SANTA CRUZ BIOTECHNOLOGY, INC.

FUCA2 siRNA (r): sc-270665

BACKGROUND

FUCA2 (fucosidase, α-L- 2, plasma), also known as α-L-fucosidase 2, is a 467 amino acid secreted protein that exists as a homotetramer and localizes specifically to plasma (unlike FUCA1 which is specific to tissues). Belonging to the glycosyl hydrolase family, FUCA2 functions to catalyze the H_2O-dependent conversion of an α-L-fucoside to an alcohol. Specifically, FUCA2 hydrolyzes the α-1,6-linked fucose that is joined to the N-acetylglucosamine residue of target glycoproteins, thereby yielding L-fucose and alcohol. As FUCA2 is responsible for regulating the amount of α-L-fucosidase within plasma, defects in the gene encoding FUCA2 that cause a loss of catalytic activity may lead to a decrease in α-L-fucosidase levels and, ultimately, fucosidosis. Fucosidosis is a very rare autosomal recessive glycoprotein storage disease that is characterized by organomegaly, mental retardation and twisted blood vessels.

REFERENCES

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CHROMOSOMAL LOCATION

Genetic locus: Fuca2 (rat) mapping to 1p13.

PRODUCT

FUCA2 siRNA (r) 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 FUCA2 shRNA Plasmid (r): sc-270665-SH and FUCA2 shRNA (r) Lentiviral Particles: sc-270665-V as alternate gene silencing products.

For independent verification of FUCA2 (r) gene silencing results, we also provide the individual siRNA duplex components. Each is available as 3.3 nmol of lyophilized siRNA. These include: sc-270665A and sc-270665B.

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

FUCA2 siRNA (r) is recommended for the inhibition of FUCA2 expression in rat 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

FUCA2 (B-11): sc-514038 is recommended as a control antibody for monitoring of FUCA2 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 FUCA2 gene expression knockdown using RT-PCR Primer: FUCA2 (r)-PR: sc-270665-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.