

Supplementary Table S1: Percentage of change in basic biochemical markers in the two intervention groups for participants with BMI < 25kg/m².

		-15	0	30	60	90	120	150	180	210	240	300	360	[^] p _{time} [^] p _{time*trial} [^] p _{trial}
%Glucose	100	102.9± 7.8	106.2± 19.3	91.8± 14.8	95.6± 16.2	104.4± 20.8	102.7± 12.9	101.0± 13.5	101.9± 11.7	100.0± 11.9	102.5± 10.1	101.5± 9.7	0.04	
-Placebo														
%Glucose	100	100.6± 7.3	110.9± 14.1 [#]	96.6± 11.3	104.0± 14.8	105.9± 17.2	103.0± 6.7	103.0± 11.6	103.3± 8.3	104.7± 11.5	101.8± 8.4	98.0± 7.8	0.70	
-Extract														
†p _{P-E}	-	0.38	0.31	0.33	0.22	0.70	0.91	0.63	0.61	0.32	0.80	0.32	0.48	
%Insulin-	100	-	710.9± 555.4 [#]	468.4± 193.0 [#]	453.0± 210.5 [#]	496.5± 245.4 [#]	409.9± 219.5 [#]	-	-	-	-	-	<0.01	
Placebo														
%Insulin-	100	-	715.2± 322.1 [#]	564.9± 246.8 [#]	446.9± 146.2 [#]	474.7± 175.7 [#]	376.9± 105.9 [#]	-	-	-	-	-	0.77	
Extract														
†p _{P-E}	-	-	0.97	0.05	0.92	0.65	0.63	-	-	-	-	-	0.91	
%TG-	100	99.4± 10.3	128.0± 27.5 [#]	161.8± 44.5 [#]	187.1± 54.8 [#]	212.7± 75.1 [#]	219.0± 95.3 [#]	208.0± 76.1 [#]	197.0± 77.9 [#]	174.1± 62.5 [#]	190.7± 84.8 [#]	176.5± 67.0 [#]	<0.01	
Placebo														
%TG-	100	97.8± 12.6	121.3± 26.6 [#]	156.8± 39.1 [#]	176.2± 30.2 [#]	185.2± 34.4 [#]	173.2± 42.2 [#]	171.2± 45.0 [#]	162.4± 30.8 [#]	156.5± 30.8 [#]	145.7± 23.2 [#]	159.3± 22.9 [#]	0.24	
Extract														
†p _{P-E}	-	0.63	0.42	0.68	0.46	0.25	0.10	0.11	0.11	0.29	0.08	0.41	0.23	
%Total cholestero l-Placebo	100	99.3± 6.5	103.6± 9.1	102.6± 9.9	105.9± 8.9	104.7± 9.8	107.6± 12.5	100.9± 14.6	103.6± 9.6	99.5± 4.9	102.1± 12.6	102.6± 6.5	0.27	
%Total cholestero l-Extract	100	99.4± 6.0	100.1± 5.2	101.0± 5.9	104.2± 8.9	97.9± 8.0	102.1± 9.8	97.4± 8.7	95.9± 7.3	96.7± 6.3	96.8± 5.7	102.7± 5.9	0.31	
†p _{P-E}	-	0.96	0.32	0.67	0.60	0.07	0.15	0.36	0.01	0.18	0.16	0.97	0.26	
%HDL-c - Placebo	100	103.8± 9.9	100.2± 8.1	103.8± 11.1	97.5± 12.9	98.2± 13.7	96.0± 15.1	97.2± 13.9	96.1± 11.6	98.1± 10.9	99.9± 13.4	99.9± 12.4	<0.01	
%HDL-c - Extract	100	101.4± 4.9	102.9± 7.9	99.4± 7.5	97.0± 8.2	94.6± 9.1	95.6± 8.0	91.7± 10.3 [#]	92.3± 7.3 [#]	95.5± 7.6	98.7± 6.3	101.7± 9.2	0.40	
†p _{P-E}	-	0.44	0.47	0.31	0.90	0.48	0.93	0.37	0.42	0.60	0.80	0.74	0.64	
%LDL-c - Placebo	100	98.4± 8.7	101.6± 12.7	93.5± 12.4	98.2± 12.4	91.0± 14.5	97.0± 11.4	86.7± 17.9	93.3± 12.4	88.7± 9.9 [#]	89.4± 18.2	93.5± 11.1	0.02	
%LDL-c - Extract	100	98.8± 8.6	95.2± 8.3	94.7± 8.0 [#]	98.4± 12.2	87.6± 11.7 [#]	95.6± 10.2	89.9± 9.7 [#]	88.3± 6.8 [#]	88.3± 6.4 [#]	89.4± 6.5 [#]	95.3± 8.3	0.67	
†p _{P-E}	-	0.92	0.23	0.81	0.96	0.49	0.76	0.54	0.25	0.93	0.99	0.69	0.80	

