DGAT1 siRNA – Diacylglycerol O-Acyltransferase 1 (Human)

PRODUCT OVERVIEW

Product Name	DGAT1, siRNA
Full Product Name	DGAT1 siRNA (Human)
Product Gene Name	DGAT1 sirna
Product Synonym Names	AGRP1; DGAT; Diacylglycerol O-acyltransferase 1; ACAT-related gene product 1; Acyl-CoA retinol O-fatty-acyltransferase; ARAT; Retinol O-fatty-acyltransferase; Diglyceride acyltransferase
Host	Synthetic
Species Reactivity	Human
Form/Format	Lyophilized powder
Purity/Purification	> 97%
Specificity	DGAT1 siRNA (Human) is a target-specific 19-23 nt siRNA oligo duplexes designed to knock down gene expression.
Preparation and Storage	Shipped at 4 degree C. Store at -20 degree C for one year.
Molecular Weight	55,278 Da
OMIM	604900
3D Structure	ModBase 3D Structure for O75907
Negative Control	siRNA Negative Control (Catalog# MBS8241404) is a non-targeting 21 nt siRNA recommended as a negative control for experiments using targeted siRNA transfection.
Quality Control	Oligonucleotide synthesis is monitored base by base through trityl analysis to ensure appropriate coupling efficiency. The oligo is subsequently purified by affinity-solid phase extraction. The annealed RNA duplex is further analyzed by mass spectrometry to verify the exact composition of the duplex. Each lot is compared to the previous lot by mass spectrometry to ensure maximum lot-to-lot consistency.
Directions for Use	We recommends transfection with 100 nM siRNA 48 to 72 hours prior to cell lysis. Before resuspending, briefly centrifuge the tube to ensure the lyophilized siRNA is at the bottom of the tube. Resuspend the siRNA oligos to an appropriate concentration with DEPC water. For each vial, suitable for 250 transfections in 24 well plate (20 pmol for each well).
Components	We offer pre-designed sets of 3 different target-specific siRNA oligo duplexes of human DGAT1 gene. Each vial contains 5 nmol of lyophilized siRNA. The duplexes can be transfected individually or pooled together to achieve knockdown of the target gene, which is most commonly assessed by qPCR or western blot. Our siRNA oligos are also chemically modified (2'-OMe) at no extra charge for increased stability and enhanced knockdown in vitro and in vivo.
Applications Tested/Suitable for DGAT1 sirna	RNA Interference (RNAi)
Related Product Information for DGAT1 sirna	MBS8216231 is an siRNA targeting DGAT1. Also known as DGAT1 siRNA (Human). Reactive in Human. Host: Synthetic. siRNA to inhibit DGAT1 expression using RNA interference
Other Notes	Small volumes of DGAT1 sirna vial(s) may occasionally become entrapped in the seal of the product vial during shipment and storage. If necessary, briefly centrifuge the vial on a tabletop centrifuge to dislodge any liquid in the container`s cap. Certain products may require to ship with dry ice and additional dry ice fee may apply.

ADDITIONAL DETAILS

NCBI/Uniprot data below describe general gene information for DGAT1. It may not necessarily be applicable to this product.

NCBI GI #	145864459
NCBI GeneID	8694
NCBI Accession #	NP_036211.2
UniProt Primary Accession #	O75907
UniProt Secondary Accession #	Q96BB8; B2RWQ2; D3DWL6
UniProt Related Accession #	O75907
GenBank Nucleotide #	NM_012079.5
NCBI Official Full Name	diacylglycerol O-acyltransferase 1
NCBI Official Synonym Full Names	diacylglycerol O-acyltransferase 1
NCBI Official Symbol	DGAT1
NCBI Official Synonym Symbols	ARAT; DGAT; ARGP1; DIAR7
UniProt Protein Name	Diacylglycerol O-acyltransferase 1
UniProt Synonym Protein Names	ACAT-related gene product 1; Acyl-CoA retinol O-fatty-acyltransferase (EC:2.3.1.76); ARAT; Retinol O-fatty-acyltransferase; Diglyceride acyltransferase
Protein Family	Diacylglycerol O-acyltransferase
UniProt Gene Name	DGAT1
UniProt Synonym Gene Names	AGRP1; DGAT; ARAT; Retinol O-fatty-acyltransferase
UniProt Entry Name	DGAT1_HUMAN
NCBI Protein Information	diacylglycerol O-acyltransferase 1
NCBI Summary for DGAT1	This gene encodes an multipass transmembrane protein that functions as a key metabolic enzyme. The encoded protein catalyzes the conversion of diacylglycerol and fatty acyl CoA to triacylglycerol. This enzyme can also transfer acyl CoA to retinol. Activity of this protein may be associated with obesity and other metabolic diseases. [provided by RefSeq, Jul 2013]
UniProt Comments for DGAT1	DGAT1: Catalyzes the terminal and only committed step in triacylglycerol synthesis by using diacylglycerol and fatty acyl CoA as substrates. In contrast to DGAT2 it is not essential for survival. May be involved in VLDL (very low density lipoprotein) assembly. In liver, plays a role in esterifying exogenous fatty acids to glycerol. Functions as the major acyl-CoA retinol acyltransferase (ARAT) in the skin, where it acts to maintain retinoid homeostasis and prevent retinoid toxicity leading to skin and hair disorders. Belongs to the membrane-bound acyltransferase family. Sterol o-acyltransferase subfamily. Protein type: Lipid Metabolism - glycerolipid; Cofactor and Vitamin Metabolism - retinol; EC 2.3.1.20; EC 2.3.1.76; Transferase; Membrane protein, multi-pass; Membrane protein, integral Chromosomal Location of Human Ortholog: 8q24.3 Cellular Component: endoplasmic reticulum membrane; integral to membrane Molecular Function: 2-acylglycerol O-acyltransferase activity; protein binding; transferase activity, transferring acyl groups; retinol O-fatty-acyltransferase activity; diacylglycerol O-acyltransferase activity Biological Process: sequestering of lipid; triacylglycerol metabolic process; retinol metabolic process; fatty acid homeostasis; phospholipid metabolic process; glycerophospholipid biosynthetic process; triacylglycerol biosynthetic process; cellular lipid metabolic process; diacylglycerol metabolic process Disease: Diarrhea 7
Research Articles on DGAT1	**1.** the apparent lack of therapeutic window owing to GI side effects of AZD7687, particularly diarrhoea, makes the utility of DGAT1 inhibition as a novel treatment for diabetes and obesity questionable.

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