

FAM3A siRNA (m): sc-145038

BACKGROUND

The FAM3 family of proteins consist of FAM3A, FAM3B, FAM3C and FAM3D. FAM3 proteins form four-helix-bundle structures and are thought to function in a similar manner as cytokines. FAM3A (family with sequence similarity 3, member A), also known as 2-19 protein, is a 230 amino acid secreted protein that contains one GG domain, which may function as an important structural element. GG domain-containing proteins have been implicated in muscle-eye-brain disease and non-syndromic hearing loss. FAM3A is predominantly expressed in vascular endothelium, particularly capillaries, though it is also expressed in islets of Langerhans of the endocrine pancreas. The gene encoding FAM3A is localized to the human X chromosome, which consists of about 153 million base pairs and nearly 1,000 genes. Color blindness, hemophilia, and Duchenne muscular dystrophy are well known X chromosome-linked conditions which affect males more frequently as males carry a single X chromosome.

REFERENCES

1. Chen, E.Y., Cheng, A., Lee, A., Kuang, W.J., Hillier, L., Green, P., Schlessinger, D., Ciccodicola, A. and D'Urso, M. 1991. Sequence of human glucose-6-phosphate dehydrogenase cloned in plasmids and a yeast artificial chromosome. *Genomics* 10: 792-800.
2. Bione, S., Tamanini, F., Maestrini, E., Tribioli, C., Poustka, A., Torri, G., Rivella, S. and Toniolo, D. 1993. Transcriptional organization of a 450-kb region of the human X chromosome in Xq28. *Proc. Natl. Acad. Sci. USA* 90: 10977-10981.
3. Chen, E.Y., Zollo, M., Mazzarella, R., Ciccodicola, A., Chen, C.N., Zuo, L., Heiner, C., Burrough, F., Repetto, M., Schlessinger, D. and D'Urso, M. 1996. Long-range sequence analysis in Xq28: thirteen known and six candidate genes in 219.4 kb of high GC DNA between the RCP/GCP and G6PD loci. *Hum. Mol. Genet.* 5: 659-668.
4. Zhu, Y., Xu, G., Patel, A., McLaughlin, M.M., Silverman, C., Knecht, K., Sweitzer, S., Li, X., McDonnell, P., Mirabile, R., Zimmerman, D., Boyce, R., Tierney, L.A., Hu, E., Livi, G.P., Wolf, B., Abdel-Meguid, S.S., et al. 2002. Cloning, expression, and initial characterization of a novel cytokine-like gene family. *Genomics* 80: 144-150.
5. Online Mendelian Inheritance in Man, OMIM[™]. 2004. Johns Hopkins University, Baltimore, MD. MIM Number: 300492. World Wide Web URL: <http://www.ncbi.nlm.nih.gov/omim/>
6. Ross, M.T., Grafham, D.V., Coffey, A.J., Scherer, S., McLay, K., Muzny, D., Platzer, M., Howell, G.R., Burrows, C., Bird, C.P., Frankish, A., Lovell, F.L., Howe, K.L., Ashurst, J.L., Fulton, R.S., et al. 2005. The DNA sequence of the human X chromosome. *Nature* 434: 325-337.
7. Guo, J., Cheng, H., Zhao, S. and Yu, L. 2006. GG: a domain involved in phage LTF apparatus and implicated in human MEB and non-syndromic hearing loss diseases. *FEBS Lett.* 580: 581-584.

PROTOCOLS

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

CHROMOSOMAL LOCATION

Genetic locus: Fam3a (mouse) mapping to X A7.3.

PRODUCT

FAM3A siRNA (m) is a target-specific 19-25 nt siRNA 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 FAM3A shRNA Plasmid (m): sc-145038-SH and FAM3A shRNA (m) Lentiviral Particles: sc-145038-V as alternate gene silencing 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

FAM3A siRNA (m) is recommended for the inhibition of FAM3A 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 FAM3A gene expression knockdown using RT-PCR Primer: FAM3A (m)-PR: sc-145038-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.