Supplementary Table 1. Composition of the experimental diets

	STD	HFHS	HFHS+ω-3	HFHS+GSE	HFHS+ω-3+GSE
Ingredients (g)					
Flour[a]	1000.0	1000.0	1000.0	1000.0	1000.0
Porcine gelatine	25.0	25.0	25.0	25.0	25.0
Soybean lecithin	6.0	22.0	22.0	22.0	22.0
(Poly)phenol extract	-	-	-	1.1	1.1
Soybean oil	17.4	22.0	-	22.0	-
EPA/DHA 1:1 oil	-	-	22.0	-	22.0
Macronutrient (% weight)					
Protein	16.0	20.9	20.9	20.8	20.8
Fat	6.0	25.6	25.6	25.6	25.6
Carbohydrates[a]	45.8	42.7	42.7	42.7	47.7
Macronutrient (% caloric value)					
Protein	21.2	17.2	17.2	17.2	17.2
Fat	18.0	47.6	47.6	47.6	47.6
Carbohydrates	60.7	35.2	35.2	35.2	35.2
Total energy density (kcal/g)	3.0	4.9	4.9	4.9	4.9

STD, standard diet; ω-3, ω-3 polyunsaturated fatty acids; GSE, grape seed extract; HFHS, high-fat high-sucrose diet.

[a]The carbohydrates in the standard flour (Tekland Global 2014) are wheat and corn starches with no added sucrose; high-fat high-sucrose flour (TD 08811) contained 340 g sucrose/kg.

Supplementary Table 2. Fatty acid composition (mol%) of the supplemented oils provided in the diets. Values are given as mean ± SD[1].

	Soybean oil Mean ± SD	ω-3 PUFAs Mean ± SD
14:0	0.96 ± 0.02	4.37 ± 0.05
15:0	0.15 ± 0.01	0.29 ± 0.02
16:0	17.78 ± 0.10	10.15 ± 0.16
16:1ω–7	0.90 ± 0.03	4.99 ± 0.04
17:0	0.21 ± 0.01	0.45 ± 0.004
18:0	2.07 ± 0.01	2.94 ± 0.03
18:1ω–9	18.75 ± 0.03	6.41 ± 0.06
18:1ω–7	1.52 ± 0.02	1.91 ± 0.03
18:2ω–6	47.55 ± 0.01	0.65 ± 0.01
20:0	-	0.32 ± 0.01
18:3ω–3	4.00 ± 0.04	0.36 ± 0.01
20:1ω–9	1.43 ± 0.09	0.98 ± 0.03
18:4ω–3	0.15 ± 0.004	1.51 ± 0.02
20:2ω–6	0.20 ± 0.05	0.21 ± 0.003
20:3ω–6	-	0.22 ± 0.01
20:4ω–6	0.40 ± 0.02	1.68 ± 0.04
22:1ω–11	1.08 ± 0.005	1.14 ± 0.01
22:1ω–9	0.25 ± 0.02	0.28 ± 0.03
20:4ω–3	0.20 ± 0.03	1.02 ± 0.02
20:5ω–3	0.70 ± 0.02	25.09 ± 0.10
24:1ω–9	0.28 ± 0.05	0.38 ± 0.003
22:5ω–3	0.26 ± 0.01	4.30 ± 0.05
22:6ω–3	1.15 ± 0.03	25.70 ± 0.21
ω–3	6.47 ± 0.14	58.84 ± 0.16
SFAs	21.17 ± 0.10	18.52 ± 0.22
MUFAs	24.21 ± 0.11	17.22 ± 0.12
PUFAs	54.62 ± 0.03	64.26 ± 0.33
EPA/DHA	1.85 ± 0.06	50.79 ± 0.31

[1] EPA, eicosapentaenoic acid; DHA, docosahexaenoic acid; ω–3, omega-3 polyunsaturated fatty acids; SFAs, saturated fatty acids; MUFAs, monounsaturated fatty acids; PUFAs, polyunsaturated fatty acids.

Supplementary Figure 1. Feed intake in rats fed standard (STD, □), high-fat high-sucrose (HFHS, ■), high-fat high-sucrose with ω-3 PUFAs (HFHS+ω-3, ▲), high-fat high-sucrose with grape seed extract (HFHS+GSE, ▼), and high-fat high-sucrose with ω-3 PUFAs and grape seed extract (HFHS+ω-3+GSE, ●) diets for 24 weeks. Data represent single calculations.

Means with different letters differ, $p < 0.05$ (resulting from two-way ANOVA and one-way ANOVA followed by Tukey's post-hoc test).