SignalSilence® HER3/ErbB3 siRNA II

#6422 Store at -20°C

☑ 10 µM in 300 µl
(100 transfections)

Cell Signaling TECHNOLOGY®

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For Research Use Only. Not For Use In Diagnostic Procedures.

Species Cross-Reactivity: H

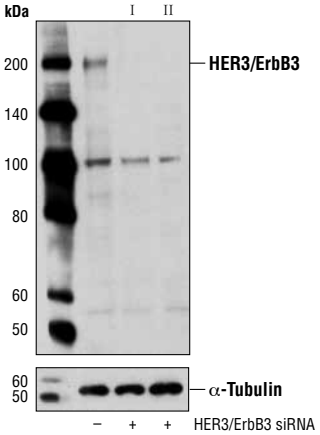
Description: SignalSilence® HER3/ErbB3 siRNA II from Cell Signaling Technology (CST) allows the researcher to specifically inhibit HER3/ErbB3 expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence® siRNA products from CST are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

Background: HER3/ErbB3 is a member of the ErbB receptor protein tyrosine kinase family, but lacks tyrosine kinase activity. Tyrosine phosphorylation of ErbB3 depends on its association with other ErbB tyrosine kinases. Upon ligand binding, heterodimers form between ErbB3 and other ErbB proteins and ErbB3 is phosphorylated on tyrosine residues by the activated ErbB kinase (1,2). There are at least 9 potential tyrosine phosphorylation sites in the carboxy-terminal tail of ErbB3. These sites serve as consensus binding sites for signal transducing proteins, including Src family members, Grb2 and the p85 subunit of PI3 kinase, which mediate ErbB-downstream signaling (3). Both Tyr1222 and Tyr1289 of ErbB3 reside within a YXXM motif and participate in signaling to PI3 kinase (4).

ErbB3 is highly expressed in many cancer cells (5) and activation of the ErbB3/PI3 kinase pathway is correlated with malignant phenotypes of adenocarcinomas (6). In tumor development, ErbB3 may function as an oncogenic unit together with other ErbB members, e.g. ErbB2 requires ErbB3 to drive breast tumor cell proliferation (7). Thus, prevention of the interaction between ErbB3 and ErbB tyrosine kinases has become a novel anti-tumor strategy.

Directions for Use: CST recommends transfection with 100 nM HER3/ErbB3 siRNA II 48 to 72 hours prior to cell lysis. For transfection procedure, follow protocol provided by the transfection reagent manufacturer. Please feel free to contact CST with any questions on use.

Quality Control: Oligonucleotide synthesis is monitored base by base through trityl analysis to ensure appropriate coupling efficiency. The oligo is subsequently purified by affinity-solid phase extraction. The annealed RNA duplex is further analyzed by mass spectrometry to verify the exact composition of the duplex. Each lot is compared to the previous lot by mass spectrometry to ensure maximum lot-to-lot consistency.



Western blot analysis of extracts from OVCAR8 cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® HER3/ErbB3 siRNA I #6504 (+) or SignalSilence® HER3/ErbB3 siRNA II (+), using HER3/ErbB3 (1B2E) Rabbit mAb #4754 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The HER3/ErbB3 (1B2E) Rabbit mAb confirms silencing of HER3/ErbB3 expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #2065
Swiss-Prot Acc. #P21860

Storage: HER3/ErbB3 siRNA II is supplied in RNAse-free water. *Aliquot and store at -20°C.*

Please visit www.cellsignal.com for a complete listing of recommended companion products.

Background References:

(1) Yarden, Y. and Sliwkowski, M.X. (2001) *Nature Rev. Mol. Cell. Biol.* 2, 127-137.

(2) Guy, P.M. et al. (1994) *Proc. Natl. Acad. Sci. USA* 91, 8132-8136.

(3) Songyang, Z. et al. (1993) *Cell* 72, 767-778.

(4) Kim, H.H. et al. (1994) *J. Biol. Chem.* 269, 24747-24755.

(5) Sithanandam, G. et al. (2003) *Carcinogenesis* 24, 1581-1592.

(6) Kobayashi, M. et al. (2003) *Oncogene* 22, 1294-1301.

(7) Holbro, T. et al. (2003) *Proc. Natl. Acad. Sci. USA* 100, 8933-8938.

Applications Key: **W**—Western **IP**—Immunoprecipitation **IHC**—Immunohistochemistry **ChIP**—Chromatin Immunoprecipitation **IF**—Immunofluorescence **F**—Flow cytometry **E-P**—ELISA-Peptide

Species Cross-Reactivity Key: **H**—human **M**—mouse **R**—rat **Hm**—hamster **Mk**—monkey **Mi**—mink **C**—chicken **Dm**—D. melanogaster **X**—Xenopus **Z**—zebrafish **B**—bovine **Dg**—dog **Pg**—pig **Sc**—S. cerevisiae **Ce**—C. elegans **Hr**—Horse **All**—all species expected Species enclosed in parentheses are predicted to react based on 100% homology.