

# MS4A12 siRNA (h): sc-97029

## 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<sub>0</sub> to G<sub>1</sub> 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. MS4A12 (membrane-spanning 4-domains, subfamily A, member 12) is a 267 amino acid multi-pass membrane protein that plays a role in signal transduction and is expressed primarily in colonocytes. The gene encoding MS4A12 maps to human chromosome 11q12.2.

## REFERENCES

1. Ishibashi, K., Suzuki, M., Sasaki, S. and Imai, M. 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-, FcγRIIb-, 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., Lapillonne, H. and Margolin, J.F. 2001. CFFM4: a new member of the CD20/FcεRIIb family. *Immunogenetics* 53: 468-476.
5. Online Mendelian Inheritance in Man, OMIM<sup>™</sup>. 2001. Johns Hopkins University, Baltimore, MD. MIM Number: 606550. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Koslowski, M., Sahin, U., Dhaene, K., Huber, C. and Türeci, O. 2008. MS4A12 is a colon-selective store-operated calcium channel promoting malignant cell processes. *Cancer Res.* 68: 3458-3466.
7. Koslowski, M., Türeci, O., Huber, C. and Sahin, U. 2009. Selective activation of tumor growth-promoting Ca<sup>2+</sup> channel MS4A12 in colon cancer by caudal type homeobox transcription factor CDX2. *Mol. Cancer* 8: 77.

## CHROMOSOMAL LOCATION

Genetic locus: MS4A12 (human) mapping to 11q12.2.

## RESEARCH USE

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

## PROTOCOLS

See our web site at [www.scbt.com](http://www.scbt.com) for detailed protocols and support products.

## PRODUCT

MS4A12 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 MS4A12 shRNA Plasmid (h): sc-97029-SH and MS4A12 shRNA (h) Lentiviral Particles: sc-97029-V as alternate gene silencing products.

For independent verification of MS4A12 (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-97029A, sc-97029B and sc-97029C.

## 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

MS4A12 siRNA (h) is recommended for the inhibition of MS4A12 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.

## RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor MS4A12 gene expression knockdown using RT-PCR Primer: MS4A12 (h)-PR: sc-97029-PR (20 μl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.