

## SignalSilence® Prolactin Receptor siRNA I



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

**Species Cross-Reactivity: H**

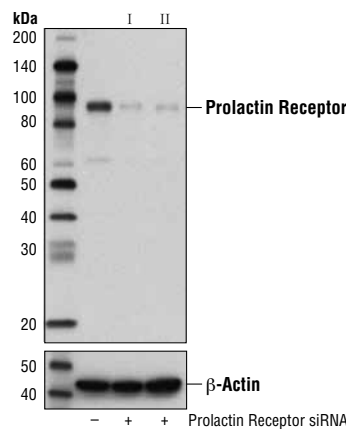
**Description:** SignalSilence® Prolactin Receptor siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit prolactin receptor expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA 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:** Prolactin receptor (PRLR) is a single-pass transmembrane receptor that mediates the actions of prolactin, a peptide hormone secreted by the anterior pituitary. PRLR is a type 1 cytokine receptor that is best known for promoting lactation in mammals, but which is also implicated in osmoregulation, metabolism, and immune system function (1). Research studies suggest that PRLR activation may promote tumor growth (2). Prolactin signaling via PRLR can activate multiple signal transduction pathways in breast cancer cells, including the Jak/Stat, PI3K/Akt, and MAPK pathways, leading to both pro-proliferative and anti-apoptotic downstream effects (3,4). Nine isoforms of PRLR have been identified, with the canonical (long) isoform primarily responsible for the pro-oncogenic effects of PRLR in some cancer cell lines (3). Much less is known about the functions of the other prolactin receptor isoforms. Defining the precise role of PRLR in promoting growth of breast cancer and other tumor types remains an area of active investigation (2).

**Directions for Use:** CST recommends transfection with 100 nM SignalSilence® Prolactin Receptor siRNA I 48 to 72 hours prior to cell lysis. For transfection procedure, follow the protocol provided by the transfection reagent manufacturer. Please feel free to contact CST with any questions on use.

Each vial contains the equivalent of 100 transfections, which corresponds to a final siRNA concentration of 100 nM per transfection in a 24-well plate with a total volume of 300 µl per well.

**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 MCF7 cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® Prolactin Receptor siRNA I (+), or SignalSilence® Prolactin Receptor siRNA II #13836 (+), using Prolactin Receptor (D4A9) Rabbit mAb #13552 (upper) or β-Actin (D6A8) Rabbit mAb #8457 (lower). The Prolactin Receptor (D4A9) Rabbit mAb confirms silencing of prolactin receptor expression, while the β-Actin (D6A8) Rabbit mAb is used as a loading control.

Entrez-Gene ID #5618  
UniProt Acc. #P16471

**Storage:** Prolactin Receptor siRNA I is supplied in RNase-free water. Aliquot and store at -20°C.

For product specific protocols please see the web page for this product at [www.cellsignal.com](http://www.cellsignal.com).

Please visit [www.cellsignal.com](http://www.cellsignal.com) for a complete listing of recommended companion products.

**Background References:**

- (1) Ignacak, A. et al. (2012) *J Physiol Pharmacol* 63, 435-43.
- (2) Damiano, J.S. and Wasserman, E. (2013) *Clin Cancer Res* 19, 1644-50.
- (3) Galsgaard, E.D. et al. (2009) *J Endocrinol* 201, 115-28.
- (4) Aksamitiene, E. et al. (2011) *Cell Signal* 23, 1794-805.