A

Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

PPARγ 57kDa

kDa Ad-DGAT2 Ad-NC sh-DGAT2 sh-NC Ad-DGAT2 Ad-NC sh-NC sh-DGAT2 kDa

63 63

63 48

48 35

B

Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

CEBP/α 39 kDa

kDa Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

48

35

C

Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

SREBF1 126 kDa

kDa Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

135

100

75

D

Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

DGAT1 55 kDa

kDa Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

75

63

48

35

E

Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

DGAT2 44 kDa

kDa Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

48

35

25

F

Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

Pax7 55 kDa

kDa Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

63

48

35

G

Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

MyoD1 35 kDa

kDa Ad-NC Ad-DGAT2 sh-NC sh-DGAT2

48

35

Figure S1. The original figure of the upper blot membrane of Figure 5E and 6E.The original western blot of PPARγ (**A**), C/EBPα (**B**), SREBF1 (**C**), DGAT1 (**D**), DGAT2 (**E**), Pax7 (**F**), MyoD1 (**G**), MyoG (**H**) and β-actin (**I**) protein in BSCs transfected with Ad-DGAT2/Ad-NC and sh-DGAT2/sh-NC.

Table S1. Information of clean data.

Sample	Trimmed_Read_Number	Trimmed_Bases	Useful_Read%	Useful_Bases%
Ad-DGAT2-1	39262616	5.89E+09	93.31	93.31
Ad-DGAT2-2	35167218	5.28E+09	93.21	93.21
Ad-DGAT2-3	38882100	5.83E+09	93.13	93.13
Ad-NC-1	46321320	6.95E+09	92.71	92.71
Ad-NC-2	42544930	6.38E+09	92.75	92.75
Ad-NC-3	40137942	6.02E+09	92.9	92.9
sh-NC-1	39417084	5.91E+09	93.48	93.48
sh-NC-2	36545664	5.48E+09	92.79	92.79
sh-NC-3	40611026	6.09E+09	92.55	92.55
sh-DGAT2-1	35169252	5.28E+09	92.93	92.93
sh-DGAT2-2	35238180	5.29E+09	92.85	92.85
sh-DGAT2-3	38945646	5.84E+09	91.95	91.95

Table S2. Summary of sequencing dada and reference genome compar-ison.

Sample	Clean Reads	Total Mapped	Multiple Mapped	Uniquely Mapped	Map Events	Mapped to Gene	Mapped to InterGene	Mapped to Exon
Ad-DGAT2-1	39262616	37622923 (95.82%)	873691 (2.32%)	36749232 (97.68%)	36749232	35293712 (96.04%)	1455520 (3.96%)	31542318 (89.37%)
Ad-DGAT2-2	35167218	33651647 (95.69%)	786025 (2.34%)	32865622 (97.66%)	32865622	31549754 (96.00%)	1315868 (4.00%)	28197356 (89.37%)
Ad-DGAT2-3	38882100	37271804 (95.86%)	871345 (2.34%)	36400459 (97.66%)	36400459	34913834 (95.92%)	1486625 (4.08%)	31094804 (89.06%)
Ad-NC-1	46321320	44601943 (96.29%)	1063563 (2.38%)	43538380 (97.62%)	43538380	41855359 (96.13%)	1683021 (3.87%)	37777213 (90.26%)
Ad-NC-2	42544930	40999061 (96.37%)	998055 (2.43%)	40001006 (97.57%)	40001006	38455274 (96.14%)	1545732 (3.86%)	34845919 (90.61%)
Ad-NC-3	40137942	38686409 (96.38%)	916427 (2.37%)	37769982 (97.63%)	37769982	36307118 (96.13%)	1462864 (3.87%)	32804176 (90.35%)
sh-NC-1	39417084	37878441 (96.10%)	910491 (2.40%)	36967950 (97.60%)	36967950	35564990 (96.20%)	1402960 (3.80%)	32005234 (89.99%)
sh-NC-2	36545664	35113371 (96.08%)	821878 (2.34%)	34291493 (97.66%)	34291493	32980521 (96.18%)	1310972 (3.82%)	29687377 (90.01%)
sh-NC-3	40611026	39064222 (96.19%)	941925 (2.41%)	38122297 (97.59%)	38122297	36658899 (96.16%)	1463398 (3.84%)	33056041 (90.17%)
sh-DGAT2-1	35169252	33751703 (95.97%)	819747 (2.43%)	32931956 (97.57%)	32931956	31668648 (96.16%)	1263308 (3.84%)	28467607 (89.89%)
sh-DGAT2-2	35238180	33889997 (96.17%)	823194 (2.43%)	33066803 (97.57%)	33066803	31823353 (96.24%)	1243450 (3.76%)	28581042 (89.81%)
sh-DGAT2-3	38945646	37444094 (96.14%)	900685 (2.41%)	36543409 (97.59%)	36543409	35145388 (96.17%)	1398021 (3.83%)	31473172 (89.55%)