SANTA CRUZ BIOTECHNOLOGY, INC.

Bcl-w siRNA (m): sc-37294

BACKGROUND

The Bcl-2 family of proteins is characterized by its ability to modulate cell death (apoptosis) under a broad range of physiological conditions. Bcl-2, A1 and Bcl-x_L function to inhibit apoptosis while other members of the Bcl-2 family, Bax, Bad, Bak and Bcl-x_S oppose their death-suppressing effects. Using a PCR-based strategy, an additional protein with life-promoting activity, designated Bcl-w, has been identified. The protein is highly conserved between mouse and human and is encoded by a gene located near the TCRα gene on chromosome 14. Bcl-w is expressed in myeloid cell lines but not in T and B lymphocytes, and can be found in a wide range of tissues. An alternative splicing event in exon 4 results in two transcripts. The first, Bcl-w, encodes a protein of 193 amino acids, and the second, Bcl-w/rox, encodes a protein 333 amino acids in length. The "rox" portion of Bcl-w/rox shows a striking 66% amino acid sequence identity with the *Drosophila* rox2 protein; however, the Bcl-w/rox transcript may be expressed at very low levels.

REFERENCES

1. Yang, E., et al. 1995. Bad, a heterodimeric partner for Bcl-x_L and Bcl-2, displaces Bax and promotes cell death. Cell 80: 285-291.
2. Craig, R.W., 1995. The Bcl-2 gene family. Semin. Cancer Biol. 6: 35-43.
3. Sedlak, T.W., et al. 1995. Multiple Bcl-2 family members demonstrate selective dimerizations with Bax. Proc. Natl. Acad. Sci. USA 92: 7834-7838.
4. Brand, S.F., et al. 1995. Novel *Drosophila melanogaster* genes encoding RRM-type RNA-binding proteins identified by a degenerate PCR strategy. Gene 154: 187-192.
5. Gibson, L., et al. 1996. Bcl-w, a novel member of the Bcl-2 family, promotes cell survival. Oncogene 13: 665-675.
6. Karsan, A., et al. 1996. Cloning of human Bcl-2 homologue: inflammatory cytokines induce human α1 in cultured endothelial cells. Blood 87: 3089-3096.
7. Chauhan, D., et al. 2007. A novel Bcl-2/Bcl-x_L/Bcl-w inhibitor ABT-737 as therapy in multiple myeloma. Oncogene 26: 2374-2380.
8. Lin, X., et al. 2007. "Seed" analysis of off-target siRNAs reveals an essential role of Mcl-1 in resistance to the small-molecule Bcl-2/Bcl-x_L inhibitor ABT-737. Oncogene 26: 3972-3979.

CHROMOSOMAL LOCATION

Genetic locus: Bcl2l2 (mouse) mapping to 14 C3.

PRODUCT

Bcl-w siRNA (m) 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 Bcl-w shRNA Plasmid (m): sc-37294-SH and Bcl-w shRNA (m) Lentiviral Particles: sc-37294-V as alternate gene silencing products.

For independent verification of Bcl-w (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-37294A, sc-37294B and sc-37294C.

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

Bcl-w siRNA (m) is recommended for the inhibition of Bcl-w expression in mouse 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 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

Bcl-w (2E4): sc-293236 is recommended as a control antibody for monitoring of Bcl-w 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-IgGκ BP-HRP: sc-516102 or m-IgGκ 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-IgGκ BP-FITC: sc-516140 or m-IgGκ 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-w gene expression knockdown using RT-PCR Primer: Bcl-w (m)-PR: sc-37294-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Briand, J., et al. 2019. Diuron exposure and Akt overexpression promote glioma formation through DNA hypomethylation. Clin. Epigenetics 11: 159.

RESEARCH USE

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