

SUPPLEMENTAL INFORMATION

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Supplemental Figure S3. Mechanism of quercetin anti-inflammatory effects in adipose tissue macrophages.

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Table S1. Primers for quantitative real-time PCR

Gene	Sequence of forward primers (5' to 3')	Sequence of reverse primers (5' to 3')
<i>F4/80</i>	CTTTGGCTATGGGCTTCCAGTC	GCAAGGAGGACAGAGTTTATCGTG
<i>mMcp-4</i>	CTTCTGACTTTTATCAAGCCGGG	CACTCCAGTTCGCCCCC
<i>Cd11c</i>	CTGGATAGCCTTTCTTCTGCTG	GCACACTGTGTCCGAACTC
<i>Nos2</i>	CCAAGCCCTCACCTACTTCC	CTCTGAGGGCTGACACAAGG
<i>Chi3l3</i>	AGAAGGGAGTTTCAAACCTGGT	GTCTTGCTCATGTGTGTAAGTGA
<i>Mgl2</i>	TTAGCCAATGTGCTTAGCTGG	GGCCTCCAATTCTTCTTGAAACCT
<i>Adiponectin</i>	GCAGAGATGGCACTCCTGGA	CCCTTCAGCTCCTGTCATTCC
<i>GLUT4</i>	GTGACTGGAACACTGGTCCTA	CCAGCCACGTTGCATTGTAG
<i>Mcp-1</i>	CCCCAAGAAGGAATGGGTCC	GGTTGTGGAAAAGGTAGTGG
<i>IL-6</i>	CCTTCCTACCCCAATTTCCAA	AGATGAATTGGATGGTCTTGGTC
<i>Tnf-α</i>	ACGGCATGGATCTCAAAGAC	AGATAGCAAATCGGCTGACG
<i>IL-1β</i>	GCAACTGTTCTGAACTCAACT	TCTTTTGGGGTCCGTCAACT
<i>IL-10</i>	ACTGCACCCACTTCCCAGT	TGTCCAGCTGGTCCTTTGTT
<i>Cpt1a</i>	CTATGCGCTACTCGCTGAAGG	GGCTTTGACCCGAGAAGA
<i>Ucp1</i>	CACTCAGGATTGGCCTCTACG	GGGGTTTGATCCCATGCAGA
<i>GAPDH</i>	TGTCATACTTGGCAGTTTCT	CGTGTTCTACCCCAATGT

Table S2. Primary antibodies used in this study

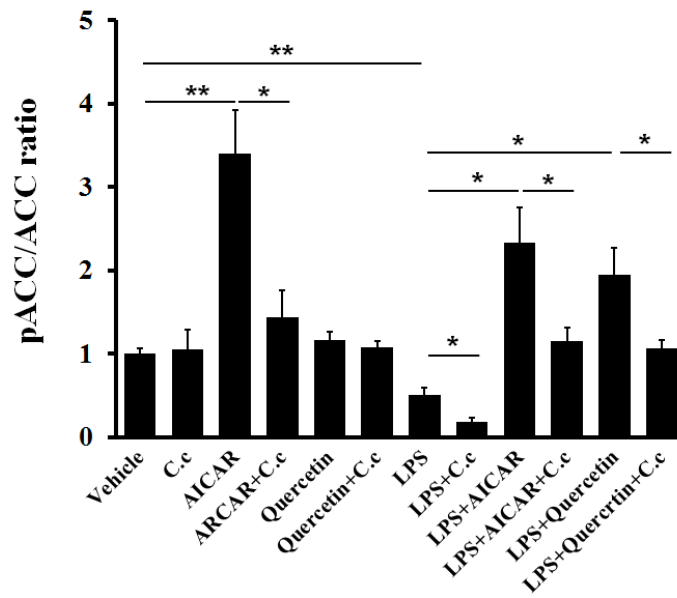
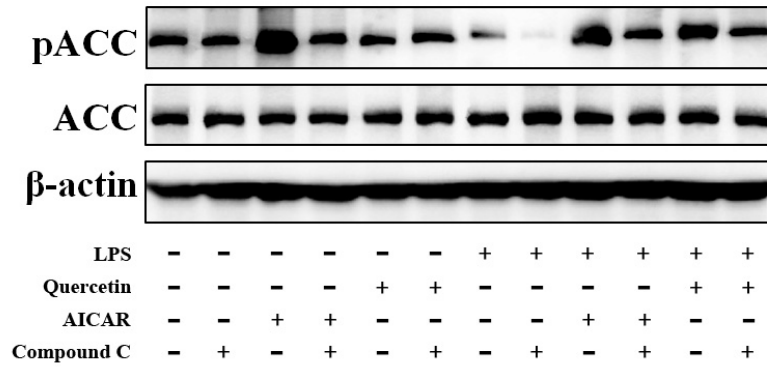
Antibody name	Supplier	Catalog No.	Dilution
AKT rabbit mAb	Cell Signaling Technology	4691	1:1000
Phospho-AKT (Ser473) antibody	Cell Signaling Technology	9271	1:1000
AMPK α antibody	Cell Signaling Technology	2532	1:1000
Phospho-AMPK α (Thr172) antibody	Cell Signaling Technology	2531	1:1000
SIRT1 rabbit mAb	Cell Signaling Technology	9475	1:1000
Acetyl-CoA Carboxylase rabbit mAb	Cell Signaling Technology	3676	1:1000
Phospho-Acetyl-CoA Carboxylase (Ser79) antibody	Cell Signaling Technology	3661	1:1000
LKB1 rabbit mAb	Cell Signaling Technology	3047	1:1000
Phospho-LKB1 (Ser428) rabbit mAb	Cell Signaling Technology	3482	1:1000
Anti-GLUT-4 polyclonal antibody	Millipore	07-1404	1:500
Anti-Actin	Sigma-Aldrich	A2066	1:100
Purified anti-mouse Mac-2	Biolegend	125401	1:800

