SANTA CRUZ BIOTECHNOLOGY, INC.

Punctin siRNA (h): sc-76297

BACKGROUND

Punctin, also known as Punctin-1 or ADAMTS-like protein 1 (ADAMTSL-1), is a secreted, glycosylated protein belonging to the ADAMTS family of metalloproteases. Unlike the typical ADAMTS protein, Punctin lacks the disintegrin-like and metalloproteinase domains. Punctin consists of a signal peptide, four thrombospondin type-1 repeats (TSRs), a cysteine rich domain and a spacer region. O-fucosylation of the TSR repeats regulates the secretion of Punctin. Punctin is closely related to the larger ADAMTS-like protein, Punctin-2, and both are similar to the invertebrate protein, papilin. Punctin is expressed in skeletal muscle, localizing to the extracellular matrix and it plays a significant role in extracellular matrix turnover. Two isoforms exist for Punctin due to alternative splicing. Isoform 1 is the full length mature protein and isoform 2 lacks amino acids 362-378, 457-525 and contains a distinct sequence for amino acids 448-456.

REFERENCES

1. Hirohata, S., et al. 2002. Punctin, a novel ADAMTS-like molecule, ADAMTSL-1, in extracellular matrix. J. Biol. Chem. 277: 12182-12189.
2. Boerboom, D., et al. 2003. Regulation of transcripts encoding ADAMTS-1 (a disintegrin and metalloproteinase with thrombospondin-like motifs-1) and progesterone receptor by human chorionic gonadotropin in equine preovulatory follicles. J. Mol. Endocrinol. 31: 473-485.
3. Hall, N.G., et al. 2003. ADAMTSL-3/Punctin-2, a novel glycoprotein in extracellular matrix related to the ADAMTS family of metalloproteases. Matrix Biol. 22: 501-510.
4. Valerio, A., et al. 2004. Gene expression profile activated by the chemokine CCL5/RANTES in human neuronal cells. J. Neurosci. Res. 78: 371-382.
5. Wight, T.N. 2004. The ADAMTS proteases, extracellular matrix, and vascular disease: waking the sleeping giant(s)! Arterioscler. Thromb. Vasc. Biol. 25: 12-14.
6. Porter, S., et al. 2005. The ADAMTS metalloproteinases. Biochem. J. 386: 15-27.

CHROMOSOMAL LOCATION

Genetic locus: ADAMTSL1 (human) mapping to 9p22.2.

PRODUCT

Punctin 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 µM solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see Punctin shRNA Plasmid (h): sc-76297-SH and Punctin shRNA (h) Lentiviral Particles: sc-76297-V as alternate gene silencing products.

For independent verification of Punctin (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-76297A, sc-76297B and sc-76297C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

Punctin siRNA (h) is recommended for the inhibition of Punctin 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

Punctin (PU29Z): sc-74258 is recommended as a control antibody for monitoring of Punctin 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 Punctin gene expression knockdown using RT-PCR Primer: Punctin (h)-PR: sc-76297-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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