

# Bak siRNA (h): sc-29786

## BACKGROUND

The Bcl-2 family of proteins is characterized by its ability to modulate cell death (apoptosis) under a broad range of physiologic conditions. Bcl-2 and several related proteins function to inhibit apoptosis, while other members of the Bcl-2 family, such as Bax, accelerate death under various conditions. One member of the Bcl-2 family, designated Bak, functions primarily to enhance apoptotic cell death following appropriate activating signals and counteracts the protection from apoptosis provided by Bcl-2. Expression of Bak is widespread in a broad range of cells, including various long-lived, terminally differentiated cell types, suggesting that its cell-death-inducing activity is broadly distributed and that the regulation of inhibitors of apoptosis may represent an important determinant of tissue-specific modulation of apoptosis.

## CHROMOSOMAL LOCATION

Genetic locus: BAK1 (human) mapping to 6p21.31.

## PRODUCT

Bak siRNA (h) is a target-specific 19-25 nt siRNA designed to knock down gene expression. Each vial contains 3.3 nmol of lyophilized siRNA, sufficient for a 10  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Bak shRNA Plasmid (h): sc-29786-SH and Bak shRNA (h) Lentiviral Particles: sc-29786-V as alternate gene silencing products.

## STORAGE AND RESUSPENSION

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

Resuspend lyophilized siRNA duplex in 330  $\mu$ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330  $\mu$ l of RNase-free water makes a 10  $\mu$ M solution in a 10  $\mu$ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

## APPLICATIONS

Bak siRNA (h) is recommended for the inhibition of Bak expression in human cells.

## 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  $\mu$ M in 66  $\mu$ l. 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.

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

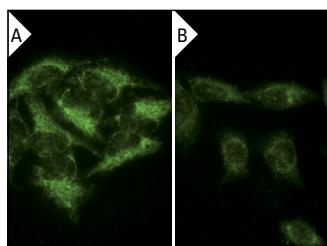
## GENE EXPRESSION MONITORING

Bak (AT38E2): sc-517390 is recommended as a control antibody for monitoring of Bak 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 Bak gene expression knockdown using RT-PCR Primer: Bak (h)-PR: sc-29786-PR (20  $\mu$ l, 469 bp). Annealing temperature for the primers should be 55-60 $^{\circ}$  C and the extension temperature should be 68-72 $^{\circ}$  C.

## DATA



Bak siRNA (h): sc-29786. Immunofluorescence staining of methanol-fixed, control HeLa (A) and Bak siRNA silenced HeLa (B) cells showing diminished cytoplasmic staining in the siRNA silenced cells. Cells probed with Bak (N-20): sc-1035.

## SELECT PRODUCT CITATIONS

- Cao, C., et al. 2006. Inhibition of mammalian target of rapamycin or apoptotic pathway induces autophagy and radiosensitizes PTEN null prostate cancer cells. *Cancer Res.* 66: 10040-10047.
- Lin, M.L., et al. 2011. Destabilization of CARP mRNAs by aloe-emodin contributes to caspase-8-mediated p53-independent apoptosis of human carcinoma cells. *J. Cell. Biochem.* 112: 1176-1191.
- Plötz, M., et al. 2012. Disruption of the VDAC2-Bak interaction by Bcl-x<sub>s</sub> mediates efficient induction of apoptosis in melanoma cells. *Cell Death Differ.* 19: 1928-1938.
- Plötz, M., et al. 2013. The BH3-only protein Bim(L) overrides Bcl-2-mediated apoptosis resistance in melanoma cells. *Cancer Lett.* 335: 100-108.
- Berger, A., et al. 2014. RAF inhibition overcomes resistance to TRAIL-induced apoptosis in melanoma cells. *J. Invest. Dermatol.* 134: 430-440.
- Tan, H., et al. 2015. Effects of interferons and double-stranded RNA on human prostate cancer cell apoptosis. *Oncotarget* 6: 39184-39195.
- Hu, S., et al. 2018. The long noncoding RNA LOC105374325 causes podocyte injury in individuals with focal segmental glomerulosclerosis. *J. Biol. Chem.* 293: 20227-20239.

## RESEARCH USE

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