SANTA CRUZ BIOTECHNOLOGY, INC.

ADAM9 siRNA (h): sc-41408

BACKGROUND

The human ADAM9 gene maps to chromosome 8p11.22 and encodes an 819 amino acid glycoprotein that is present in brain, liver, heart, kidney, lung, and trachea. ADAM (a disintegrin and metalloprotease) glycoproteins are a family of over 30 membrane-anchored, Zn^{2+}-dependent proteases that influence fertilization, muscle fusion, cytokine secretion, modulation of Notch-related neurogenic pathways, monocyte fusion, and many other cell adhesion-dependent events. ADAM proteins contain 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 (TM) domain (alternative splicing before the TM domain in ADAM11, 12, 17, and 28 can yield soluble forms), and a cytoplasmic tail. Removal of the amino-terminal signal peptide initiates secretion from the cell, or anchoring on the cell surface. Furin or furin-like proprotein convertase-dependent cleavage of the pro domain initiates catalytic activity of the metalloprotease.

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. Gilpin, B.J., et al. 1998. A novel, secreted form of human ADAM12 (meltrin-α) provokes myogenesis *in vivo*. J. Biol. Chem. 273: 157-166.
3. Stone, A.L., et al. 1999. Structurefunction analysis of the ADAM family of disintegrin-like and metalloproteinase-containing proteins (review). J. Protein Chem. 18: 447-465.

CHROMOSOMAL LOCATION

Genetic locus: ADAM9 (human) mapping to 8p11.22.

PRODUCT

ADAM9 siRNA (h) is a pool of 2 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 ADAM9 shRNA Plasmid (h): sc-41408-SH and ADAM9 shRNA (h) Lentiviral Particles: sc-41408-V as alternate gene silencing products.

For independent verification of ADAM9 (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-41408A and sc-41408B.

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

ADAM9 siRNA (h) is recommended for the inhibition of ADAM9 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.

GENE EXPRESSION MONITORING

ADAM9 (G-1): sc-377233 is recommended as a control antibody for monitoring of ADAM9 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor ADAM9 gene expression knockdown using RT-PCR Primer: ADAM9 (h)-PR: sc-41408-PR (20 µl, 572 bp). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

SELECT PRODUCT CITATIONS

1. Zhao, Y., et al. 2011. Docosahexaenoic acid-derived neuroprotectin D1 induces neuronal survival via secretase- and PPARγ-mediated mechanisms in Alzheimer's disease models. PLoS ONE 6: e15816.
2. Wang, C.Z., et al. 2015. MiR-126 regulated breast cancer cell invasion by targeting ADAM9. Int. J. Clin. Exp. Pathol. 8: 6547-6553.
3. Caporali, S., et al. 2019. MiR-126-3p down-regulation contributes to dabrafenib acquired resistance in melanoma by up-regulating ADAM9 and VEGF-A. J. Exp. Clin. Cancer Res. 38: 272.
4. Xu, C., et al. 2021. Circular RNA circNINL promotes breast cancer progression through activating β-catenin signaling via miR-921/ADAM9 axis. J. Biochem. 169: 693-700.

RESEARCH USE

For research use only, not for use in diagnostic procedures.