SANTA CRUZ BIOTECHNOLOGY, INC.

Lambda 5 siRNA (h): sc-44543

BACKGROUND

Lambda 5 (also called Immunoglobulin lambda-like polypeptide 1 or CD179b antigen) and VpreB comprise the surrogate light chain of the pre-B cell receptor complex. SL chain is also part of a quality control mechanism that tests a μ-chain for its ability to pair with conventional L chains. It can form Ig-like complexes with the heavy (H) chain, the DHJHC μ-protein or the p55 chain. Production of the surrogate light chain begins at the stage of pro-B cells, continues during the pre-B-cell stage and halts at the immature B cell stage. Once pre-BCR is expressed, SL chain expression is turned off. As pre-B II cells proliferate, SL is diluted out, thus limiting pre-BCR formation. Lambda 5 is critical for B cell development in mammals. Expression of Lambda 5 is highest in liver, pre- B-lymphocytes and bone marrow, the major source of B cell precursors.

REFERENCES

1. Hollis, G., et al. 1989. Immunoglobulin I light-chain-related genes 14.1 and 16.1 are expressed in pre-B cells and may encode the human immuno-globulin ω light-chain protein. Proc. Natl. Acad. Sci. USA 86: 5552-5556.
2. Bossy, D., et al. 1991. Organization and expression of the I-like genes that contribute to the μ-ψ light chain complex in human pre-B cells. Int. Immunol. 11: 1081-1090.
3. Mai, S., et al. 1995. The c-myc protein represses the Lambda 5 and TdT initiators. Nucleic Acids Res. 23: 1-9.
4. Corcos, D., et al. 1995. Pre-B-cell development in the absence of Lambda 5 in transgenic mice expressing a heavy-chain disease protein. Curr. Biol. 5: 1140-1148.
5. Minegishi, Y., et al. 1998. Mutations in the human Lambda 5/14.1 gene result in B cell deficiency and agammaglobulinemia. J. Exp. Med. 187: 71-77.
6. Donohoe, M.E., et al., 2000. Transgenic human Lambda 5 rescues the murine Lambda 5 nullizygous phenotype. J. Immunol. 164: 5269-5276.
7. Bradl, H., et al. 2003. Interaction of murine precursor B cell receptor with stroma cells is controlled by the unique tail of Lambda 5 and stroma cell-associated heparan sulfate. J. Immunol. 171: 2338-2348.
8. Schuh, W., et al. 2003. Cutting edge: signaling and cell surface expression of a m H chain in the absence of Lambda 5: a paradigm revisited. J. Immunol. 171: 3343-3347.

CHROMOSOMAL LOCATION

Genetic locus: IGLL1 (human) mapping to 22q11.23.

PRODUCT

Lambda 5 shRNA Plasmid (h) is a target-specific lentiviral vector plasmid encoding a 19-25 nt (plus hairpin) shRNA designed to knock down gene expression. Each plasmid contains a puromycin resistance gene for the selection of cells stably expressing shRNA. Each vial contains 20 µg of lyophilized shRNA plasmid DNA. Suitable for up to 20 transfections. Also see Lambda 5 siRNA (h): sc-44543 and Lambda 5 shRNA (h) Lentiviral Particles: sc-44543-V as alternate gene silencing products.

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

Lambda 5 siRNA (h) is recommended for the inhibition of Lambda 5 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

Lambda 5 (A-1): sc-398932 is recommended as a control antibody for monitoring of Lambda 5 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor Lambda 5 gene expression knockdown using RT-PCR Primer: Lambda 5 (h)-PR: sc-44543-PR (20 µl, 419 bp). 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.

PROTOCOLS

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