

Table S1. Fatty acid composition (%) in brain of C57/BL mice on HFD regime after 8 week wash out period

FAMEs	HFD	HFD WCFS1	HFD LA68
16:0	17.131 ± 1.181	17.433 ± 0.996	17.557 ± 1.157 [†]
18:0	15.305 ± 0.950	15.480 ± 0.971	15.957 ± 0.663
20:0	0.327 ± 0.025 [†]	0.345 ± 0.036	0.347 ± 0.033 [†]
22:0	0.608 ± 0.054 [†]	0.650 ± 0.065 [†]	0.652 ± 0.044 [†]
24:0	0.637 ± 0.089	0.796 ± 0.112	0.767 ± 0.139 [†]
16:1n-7	0.543 ± 0.067 [†]	0.510 ± 0.030	0.557 ± 0.022 [†]
18:1n-9	16.288 ± 0.937 [†]	15.673 ± 0.823	16.221 ± 0.933 [†]
18:1n-7	3.454 ± 0.173 [†]	3.384 ± 0.192	3.468 ± 0.206 [†]
20:1n-9	2.425 ± 0.146 [†]	2.282 ± 0.147	2.319 ± 0.054 [†]
24:1n-9	2.276 ± 0.219 [†]	2.546 ± 0.285 [†]	2.574 ± 0.232 [†]
18:2n-6	0.349 ± 0.021	0.342 ± 0.064	0.356 ± 0.024
20:2n-6	0.206 ± 0.036	0.214 ± 0.045	0.200 ± 0.031
20:3n-6	0.359 ± 0.010	0.351 ± 0.020	0.356 ± 0.016
20:4n-6	9.427 ± 0.130 ^a	8.876 ± 0.322 ^b	9.382 ± 0.129 ^a
20:5n-3	0.360 ± 0.080 [†]	0.449 ± 0.129	0.394 ± 0.104
22:6n-3	2.815 ± 0.118 [†]	2.616 ± 1.222 [†]	2.617 ± 0.016 [†]
Σ SFA	34.012 ± 2.219	34.708 ± 2.058	35.280 ± 1.772 [†]
Σ MUFA	24.992 ± 1.472 [†]	24.398 ± 1.419	25.138 ± 1.356 [†]
Σ PUFA	13.518 ± 0.287 [†]	12.848 ± 0.543	13.305 ± 0.151 [†]
PUFA n-3	3.176 ± 0.195 [†]	3.066 ± 0.192 [†]	3.015 ± 0.117 [†]
PUFA n-6	10.342 ± 0.137 ^{a†}	9.782 ± 0.374 ^b	10.290 ± 0.129 ^a
HUFA n6/n3	3.266 ± 0.184 [†]	3.194 ± 0.118 [†]	3.418 ± 0.145 [†]

Values are presented as mean ± SD (g/100 g fatty acid methyl esters); n=6 mice per group. Values in the same row with different superscript letters are significantly different. P < 0.05 (ANOVA followed by post hoc Tukey's multiple comparison tests). **Values in the same row and column in Table S1 and Table 3 (in Manuscript) with symbol † are significant different P < 0.05 (two sample T-test).** FAME, fatty acid methyl ester; SFA, Saturated Fatty acid; MUFA, monounsaturated fatty acid; PUFA, polyunsaturated fatty acid.

Table 2. Fatty acid composition (%) in heart of C57/BL mice on HFD regime after 8 week wash out period

FAMES	HFD	HFD WCFS1	HFD LA68
16:0	18.673 ± 1.708 [†]	18.929 ± 2.566 [†]	15.820 ± 3.645
18:0	22.943 ± 2.769 [†]	20.535 ± 2.065	17.099 ± 4.423
20:0	0.437 ± 0.093 [†]	0.348 ± 0.072	0.339 ± 0.088
22:0	0.631 ± 0.064 ^{a†}	0.418 ± 0.141 ^b	0.552 ± 0.078 ^{ab}
16:1n-7	1.558 ± 0.413	2.366 ± 0.948	1.811 ± 0.802
18:1n-9	18.207 ± 1.464	22.612 ± 3.713 [†]	18.916 ± 4.738
18:1n-7	2.294 ± 0.221 [†]	2.435 ± 0.206 [†]	2.846 ± 1.111
20:1n-9	0.422 ± 0.095	0.455 ± 0.049	0.375 ± 0.130
18:2n-6	9.568 ± 1.054	8.629 ± 1.189	7.913 ± 2.257
20:2n-6	0.458 ± 0.089	0.657 ± 0.214	0.461 ± 0.143
20:3n-6	1.508 ± 0.251	1.512 ± 0.130	1.470 ± 0.146 [†]
20:4n-6	7.342 ± 1.956	6.452 ± 1.231	7.837 ± 1.919 [†]
20:5n-3	1.281 ± 0.362	2.665 ± 1.193	1.533 ± 0.731
22:5n-3	1.161 ± 0.401	0.931 ± 0.263	1.160 ± 0.430 [†]
22:6n-3	6.319 ± 3.249	4.261 ± 1.432	7.658 ± 3.217 [†]
Σ SFA	42.682 ± 4.541 [†]	40.230 ± 4.299	33.807 ± 8.156
Σ MUFA	22.480 ± 1.888	27.868 ± 4.178 [†]	23.950 ± 4.945
Σ PUFA	27.635 ± 6.136	25.105 ± 4.043	28.033 ± 6.306 [†]
PUFA n-3	8.878 ± 3.371 [†]	7.855 ± 2.342	10.350 ± 3.058 [†]
PUFA n-6	9.310 ± 2.113	8.620 ± 1.296	9.770 ± 1.900 [†]
PUFA n6/n3	1.109 ± 0.185 [†]	1.142 ± 0.217	0.967 ± 0.141

Values are presented as mean ± SD (g/100 g fatty acid methyl esters); n=6 mice per group. Values in the same row with different superscript letters are significantly different. P < 0.05 (ANOVA followed by post hoc Tukey's multiple comparison tests). **Values in the same row and column in Table S2 and Table 4 (in Manuscript) with symbol † are significant different P< 0.05 (two sample T-test).** FAME, fatty acid methyl ester; SFA, Saturated Fatty acid; MUFA, monounsaturated fatty acid; PUFA, polyunsaturated fatty acid.