

A1 siRNA (h): sc-37285

BACKGROUND

The Bcl-2 family of proteins is characterized by its ability to modulate cell death under a broad range of physiological conditions. Bcl-2 and Bcl-x_L function to inhibit apoptosis while other members of the Bcl-2 family, Bax, Bad, Bak and Bcl-x_S, oppose death-suppressing effects. An additional member of the family, A1 (also designated Bfl-1), dimerizes with both Bcl-2 and Bax and has been identified as a hematopoietic-specific, early inducible gene. While A1 demonstrates life promoting properties similar to those of Bcl-2, its function may be more temporally regulated during myeloid differentiation and dependent on additional growth stimuli to confer its life promoting properties. A1 is abundantly expressed in bone marrow and at low levels in other tissues. There is evidence that a correlation exists between a high expression of the A1 gene product and stomach cancer.

REFERENCES

1. Korsmeyer, S.J., et al. 1993. Bcl-2/Bax: a rheostat that regulates an anti-oxidant pathway and cell death. *Semin. Cancer Biol.* 4: 327-332.
2. Craig, R.W. 1995. The Bcl-2 gene family. *Semin. Cancer Biol.* 6: 35-43.
3. 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.
4. Chittenden, T., et al. 1995. Induction of apoptosis by the Bcl-2 homologue Bak. *Nature* 374: 733-736.

CHROMOSOMAL LOCATION

Genetic locus: BCL2A1 (human) mapping to 15q25.1.

PRODUCT

A1 siRNA (h) is a pool of 2 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 A1 shRNA Plasmid (h): sc-37285-SH and A1 shRNA (h) Lentiviral Particles: sc-37285-V as alternate gene silencing products.

For independent verification of A1 (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-37285A and sc-37285B.

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

A1 siRNA (h) is recommended for the inhibition of A1 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 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

A1 (B-3): sc-166943 is recommended as a control antibody for monitoring of A1 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 A1 gene expression knockdown using RT-PCR Primer: A1 (h)-PR: sc-37285-PR (20 μl, 398 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Dhiman, R., et al. 2008. Inhibition of bfl-1/A1 by siRNA inhibits mycobacterial growth in THP-1 cells by enhancing phagosomal acidification. *Biochim. Biophys. Acta* 1780: 733-742.
2. Kathania, M., et al. 2011. Bfl-1/A1 acts as a negative regulator of autophagy in mycobacteria infected macrophages. *Int. J. Biochem. Cell Biol.* 43: 573-585.
3. Halder, P., et al. 2015. Gene expression profiling of *Mycobacterium tuberculosis* lipoarabinomannan-treated macrophages: a role of the Bcl-2 family member A1 in inhibition of apoptosis in mycobacteria-infected macrophages. *IUBMB Life* 67: 726-736.
4. Sarif, Z., et al. 2020. Mcl-1 targeting strategies unlock the proapoptotic potential of TRAIL in melanoma cells. *Mol. Carcinog.* 59: 1256-1268.

RESEARCH USE

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