For normally distributed variables, data are presented as means ± SD. Repeated measures ANOVA was used for the comparisons (p_{time}, p_{trial}, p_{time*trial}). Paired samples t-test was used to compare each time point to the other intervention (p_{P-E}) and to baseline. TG; triglycerides, HDL-c; high-density lipoprotein cholesterol, LDL-c; low-density lipoprotein cholesterol. [^]p trend from RMANOVA, [†]p value from paired samples t-test, [#]p≤0.05 compared to baseline.

Supplementary Table S2: Percentage of change in basic biochemical markers in the two intervention groups for participants with BMI > 25kg/m².

		-15	0	30	60	90	120	150	180	210	240	300	360	[^] p _{time} [^] p _{time*trial} [^] p _{trial}
%Glucose	100	106.5± 16.1	122.5± 27.1	93.9± 15.0	102.8± 11.3	108.5± 10.9	104.8± 8.4	102.7± 14.0	99.9± 5.8	101.3± 6.1	97.7± 7.1	95.0± 8.1	0.57	
%Glucose	100	110.2± 10.8 [#]	115.9± 16.9 [#]	99.7± 10.3	103.0± 18.0	102.9± 10.5	101.7± 8.6	100.9± 6.8	101.2± 7.2	94.7± 6.2	92.3± 6.1 [#]	89.5± 8.4 [#]	0.85	
[†] p _{P-E}	-	0.59	0.51	0.25	0.97	0.11	0.49	0.76	0.72	0.11	0.21	0.14	0.55	
%Insulin- Placebo	100	-	698.4± 342.5 [#]	420.3± 140.4 [#]	368.4± 173.2 [#]	439.3± 150.1 [#]	369.1± 64.5 [#]	-	-	-	-	-	0.03	
%Insulin- Extract	100	-	650.1± 220.9 [#]	616.4± 449.2 [#]	474.4± 266.6 [#]	435.1± 215.4 [#]	357.0± 124.0 [#]	-	-	-	-	-	0.40	
[†] p _{P-E}	-	-	0.55	0.22	0.08	0.95	0.83	-	-	-	-	-	0.64	
%TG- Placebo	100	93.4± 8.8	120.9± 17.3 [#]	142.4± 20.7 [#]	147.4± 23.3 [#]	167.9± 23.3 [#]	158.6± 18.6 [#]	158.2± 18.6 [#]	150.2± 24.4 [#]	136.2± 23.9 [#]	132.7± 12.4 [#]	143.8± 13.0 [#]	0.16	
%TG- Extract	100	97.0± 6.7	118.0± 6.9 [#]	145.7± 12.9 [#]	168.2± 38.1 [#]	171.9± 43.2 [#]	181.0± 34.4 [#]	181.3± 81.3 [#]	170.0± 60.9 [#]	183.8± 53.3 [#]	122.5± 12.5 [#]	111.2± 28.5	0.18	
[†] p _{P-E}	-	0.36	0.66	0.60	0.31	0.85	0.25	0.55	0.51	0.07	0.19	0.12	0.42	
%Total cholestero l-Placebo	100	98.3± 8.1	99.2± 2.4	97.3± 6.6	106.7± 4.3 [#]	98.5± 7.0	102.2± 3.8	98.6± 7.4	99.7± 5.4	95.5± 8.9	98.4± 8.8	102.9± 11.2	0.40	
%Total cholestero l-Extract	100	99.5± 2.4	102.3± 4.5	97.2± 4.7	102.2± 4.7	99.4± 3.8	102.4± 5.1	97.5± 5.6	97.7± 6.0	98.3± 7.8	96.8± 5.4	99.2± 4.2	0.54	
[†] p _{P-E}	-	0.72	0.23	0.99	0.12	0.78	0.93	0.72	0.47	0.45	0.60	0.41	0.84	
%HDL-c - Placebo	100	102.2± 3.8	98.6± 6.4	99.3± 6.7	97.2± 5.6	95.4± 4.1 [#]	93.7± 4.8 [#]	94.8± 5.6 [#]	94.6± 8.4	96.9± 5.3	99.5± 5.2	99.8± 6.6	0.76	
%HDL-c - Extract	100	98.4± 4.5	98.5± 8.6	97.5± 8.5	94.1± 6.4 [#]	94.7± 8.4	93.3± 8.2	92.4± 10.7	91.8± 10.0	92.7± 13.6	92.0± 7.9 [#]	100.2± 11.8	0.49	
[†] p _{P-E}	-	0.21	0.97	0.68	0.42	0.84	0.89	0.45	0.57	0.44	0.08	0.94	0.50	
%LDL-c - Placebo	100	96.0± 14.6	96.6± 3.1 [#]	88.9± 14.4 [#]	107.9± 8.7	92.1± 11.8	99.9± 5.1	95.6± 16.1	97.4± 12.6	92.4± 18.4	95.8± 17.5	101.9± 18.7	0.24	
%LDL-c - Extract	100	100.0± 3.4	100.0± 6.3	90.2± 7.3 [#]	96.5± 5.2	91.1± 5.9 [#]	95.4± 7.1	86.9± 7.2 [#]	89.7± 6.3 [#]	88.5± 12.1 [#]	95.6± 9.3	98.2± 7.6	0.37	
[†] p _{P-E}	-	0.52	0.34	0.80	0.06	0.83	0.35	0.15	0.22	0.60	0.96	0.52	0.45	

