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Bcl-11b siRNA (h): sc-43579

BACKGROUND

Bcl-11a (CtlP-1, EVI9, B cell chronic lymphocytic leukemia (CLL)/lymphoma 11A) and Bcl-11b (CtlP-2, RIT1, B cell CLL/lymphoma 11B) genes play crucial roles in lymphopoiesis and influence the progression of hematopoietic malignancies. Disruption of the Bcl-11b locus is linked to T cell acute lymphoblastic leukemia, and the loss of heterozygosity in mice results in T cell lymphoma. Bcl-11 proteins are related C₂H₂ zinc-finger transcription factors that act as transcriptional repressors. Bcl-11b can interact with the metastasis-associated proteins MTA1 and MTA2 through the amino-terminal region. Bcl-11a is essential for postnatal development and normal lymphopoiesis. The Bcl-11a mouse gene is a common site of retroviral integration in myeloid leukemia, and may function as a leukemia disease gene, in part, through its interaction with Bcl-6.

REFERENCES

1. Dyer, M.J., et al. 2002. The configuration of the immunoglobulin genes in B cell chronic lymphocytic leukemia. *Leukemia* 16: 973-984.
2. Avram, D., et al. 2002. COUP-TF (chicken ovalbumin upstream promoter transcription factor)-interacting protein 1 (CTIP1) is a sequence-specific DNA binding protein. *Biochem. J.* 368: 555-563.
3. Liu, P., et al. 2003. Bcl-11a is essential for normal lymphoid development. *Nat. Immunol.* 4: 525-532.
4. Durum, S.K. 2003. Bcl-11: sibling rivalry in lymphoid development. *Nat. Immunol.* 4: 512-514.

CHROMOSOMAL LOCATION

Genetic locus: BCL11B (human) mapping to 14q32.2.

PRODUCT

Bcl-11b 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Bcl-11b shRNA Plasmid (h): sc-43579-SH and Bcl-11b shRNA (h) Lentiviral Particles: sc-43579-V as alternate gene silencing products.

For independent verification of Bcl-11b (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-43579A, sc-43579B and sc-43579C.

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

Bcl-11b siRNA (h) is recommended for the inhibition of Bcl-11b 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 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.

GENE EXPRESSION MONITORING

Bcl-11b (F-4): sc-365320 is recommended as a control antibody for monitoring of Bcl-11b 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 κ BP-HRP: sc-516102 or m-IgG κ 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 κ BP-FITC: sc-516140 or m-IgG κ 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-11b gene expression knockdown using RT-PCR Primer: Bcl-11b (h)-PR: sc-43579-PR (20 μ l, 413 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Cismasiu, V.B., et al. 2006. BCL11B participates in the activation of IL2 gene expression in CD4⁺ T lymphocytes. *Blood* 108: 2695-2702.
2. Cismasiu, V.B., et al. 2009. BCL11B enhances TCR/CD28-triggered NF- κ B activation through up-regulation of Cot kinase gene expression in T-lymphocytes. *Biochem. J.* 417: 457-466.

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.