

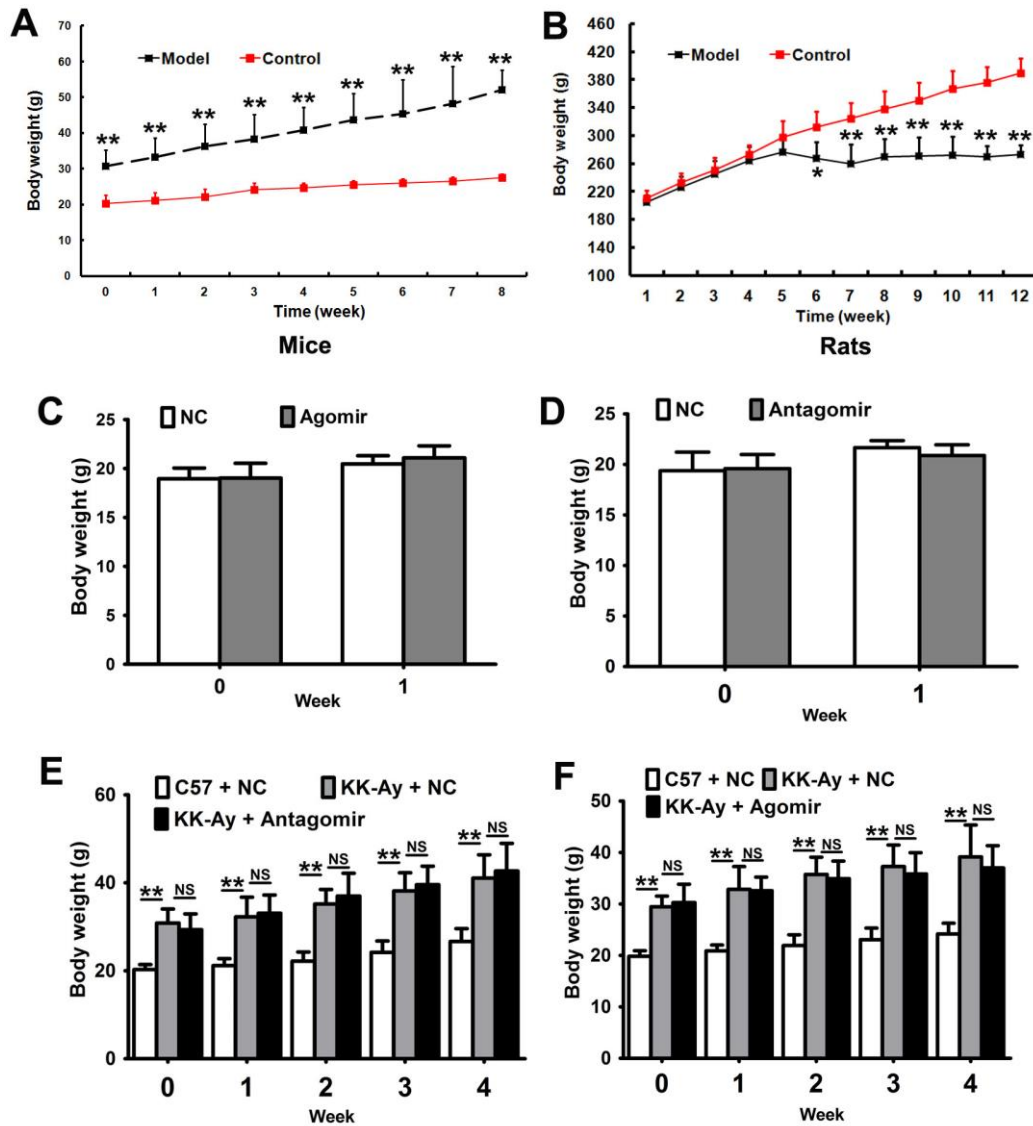
Supporting Information

Supplemental Table S1 The primer sequences used in qRT-PCR assay.

