptor Tyrosine Kinase 2 is negatively regulated by the p53-responsive microRNA-3184-5p in cervical cancer cells. Oncol. Rep. 45: 95-106.


## RESEARCH USE

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