SANTA CRUZ BIOTECHNOLOGY, INC.

MS4A7 siRNA (h): sc-96342

BACKGROUND

MS4A (membrane-spanning 4-domain family, subfamily A) is a large family of proteins that includes at least 26 members in mouse and humans. Flanked by amino- and carboxyl-cytoplasmic regions, MS4A family members contain four highly conserved transmembrane domains. CD20, the most well-known MS4A family member, is a B-cell-specific molecule that functions as a calcium-permeable cation channel and is known to accelerate the G_0 to G_1 progression induced by IGF-1. Several other MS4A family members are likely to be components of oligomeric cell surface complexes involved in signal transduction in diverse cell lineages. MS4A7 (membrane-spanning 4-domains subfamily A member 7), also known as CFFM4 (CD20/FC-epsilon-RI-βfamily member 4), 4SPAN2 (four-span transmembrane protein 2) and CD20L4 (CD20 antigen-like 4), is a 240 amino acid multi-pass membrane protein that may be involved in signal transduction due to the presence of multiple phosphorylation sites on its C-terminus.

REFERENCES

1. Ishibashi, K., et al. 2001. Identification of a new multigene four-transmembrane family (MS4A) related to CD20, HTm4 and beta subunit of the high-affinity IgE receptor. Gene 264: 87-93.
2. Liang, Y. and Tedder, T.F. 2001. Identification of a CD20-, FcepsilonRIβ-, and HTm4-related gene family: sixteen new MS4A family members expressed in human and mouse. Genomics 72: 119-127.
3. Liang, Y., Buckley, T.R., Tu, L., Langdon, S.D. and Tedder, T.F. 2001. Structural organization of the human MS4A gene cluster on Chromosome 11q12. Immunogenetics 53: 357-368.
4. Gingras, M.C., et al. 2001. CFFM4: a new member of the CD20/FcεRIβ family. Immunogenetics 53: 468-476.
5. Online Mendelian Inheritance in Man, OMIM™. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 606502. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
6. Ota, T., et al. 2004. Complete sequencing and characterization of 21,243 full-length human cDNAs. Nat. Genet. 36: 40-45.
7. Brink, T.C., et al. 2008. The origins of human embryonic stem cells: a biological conundrum. Cells Tissues Organs 188: 9-22.

CHROMOSOMAL LOCATION

Genetic locus: MS4A7 (human) mapping to 11q12.2.

PRODUCT

MS4A7 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 MS4A7 shRNA Plasmid (h): sc-96342-SH and MS4A7 shRNA (h) Lentiviral Particles: sc-96342-V as alternate gene silencing products.

For independent verification of MS4A7 (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-96342A, sc-96342B and sc-96342C.

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

MS4A7 siRNA (h) is recommended for the inhibition of MS4A7 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

MS4A7 (SW-44): sc-134394 is recommended as a control antibody for monitoring of MS4A7 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 MS4A7 gene expression knockdown using RT-PCR Primer: MS4A7 (h)-PR: sc-96342-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.

PROTOCOLS

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