

# SignalSilence® Stat3 siRNA I

✓ 10 µM in 300 µl  
(100 Transfections)

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New 03/09

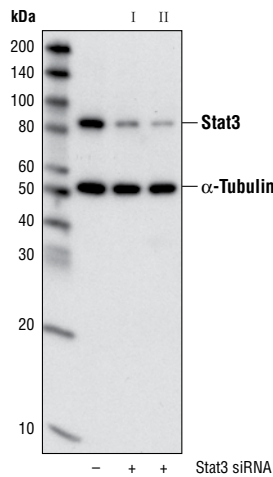
This product is for *in vitro* research use only and is not intended for use in humans or animals.  
This product is not intended for use as a therapeutic or in diagnostic procedures.

## Species Cross-Reactivity: H

**Description:** SignalSilence® Stat3 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit Stat3 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:** The Stat3 transcription factor is an important signaling molecule for many cytokines and growth-factor receptors (1) and is required for murine fetal development (2). Stat3 is constitutively activated in a number of human tumors (3,4) and possesses oncogenic potential (5) and anti-apoptotic activities (3). Stat3 is activated by phosphorylation at Tyr705, which induces dimerization, nuclear translocation and DNA binding (6,7). Transcriptional activation seems to be regulated by phosphorylation at Ser727 through the MAPK or mTOR pathways (8,9). Stat3 isoform expression appears to reflect biological function as the relative expression levels of Stat3α (86 kDa) and Stat3β (79 kDa) depend on cell type, ligand exposure or cell maturation stage (10). It is notable that Stat3β lacks the serine phosphorylation site within the carboxy-terminal transcriptional activation domain (8).

**Directions for Use:** CST recommends transfection with 100 nM Stat3 siRNA I 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.



Western blot analysis of extracts from HeLa cells, transfected with 100 nM SignalSilence® Control siRNA (Unconjugated) #6568 (-), SignalSilence® Stat3 siRNA I (+) or SignalSilence® Stat3 siRNA II #6582 (+), using Stat3 (79D7) Rabbit mAb #4904 and α-Tubulin (11H10) Rabbit mAb #2125. The Stat3 (79D7) Rabbit mAb confirms silencing of Stat3 expression, while the α-Tubulin (11H10) Rabbit mAb is used to control for loading and specificity of Stat3 siRNA.

**Entrez-Gene ID** #6774  
**Swiss-Prot Acc.** #P40763

**Storage:** Stat3 siRNA I is supplied in RNase-free water. Aliquot and store at -20°C.

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

## Background References:

- (1) Heim, M.H. (1999) *J. Recept. Signal Transduct. Res.* 19, 75–120.
- (2) Takeda, K. et al. (1997) *Proc. Natl. Acad. Sci. USA* 94, 3801–3804.
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- (4) Garcia, R. and Jove, R. (1998) *J. Biomed. Sci.* 5, 79–85.
- (5) Bromberg, J.F. et al. (1999) *Cell* 98, 295–303.
- (6) Darnell Jr., J.E. et al. (1994) *Science* 264, 1415–1421.
- (7) Ihle, J.N. (1995) *Nature* 377, 591–594.
- (8) Wen, Z. et al. (1995) *Cell* 82, 241–250.
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- (10) Biethahn, S. et al. (1999) *Exp. Hematol.* 27, 885–894.