For normally distributed variables, data are presented as means ± SD. Repeated measures ANOVA was used for the comparisons (p_{time}, p_{trial}, p_{time*trial}). Paired samples t-test was used to compare each time point to the other intervention (p_{P-E}) and to baseline. TG; triglycerides, HDL-c; high-density lipoprotein cholesterol, LDL-c; low-density lipoprotein cholesterol. [^]p trend from RMANOVA, [†]p value from paired samples t-test, [#]p≤0.05 compared to baseline.

Supplementary Table S3: Percentage of change in oxidative and endogenous antioxidant biomarkers in the two intervention groups for participants with BMI < 25kg/m².

														$\frac{\hat{p}_{time}}{\hat{p}_{time*trial}}$	$\hat{p}_{trial}$	$\hat{p}_{time}$
		-15	0	30	60	90	120	150	180	210	240	300	360			
%UA-Placebo	100	103.8± 6.4	105.9± 6.1 [#]	116.0± 13.6 [#]	121.7± 14.5 [#]	131.4± 28.8 [#]	121.9± 27.1 [#]	116.8± 29.7	107.0± 22.0	102.5± 15.2	103.4± 27.7	99.0± 13.6	<0.01	-		
%UA-Extract	100	95.9± 4.2 [#]	98.2± 3.6	111.7± 18.0 [#]	116.5± 8.1 [#]	113.4± 15.4 [#]	108.2± 18.8	103.8± 15.2	101.7± 16.4	97.3± 10.8	91.4± 11.0 [#]	94.7± 10.6	0.33	-		
$\dagger p_{P-E}$	-	0.01	0.01	0.49	0.24	0.02	0.06	0.13	0.27	0.16	0.07	0.33	0.08	-		
%TBARS-Placebo	100	-	-	96.1± 13.2	-	94.7± 11.6	-	91.2± 19.5	-	91.7± 23.8	79.6± 18.5 [#]	77.3± 12.5 [#]	<0.01	-		
%TBARS-Extract	100	-	-	92.1± 9.4 [#]	-	92.5± 11.0 [#]	-	80.4± 10.6 [#]	-	76.6± 15.0 [#]	68.4± 15.2 [#]	73.9± 16.5 [#]	0.19	-		
$\dagger p_{P-E}$	-	-	-	0.35	-	0.62	-	0.06	-	0.02	0.01	0.50	0.14	-		
%PC-Placebo	100	98.2± 16.4	107.5± 21.2	105.5± 18.4	98.6± 15.0	96.2± 15.0	95.1± 13.2	96.3± 16.4	94.3± 17.0	101.8± 16.0	98.4± 24.5	114.6± 26.2	0.44	-		
%PC-Extract	100	91.9± 6.0 [#]	95.3± 11.9	94.0± 11.0	90.7± 10.1 [#]	95.2± 9.6	100.4± 14.1	91.6± 11.2 [#]	101.1± 20.6	95.2± 19.4	89.2± 10.4 [#]	89.5± 11.9 [#]	0.03	-		
$\dagger p_{P-E}$	-	0.27	0.14	0.14	0.18	0.88	0.32	0.32	0.49	0.47	0.33	0.01	0.17	-		
