

VpreB3 siRNA (m): sc-63215

BACKGROUND

VpreB (also known as CD179a or pre-B lymphocyte 1) is expressed in pre-B lymphocytes, but not in mature B cells or in other blood cell lineages. The gene which encodes VpreB maps to human chromosome 22q11.23. The VpreB and λ 5 genes encode the ι and ω polypeptide chains, respectively, which associate with the Ig- μ chain to form a molecular complex that is expressed on the surface of pre-B cells. This complex presumably regulates Ig gene rearrangements in the early steps of B cell differentiation. In the mouse the two genes are simultaneously expressed in pre-B cells and belong to the same transcription unit. A primary transcript is synthesized from which the pre-B and λ 5 mRNAs are derived by alternative splicing. In the human, however, the two genes are separate and do not belong to the same transcription unit.

REFERENCES

1. Kudo, A. and Melchers, F. 1987. A second gene, Vpre-B in the λ 5 locus of the mouse, which appears to be selectively expressed in pre-B lymphocytes. *EMBO J.* 6: 2267-2272.
2. Bauer, S.R., Huebner, K., Budarf, M., Finan, J., Erikson, J., Emanuel, B.S., Nowell, P.C., Croce, C.M. and Melchers, F. 1988. The human VpreB gene is located on chromosome 22 near a cluster of V λ gene segments. *Immunogenetics* 28: 328-333.
3. Pillai, S. and Baltimore, D. 1988. The ω and ι surrogate immunoglobulin light chains. *Curr. Top. Microbiol. Immunol.* 137: 136-139.
4. Mattei, M.G., Fumoux, F., Roedel, N., Fougereau, M. and Schiff, C. 1991. The human pre-B-specific λ -like cluster is located in the 22q11.2-22q12.3 region, distal to the IgC- λ locus. *Genomics* 9: 544-546.
5. Seidl, T., Rolink, A. and Melchers, F. 2001. The VpreB protein of the surrogate light-chain can pair with some μ heavy-chains in the absence of the λ 5 protein. *Eur. J. Immunol.* 31: 1999-2006.
6. Stephan, R.P., Elgavish, E., Karasuyama, H., Kubagawa, H. and Cooper, M.D. 2001. Analysis of VpreB expression during B lineage differentiation in λ 5-deficient mice. *J. Immunol.* 167: 3734-3739.
7. Licence, S., Persson, C., Mundt, C. and Martensson, I.L. 2003. The VpreB1 enhancer drives developmental stage-specific gene expression *in vivo*. *Eur. J. Immunol.* 33: 1117-1126.
8. Cannon, J.P., Haire, R.N., Pancer, Z., Mueller, M.G., Skapura, D., Cooper, M.D. and Litman, G.W. 2005. Variable domains and a VpreB-like molecule are present in a jawless vertebrate. *Immunogenetics* 56: 924-929.
9. Parker, M.J., Licence, S., Erlandsson, L., Galler, G.R., Chakalova, L., Osborne, C.S., Morgan, G., Fraser, P., Jumaa, H., Winkler, T.H., Skok, J. and Martensson, I.L. 2005. The pre-B cell receptor induces silencing of VpreB and λ 5 transcription. *EMBO J.* 24: 3895-3905.

CHROMOSOMAL LOCATION

Genetic locus: Vpreb3 (mouse) mapping to 10 C1.

PROTOCOLS

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

PRODUCT

VpreB3 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 VpreB3 shRNA Plasmid (m): sc-63215-SH and VpreB3 shRNA (m) Lentiviral Particles: sc-63215-V as alternate gene silencing products.

For independent verification of VpreB3 (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-63215A, sc-63215B and sc-63215C.

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

VpreB3 siRNA (m) is recommended for the inhibition of VpreB3 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 VpreB3 gene expression knockdown using RT-PCR Primer: VpreB3 (m)-PR: sc-63215-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

RESEARCH USE

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