

#6548 Store at -20°C

# SignalSilence® Tuberin/TSC2 siRNA II



✓ 10 µM in 300 µl (100 Transfections)

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

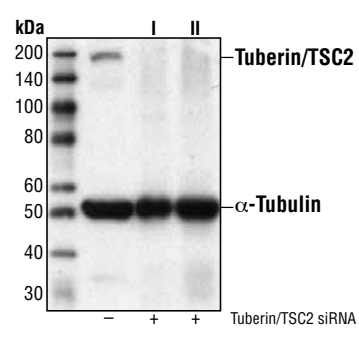
### Species Cross-Reactivity: H, M, R

**Description:** SignalSilence® Tuberin/TSC2 siRNA II from Cell Signaling Technology (CST) allows the researcher to specifically inhibit tuberin/TSC2 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 are rigorously tested in-house and have been shown to reduce target protein expression by western analysis.

**Background:** Tuberin, a product of the tumor suppressor gene TSC2, is important in regulating cell proliferation and tumor development (1). Mutations in either TSC1 or TSC2 are responsible for tuberous sclerosis complex (TSC), an autosomal dominant disorder (2). Tuberin is directly phosphorylated at Thr1462 by Akt/PKB (3). Phosphorylation at Thr1462 and Tyr1571 regulates tuberin-hamartin complexes and tuberin activity (3-5). In addition, tuberin inhibits the mammalian target of rapamycin (mTOR), resulting in inhibition of p70 S6 kinase and activation of eukaryotic initiation factor 4E binding protein 1 (4E-BP1, an inhibitor of translation initiation) and thus, inhibits translation (3,6,7).

**Directions for Use:** CST recommends transfection with 100 nM Tuberin/TSC2 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 HeLa cells, transfected with 100 nM SignalSilence® Control siRNA (Fluorescein Conjugate) #6201 (-) or SignalSilence® Tuberin/TSC2 siRNA I #6476 or SignalSilence® Tuberin/TSC2 siRNA II (+), using Tuberin/TSC2 (28A7) Rabbit mAb #3635 and α-Tubulin (11H10) Rabbit mAb #2125. Tuberin/TSC2 (28A7) Rabbit mAb confirms silencing of Tuberin/TSC2 expression and α-Tubulin (11H10) Rabbit mAb is used to control for loading and specificity of Tuberin/TSC2 siRNA.

Entrez-Gene ID #7249  
Swiss-Prot Acc. #P49815

**Storage:** Tuberin/TSC2 siRNA II is supplied in RNase-free water. Aliquot and store at -20°C.

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

### Background References:

- (1) Soucek, T. et al. (1998) *Proc. Natl. Acad. Sci. USA* 95, 15653-15658.
- (2) Sparagana, S.P. and Roach, E.S. (2000) *Curr. Opin. Neurol.* 13, 115-119.
- (3) Manning, B. D. et al. (2002) *Mol. Cell* 10, 151-161.
- (4) Aicher, L. D. et al. (2001) *J. Biol. Chem.* 276, 21017-21021.
- (5) Dan, H. C. et al. (2002) *J. Biol. Chem.* 277, 35364-35370.
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**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.