



vaspin siRNA (h): sc-76889

BACKGROUND

The serine proteinase inhibitors (serpins) comprise a superfamily of proteins with a diverse set of functions, including the control of blood coagulation, complement activation, programmed cell death and tissue development. Vaspin, also known as SERPINA12 (serpin peptidase inhibitor, clade A (α -1 antitrypsin, member 12) or OL-64, is a 414 amino acid secreted protein that belongs to the serpin family. Expressed in visceral adipose tissue, vaspin functions to modulate Insulin activity within adipose tissue, possibly only in the presence of select proteases. Due to its involvement in Insulin regulation, vaspin may be associated with the pathogenesis of obesity and type 2 diabetes. The gene encoding vaspin maps to human chromosome 14, which houses over 700 genes and comprises nearly 3.5% of the human genome.

REFERENCES

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3. Klötting, N., et al. 2006. Vaspin gene expression in human adipose tissue: association with obesity and type 2 diabetes. *Biochem. Biophys. Res. Commun.* 339: 430-436.
4. Youn, B.S., et al. 2008. Serum vaspin concentrations in human obesity and type 2 diabetes. *Diabetes* 57: 372-377.
5. Tan, B.K., et al. 2008. Metformin decreases the adipokine vaspin in overweight women with polycystic ovary syndrome concomitant with improvement in Insulin sensitivity and a decrease in Insulin resistance. *Diabetes* 57: 1501-1507.
6. Kempf, K., et al. 2008. Vaspin (SERPINA12) genotypes and risk of type 2 diabetes: results from the MONICA/KORA studies. *Exp. Clin. Endocrinol. Diabetes* 118: 184-189.
7. Wada, J. 2008. Vaspin and Insulin resistance. *Rinsho Byori* 56: 705-711.
8. Wada, J. 2008. Vaspin: a novel serpin with Insulin-sensitizing effects. *Expert Opin. Investig. Drugs* 17: 327-333.

CHROMOSOMAL LOCATION

Genetic locus: SERPINA12 (human) mapping to 14q32.13.

PRODUCT

vaspin siRNA (h) 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 vaspin shRNA Plasmid (h): sc-76889-SH and vaspin shRNA (h) Lentiviral Particles: sc-76889-V as alternate gene silencing products.

For independent verification of vaspin (h) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-76889A, sc-76889B and sc-76889C.

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

vaspin siRNA (h) is recommended for the inhibition of vaspin 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 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.

GENE EXPRESSION MONITORING

vaspin (1C4): sc-81666 is recommended as a control antibody for monitoring of vaspin 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 vaspin gene expression knockdown using RT-PCR Primer: vaspin (h)-PR: sc-76889-PR (20 μ l). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Mohamad, J., et al. 2020. Loss-of-function variants in SERPINA12 underlie autosomal recessive palmoplantar keratoderma. *J. Invest. Dermatol.* E-published.

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.