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vanin-3 siRNA (m): sc-155091

BACKGROUND

The vanin family is a novel group of ectoenzymes that function in tissue repair and convert pantetheine into pantothenic acid (vitamin B5) and cysteamine. As both secreted and membrane proteins, members of the vanin family have been implicated as therapeutic targets in inflammatory disease. Vanin-3 (vascular non-inflammatory molecule 3), also known as VNN3, is a 501 amino acid GPI-anchored amidohydrolase that is widely expressed and is found at highest levels in blood and liver. Vanin-3 is overexpressed in lesional psoriatic skin and exists as eight alternatively spliced isoforms. Induced by Th17/Th1 type cytokines, vanin-3 hydrolyzes carboamide linkages in D-pantetheine, thereby releasing cysteamine while recycling pantothenic acid. Containing one CN hydrolase domain, vanin-3 is encoded by a gene that maps to human chromosome 6q23.2.

REFERENCES

1. Maras, B., et al. 1999. Is pantetheinase the actual identity of mouse and human vanin-1 proteins? *FEBS Lett.* 461: 149-152.
2. Granjeaud, S., et al. 1999. An ESTs description of the new Vanin gene family conserved from fly to human. *Immunogenetics* 49: 964-972.
3. 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.
4. Martin, F., et al. 2001. Vanin genes are clustered (human 6q22-24 and mouse 10A2B1) and encode isoforms of pantetheinase ectoenzymes. *Immunogenetics* 53: 296-306.
5. Nitto, T., et al. 2008. Alternative spliced variants in the pantetheinase family of genes expressed in human neutrophils. *Gene* 426: 57-64.
6. Jansen, P.A., et al. 2009. Expression of the vanin gene family in normal and inflamed human skin: induction by proinflammatory cytokines. *J. Invest. Dermatol.* 129: 2167-2174.

CHROMOSOMAL LOCATION

Genetic locus: Vnn3 (mouse) mapping to 10 A4.

PRODUCT

vanin-3 siRNA (m) is a target-specific 19-25 nt siRNA 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 vanin-3 shRNA Plasmid (m): sc-155091-SH and vanin-3 shRNA (m) Lentiviral Particles: sc-155091-V as alternate gene silencing products.

For independent verification of vanin-3 (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-155091A, sc-155091B and sc-155091C.

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 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

vanin-3 siRNA (m) is recommended for the inhibition of vanin-3 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 vanin-3 gene expression knockdown using RT-PCR Primer: vanin-3 (m)-PR: sc-155091-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.