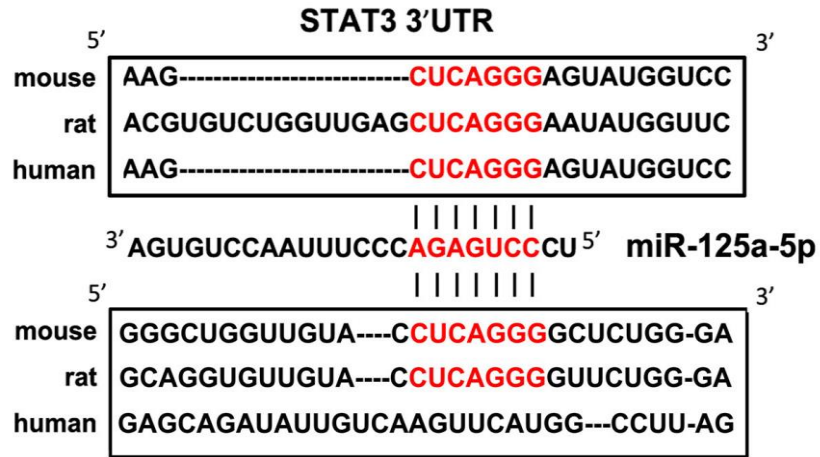
Gene	Forward primer (5'→3')	Reverse primer (5'→3')
Homo sapiens		
Stat3	ACCCACTCCTTGCCAGTTGT	GGCCACTTGATCCCAGGTT
Srebp-1c	GCTGTGCCAAGGCAGAGTCT	TGCGCACCACAAGAAGCA
Fas	GAACTCCTTGGCGGAAGAGA	AGGACCCCGTGAATGTCA
Acc	CCCATACGATCCTCGATGGA	CCTCCTAGCCTGGCTCTACCA
Scd1	CACCTCTTCGGATATCGTCCTT	GTTGATGTGCCAGCGGTACTC
Pepck	GGTTCCCAGGGTGCATGAAA	CACGTAGGGTGAATCCGTGAG
G6pase	TCTACGTCCTCTTCCCCATC	TCAGTATCCAAAACCCACCAG
β-actin	GGGAAATCGTGCGTGACATT	GGAACCGCTCATTGCCAAT
Rattus norvegicus		
Stat3	TTAGGGCCTGGTGTGAACTACTC	TTCATTCCAAAGGGCCAAGA
Srebp-1c	GCCCAGGTGACCCGACTATT	GACAGCGTCAGAACAGCTATTTAGC
Fas	CGTGGTAATGCTGGCCAATC	GGTACCCATCGCTTCCAAGA
Acc	GATGGCTTGCGGGAATGTT	CAGAACGGATCCCCTGCTT
Scd1	GCGAGGGCTTCCACAACACTAC	CAGCGGCCTTAGAAACTTTTTTC
Pepck	ATATGACAACTGTTGGCTGG	TCTTGGGTAATGATGACCGT
G6pase	CTGTGAGGCATTGCTGTG	GATGAGACAGTACCTCTGGAG
β-actin	CCTGTGGCATCCATGAAACTAC	CCAGGGCAGTAATCTCCTTCTG
Mus musculus		
Stat3	TGCTGACCAATAACCCCAAGA	GCTTCTCAGCCAGCGTTGTC
Srebp-1c	TCAAACCCAGCCTCCCAAGA	CCCCGTCCACAAAGAAACG
Fas	GCACCTATGGCGAGGACTTG	CCAGGGAGCTATGGATGATGTT
Acc	GATGGCTTGCGGGAATGT	CAGAACAGATCCCCTGCTTTCT
Scd1	CCTCCTGCTGATGTGCTTCA	TAGAGATGCGCGGCACTGT
Pepck	CCATCCCAACTCGAGATTCTG	CTGAGGGCTTCATAGACAAGG
G6pase	GTCGTGGCTGGAGTCTTG	CGGAGGCTGGCATTGTAG
β-actin	ACTGCCGCATCCTCTTCCT	TCAACGTCACACTTCATGATGGA

Supplemental Table S2 The primary antibodies used in Western blotting assay.

