

**Supplementary Table 1 Primers used for quantitative real-time PCR**

Gene	Sense primer (5'→3')	Antisense primer (5'→3')
PPAR $\alpha$	GGTCATACTCGCAGGAAA	AGCAAATTATAGCAGCCAC
PPAR $\gamma$	TCAGGGCTGCCAGTTCG	GCTTTGGCATACTCTGTGATCTC
PPAR $\delta$	AACGAGATCAGCGTGCATGTG	TGAGGAAGAGGGCTGCTGAAGTT
PGC1 $\alpha$	TGAGAGGGCCAAGCAAAG	ATAAATCACACGGCGCTCTT
CPT1 $\alpha$	CGGTTCAAGAACATGGCATCATC	TCACACCCACCACACGAT
FAS	GTCTGCAGCTACCCACCCGTG	CTTCTCCAGGGTGGGGACCAG
ACC	ACAGAGATGGTGGCTGATGTC	GATCCCCATGGCAATCTG
SCD1	TGCCAGAGGAAATAGGGAAA	CTCTCCCATCCTTACTTACAAACC A
<i>Lactobacillus</i> spp.	AGCAGTAGGAAATCTTCCA	ATTYCACCGCTACACATG
<i>Bifidobacterium</i> spp.	CTCCTGGAAACGGGTGG	GGTGTCTTCCCGATATCTACA
<i>Enterobacteriaceae</i> spp.	CATTGACGTTACCCGCAGAAGAAGC	CTCTACGAGACTCAAGCTTGC
<i>Bacteroides</i> spp.	ATAGCCTTCGAAAGRAAGAT	CCAGTATCAACTGCAATTAA
$\beta$ -actin	TGTTGTCCCTGTATGCCTCT	TAATGTCACGCACGATTCC

**Supplementary Table 2 Fatty acids composition of the two kinds of diet (mg/g)**

Groups	HFD	ND
14:0	0.762 ± 0.018	0.106 ± 0.029
9c14:1	nd	nd
15:0	0.057 ± 0.002	0.024 ± 0.007
16:0	15.672 ± 0.494	2.447 ± 0.706
9c16:1	0.727 ± 0.010	0.064 ± 0.018
17:0	0.160 ± 0.003	0.017 ± 0.007
9c17:1	0.078 ± 0.008	0.010 ± 0.003
18:0	8.721 ± 0.329	0.472 ± 0.116
9t/11t18:1	0.006 ± 0.010	0.007 ± 0.002
9c18:1	17.309 ± 0.421	2.427 ± 0.729
11c18:1	1.015 ± 0.019	0.112 ± 0.033
9c12t/9t12c18:2	0.020 ± 0.003	0.001 ± 0.002
9c12c18:2n-6	10.321 ± 0.226	4.896 ± 1.463
6c9c12c18:3n-6	0.012 ± 0.011	nd
ctt/cct18:3	nd	nd
C20:0	0.172 ± 0.007	0.043 ± 0.012
ctc/tcc18:3	nd	nd
9c12c15c18:3n-3	0.495 ± 0.008	0.253 ± 0.077
11c20:1	0.362 ± 0.006	0.035 ± 0.010
20:2n-6	0.228 ± 0.005	0.006 ± 0.002
20:3n-6	0.046 ± 0.002	0.004 ± 0.001
22:0	0.027 ± 0.002	0.022 ± 0.006
20:4n-6	0.131 ± 0.003	0.024 ± 0.006
20:5n-3	0.090 ± 0.002	0.084 ± 0.024
C24:0	0.023 ± 0.001	0.022 ± 0.006
C22:5n-3	0.047 ± 0.001	0.017 ± 0.003
C22:6n-3	0.142 ± 0.003	0.143 ± 0.041
ΣSFA	25.593 ± 0.844	3.153 ± 0.874
ΣMUFA	19.500 ± 0.438	2.651 ± 0.793
ΣPUFA	11.512 ± 0.247	5.428 ± 1.615
Σtrans	0.026 ± 0.013	0.008 ± 0.004
ΣFA	56.630 ± 0.515	11.241 ± 0.284