SANTA CRUZ BIOTECHNOLOGY, INC.

ADAM2 siRNA (m): sc-41403

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. ADAM2, also designated fertilin β and PH30 β, forms a heterodimer with ADAM1 (fertilin α or PH30 α) on the surface of spermatozoa, which mediates gamete cell adhesion during fertilization. ADAM2 utilizes an ECD motif to interact with integrins expressed on the egg plasma membrane. The gene encoding human ADAM2 maps to chromosome 8p11.22.

REFERENCES

1. Wolfsberg, T.G., et al. 1995. ADAM, a novel family of membrane proteins containing a disintegrin and metalloprotease domain: multipotential functions in cell-cell and cell-matrix interactions. J. Cell Biol. 131: 275-278.
2. Vidaeus, C.M., et al. 1997. Human fertilin β: identification, characterization, and chromosomal mapping of an ADAM gene family member. Mol. Reprod. Dev. 46: 363-369.
3. Stone, A.L., et al. 1999. Structure-function analysis of the ADAM family of disintegrin-like and metalloproteinase-containing proteins (review). J. Protein Chem. 18: 447-465.
4. Primakoff, P., et al. 2000. The ADAM gene family: surface proteins with adhesion and protease activity. Trends Genet. 16: 83-87.
5. 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. 222: 289-295.
6. Nishimura, H., et al. 2002. The ADAM1a and ADAM1b genes, instead of the ADAM1 (fertilin α) gene, are localized on mouse chromosome 5. Gene 291: 67-76.
7. Zhu, X. and Evans, J.P. 2002. Analysis of the roles of RGD-binding integrins, α_4/α_9 integrins, α_6 integrins, and CD9 in the interaction of the fertilin β (ADAM2) disintegrin domain with the mouse egg membrane. Biol. Reprod. 66: 1193-1202.

CHROMOSOMAL LOCATION

Genetic locus: Adam2 (mouse) mapping to 14 D1.

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

ADAM2 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 ADAM2 shRNA Plasmid (m): sc-41403-SH and ADAM2 shRNA (m) Lentiviral Particles: sc-41403-V as alternate gene silencing products.

For independent verification of ADAM2 (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-41403A, sc-41403B and sc-41403C.

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

ADAM2 siRNA (m) is recommended for the inhibition of ADAM2 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 ADAM2 gene expression knockdown using RT-PCR Primer: ADAM2 (m)-PR: sc-41403-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.