

Supplementary Table 1. The chromatographic and mass spectrometric parameters for the LC/MS lipidomics study

Chromatographic parameters	
Column	Waters Acquity UPLC BEH C18, 2.1x100mm, 1.7 μ M
Column temperature	45°C
Autosampler temperature	10°C
Mobile phase	A= Water with 10mM Ammonium formate pH4 adjusted by formic acid B= Acetonitrile
Gradient	0% B (0-0.25min) 5% B (0.25-1min) 20% B (1-10min) 60% B (10-22min) 99% B (22-26min)
Flow rate	0.45 mL/min
Injection volume	12 μ l
MS parameters	
Polarity	Negative
Capillary voltage	4.0kV
Sheath gas flow rate	10 L/min
Sheath gas temperature	350°C
Drying gas flow rate (nitrogen)	7 L/min
Drying gas temperature	300°C
Nebuilizer gas (nitrogen)	45 psi
Fragmentor voltage	140V
Nozzle voltage	0V
Scanning range	50-1700 m/z

Supplementary Table 2: Regulation of fatty acids in A375 cells after co-culture with subcutaneous adipocytes

Compound	Regulation	Accurate MS	Retention Time (min)
10E-nonadecenoic acid	down	296.26810	18.25829
10-Hydroxy-3,7-dimethyl-2E,6E-decadienoic acid	down	212.13956	9.50828
10-hydroxy-8Z-Decene-4,6-diynoic acid	down	402.12634	10.54891
10-tridecynoic acid	down	210.16030	9.04052
10Z,13Z-nonadecadienoic acid	up	588.51120	18.54392
12Z-heneicosenoic acid	down	370.30423	24.77153
15-octadecene-9,11,13-triynoic acid	down	690.39825	25.06367
16-heptadecynoic acid	down	532.44700	23.31169
16Z-tricosenoic acid	down	398.33755	22.24143
17Z-pentacosenoic acid	down	426.36868	23.42075
2E,6E,8E,10E-dodecatetraenoic acid	down	384.22906	16.97578
2E,6Z,8Z,12E-hexadecatetraenoic acid	down	294.18090	9.11902
2-octynoic acid	down	280.16544	9.09935
2-pentadecenoic acid	up	526.43020	18.54478
2Z,4E-nonadienoic acid	down	508.29800	8.29309
3,9,15-Docosatriynoic acid	down	1030.73990	24.87174
3-decylenic acid	down	216.13434	9.05965
3-octadecynoic acid	down	280.23880	18.02790
4,7,10,13,16-Docosapentaynoic acid	down	640.34090	24.46954
4,7,10,13-docosatetraenoic acid	up	378.27872	17.68587
4-heptynoic acid	down	252.13496	9.09544
4Z,7Z,10Z,13Z,16Z,19Z,22Z,25Z-octacosaoctaenoic acid	up	408.30133	20.90376
5,8,11-dodecatriynoic acid	down	376.16882	13.44884
5,9,12-octadecatrienoic acid	down	324.22543	18.75168
6,9,12,15,18,21-Tetracosahexaynoic acid	down	344.17657	13.23476
6,9,12-Eicosatriynoic acid	down	346.20970	15.46260
6E,8E,12E,14E-Hexadecatetraen-10-ynoic acid	down	534.29645	19.23109
Arachidic acid	up	312.30063	22.30968
Capric acid	down	562.45496	25.69240
Caproic acid	down	116.08536	0.92467
cis, cis-stillingic acid	down	382.23645	14.28399
cis,cis-dodeca-3,6-dienoic acid	down	196.14511	9.66053
cis-erucic acid	down	384.31958	21.92792

*Only fatty acids with statistically significant effect ($p < 0.05$) and fold change > 2.0 are presented in the table as described in Materials and methods section

Supplementary Table 2: Regulation of fatty acids in A375 cells after co-culture with subcutaneous adipocytes (cont'd)

Compound	Regulation	Accurate MS	Retention Time (min)
Crotonic acid	down	86.03724	0.93133
Heptylic acid	down	390.29890	17.72229
Margaric acid	down	270.25293	18.28515
Palmitic acid	up	256.24260	17.96330
Pelargonic acid	down	362.26822	15.29633
trans,trans-hepta-2,4,6-trienoic acid	up	418.15960	7.68239
trans-tetradec-11-enoic acid	down	272.19202	10.31420
Undecylic acid	down	186.16025	7.37731

*Only fatty acids with statistically significant effect ($p < 0.05$) and fold change > 2.0 are presented in the table as described in Materials and methods section