%SOD-Placebo	100	-	-	100.9 (79.9- 119.2)	-	90.8 (76.4- 164.7)	-	91.9 (70.9- 120.4)	88.0 (55.9- 92.8)	95.8 (76.9- 113.7)	97.1 (65.0- 115.4)	88.9 (62.4- 100.5)	-	0.12		
%SOD-Extract	100	-	-	85.2 (57.4- 112.5)	-	72.6 (67.8- 97.2)	-	87.7 (49.3- 95.9) [#]	85.6 (55.6- 107.9)	75.2 (58.0- 132.4)	96.3 (72.6- 114.1)	104.5 (67.8- 119.6)	-	0.05		
$\dagger p_{P-E}$	-	-	-	0.04	-	0.04	-	0.28	0.79	0.92	0.92	0.37	-	-		
%GPx-Placebo	100	103.9± 4.1 [#]	101.3± 2.9	100.3± 6.0	101.6± 8.6	99.5± 7.7	102.5± 10.4	99.2± 6.1	102.1± 10.4	99.1± 10.0	101.6± 7.7	104.6± 4.9 [#]	0.25	-		
%GPx-Extract	100	104.9± 5.7 [#]	103.3± 3.6 [#]	101.3± 6.8	101.7± 8.7	101.3± 6.9	103.6± 10.5	101.1± 10.5	99.3± 7.9	101.2± 8.1	101.2± 6.1	102.4± 10.4	0.83	-		
$\dagger p_{P-E}$	-	0.65	0.19	0.62	0.99	0.64	0.81	0.51	0.59	0.54	0.89	0.57	0.83	-		

For normally distributed variables, data are presented as means ± SD. Repeated measures ANOVA was used for the comparisons (p_{time} , p_{trial} , $p_{time*trial}$). Paired samples t-test was used to compare each time point to the other intervention (p_{P-E}) and to baseline. For skewed variables, data are presented as the median (25th-75th quartile). Friedman's 2-way ANOVA by ranks was used for the estimation of the time effect in each intervention group ($\hat{p}_{time}$) and Wilcoxon paired test for differences compared to baseline. Trial-related pairwise comparisons were performed using Wilcoxon paired test (p_{P-E}). UA; uric acid, TBARS; thiobarbituric acid reactive substances, PC; protein carbonyls, SOD; superoxide dismutase, GPx; glutathione peroxidase. $\hat{p}$ trend from RMANOVA, $\dagger p$ value from Paired samples t-test, Friedman, Wilcoxon test, [#] $p \leq 0.05$ compared to baseline

Supplementary Table S4: Percentage of change in oxidative and endogenous antioxidant biomarkers in the two intervention groups for participants with BMI > 25kg/m².

