



A1 siRNA (m): sc-37286

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.
5. Lin, E.Y., et al. 1996. A1, a Bcl-2 family member, prolongs cell survival and permits myeloid differentiation. *Blood* 87: 983-992.
6. Karsan, A., et al. 1996. Cloning of human Bcl-2 homologue: inflammatory cytokines induce human A1 in cultured endothelial cells. *Blood* 87: 3089-3096.
7. Kubota, Y., et al. 2007. Mcl-1 depletion in apoptosis elicited by ionizing radiation in peritoneal resident macrophages of C3H mice. *J. Immunol.* 178: 2923-2931.
8. Moller, C., et al. 2007. Bcl-2 and Bcl-x_L are indispensable for the late phase of mast cell development from mouse embryonic stem cells. *Exp. Hematol.* 35: 385-393.

CHROMOSOMAL LOCATION

Genetic locus: Bcl2a1b (mouse) mapping to 9 E3.1.

PRODUCT

A1 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see A1 shRNA Plasmid (m): sc-37286-SH and A1 shRNA (m) Lentiviral Particles: sc-37286-V as alternate gene silencing products.

For independent verification of A1 (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-37286A, sc-37286B and sc-37286C.

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

APPLICATIONS

A1 siRNA (m) is recommended for the inhibition of A1 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 μ M in 66 μ 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor A1 gene expression knockdown using RT-PCR Primer: A1 (m)-PR: sc-37286-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Kim, Y.H., et al. 2008. Combination therapy with cisplatin and anti-4-1BB: synergistic anticancer effects and amelioration of cisplatin-induced nephrotoxicity. *Cancer Res.* 68: 7264-7269.
2. Dandekar, P., et al. 2015. Enhanced uptake and siRNA-mediated knock-down of a biologically relevant gene using cyclodextrin polyrotaxane. *J. Mater. Chem. B* 3: 2590-2598.

RESEARCH USE

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

PROTOCOLS

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