SANTA CRUZ BIOTECHNOLOGY, INC.

# Bmi-1 siRNA (h): sc-29814

## BACKGROUND

In *Drosophila,* Polycomb (Pc-g) gene family encodes chromatin proteins that are required for the repression of homeotic loci in embryonic development. Mel-18 and Bmi-1, mammalian homologs of *Drosophila* Pc-g group proteins, are similarly expressed during development and implicated in the regulation of gene expression, axial skeleton development, control of proliferation and survival of haematopoietic cells. Mel-18 directly binds to DNA through a RING-finger motif and preferentially associates with juxtaposed enhancer elements on various genes, including Bcl-2, c-Myc and Hox. Mel-18 is an immediate early response gene within the c-Myc/Cdc25 signaling cascade that exhibits tumor suppressor activity and negatively regulates cell cycle progression by blocking S phase entry. Alternatively, Bmi-1 has been identified as a potent oncogene as it contributes to the transcriptional activation of genes implicated in early lymphoid development. Proviral activation of Bmi-1 expression corresponds to enhanced gene-specific activation of other proto-oncogenes, including c-Myc and Pim, subsequently resulting in the progression of lymphomagenesis.

## CHROMOSOMAL LOCATION

Genetic locus: BMI1 (human) mapping to 10p12.2.

## PRODUCT

Bmi-1 siRNA (h) is a pool of 3 target-specific 19-25 nt siRNAs designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Bmi-1 shRNA Plasmid (h): sc-29814-SH and Bmi-1 shRNA (h) Lentiviral Particles: sc-29814-V as alternate gene silencing products.

For independent verification of Bmi-1 (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-29814A, sc-29814B and sc-29814C.

## STORAGE AND RESUSPENSION

Store lyophilized siRNA duplex at -20° C with desiccant. Stable for at least one year from the date of shipment. Once resuspended, store at -20° C, avoid contact with RNAses and repeated freeze thaw cycles.

Resuspend lyophilized siRNA duplex in 330 µl of the RNAse-free water provided. Resuspension of the siRNA duplex in 330 µl of RNAse-free water makes a 10 µM solution in a 10 µM Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Bmi-1 siRNA (h) is recommended for the inhibition of Bmi-1 expression in human cells.

## PROTOCOLS

See our web site at www.scbt.com for detailed protocols and support products.

## SUPPORT REAGENTS

For optimal siRNA transfection efficiency, Santa Cruz Biotechnology's siRNA Transfection Reagent: sc-29528 (0.3 ml), siRNA Transfection Medium: sc-36868 (20 ml) and siRNA Dilution Buffer: sc-29527 (1.5 ml) are recommended. Control siRNAs or Fluorescein Conjugated Control siRNAs are available as 10 µM in 66 µl. Each contain a scrambled sequence that will not lead to the specific degradation of any known cellular mRNA. Fluorescein Conjugated Control siRNAs include: sc-36869, sc-44239, sc-44240 and sc-44241. Control siRNAs include: sc-37007, sc-44230, sc-44231, sc-44232, sc-44233, sc-44234, sc-44235, sc-44236, sc-44237 and sc-44238.

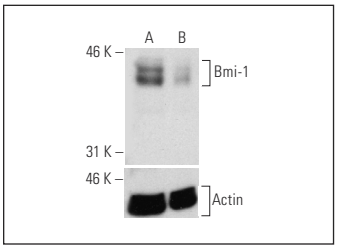
## GENE EXPRESSION MONITORING

Bmi-1 (F-9): sc-390443 is recommended as a control antibody for monitoring of Bmi-1 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Bmi-1 gene expression knockdown using RT-PCR Primer: Bmi-1 (h)-PR: sc-29814-PR (20 µl, 471 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## DATA




Bmi-1 siRNA (h): sc-29814. Western blot analysis of Bmi-1 expression in non-transfected control (**A**) and Bmi-1 siRNA transfected (**B**) HeLa cells. Blot probed with Bmi-1 (C-20): sc-8906. Actin (I-19): sc-1616 used as specificity and loading control.

## SELECT PRODUCT CITATIONS


1. Sasaki, M., et al. 2009. Polycomb group protein Bmi-1 is overexpressed and essential in anchorage-independent colony formation, cell proliferation and repression of cellular senescence in cholangiocarcinoma: tissue and culture studies. Hum. Pathol. 40: 1723-1730.
2. Mitra, S., et al. 2018. *Ehrlichia chaffeensis* TRP120 effector targets and recruits host Polycomb group proteins for degradation to promote intracellular infection. Infect. Immun. 86: e00845-17.
3. Li, B., et al. 2020. Bmi-1 drives hepatocarcinogenesis by repressing the TGFβ2/Smad signalling axis. Oncogene 39: 1063-1079.


## RESEARCH USE

For research use only, not for use in diagnostic procedures.