SANTA CRUZ BIOTECHNOLOGY, INC.

FRMD3 siRNA (h): sc-92528

BACKGROUND

FERM domains are roughly 150 amino acids in length and are found in a number of cytoskeletal-associated proteins such as ezrin, radixin, moesin and 4.1 (erythrocyte membrane protein band 4.1), where they provide a link between cytoskeletal signals and membrane dynamics. FRMD3 (FERM domain-containing protein 3), also known as band 4.1-like protein 4O or 4.1O (ovary type protein 4.1), is a 597 amino acid single-pass membrane protein that contains one FERM domain. Gene transcription of FRMD3 is ovary-specific. Expression of FRMD3 can be found in kidney, lung and skeletal muscle, with lower levels in thymus and brain. FRMD3 is a novel putative tumor suppressor gene that likely has an important role in the development and progression of lung cancer. The gene encoding FRMD, which maps to human chromosome 9q21.32, may also be involved in susceptibility to diabetic nephropathy. FRMD3 exists as five alternatively spliced isoforms.

REFERENCES

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2. Humphray, S.J., et al. 2004. DNA sequence and analysis of human chromosome 9. Nature 429: 369-374.
3. Sweetser, D.A., et al. 2005. Delineation of the minimal commonly deleted segment and identification of candidate tumor-suppressor genes in del(9q) acute myeloid leukemia. Genes Chromosomes Cancer 44: 279-291.
4. Haase, D., et al. 2007. FRMD3, a novel putative tumour suppressor in NSCLC. Oncogene 26: 4464-4468.
5. Pezzolesi, M.G., et al. 2009. Genome-wide association scan for diabetic nephropathy susceptibility genes in type 1 diabetes. Diabetes 58: 1403-1410.
6. Maeda, S., et al. 2010. Replication study for the association between four loci identified by a genome-wide association study on European American subjects with type 1 diabetes and susceptibility to diabetic nephropathy in Japanese subjects with type 2 diabetes. Diabetes 59: 2075-2079.
7. Mooyaart, A.L., et al. 2011. Genetic associations in diabetic nephropathy: a meta-analysis. Diabetologia 54: 544-553.

CHROMOSOMAL LOCATION

Genetic locus: FRMD3 (human) mapping to 9q21.32.

PRODUCT

FRMD3 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 FRMD3 shRNA Plasmid (h): sc-92528-SH and FRMD3 shRNA (h) Lentiviral Particles: sc-92528-V as alternate gene silencing products.

For independent verification of FRMD3 (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-92528A, sc-92528B and sc-92528C.

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

FRMD3 siRNA (h) is recommended for the inhibition of FRMD3 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 FRMD3 gene expression knockdown using RT-PCR Primer: FRMD3 (h)-PR: sc-92528-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.