



# Bcl-x siRNA (h): sc-77361

## BACKGROUND

The Bcl-2 gene was isolated at the chromosomal breakpoint of t(14;18) bearing follicular B cell lymphomas. Bcl-2 blocks cell death following a variety of stimuli and confers a death-sparing effect to certain hematopoietic cell lines following growth factor withdrawal. A second protein, designated Bcl-associated X protein (Bax) p21, has extensive amino acid homology with Bcl-2 and both homodimerizes and heterodimerizes with Bcl-2. Overexpression of Bax accelerates apoptotic death induced by cytokine deprivation in an IL-3-dependent cell line, and Bax also counters the death repressor activity of Bcl-2. Bcl-x, one of several additional proteins with sequence homology to Bcl-2, is expressed as Bcl-x<sub>L</sub>, a 233 amino acid protein with 43% sequence identity with Bcl-2 that suppresses cell death, and Bcl-x<sub>S</sub>, a shorter variant that is 178 amino acids in length and lacks a 63 amino acid region (amino acids 126-188) found in Bcl-x<sub>L</sub> and which functions as a dominant inhibitor of Bcl-2. A further apoptosis-inducing protein, Bad, dimerizes both with Bcl-x<sub>L</sub> and to a lesser extent with Bcl-2, thus displacing Bax and inducing apoptosis.

## CHROMOSOMAL LOCATION

Genetic locus: BCL2L1 (human) mapping to 20q11.21.

## PRODUCT

Bcl-x 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  $\mu$ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Bcl-x shRNA Plasmid (h): sc-77361-SH and Bcl-x shRNA (h) Lentiviral Particles: sc-77361-V as alternate gene silencing products.

For independent verification of Bcl-x (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-77361A, sc-77361B and sc-77361C.

## 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  $\mu$ 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

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

## PROTOCOLS

See our web site at [www.scbt.com](http://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  $\mu$ 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.

## GENE EXPRESSION MONITORING

Bcl-x<sub>L</sub> (H-5): sc-8392 is recommended as a control antibody for monitoring of Bcl-x 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).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgG $\kappa$  BP-HRP: sc-516102 or m-IgG $\kappa$  BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgG $\kappa$  BP-FITC: sc-516140 or m-IgG $\kappa$  BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Bcl-x gene expression knockdown using RT-PCR Primer: Bcl-x (h)-PR: sc-77361-PR (20  $\mu$ l, 474 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

## SELECT PRODUCT CITATIONS

- Yin, S., et al. 2011. Bcl-x<sub>L</sub> is a dominant antiapoptotic protein that inhibits homoharringtonine-induced apoptosis in leukemia cells. *Mol. Pharmacol.* 79: 1072-1083.
- Cui, S.Y., et al. 2013. Let-7c governs the acquisition of chemo- or radioresistance and epithelial-to-mesenchymal transition phenotypes in docetaxel-resistant lung adenocarcinoma. *Mol. Cancer Res.* 11: 699-713.
- Wu, C.Y., et al. 2014. *Acremonium* species combined with *Penicillium* species infection in hip hemiarthroplasty: a case report and literature review. *Hip Int.* 24: 656-659.
- Chiou, J.T., et al. 2023. BCL2L1 inhibitor A-1331852 inhibits MCL1 transcription and triggers apoptosis in acute myeloid leukemia cells. *Biochem. Pharmacol.* 215: 115738.
- Dong, X., et al. 2023. TRAF4-mediated ubiquitination-dependent activation of JNK/Bcl-x<sub>L</sub> drives radioresistance. *Cell Death Dis.* 14: 102.

## RESEARCH USE

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