SANTA CRUZ BIOTECHNOLOGY, INC.

FADS3 siRNA (h): sc-96983

BACKGROUND

FADS3 (fatty acid desaturase 3), also known as cytochrome β5-related protein (CYB5RP), is a 445 amino acid protein belonging to the fatty acid desaturase family. Fatty acid desaturase proteins introduce double bonds between defined carbons of the fatty acyl chain to cause unsaturation of fatty acids. Fatty acid desaturase family members are fusion products composed of two conserved histidine motifs: an N-terminal cytochrome β5 heme-binding domain and a C-terminal multiple membrane-spanning desaturase portion. The cytochrome β5 heme-binding domain may contain an active site and may be responsible for metal ion binding. FADS3 is a multi-pass membrane protein localized to the endoplasmic reticulum and can be found in heart, uterus, lung, brainstem and liver.

REFERENCES

1. Stöhr, H., Marquardt, A., Rivera, A., Cooper, P.R., Nowak, N.J., Shows, T.B., Gerhard, D.S. and Weber, B.H. 1998. A gene map of the Best's vitelliform macular dystrophy region in chromosome 11q12-q13.1. Genome Res. 8: 48-56.
2. Marquardt, A., Stöhr, H., White, K. and Weber, B.H. 2000. cDNA cloning, genomic structure, and chromosomal localization of three members of the human fatty acid desaturase family. Genomics 66: 175-183.
3. Nakamura, M.T. and Nara, T.Y. 2004. Structure, function, and dietary regulation of δ6, δ5, and δ9 desaturases. Annu. Rev. Nutr. 24: 345-376.
4. Online Mendelian Inheritance in Man, OMIM™. 2005. Johns Hopkins University, Baltimore, MD. MIM Number: 606150. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
5. Taylor, T.D., Noguchi, H., Totoki, Y., Toyoda, A., Kuroki, Y., Dewar, K., Lloyd, C., Itoh, T., Takeda, T., Kim, D.W., She, X., Barlow, K.F., Bloom, T., Bruford, E., Chang, J.L., Cuomo, C.A., Eichler, E., FitzGerald, M.G., Jaffe, D.B., et al. 2006. Human chromosome 11 DNA sequence and analysis including novel gene identification. Nature 440: 497-500.

CHROMOSOMAL LOCATION

Genetic locus: FADS3 (human) mapping to 11q12.2.

PRODUCT

FADS3 siRNA (h) is a pool of 2 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 FADS3 shRNA Plasmid (h): sc-96983-SH and FADS3 shRNA (h) Lentiviral Particles: sc-96983-V as alternate gene silencing products.

For independent verification of FADS3 (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-96983A and sc-96983B.

PROTOCOLS

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

FADS3 siRNA (h) is recommended for the inhibition of FADS3 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 FADS3 gene expression knockdown using RT-PCR Primer: FADS3 (h)-PR: sc-96983-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.