

Supplementary Material

Supplementary Table S1. Primer sequence

Gene	Forward primer (5'→3')	Reverse primer (5'→3')
<i>CD36</i>	GATGACGTGGCAAAGAACAG	AAAGGAGGCTGCGTCTGTG
<i>SCD-1</i>	TTCTTGCGATACTCTGGTGC	CGGGATTGAATGTTCTTGTCGT
<i>SREBP1c</i>	TGGATTGCACATTTGAAGACAT	GCCAGAGAAGCAGAAGAG
<i>UCP1</i>	GTGAACCCGACAACCTCCGAA	TGAAACTCCGGCTGAGAAGAT
<i>PGC1α</i>	TGGAGTGACATAGAGTGTGCTGC	CTC AAATATGTTTCGCAGGCTCA
<i>Dio2</i>	AATTATGCCTCGGAGAAGACCG	GGCAGTTGCCTAGTGAAAGGT
<i>Prdm16</i>	CCACCAGCGAGGACTTCAC	GGAGGACTCTCGTAGCTCGAA
<i>Cidea</i>	TGCTCTTCTGTATCGCCAGT	GCCGTGTTAAGGAATCTGCTG
<i>UCP2</i>	ATGGTTGGTTTCAAGGCCACA	TTGGCGGTATCCAGAGGGAA
<i>Cox8b</i>	TGTGGGGATCTCACCATAGT	GCAGGAGTACGATGAGTCCG
<i>Tfam</i>	GTCGCATCCCCTCGTCTATC	GCTGGAAAAACACTTCGGAATAC
<i>Nrf1</i>	AGCACGGAGTGACCCAAAC	TGTACGTGGCTACATGGACCT
<i>C/EBPα</i>	CAAGAACAGCAACGAGTACCG	GTCACTGGTCAACTCCAGCAC
<i>PPARγ</i>	TCGCTGATGCACTGCCTATG	GAGAGGTCCACAGAGCTGATT
<i>FAS</i>	GGAGGTGGTGATAGCCGGTAT	TGGGTAATCCATAGAGCCCAG
<i>aP2</i>	CCGCAGACGACAGGA	CTCATGCCCTTTCATAAACT
<i>β-actin</i>	GCAGGAGTACGATGAGTCCG	ACGCAGCTCAGTAACAGTCC
<i>18S</i>	CTCAACACGGGAAACCTCAC	CGCTCCACCAACTAAGAACG

Supplementary Table S2. Diet formulation (g/kg)

Ingredient	N	HFD	HFD + 0.25% WSE	HFD + 0.5% WSE
Casein	200	200	200	200
Corn oil	50	50	50	50
Lard	-	200	200	200
Cholesterol	-	5	5	5
Corn starch	350	145	145	145
Sucrose	300	300	300	300
Cellulose	50	50	50	50
Mineral	35	35	35	35
Vitamin	10	10	10	10
Methionine	3	3	3	3
Choline bitartate	2	2	2	2
WSE	-	-	2.5	5
Total	1,000	1,000	1,000	1,000

