SANTA CRUZ BIOTECHNOLOGY, INC.

Blimp-1 siRNA (h): sc-37714

BACKGROUND

The development and differentiation of plasma cells, which are terminally differentiated B cells, are induced by Blimp-1 (B lymphocyte-induced maturation protein, also designated PRDI-BF1). Blimp-1 is a transcriptional repressor that localizes to the nucleus and is considered a master regulator of terminal B cell development. Alone, Blimp-1 is sufficient to trigger terminal B cell differentiation. Blimp-1 upregulates the expression of Syndecan-1 and J chain, represses IFN-β gene transcription and associates with HDAC to recruit it to DNA, thereby repressing c-Myc. Blimp-1 is expressed during the late stages of B cell differentiation in immunoglobulin-secreting plasma cells, as well as in long-lived, bone marrow plasma cells. The expression of Blimp-1 defines a checkpoint beyond which fully activated B cells proceed to the plasma cell stage, whereas immature and partially activated cells are eliminated.

REFERENCES

1. Turner, C.A., Jr., et al. 1994. Blimp-1, a novel zinc finger-containing protein that can drive the maturation of B lymphocytes into immunoglobulin-secreting cells. Cell 77: 297-306.
2. Messika, E.J., et al. 1998. Differential effect of B lymphocyte-induced maturation protein (Blimp-1) expression on cell fate during B cell development. J. Exp. Med. 188: 515-525.
3. Knodel, M., et al. 1999. Reversal of Blimp-1-mediated apoptosis by A1, a member of the Bcl-2 family. Eur. J. Immunol. 29: 2988-2998.
4. Angelin-Duclos, C., et al. 2000. Commitment of B lymphocytes to a plasma cell fate is associated with Blimp-1 expression *in vivo*. J. Immunol. 65: 5462-5471.
5. Shaffer, A.L., et al. 2000. Bcl-6 represses genes that function in lymphocyte differentiation, inflammation, and cell cycle control. Immunity 13: 199-212.
6. Yu, J., et al. 2000. Transcriptional repression by Blimp-1 (PRDI-BF1) involves recruitment of histone deacetylase. Mol. Cell. Biol. 20: 2592-2603.

CHROMOSOMAL LOCATION

Genetic locus: PRDM1 (human) mapping to 6q21.

PRODUCT

Blimp-1 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Blimp-1 shRNA Plasmid (h): sc-37714-SH and Blimp-1 shRNA (h) Lentiviral Particles: sc-37714-V as alternate gene silencing products.

For independent verification of Blimp-1 (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-37714A, sc-37714B and sc-37714C.

RESEARCH USE

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

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

Blimp-1 siRNA (h) is recommended for the inhibition of Blimp-1 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

Blimp-1 (6D3): sc-47732 is recommended as a control antibody for monitoring of Blimp-1 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).

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Blimp-1 gene expression knockdown using RT-PCR Primer: Blimp-1 (h)-PR: sc-37714-PR (20 µl, 499 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Hartman, M.L., et al. 2014. Gene expression profiling identifies microphthalmia-associated transcription factor (MITF) and Dickkopf-1 (DKK1) as regulators of microenvironment-driven alterations in melanoma phenotype. PLoS ONE 9: e95157.
2. Kang, H.B., et al. 2016. PRDM1, a tumor-suppressor gene, is induced by genkwadaphnin in human colon cancer SW620 cells. J. Cell. Biochem. 117: 172-179.

PROTOCOLS

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