SANTA CRUZ BIOTECHNOLOGY, INC.

FRAS1 siRNA (m): sc-75058

BACKGROUND

Extracellular matrix protein FRAS1 is a 4,007 amino acid protein belonging to the FRAS1 family. Expressed in many adult tissues, FRAS1 has the highest levels of expression in kidney, pancreas, thalamus, fetal kidney and fetal heart. FRAS1 contains five Calx-β domains, which bind calcium with high affinity and undergo a major conformational shift upon binding. Additionally, it contains 12 CSPG (NG2) repeats, 14 FU (furin-like) repeats and 6 VWFC domains. Mutations in the gene encoding FRAS1 cause Fraser syndrome, a multisystem malformation usually comprising cryptophthalmos, cutaneous syndactyly, ear abnormalities, renal agenesis and congenital heart defects. Five named isoforms of FRAS1 exist as a result of alternative splicing events.

REFERENCES

1. Slavotinek, A.M. and Tifft, C.J. 2002. Fraser syndrome and cryptophthalmos: review of the diagnostic criteria and evidence for phenotypic modules in complex malformation syndromes. J. Med. Genet. 39: 623-633.
2. Smyth, I. and Scambler, P. 2005. The genetics of Fraser syndrome and the blebs mouse mutants. Hum. Mol. Genet. 14: R269-R274.
3. Slavotinek, A., Li, C., Sherr, E.H. and Chudley, A.E. 2006. Mutation analysis of the FRAS1 gene demonstrates new mutations in a propositus with Fraser syndrome. Am. J. Med. Genet. A 140: 1909-1914.
4. Dalezios, Y., Papasozomenos, B., Petrou, P. and Chalepakis, G. 2007. Ultrastructural localization of FRAS1 in the sublamina densa of embryonic epithelial basement membranes. Arch. Dermatol. Res. 299: 337-343.
5. Petrou, P., Chiotaki, R., Dalezios, Y. and Chalepakis, G. 2007. Overlapping and divergent localization of Frem1 and FRAS1 and its functional implications during mouse embryonic development. Exp. Cell Res. 313: 910-920.
6. Chiotaki, R., Petrou, P., Giakoumaki, E., Pavlakis, E., Sitaru, C. and Chalepakis, G. 2007. Spatiotemporal distribution of FRAS1 /Frem proteins during mouse embryonic development. Gene Expr. Patterns 7: 381-388.
7. Short, K., Wiradjaja, F. and Smyth, I. 2007. Let's stick together: the role of the FRAS1 and Frem proteins in epidermal adhesion. IUBMB Life 59: 427-435.
8. Petrou, P., Pavlakis, E., Dalezios, Y. and Chalepakis, G. 2007. Basement membrane localization of Frem3 is independent of the FRAS1 /Frem1/Frem2 protein complex within the sublamina densa. Matrix Biol. 26: 652-658.
9. Online Mendelian Inheritance in Man, OMIM™. 2009. Johns Hopkins University, Baltimore, MD. MIM Number: 607830. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/

CHROMOSOMAL LOCATION

Genetic locus: Fras1 (mouse) mapping to 5 E3.

PROTOCOLS

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

PRODUCT

FRAS1 siRNA (m) 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 FRAS1 shRNA Plasmid (m): sc-75058-SH and FRAS1 shRNA (m) Lentiviral Particles: sc-75058-V as alternate gene silencing products.

For independent verification of FRAS1 (m) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-75058A, sc-75058B and sc-75058C.

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

FRAS1 siRNA (m) is recommended for the inhibition of FRAS1 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 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 FRAS1 gene expression knockdown using RT-PCR Primer: FRAS1 (m)-PR: sc-75058-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.