Store at -20°C

#6461

SignalSilence® Bim siRNA I

☑ 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, M, R

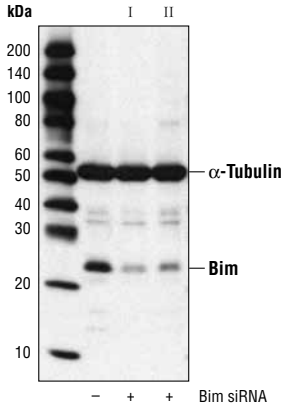
Description: SignalSilence® Bim siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit Bim expression using RNA interference, a method whereby gene expression can be selectively silenced through the delivery of double stranded RNA molecules into the cell. All SignalSilence®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

Background: Bim/Bod is a pro-apoptotic protein belonging to the BH3-only group of Bcl-2 family members including Bad, Bid, Bik, Hrk and Noxa that contain a BH3 domain but lack other conserved BH1 or BH2 domains (1,2). Bim induces apoptosis by binding to and antagonizing anti-apoptotic members of the Bcl-2 family. Interactions have been observed with Bcl-2, Bcl-xL, Mcl-1, Bcl-w, Bfl-1 and BHRF-1 (1,2). Bim functions in regulating apoptosis associated with thymocyte negative selection and following growth factor withdrawal, during which Bim expression is elevated (3-6). Three major isoforms of Bim are generated by alternative splicing: Bim_{EL}, Bim_L and Bim_S (1). The shortest form, Bim_S, is the most cytotoxic and is generally only transiently expressed during apoptosis. The Bim_{EL} and Bim_L isoforms may be sequestered to the dynein motor complex through an interaction with the dynein light chain and released from this complex during apoptosis (7). Apoptotic activity of these longer isoforms may be regulated by phosphorylation (8,9). Environmental stress triggers Bim phosphorylation by JNK and results in its dissociation from the dynein complex and increased apoptotic activity.

Previous studies have shown that silencing of Bim using siRNA can reduce paclitaxel-induced apoptosis (8).

Directions for Use: CST recommends transfection with 100 nM Bim 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.

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 (-), SignalSilence® Bim siRNA I (+) or SignalSilence® Bim siRNA II #6518 (+), using Bim (C34C5) Rabbit mAb and α-Tubulin (11H10) Rabbit mAb #2125. Bim (C34C5) rabbit mAb confirms silencing of Bim expression, while the α-tubulin (11H10) rabbit mAb is used to control for loading and specificity of Bim siRNA.

Entrez-Gene ID #10018
Swiss-Prot Acc. #043521

Storage: Bim siRNA I 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) O'Connor, L. et al. (1998) *EMBO J* 17, 384–95.
(2) Hsu, S.Y. et al. (1998) *Mol Endocrinol* 12, 1432–40.
(3) Bouillet, P. et al. (2002) *Nature* 415, 922–6.
(4) Whitfield, J. et al. (2001) *Neuron* 29, 629–43.
(5) Dijkers, P.F. et al. (2000) *Curr Biol* 10, 1201–4.
(6) Ley, R. et al. (2003) *J Biol Chem* 278, 18811–6.
(7) Puthalakath, H. et al. (1999) *Mol Cell* 3, 287–96.
(8) Lei, K. and Davis, R.J. (2003) *Proc Natl Acad Sci U S A* 100, 2432–7.
(9) Putcha, G.V. et al. (2003) *Neuron* 38, 899–914.
(10) Sunters, A. et al. (2003) *J Biol Chem* 278, 49795–805.

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.