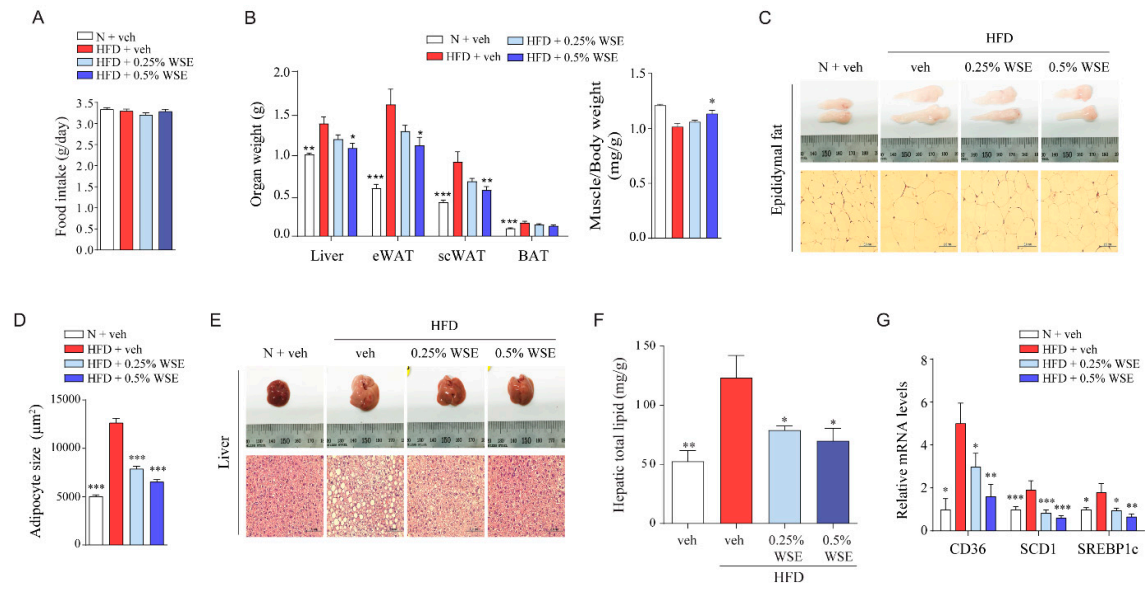
Supplementary figures

Supplementary Figure S1. WSE reduces lipid accumulation in the liver and adipose tissue of HFD-fed mice. (A) Food intake during the 10 weeks. (B) Organ weights. (C) H&E stained epididymal fat. (D) Measurement of adipocyte size. (E) H&E stained liver. (F) Hepatic total lipid measured by Folch method. (G) Expression of mRNA involved in the hepatic lipogenesis. Data represent mean \pm SEM (n = 10). * p < 0.05; ** p < 0.01; *** p < 0.001 compared to the HFD group.

Supplementary Figure S2. WSE improves insulin sensitivity in HFD-fed mice. (A) Blood glucose levels at the indicated time points after oral glucose administration. (B) Area under the curve of OGTT. (C) Blood glucose levels at the indicated time points after insulin injection. (D) Area under the curve of IPITT. Data represent mean \pm SEM (n = 7). * p < 0.05; ** p < 0.01; *** p < 0.001 compared to the HFD group.

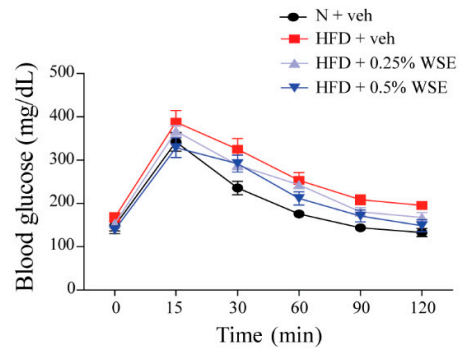
Supplementary Figure S3. WNA promotes the OCR in the C2C12 cells. (A) Oxygen consumption levels in WNA-treated C2C12 cells. (B) Quantification of basal respiration. (C) ATP production. (D) maximal respiration. (E) Spare capacity. (F) Protein expression of total MHC and UCP2 in C2C12 myogenic differentiated cells. Data represent mean \pm SD (n = 5). * p < 0.05, ** p < 0.01, *** p < 0.001 compared to vehicle.

Supplementary Figure S1

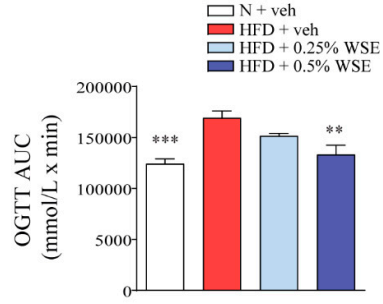


Supplementary Figure S2

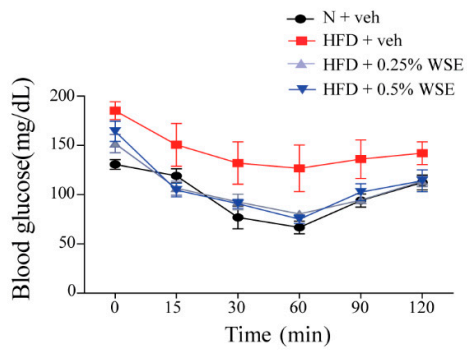
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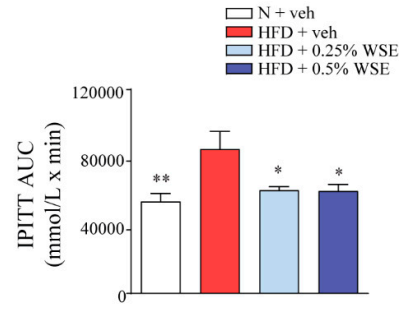
B



C



D



Supplementary Figure S3

