SANTA CRUZ BIOTECHNOLOGY, INC.

ADAM19 siRNA (h): sc-41417

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The Power to Question

BACKGROUND

The ADAM (a disintegrin and metalloprotease) protein family, which includes over 30 membrane-anchored, glycosylated, Zn^{2+} dependent proteases, plays a role in cell-cell and cell-matrix interface related processes, including fertilization, muscle fusion, secretion of TNFα (tumor necrosis factor α), and modulation of the neurogenic function of Notch and Delta. The ADAM proteins possess a signal-domain, a pro-domain, a metalloprotease domain, a disintegrin domain (Integrin ligand), a cysteine-rich region, an epidermal growth factor-like domain, a transmembrane domain and a cytoplasmic tail. ADAMs are expressed in a wide range of mammalian tissues and several are abundantly expressed in the male reproductive tract. Expression of ADAM19, also designated meltrin β, is highest in the peripheral nervous system during embryogenesis, but is also apparent in placenta, brain, heart, lung, leukocytes, and SW480 cells. ADAM19 also serves as a dendritic cell marker. Truncation of ADAM19 in its cysteine-rich domain is necessary to exert its proteolytic activity on specific substrates, including α2-macroglobulin.

REFERENCES

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4. Fritsche, J., et al. 2000. Molecular cloning and characterization of a human metalloprotease disintegrin—a novel marker for dendritic cell differentiation. Blood 96: 732-739.
5. Wei, P., et al. 2001. Expression and enzymatic activity of human disintegrin and metalloproteinase ADAM19/meltrin β. Biochem. Biophys. Res. Commun. 280: 744-755.
6. Zhao, Y.G., et al. 2001. Inhibitory antibodies against endopeptidase activity of human adamalysin 19. Biochem. Biophys. Res. Commun. 289: 288-294.
7. Kurisaki, T., et al. 2002. Meltrin β mini, a new ADAM19 isoform lacking metalloprotease and disintegrin domains, induces morphological changes in neuronal cells. FEBS Lett. 532: 419-422.
8. Kang, T., et al. 2002. Autolytic processing at Glu586-Ser587 within the cysteine-rich domain of human adamalysin 19/disintegrin-metalloproteinase 19 is necessary for its proteolytic activity. J. Biol. Chem. 277: 48514-48522.

CHROMOSOMAL LOCATION

Genetic locus: ADAM19 (human) mapping to 5q33.3.

PROTOCOLS

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

PRODUCT

ADAM19 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 ADAM19 shRNA Plasmid (h): sc-41417-SH and ADAM19 shRNA (h) Lentiviral Particles: sc-41417-V as alternate gene silencing products.

For independent verification of ADAM19 (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-41417A, sc-41417B and sc-41417C.

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

ADAM19 siRNA (h) is recommended for the inhibition of ADAM19 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.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ADAM19 gene expression knockdown using RT-PCR Primer: ADAM19 (h)-PR: sc-41417-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.