SANTA CRUZ BIOTECHNOLOGY, INC.

# ErbB-3 siRNA (h): sc-35327

## 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. Full length ErbB-3 is overexpressed in human mammary tumors. The ErbB-3 gene also produces several alternative variants, including a secreted form which negatively regulates heregulin stimulated ErbB activation. ErbB-3 heterodimerizes with Neu and binds heregulin in order to activate phosphoinositide (PI) 3-kinase. The recruitment and activation of PI 3-kinase occurs via its interaction with phosphorylated YXXM motifs in the carboxy terminus of ErbB-3.

## CHROMOSOMAL LOCATION

Genetic locus: ERBB3 (human) mapping to 12q13.2.

## PRODUCT

ErbB-3 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 ErbB-3 shRNA Plasmid (h): sc-35327-SH and ErbB-3 shRNA (h) Lentiviral Particles: sc-35327-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

ErbB-3 siRNA (h) is recommended for the inhibition of ErbB-3 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.

## PROTOCOLS

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

## GENE EXPRESSION MONITORING

ErbB-3 (G-4): sc-7390 is recommended as a control antibody for monitoring of ErbB-3 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 ErbB-3 gene expression knockdown using RT-PCR Primer: ErbB-3 (h)-PR: sc-35327-PR (20 µl, 443 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS


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4. Kim, J., et al. 2013. HRG-β1-driven ErbB3 signaling induces epithelial-mesenchymal transition in breast cancer cells. BMC Cancer 13: 383.
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6. Jeong, H., et al. 2014. Neuregulin-1 induces cancer stem cell characteristics in breast cancer cell lines. Oncol. Rep. 32: 1218-1224.
7. He, C., et al. 2015. YAP forms autocrine loops with the ErbB pathway to regulate ovarian cancer initiation and progression. Oncogene 34: 6040-6054.
8. Kim, J., et al. 2016. Anti-cancer effect of metformin by suppressing signaling pathway of HER2 and HER3 in tamoxifen-resistant breast cancer cells. Tumour Biol. 37: 5811-5819.
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11. Aihara, Y., et al. 2019. Algal photoprotection is regulated by the E3 ligase CUL4-DDB1$^{DET1}$. Nat. Plants 5: 34-40.
12. Li, Z., et al. 2019. Co-targeting EGFR and IKKβ/NFκB signalling pathways in head and neck squamous cell carcinoma: a potential novel therapy for head and neck squamous cell cancer. Br. J. Cancer 120: 306-316.


## RESEARCH USE

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