SANTA CRUZ BIOTECHNOLOGY, INC.

ADAM1 siRNA (m): sc-41424

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The Power to Question

BACKGROUND

Fertilin, also known as PH-30, is a sperm surface protein that is a member of the MDC (metalloprotease, disintigrin-like, cysteine-rich) family of proteins. This family is also known as the ADAM (a disintegrin and a metalloprotease domain) family of proteins because the members contain a metalloprotease and a disintegrin domain. Approximately 30 ADAM family members have been identified so far, and members of this family function as proteases and/or as cell adhesion molecules. Fertilin is a heterodimer of fertilin-α and fertilin-β subunits, which are also known as ADAM1 and ADAM2, respectively. Both subunits are synthesized in the testis as larger precursors. ADAM1 is proteolytically processed in the testis into the mature form, while ADAM2 undergoes final processing during the epididymal transit. ADAM1 is also expressed, to a much lesser extent, in the liver. Functional blocking of the disintegrin domains of both ADAM1 and ADAM2 inhibits sperm-egg binding, and recombinant forms of the extracellular domains of both subunits bind the surface of eggs.

REFERENCES

1. Perry, A., et al. 1995. Analysis of transcripts encoding novel members of the mammalian metalloprotease-like, disintegrin-like, cysteine-rich (MDC) protein family and their expression in reproductive and non-reproductive monkey tissues. Biochem. J. 312: 239-244.
2. Evans, J., et al. 1997. Characterization of the binding of recombinant mouse sperm fertilin-α subunit to mouse eggs: evidence for function as a cell adhesion molecule in sperm-egg binding. Dev. Biol. 1: 94-106.
3. Yuan, R., et al. 1997. A role for the disintegrin domain of cyritestin, a sperm surface protein belonging to the ADAM family, in mouse sperm-egg plasma membrane adhesion and fusion. J. Cell Biol. 137: 105-112.
4. Jury, J., et al. 1997. The human fertilin-α gene is non-functional: implications for its proposed role in fertilization. Biochem. J. 321: 577-581.
5. Evans, J., et al. 1998. Roles of the disintegrin domains of mouse fertilins α and β in fertilization. Biol. Reprod. 59: 145-152.
6. Cho, C., et al. 2000. Analysis of mouse fertilin in wild-type and fertilin $\beta^{-/-}$ sperm: evidence for C-terminal modification, α/β dimerization, and lack of essential role of fertilin α in sperm-egg fusion. Dev. Biol. 2: 289-295.
7. Wong, G., et al. 2001. Analysis of fertilin-α (ADAM1)-mediated sperm-egg cell adhesion during fertilization and identification of an adhesion-mediating sequence in the disintegrin-like domain. J. Biol. Chem. 276: 24937-24945.

CHROMOSOMAL LOCATION

Genetic locus: Adam1a (mouse) mapping to 5 F.

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.

PRODUCT

ADAM1 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 ADAM1 shRNA Plasmid (m): sc-41424-SH and ADAM1 shRNA (m) Lentiviral Particles: sc-41424-V as alternate gene silencing products.

For independent verification of ADAM1 (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-41424A, sc-41424B and sc-41424C.

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

ADAM1 siRNA (m) is recommended for the inhibition of ADAM1 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 ADAM1 gene expression knockdown using RT-PCR Primer: ADAM1 (m)-PR: sc-41424-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.