Table S3. Effects of dietary quercetin on the body weight gain, liver weight and adipose tissue weight in C57BL/6 mice.

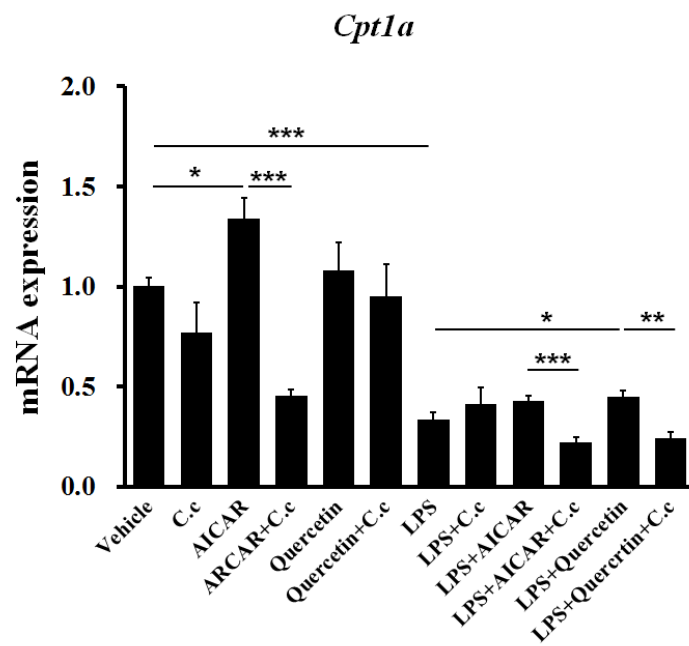
	HFD	HFD+0.1%Qu	LFD
Initial body weight (g)	19.660±0.252 ^a	19.588±0.472 ^a	19.300±0.407 ^a
Final body weight (g)	41.320±0.950 ^a	37.244±1.455 ^b	30.455±0.592 ^c
Liver weight (g)	1.359±0.060 ^a	1.341±0.079 ^a	1.494±0.068 ^a
EAT weight (g)	1.861±0.061 ^a	1.302±0.175 ^b	0.361±0.063 ^c
SAT weight (g)	1.335±0.109 ^a	0.783±0.121 ^b	0.263±0.029 ^c
BAT weight (g)	0.168±0.015 ^a	0.18±0.028 ^a	0.082±0.005 ^b

Values are mean ± SEM, n=8. Values within a row with different superscript letters in each experiment are significantly different from each other (p<0.05) by Mann-Whitney test. LFD, low fat diet; HFD, high fat diet; HFD+0.1%Qu, high fat diet containing 0.1% quercetin; EAT, epididymal adipose tissue; SAT, subcutaneous adipose tissue; BAT, brown adipose tissue.

