SANTA CRUZ BIOTECHNOLOGY, INC.

ALMS1 siRNA (h): sc-72345

BACKGROUND

ALMS1 (Alström syndrome protein 1), or ALSS, is a widely expressed protein that localizes to centrosomes and the basal bodies of cilia. It consists of a putative leucine zipper, a tandem repeat domain and a stretch of 17 glutamine residues followed by 7 alanine residues near the N-terminal. Three ALMS1 isoforms exist due to splicing variation. The first isoform is the full length ALMS1. Isoform 2 lacks amino acids 4121-4167. The third isoform is only 3,858 amino acids long and it contains an alternate sequence for amino acids 3850-3858. ALMS1 may play a role in intracellular transport, microtubule organization and basal body and cilia function. A mutation in the gene encoding ALMS1 results in the dysfunction of basal bodies and/or cilia. This dysfunction is suggested to be the cause of Alström syndrome, a rare autosomal-recessive condition. Symptoms include Insulin resistance, type 2 diabetes and obesity.

REFERENCES

1. Tai, T.S., et al. 2003. Metabolic effects of growth hormone therapy in an Alström syndrome patient. Horm. Res. 60: 297-301.
2. Collin, G.B., et al. 2005. ALMS1-disrupted mice recapitulate human Alström syndrome. Hum. Mol. Genet. 14: 2323-2333.
3. Farooqi, I.S. 2005. Genetic and hereditary aspects of childhood obesity. Best Pract. Res. Clin. Endocrinol. Metab. 19: 359-374.
4. Hearn, T., et al. 2005. Subcellular localization of ALMS1 supports involvement of centrosome and basal body dysfunction in the pathogenesis of obesity, Insulin resistance, and type 2 diabetes. Diabetes 54: 1581-1587.
5. Arsov, T., et al. 2006. Adaptive failure to high-fat diet characterizes steatohepatitis in ALMS1 mutant mice. Biochem. Biophys. Res. Commun. 342: 1152-1159.

CHROMOSOMAL LOCATION

Genetic locus: ALMS1 (human) mapping to 2p13.1.

PRODUCT

ALMS1 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 ALMS1 shRNA Plasmid (h): sc-72345-SH and ALMS1 shRNA (h) Lentiviral Particles: sc-72345-V as alternate gene silencing products.

For independent verification of ALMS1 (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-72345A, sc-72345B and sc-72345C.

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.

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

ALMS1 siRNA (h) is recommended for the inhibition of ALMS1 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 ALMS1 gene expression knockdown using RT-PCR Primer: ALMS1 (h)-PR: sc-72345-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.