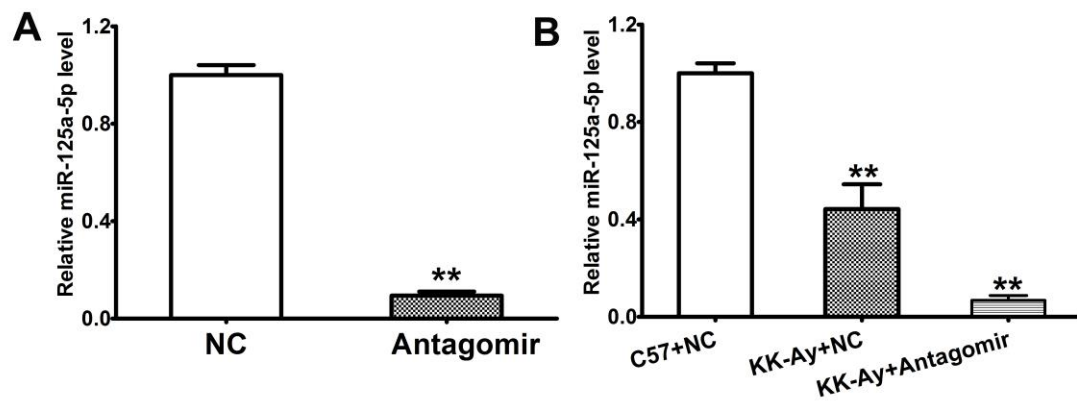
Antibody	Source	Dilutions	Company	Catalog number
STAT3	Rabbit	1: 500	Proteintech Group, USA	10253-2-AP
p-STAT3	Rabbit	1:300	Bioworld Technology, USA	AP0247
SOCS3	Rabbit	1: 500	Proteintech Group, USA	14025-1-AP
PI3K	Rabbit	1: 500	Proteintech Group, USA	20584-1-AP
p-PI3K	Rabbit	1: 300	Bioworld Technology, USA	AP0152
Akt	Rabbit	1: 500	Wanlei Biotechnology, China	WL0003b
p-Akt	Rabbit	1: 300	Bioworld Technology, USA	BS4006
GSK-3 β	Rabbit	1: 1000	Wanlei Biotechnology, China	WL01456
p-GSK-3 β	Rabbit	1: 500	Bioworld Technology, USA	BS6365
FoxO1	Rabbit	1: 300	Wanlei Biotechnology, China	WL02398
p-FoxO1	Rabbit	1: 300	Bioworld Technology, USA	BS4711
PEPCK	Rabbit	1: 1000	Proteintech Group, Chicago, USA	16754-1-AP
G6Pase	Rabbit	1: 500	Beijing Biosynthesis Biotechnology, China	bs-4044R
SREBP-1c	Rabbit	1: 200	Beijing Biosynthesis Biotechnology, China	bs-1402R
ACC	Rabbit	1: 1000	Proteintech Group, Chicago, USA	21923-1-AP
FAS	Rabbit	1: 1000	Proteintech Group, Chicago, USA	10624-2-AP
SCD1	Rabbit	1: 1000	Proteintech Group, Chicago, USA	23395-1-AP
PYK	Rabbit	1: 1000	Proteintech Group, Chicago, USA	24658-1-AP
GK	Rabbit	1: 1000	Proteintech Group, Chicago, USA	13360-1-AP
GLUT2	Rabbit	1:300	Proteintech Group, Chicago, USA	20436-1-AP
IL-6R	Rabbit	1:500	Proteintech Group, Chicago, USA	23457-1-AP
β -actin	Rabbit	1: 1000	Proteintech Group, Chicago, USA	14395-1-AP



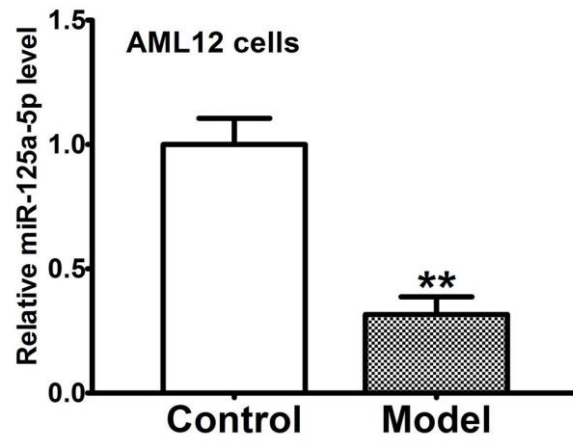
Supplemental Figure S1 The body weights of the animals. (A) C57BL/6 mice (control) and KK-Ay mice (model). (B) Wistar rats. (C) C57BL/6 mice injected with agomir control (NC) or miR-125a-5p agomir (Agomir). (D) C57BL/6 mice injected with antagomir control (NC) or miR-125a-5p antagomir (Antagomir). (E) C57BL/6 mice injected with antagomir control (C57+NC), and KK-Ay mice injected with antagomir control (KK-Ay+NC) or miR-125a-5p antagomir (KK-Ay+Antagomir). (F) C57BL/6 mice injected with agomir control (C57+NC), and KK-Ay mice injected with agomir control (KK-Ay+NC) or miR-125a-5p agomir (KK-Ay+Antagomir). * $p < 0.05$, ** $p < 0.01$.



