

ADAM23 siRNA (m): sc-61939

BACKGROUND

ADAMs (a disintegrin and metalloproteinase domain), also known as MDCs (metalloproteinase, disintegrin and cysteine-rich domain) or cellular disintegrins, are a family of proteins that are expressed in numerous different tissues. They catalyze proteolysis, adhesion, fusion and intracellular signaling. ADAMs are membrane-anchored proteins and there are over 30 different members in the family with many diverse functions. ADAM23 is exclusively expressed in fetal and adult brains and may function as an integrin ligand in cells of neural origin. Adhesion of neuroblastoma and astrocytoma cells is promoted by the disintegrin-like domain of ADAM23 and is mediated by an interaction of this protein with $\alpha V/\beta 3$. A short amino acid sequence in the disintegrin loop of ADAM23 interacts with $\alpha V/\beta 3$ to mediate cell interactions that take place during both normal and pathological processes. The three characteristic histidine residues and the glutamic acid residue typical of metalloproteinases are lacking in the metalloproteinase-like domain of ADAM23. This suggests that ADAM23 may not be involved in protease-mediated events, but could exclusively serve in cell adhesion processes. In addition, evidence suggests that ADAM23 may be a tumor suppressor gene.

REFERENCES

1. Sagane, K., et al. 1998. Metalloproteinase-like, disintegrin-like, cysteine-rich proteins MDC2 and MDC3: novel human cellular disintegrins highly expressed in the brain. *Biochem. J.* 334: 93-98.
2. Sagane, K., et al. 1999. Cloning and chromosomal mapping of mouse ADAM11, ADAM22 and ADAM23. *Gene* 236: 79-86.
3. Cal, S., et al. 2000. ADAM23/MDC3, a human disintegrin that promotes cell adhesion via interaction with the $\alpha V/\beta 3$ Integrin through an RGD-independent mechanism. *Mol. Biol. Cell* 11: 1457-1469.
4. Goldsmith, A.P., et al. 2004. ADAM23 is a cell-surface glycoprotein expressed by central nervous system neurons. *J. Neurosci. Res.* 78: 647-658.

CHROMOSOMAL LOCATION

Genetic locus: Adam23 (mouse) mapping to 1 C2.

PRODUCT

ADAM23 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 μ M solution once resuspended using protocol below. Suitable for 50-100 transfections. Also see ADAM23 shRNA Plasmid (m): sc-61939-SH and ADAM23 shRNA (m) Lentiviral Particles: sc-61939-V as alternate gene silencing products.

For independent verification of ADAM23 (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-61939A, sc-61939B and sc-61939C.

PROTOCOLS

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

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 μ l of the RNase-free water provided. Resuspension of the siRNA duplex in 330 μ l of RNase-free water makes a 10 μ M solution in a 10 μ M Tris-HCl, pH 8.0, 20 mM NaCl, 1 mM EDTA buffered solution.

APPLICATIONS

ADAM23 siRNA (m) is recommended for the inhibition of ADAM23 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 μ M in 66 μ l. 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 ADAM23 gene expression knockdown using RT-PCR Primer: ADAM23 (m)-PR: sc-61939-PR (20 μ l). 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.