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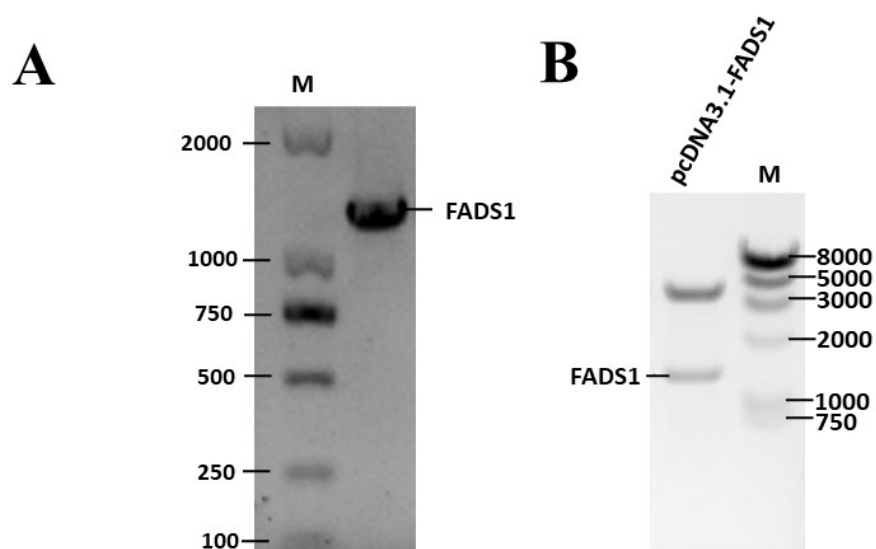
Supplementary Table 1 Sequences of siRNA for silencing goat FADS1 gene

Site	sense strand	Antisense strand
SiRNA-FADS1-359	CCACAUCAACAAGGGCCUUTT	AAGGCCCCUUGUUGAUGUGGTT
SiRNA- FADS1-817	GCAAAGACCCUGACAUCAATT	UUGAUGUCAGGGUCUUUGCTT
SiRNA- FADS1-1235	CCACAAGUCAGCCUUCAAUTT	AUUGAAGGCUGACUUGUGGTT
Scrambled-SiRNA	UUCUCCGAACGUGUCAGUTT	ACGUGACACGUUCGGAGAATT

Supplementary Table 2. Primers used for quantitative real-time PCR of genes

NCBI accession ID	Gene	Primer sequence (5' to 3')		Size(bp)
JN236219.1	<i>ACC</i>	F	CTCCAACCTCAACCACTACGG	171
		R	GGGGAATCACAGAAGCAGCC	
BC134532	<i>ACSS2</i>	F	GGCGAATGCCTCTACTGCTT	100
		R	GGCCAATCTTTTCTCTAATCTGCTT	
NM_001046597.1	<i>ELOVL5</i>	F	GTTCTGTGAGTTAGTGACGGGAGT	100
		R	GTGGTTGTTCTTGCGGAGGAT	
NM_001102155.1	<i>ELOVL6</i>	F	GGAAGCCTTTAGTGCTCTGGTC	205
		R	ATTGTATCTCCTAGTTCGGGTGC	
XM_005700842.1	<i>FABP4</i>	F	TGTGGCCCTTGATATGGTT	101
		R	GGTTGTCGCTGAGCTCTGTG	
BT030532.1	<i>DGAT2</i>	F	CATGTACACATTCTGCACCGATT	100
		R	TGACCTCCTGCCACCTTTCT	
NM_001285701.1	<i>FABP3</i>	F	GATGAGACCACGGCAGATG	120
		R	GTCAACTATTTCCCGCACAAAG	
XM_018043053.1	<i>FADS1</i>	F	GGTGGACTTGGCCTGGATG	101
		R	TGACCATGAAGACAAGCCCC	
HM443643.1	<i>FADS2</i>	F	GCCTGTAGGCTCAGATGTTTGTTT	101
		R	TGCCTGGCAGTAACAGAGCAC	
DQ915966.3	<i>FASN</i>	F	GGGCTCCACCACCGTGTTC	226
		R	GCTCTGCTGGGCCTGCAGCTG	
HQ846826	<i>PLIN2</i>	F	TACGATGATACAGATGAATCCAC	202
		R	CAGCATTGCGAAGCACAGAGT	
NM_001285751	<i>LXRa</i>	F	CATCAACCCCATCTTCGAGTT	163
		R	CAGGGCCTCCACATATGTGT	
XM_005709411.1	<i>RPS9</i>	F	CCTCGACCAAGAGCTGAAG	64
		R	CCTCCAGACCTCACGTTTGTTT	
GU947654	<i>SCD1</i>	F	CCATCGCCTGTGGAGTCAC	256
		R	GTCGGATAAATCTAGCGTAGCA	
HM443643.1	<i>SREBP1</i>	F	ACGCCATCGAGAAACGCTAC	181
		R	GTGCGCAGACTCAGGTTCTC	
XM_005696121.1	<i>SCAP</i>	F	CCATGTGCACTTCAAGGAGGA	107
		R	TGTCGATCTTGCGTGTGGAG	

XM_005700842.1	UXT	F	TGTGGCCCCTTGGATATGGTT	101
		R	GGTTGTCGCTGAGCTCTGTG	



Supplementary Figures

Figure S1 Molecular cloning of Goat *FADS1* gene and KpnI/EcoRI double-digested of pcDNA3.1-FADS1

(A) Gel electrophoresis of FADS1. M indicates Marker. (B) The eukaryotic expression vector of *FADS1* gene was double digested by KpnI and EcoRI.

