SANTA CRUZ BIOTECHNOLOGY, INC.

POFUT2 siRNA (m): sc-76187

BACKGROUND

Glycosyltransferases that mediate the regio- and stereoselective transfer of sugars, such as the fucosyltransferases, determine cell surface-carbohydrate profiles, which is an essential interface for biological recognition processes. Fucosyltransferases catalyze the covalent association of fucose to different positional linkages in sugar acceptor molecules. POFUT2 (peptide-O-fucosyltransferase 2), also known as FUT13 or O-FucT-2, is a fucosyltransferase responsible for transferring fucose to serine or threonine residues in properly folded thrombospondin repeats (TSRs) through an O-glycosidic linkage. POFUT2 localizes to the endoplasmic reticulum and exists in three isoforms (designated A, B and C) which exhibit different patterns of expression. In addition, POFUT2 may have chaperone-like activity and function in quality control and protein folding.

REFERENCES

1. Nagase, T., et al. 1999. Prediction of the coding sequences of unidentified human genes. XIII. The complete sequences of 100 new cDNA clones from brain which code for large proteins *in vitro*. DNA Res. 6: 63-70.
2. Online Mendelian Inheritance in Man, OMIM™. 2002. Johns Hopkins University, Baltimore, MD. MIM Number: 610249. World Wide Web URL: http://www.ncbi.nlm.nih.gov/omim/
3. Martinez-Duncker, I., et al. 2003. A new superfamily of protein-O-fucosyltransferases, α2-fucosyltransferases, and α6-fucosyltransferases: phylogeny and identification of conserved peptide motifs. Glycobiology 13: 1C-5C.
4. Dong, S., et al. 2005. Histology-based expression profiling yields novel prognostic markers in human glioblastoma. J. Neuropathol. Exp. Neurol. 64: 948-955.
5. Loriol, C., et al. 2006. Molecular evolution of protein O-fucosyltransferase genes and splice variants. Glycobiology 16: 736-747.
6. Sato, T., et al. 2006. Molecular cloning and characterization of a novel human β1,3-glucosyltransferase, which is localized at the endoplasmic reticulum and glucosylates O-linked fucosylglycan on thrombospondin type 1 repeat domain. Glycobiology 16: 1194-1206.

CHROMOSOMAL LOCATION

Genetic locus: Pofut2 (mouse) mapping to 10 C1.

PRODUCT

POFUT2 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 POFUT2 shRNA Plasmid (m): sc-76187-SH and POFUT2 shRNA (m) Lentiviral Particles: sc-76187-V as alternate gene silencing products.

For independent verification of POFUT2 (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-76187A, sc-76187B and sc-76187C.

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

POFUT2 siRNA (m) is recommended for the inhibition of POFUT2 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.

GENE EXPRESSION MONITORING

POFUT2 (G-1): sc-271239 is recommended as a control antibody for monitoring of POFUT2 gene expression knockdown by Western Blotting (starting dilution 1:200, dilution range 1:100-1:1000) or immunofluorescence (starting dilution 1:50, dilution range 1:50-1:500).

To ensure optimal results, the following support reagents are recommended: 1) Western Blotting: use m-IgGκ BP-HRP: sc-516102 or m-IgGκ BP-HRP (Cruz Marker): sc-516102-CM (dilution range: 1:1000-1:10000), Cruz Marker™ Molecular Weight Standards: sc-2035, UltraCruz® Blocking Reagent: sc-516214 and Western Blotting Luminol Reagent: sc-2048. 2) Immunofluorescence: use m-IgGκ BP-FITC: sc-516140 or m-IgGκ BP-PE: sc-516141 (dilution range: 1:50-1:200) with UltraCruz® Mounting Medium: sc-24941 or UltraCruz® Hard-set Mounting Medium: sc-359850.

RT-PCR REAGENTS

Semi-quantitative RT-PCR may be performed to monitor POFUT2 gene expression knockdown using RT-PCR Primer: POFUT2 (m)-PR: sc-76187-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.