

## Supplementary Tables

**Supplementary Table S1.** Composition of the experimental control diet (CD) and Western diet (WD)

Item	CD* (TD.110240)	WD* (TD.110239)
Main ingredients (g kg <sup>-1</sup> )		
Isolated soy protein	210	255
L-METHIONINE	2.47	3
Sucrose	100	190
Fructose	—	65
Corn starch	354	—
Maltodextrin	93	93
Cellulose	130	130
Soybean oil	60	—
Cocoa butter	—	50
Lard	—	55
Coconut oil	—	95
Cholesterol	—	2.5
Vitamin Mix Teklad (40060)	10	12.3
Vitamin C, l-ascorbyl-2-polyphosphate (35%)	0.61	0.75
Folic acid	0.008	0.01
Calcium phosphate dibasic	17.66	21.5
Potassium citrate, monohydrate	9.85	12
Magnesium oxide	2.63	3.2
Potassium chloride	3.29	4
Sodium chloride	1.64	2
Calcium carbonate	4.1	5
Ferric citrate	0.33	0.4
Manganese sulfate, monohydrate	0.164	0.2
Zinc carbonate	0.05	0.06
Cupric sulfate	0.0164	0.02
Potassium iodate	0.0008	0.001
Chromium potassium sulfate, dodecahydrate	0.008	0.01
Sodium selenite, pentahydrate	0.0008	0.001
Ammonium paramolybdate, tetrahydrate	0.0002	0.0003
Chemical composition		
Protein (% kcal)	21.6	21.4
Fat (% kcal)	18.4	45.3
Carbohydrates (% kcal)	60	33.3
Energy (kcal g <sup>-1</sup> )	3.4	4.2
Fatty acid composition (% of total fatty acids)		
Lauric acid (C12:0)	—	23.12
Myristic acid (C14:0)	—	8.83
Palmitic acid (C16:0)	11	17.32
Stearic acid (C18:0)	4	13.24
Oleic acid (C18:1 <i>cis</i> 9)	23.5	24.4
Linoleic acid (C18:2 <i>n</i> -6)	53.4	4.2
α-Linoleic acid (C18:3 <i>n</i> -3)	8	0.03

\*Diets were formulated in the Harlan Laboratories (Madison, WI, USA)

**Supplementary Table S2.** Primers used for analysis of gene expression by qRT-PCR

Gene	Accession No.	Anneal Temp (°C)	Forward Sequence (5'-3')	Reverse Sequence (3'-5')	Efficiency
<i>VLCAD</i>	XM_003466183.2	59	CAAACCTGGCAGTGACGGCT	TTGGTGGGGGTCAGACTGTA	91.2%
<i>MCAD</i>	XM_003479087.2	59	CGAGTTGACCGAACAGCAGA	CAACAGGCATTTGCCCCAAG	94.4%
<i>KT</i>	XM_003464099.2	59	TAAGGTCCTACGCAGTGGTTG	CTCCATAAGCCCTCTTCCCAC	90.8%
<i>PDK4</i>	XM_003475111.2	59	GCAGTGGTCCAAGATGCCTT	TGGTGTTCAACTGTTGCCCT	94.2%
<i>CPT1b</i>	XM_003461559.1	59	AGCTCCCCATTCCATAGCAGA	CGCTGAGCATTCGTCCTGA	96.7%
<i>PGC1α</i>	XM_003467408.2	56	CAAGACCAGTGAAATGAGGG	CATCCTTTGGGGTCTTTGAG	92.5%
<i>PPARα</i>	NM_001173004.1	56	AGATCCAGAAAAAGAACCGC	TTTTGCTTTCTCAGACCTCG	91.8%
<i>SIRT1</i>	XM_005005505.1	58	TTGCAACTGCATCTTGCCCTG	TCATGGGGTATGGAACTTGGAA	103.8%
<i>SIRT3</i>	XM_004999541.1	58	CATGGCGGATCTGCTACTCA	AGGCTGCATGTTGTGGTTTG	93.8%
<i>β-actin</i>	NM_001172909.1	59	AAGAGATGTGGCCTCAAAGC	CAGGAACAGGCCGTAGAGTG	100.6%

**Supplementary Table S3.** Specifications and catalog numbers of antibodies used for immunoblotting

Protein	Species	Dilution	Blocking	Company	Catalogue
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			<b>Solution</b>		<b>No.</b>
IR $\beta$	Rabbit Monoclonal	1:1000	5% BSA	Cell Signaling Technology	3025
pIR $\beta$ (Tyr 1150/1151)	Rabbit Monoclonal	1:1000	5% BSA	Cell Signaling Technology	3024
pAKT (Ser 473)	Rabbit Monoclonal	1:1000	5% BSA	Cell Signaling Technology	4060
pAKT (Thr308)	Rabbit Monoclonal	1:1000	5% BSA	Cell Signaling Technology	2965
PKC $\theta$	Rabbit Polyclonal	1:1000	5% BSA	Cell Signaling Technology	2059
PKC $\epsilon$	Rabbit Monoclonal	1:1000	5% BSA	Cell Signaling Technology	2683
pJNK(Thr183/Tyr185)	Mouse Monoclonal	1:500	5% Milk	Santa Cruz Biotechnology	sc-6254
JNK	Mouse Monoclonal	1:500	5% Milk	Santa Cruz Biotechnology	sc-7345
pIKK $\beta$ (Ser177/181)	Rabbit Polyclonal	1:1000	5% BSA	Cell Signaling Technology	2694
IKK $\beta$	Rabbit Polyclonal	1:1000	5% BSA	Cell Signaling Technology	2678
pIRS1 (ser302)	Mouse Monoclonal	1:1000	5% Milk	Millipore	05-1086
IRS1	Rabbit Monoclonal	1:1000	5% BSA	Cell Signaling Technology	2382
Anti-Rabbit Secondary	Mouse Monoclonal	1:10,000	5% BSA or Milk	Cell Signaling Technology	7074
Anti-Mouse Secondary	Donkey	1:5000	5% BSA or Milk	Cell Signaling Technology	7076