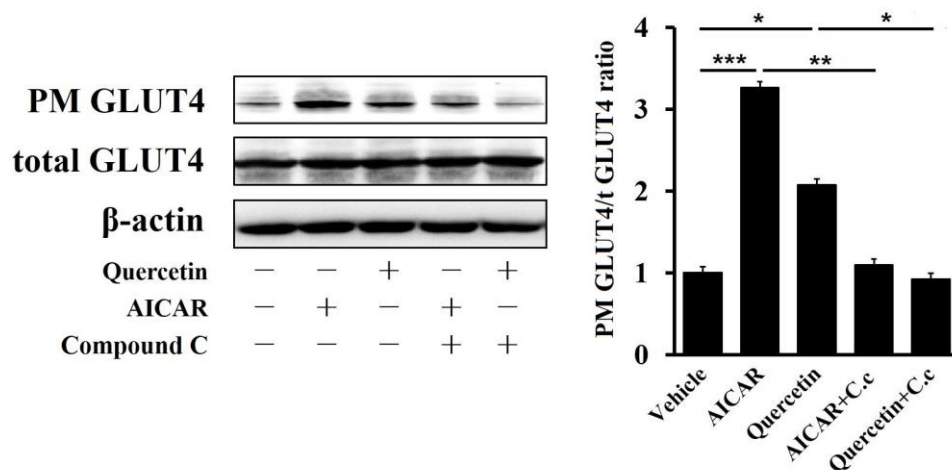
A



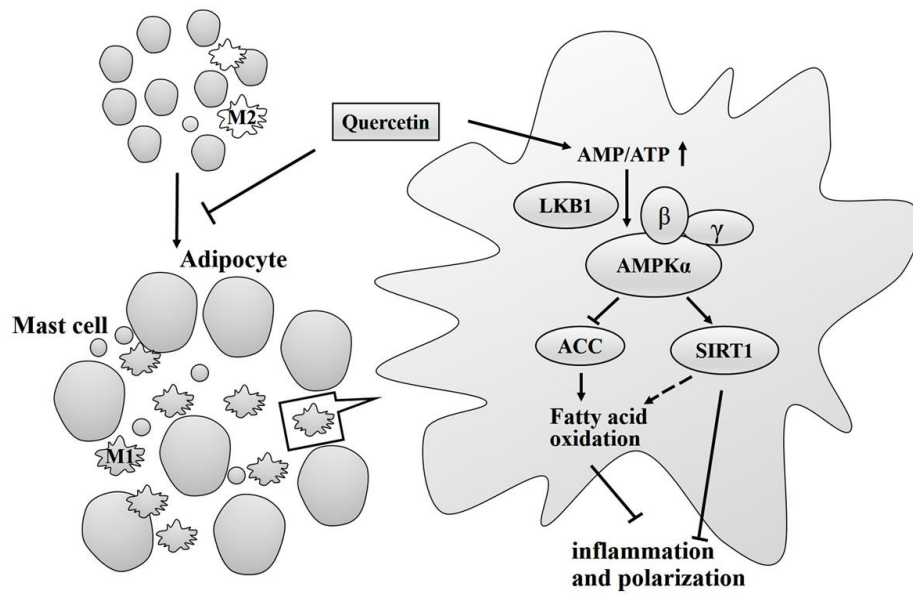
B



Supplemental Figure S1. Effect of quercetin on ACC phosphorylation and *Cpt1a* expression in BMDMs. (A) Immunoblots for phospho-ACC (Ser 79) and ACC in BMDMs. Quantification of protein expression was described as ratio of phosphorylated ACC to total ACC. (B) Real-time PCR quantitative mRNA expression of *Cpt1a* in BMDMs. *GAPDH* was used as reference gene in qPCR analysis. Data are represented as fold changes compared to vehicle. C.c represented Compound C. Statistical difference between groups was shown using a Student's t test. n=4 per group. *p<0.05, **p<0.01, ***p<0.001. All data are mean \pm SEM.



Supplemental Figure S2. Effect of quercetin on GLUT4 translocation in 3T3-L1 adipocytes. Differentiated 3T3-L1 adipocytes were starved for 2 h in serum-free medium before starting the experiment. Thereafter, 2 mM AICAR or 20 μ M quercetin were added into medium with or without 10 μ M Compound C for 30 min. Quantification of protein expression was described as ratio of plasma membrane protein to total protein. Data are represented as fold changes compared to vehicle. C.c represented Compound C. Statistical difference between groups was shown using a Student's t test. n=4 per group. *p<0.05, **p<0.01, ***p<0.001. All data are mean \pm SEM.



Supplemental Figure S3. Mechanism of quercetin anti-inflammatory effects in adipose tissue macrophages.