SANTA CRUZ BIOTECHNOLOGY, INC.

ADAMTS-20 siRNA (m): sc-140865

BACKGROUND

ADAMTS (a disintegrin and metalloproteinase domain with thrombospondin type-1 modules) is a family of zinc-dependent proteases that are implicated in a variety of normal and pathological conditions, including arthritis and cancer. ADAMTS protein family members contain an N-terminal propeptide domain, a metalloproteinase domain, a disintegrin-like domain and a C-terminus that contains a varying number of thrombospondin type-1 (TSP-1) motifs. ADAMTS genes are primarily expressed in fetal tissues, including lung, kidney and liver. ADAMTS-20 (ADAM metallopeptidase with thrombospondin type 1 motif, 20), also known as GON-1, is a 1,910 amino acid protein that exists as two alternatively spliced isoforms. Encoded by a gene that maps to human chromosome 12q12, ADAMTS-20 contains 15 TSP-1 motifs and binds one zinc ion per subunit. Very sparingly expressed, ADAMTS-20 is detected at low levels in testis, prostate, ovary, heart, placenta, lung and pancreas. Conversely, ADAMTS-20 is overexpressed in several brain, colon and breast carcinomas. ADAMTS-20 may play a role in tissue-remodeling processes.

REFERENCES

1. Cal, S., et al. 2002. Cloning, expression analysis, and structural characterization of seven novel human ADAMTSs, a family of metalloproteinases with disintegrin and thrombospondin-1 domains. Gene 283: 49-62.
2. Somerville, R.P., et al. 2003. Characterization of ADAMTS-9 and ADAMTS-20 as a distinct ADAMTS subfamily related to *Caenorhabditis elegans* GON-1. J. Biol. Chem. 278: 9503-9513.
3. Llamazares, M., et al. 2003. Identification and characterization of ADAMTS-20 defines a novel subfamily of metalloproteinases-disintegrins with multiple thrombospondin-1 repeats and a unique GON domain. J. Biol. Chem. 278: 13382-13389.
4. Porter, S., et al. 2004. Dysregulated expression of adamalysin-thrombospondin genes in human breast carcinoma. Clin. Cancer Res. 10: 2429-2440.
5. Jones, G.C. and Riley, G.P. 2005. ADAMTS proteinases: a multi-domain, multi-functional family with roles in extracellular matrix turnover and arthritis. Arthritis Res. Ther. 7: 160-169.
6. Glasson, S.S., et al. 2005. Deletion of active ADAMTS-5 prevents cartilage degradation in a murine model of osteoarthritis. Nature 434: 644-648.
7. Mittaz, L., et al. 2005. Neonatal calyceal dilation and renal fibrosis resulting from loss of ADAMTS-1 in mouse kidney is due to a developmental dysgenesis. Nephrol. Dial. Transplant. 20: 419-423.
8. Mochizuki, S. and Okada, Y. 2007. ADAMs in cancer cell proliferation and progression. Cancer Sci. 98: 621-628.
9. Gendron, C., et al. 2007. Proteolytic activities of human ADAMTS-5: comparative studies with ADAMTS-4. J. Biol. Chem. 282: 18294-18306.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Adamts20 (mouse) mapping to 15 E3.

PRODUCT

ADAMTS-20 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 ADAMTS-20 shRNA Plasmid (m): sc-140865-SH and ADAMTS-20 shRNA (m) Lentiviral Particles: sc-140865-V as alternate gene silencing products.

For independent verification of ADAMTS-20 (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-140865A, sc-140865B and sc-140865C.

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

ADAMTS-20 siRNA (m) is recommended for the inhibition of ADAMTS-20 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 ADAMTS-20 gene expression knockdown using RT-PCR Primer: ADAMTS-20 (m)-PR: sc-140865-PR (20 µl). 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.