SANTA CRUZ BIOTECHNOLOGY, INC.

vanin-1 siRNA (m): sc-36808

BACKGROUND

Hematopoietic precursor cells migrate to the thymus, where they differentiate into mature T lymphocytes. GPI-anchored vanin-1 protein regulates the late adhesion steps of thymus homing of bone marrow precursor cells. Vanin-1 is ubiquitously expressed as a pantetheinase enzyme and catalyzes the hydrolysis of pantetheine for vitamin B5 recycling. The hydrolytic activity of vanin-1 generates the potent antioxidant cysteamine as a metabolite. As a membrane bound pantetheinase, vanin-1 provides the main source of cysteamine under normal physiological conditions. In mice, vanin-1 is expressed specifically in male Sertoli cells of the developing testis, where it aids in cell migration. Vanin-1 is also expressed in human spleen, liver and small intestine, where it may be involved in salvaging vitamin B5. The gene encoding human vanin-1 maps to chromosome 6q23.2. Other members of the vanin family include vanin-2 and vanin-3.

REFERENCES

1. Dupre, S., et al. 1970. The enzymatic breakdown of pantethine to pantothenic acid and cystamine. Eur. J. Biochem. 16: 571-578.
2. Aurrand-Lions, M., et al. 1996. vanin-1, a novel GPI-linked perivascular molecule involved in thymus homing. Immunity 5: 391-405.
3. Galland, F., et al. 1998. Two human genes related to murine vanin-1 are located on the long arm of human chromosome 6. Genomics 53: 203-213.
4. Bowles, J., et al. 2000. A subtractive gene expression screen suggests a role for vanin-1 in testis development in mice. Genesis 27: 124-135.
5. Pitari, G., et al. 2000. Pantetheinase activity of membrane-bound vanin-1: lack of free cysteamine in tissues of vanin-1 deficient mice. FEBS Lett. 483: 149-154.
6. Grimmond, S., et al. 2000. Sexually dimorphic expression of protease nexin-1 and vanin-1 in the developing mouse gonad prior to overt differentiation suggests a role in mammalian sexual development. Hum. Mol. Genet. 9: 1553-1560.

CHROMOSOMAL LOCATION

Genetic locus: Vnn1 (mouse) mapping to 10 A4.

PRODUCT

vanin-1 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 vanin-1 shRNA Plasmid (m): sc-36808-SH and vanin-1 shRNA (m) Lentiviral Particles: sc-36808-V as alternate gene silencing products.

For independent verification of vanin-1 (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-36808A, sc-36808B and sc-36808C.

PROTOCOLS

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

vanin-1 siRNA (m) is recommended for the inhibition of vanin-1 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

vanin-1 (407): sc-23907 is recommended as a control antibody for monitoring of vanin-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 vanin-1 gene expression knockdown using RT-PCR Primer: vanin-1 (m)-PR: sc-36808-PR (20 µl, 475 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.