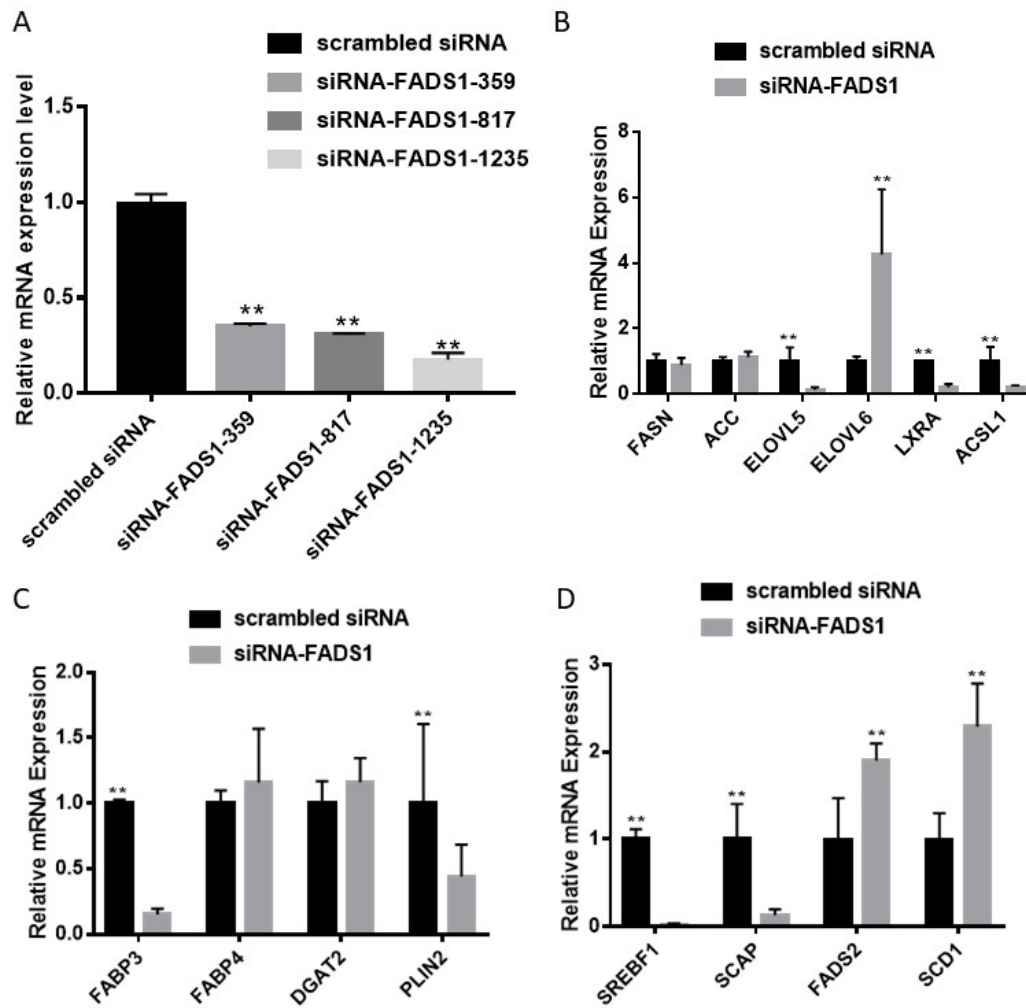


Figure S2 Effect of FADS1 siRNA on genes related to lipid metabolism in GMECs

(a) Comparison of interference efficiency of three FADS1 small interfering RNA sequences. Impact of FADS1 knockdown on the mRNA levels of genes related to (B) de novo fatty acid synthesis (FASN, ACC, ELOVL5, ELOVL6, and LXRA), (C) TAG synthesis, lipid droplet formation (DGAT2, PLIN2), and fatty acid uptake and transport (FABP3 and FABP4) (D) SREBF1, SCAP, FADS2 and SCD1 in GMECs after transfection with scrambled-siRNA or siRNA-FADS1. RT-qPCR data were calculated using $2^{-\Delta\Delta C_t}$, values are shown as mean $\pm$ SEM for three biological replicates. ** $P < 0.01$. * $P < 0.05$.