#6315 Store at -20°C

SignalSilence® Mcl-1 siRNA I

☑ 10 µM in 300 µl
(100 transfections)

Cell Signaling TECHNOLOGY®

Orders ■ 877-616-CELL (2355)
orders@cellsignal.com
Support ■ 877-678-TECH (8324)
info@cellsignal.com
Web ■ www.cellsignal.com

rev. 02/10/16

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

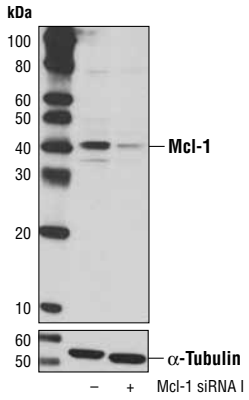
Species Cross-Reactivity: H

Description: SignalSilence® Mcl-1 siRNA I from Cell Signaling Technology (CST) allows the researcher to specifically inhibit Mcl-1 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: Mcl-1 is an anti-apoptotic member of the Bcl-2 family originally isolated from the ML-1 human myeloid leukemia cell line during phorbol ester-induced differentiation along the monocyte/macrophage pathway (1). Similar to other Bcl-2 family members, Mcl-1 localizes to the mitochondria (2), interacts with and antagonizes pro-apoptotic Bcl-2 family members (3), and inhibits apoptosis induced by a number of cytotoxic stimuli (4). Mcl-1 differs from its other family members in its regulation at both the transcriptional and post-translational level. First, Mcl-1 has an extended amino-terminal PEST region, which is responsible for its relatively short half-life (1,2). Second, unlike other family members, Mcl-1 is rapidly transcribed via a PI3K/Akt dependent pathway, resulting in its increased expression during myeloid differentiation and cytokine stimulation (1,5-7). Mcl-1 is phosphorylated in response to treatment with phorbol ester, microtubule-damaging agents, oxidative stress, and cytokine withdrawal (8-11). Phosphorylation at Thr163, the conserved MAP kinase/ERK site located within the PEST region, slows Mcl-1 protein turnover (10) but may prime the GSK-3 mediated phosphorylation at Ser159 that leads to Mcl-1 destabilization (11). Mcl-1 deficiency in mice results in peri-implantation lethality (12). In addition, conditional disruption of the corresponding *mcl-1* gene shows that Mcl-1 plays an important role in early lymphoid development and in the maintenance of mature lymphocytes (13).

Directions for Use: CST recommends transfection with 100 nM Mcl-1 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 (Unconjugated) #6568 (-) or SignalSilence® Mcl-1 siRNA I (+), using Mcl-1 (D35A5) Rabbit mAb #5453 (upper) or α-Tubulin (11H10) Rabbit mAb #2125 (lower). The Mcl-1 (D35A5) Rabbit mAb confirms silencing of Mcl-1 expression, while the α-Tubulin (11H10) Rabbit mAb is used as a loading control.

Entrez-Gene ID #4170
Swiss-Prot Acc. #Q07820

Storage: Mcl-1 siRNA I is supplied in RNAse-free water. *Aliquot and store at -20°C.*

Background References:

(1) Kozopas, K.M. et al. (1993) *Proc Natl Acad Sci USA* 90, 3516-20.
(2) Yang, T. et al. (1995) *J Cell Biol* 128, 1173-84.
(3) Sato, T. et al. (1994) *Proc Natl Acad Sci USA* 91, 9238-42.
(4) Zhou, P. et al. (1997) *Blood* 89, 630-43.
(5) Wang, J.M. et al. (1999) *Mol Cell Biol* 19, 6195-206.
(6) Jourdan, M. et al. (2003) *Oncogene* 22, 2950-9.
(7) Chao, J.R. et al. (1998) *Mol Cell Biol* 18, 4883-98.
(8) Domina, A.M. et al. (2000) *J Biol Chem* 275, 21688-94.
(9) Inoshita, S. et al. (2002) *J Biol Chem* 277, 43730-4.
(10) Domina, A.M. et al. (2004) *Oncogene* 23, 5301-15.
(11) Maurer, U. et al. (2006) *Mol Cell* 21, 749-60.
(12) Rinkenberger, J.L. et al. (2000) *Genes Dev* 14, 23-7.
(13) Opferman, J.T. et al. (2003) *Nature* 426, 671-6.

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.