SANTA CRUZ BIOTECHNOLOGY, INC.

VpreB siRNA (m): sc-44630

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 22q11.2. The VpreB and lambda 5 genes encode the iota and omega 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 lambda 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

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2. Bauer, S.R., et al. 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., et al. 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., et al. 2001. The VpreB protein of the surrogate light-chain can pair with some μ heavy-chains in the absence of the Lambda 5 protein. Eur. J. Immunol. 31: 1999-2006.
6. Stephan, R.P., et al. 2001. Analysis of VpreB expression during B lineage differentiation in Lambda 5-deficient mice. J. Immunol. 167: 3734-3739.
7. Licence, S., et al. 2003. The VpreB1 enhancer drives developmental stage-specific gene expression *in vivo*. Eur. J. Immunol. 33: 1117-1126.
8. Cannon, J.P., et al. 2005. Variable domains and a VpreB-like molecule are present in a jawless vertebrate. Immunogenetics 56: 924-929.
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CHROMOSOMAL LOCATION

Genetic locus: Vpreb2/Vpreb1 (mouse) mapping to 16 A3.

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.

PRODUCT

VpreB 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 μM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see VpreB shRNA Plasmid (m): sc-44630-SH and VpreB shRNA (m) Lentiviral Particles: sc-44630-V as alternate gene silencing products.

For independent verification of VpreB (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-44630A, sc-44630B and sc-44630C.

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

VpreB siRNA (m) is recommended for the inhibition of VpreB 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 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

VpreB (H-11): sc-514957 is recommended as a control antibody for monitoring of VpreB 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.