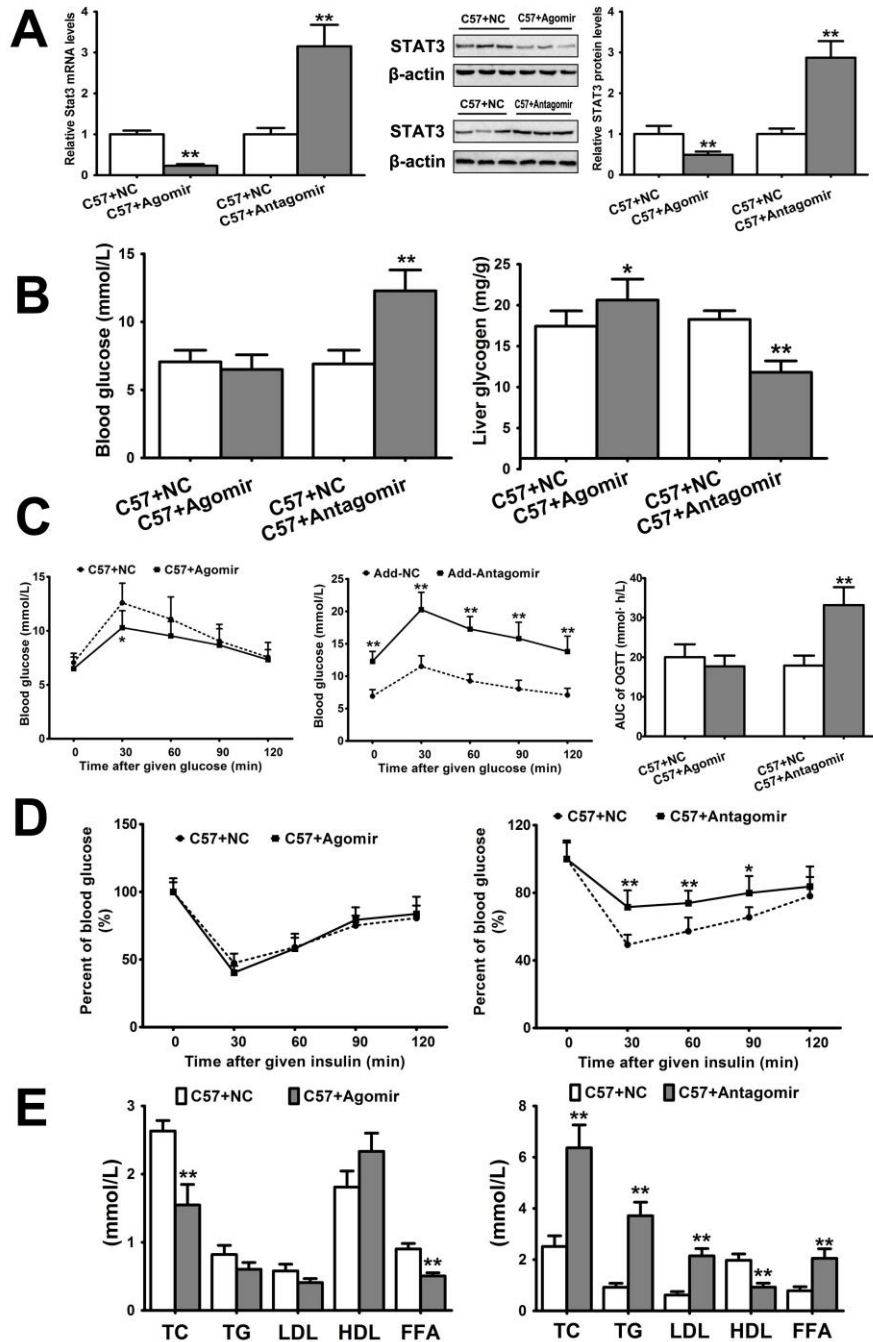
Supplemental Figure S2 Sequence alignment of miR-125a-5p with the 3'UTR of STAT3 in mouse, rat and human.



[Supplemental Figure S3](#) The hepatic expression levels of miR-125a-5p in C57BL/6 mice (A) and KK-Ay mice (B) treated with antagomir. ** $p < 0.01$ compared with NC/C57+NC mice.



[Supplemental Figure S4](#) The expression level of miR-125a-5p in AML12 cells induced by palmitic acid (0.1 mmol/L). ** $p < 0.01$ compared with Control group.



Supplemental Figure S5 Overexpression or inhibition of miR-125a-5p by agomir affected glycolipid metabolism in C57BL/6 mice. C57BL/6 mice were injected with miR-125a-5p agomir (5 mg/kg) or agomir control oligos (NC) via tail vein twice a week for 4 weeks, or injected intravenously with miR-125a-5p antagomir (20 mg/kg) or antagomir control oligos (NC) twice a week for 4 weeks ($n = 6$). **(A)** The hepatic expression levels of STAT3. **(B)** Blood glucose and liver glycogen contents. **(C)** OGTT results. **(D)** ITT results. **(E)** The levels of TC, TG, LDL, HDL and FFA in serum. Values are listed as the mean \pm SD. * $p < 0.05$, ** $p < 0.01$ compared with C57+NC group.