SANTA CRUZ BIOTECHNOLOGY, INC.

vaspin siRNA (m): sc-76890

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 antiproteinase, 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

1. Namciu, S.J., et al. 2004. Sequence organization and matrix attachment regions of the human serine protease inhibitor gene cluster at 14q32.1. Mamm. Genome 15: 162-178.
2. Hida, K., et al. 2005. Visceral adipose tissue-derived serine protease inhibitor: a unique Insulin-sensitizing adipocytokine in obesity. Proc. Natl. Acad. Sci. USA 102: 10610-10615.
3. Klöting, 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.

CHROMOSOMAL LOCATION

Genetic locus: Serpina12 (mouse) mapping to 12 E.

PRODUCT

vaspin 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 vaspin shRNA Plasmid (m): sc-76890-SH and vaspin shRNA (m) Lentiviral Particles: sc-76890-V as alternate gene silencing products.

For independent verification of vaspin (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-76890A, sc-76890B and sc-76890C.

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

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

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor vaspin gene expression knockdown using RT-PCR Primer: vaspin (m)-PR: sc-76890-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhang, D., et al. 2021. Vaspin mediates the intraorgan crosstalk between heart and adipose tissue in lipoatrophic mice. Front. Cell Dev. Biol. 9: 647131.

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.