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SANTA CRUZ BIOTECHNOLOGY, INC.

MGAT1 siRNA (h): sc-44467

BACKGROUND

Monoacylglycerol O-acyltransferase (MGAT) catalyzes diacylglycerol (a precursor to triacylglycerol) synthesis. MGAT is important in intestinal absorption of dietary fat because resynthesis of triacylglycerol is needed for the assembly of the lipoproteins that transport absorbed fat to tissues. MGAT1 is expressed in stomach, kidney, liver and adipose tissue but is not found in the intestine. On the contrary, MGAT2 is highly expressed in the small intestine as well as in kidney, liver, colon, stomach and white adipose tissue. MGAT 3 is highly homologous to MGAT1 and 2. The expression of MGAT3 is restricted to the gastrointestinal tract, most concentrated in the ileum.

REFERENCES

1. Bhat, B.G., et al. 1993. Solubilization and partial purification of neonatally expressed rat hepatic microsomal monoacylglycerol acyltransferase. Arch. Biochem. Biophys. 300: 663-669.
2. Lehner, R., et al. 1993. Stereospecificity of monoacylglycerol and diacylglycerol acyltransferases from rat intestine as determined by chiral phase high-performance liquid chromatography. Lipids 28: 29-34.
3. Cases, S., et al. 2001. Cloning of DGAT2, a second mammalian diacylglycerol acyltransferase, and related family members. J. Biol. Chem. 276: 38870-38876.
4. Yen, C.L., et al. 2002. Identification of a gene encoding MGAT1, a monoacylglycerol acyltransferase. Proc. Natl. Acad. Sci. USA 99: 8512-8517.
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6. Cheng, D., et al. 2003. Identification of acyl coenzyme A:monoacylglycerol acyltransferase 3, an intestinal specific enzyme implicated in dietary fat absorption. J. Biol. Chem. 278: 13611-13614.
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CHROMOSOMAL LOCATION

Genetic locus: MOGAT1 (human) mapping to 2q36.1.

PRODUCT

MGAT1 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 MGAT1 shRNA Plasmid (h): sc-44467-SH and MGAT1 shRNA (h) Lentiviral Particles: sc-44467-V as alternate gene silencing products.

For independent verification of MGAT1 (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-44467A, sc-44467B and sc-44467C.

RESEARCH USE

For research use only, not for use in diagnostic procedures.

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

MGAT1 siRNA (h) is recommended for the inhibition of MGAT1 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.

GENE EXPRESSION MONITORING

MGAT1 (H-6): sc-376079 is recommended as a control antibody for monitoring of MGAT1 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 MGAT1 gene expression knockdown using RT-PCR Primer: MGAT1 (h)-PR: sc-44467-PR (20 µl). Annealing temperature for the primers should be 55-60° C and the extension temperature should be 68-72° C.

PROTOCOLS

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