		-15	0	30	60	90	120	150	180	210	240	300	360	$\frac{\hat{p}_{\text{time}}}{\hat{p}_{\text{time} \times \text{trial}}}$	$\hat{p}_{\text{trial}}$	$\hat{p}_{\text{time}}$
%UA-Placebo	100	100.1±5.2	103.5±9.7	107.9±10.8	112.2±6.6 [#]	109.1±8.0 [#]	102.9±4.5	96.5±6.9	95.5±9.2	91.5±6.9 [#]	89.9±13.3	97.4±19.2	0.29	-		
%UA-Extract	100	105.7±8.3	109.3±5.1 [#]	109.9±4.8 [#]	117.9±13.8 [#]	121.7±10.0 [#]	116.8±10.4 [#]	117.3±24.3	108.2±18.2	115.2±15.6 [#]	94.6±6.1 [#]	91.6±10.8	0.04	-		
$\dagger p_{P-E}$	-	0.19	0.17	0.55	0.14	0.02	0.01	0.07	0.15	0.00	0.25	0.30	0.03	-		
%TBARS-Placebo	100	-	-	100.4±16.2	-	97.5±17.3	-	92.5±16.9	-	91.1±30.5	86.1±22.7	79.2±15.5 [#]	0.20	-		
%TBARS-Extract	100	-	-	107.1±23.9	-	96.4±10.6	-	90.3±11.2	-	83.7±18.1 [#]	83.6±9.0 [#]	83.0±18.7 [#]	0.70	-		
$\dagger p_{P-E}$	-	-	-	0.39	-	0.85	-	0.74	-	0.63	0.79	0.72	0.96	-		
%PC-Placebo	100	97.8±9.2	111.4±21.6	101.0±9.6	107.1±16.2	116.5±23.0	100.1±12.1	103.2±9.4	111.8±23.1	107.6±14.7	107.5±12.0	103.9±17.8	0.64	-		
%PC-Extract	100	88.5±7.8 [#]	88.8±15.9	93.9±16.5	86.6±10.6 [#]	85.5±15.0 [#]	86.8±20.6	91.4±14.5	93.7±21.4	88.6±10.5 [#]	89.3±14.0	84.6±20.8	0.26	-		
$\dagger p_{P-E}$	-	0.11	0.10	0.42	0.07	0.02	0.15	0.19	0.08	<0.01	0.01	0.07	<0.01	-		
%SOD-Placebo	100	-	-	104.5 (81.3-119.2)	-	102.5 (77.5-149.2)	-	80.2 (60.0-127.6)	100.1 (85.4-120.2)	89.4 (80.5-107.8)	86.9 (78.8-105.5)	89.9 (63.7-114.2)	-	0.78		
%SOD-Extract	100	-	-	93.3 (84.2-98.1)	-	94.8 (73.5-97.9)	-	95.2 (79.2-106.6)	90.4 (80.0-100.6)	87.1 (78.9-93.0)	80.7 (68.5-89.3) [#]	92.6 (70.6-107.1)	-	0.16		
$\dagger p_{P-E}$	-	-	-	0.49	-	0.17	-	0.17	0.12	0.23	0.12	0.39	-	-		
%GPx-Placebo	100	103.4±4.0	95.6±5.2	98.6±3.8	97.9±6.3	95.1±3.9 [#]	98.6±6.5	98.8±5.3	97.1±9.1	99.7±5.6	100.4±6.2	99.3±5.9	0.28	-		
%GPx-Extract	100	104.1±5.7	99.3±5.8	97.8±4.9	96.5±7.1	95.7±7.2	101.0±4.7	100.7±11.1	98.1±4.4	100.5±6.6	102.5±7.7	105.7±7.5	0.69	-		
$\dagger p_{P-E}$	-	0.83	0.36	0.55	0.77	0.87	0.42	0.66	0.68	0.72	0.65	0.16	0.48	-		

For normally distributed variables, data are presented as means ± SD. Repeated measures ANOVA was used for the comparisons (p_{time} , p_{trial} , $p_{\text{time} \times \text{trial}}$). Paired samples t-test was used to compare each time point to the other intervention (p_{P-E}) and to baseline. For skewed variables, data are presented as the median (25th-75th quartile). Friedman's 2-way ANOVA by ranks was used for the estimation of the time effect in each intervention group ($\hat{p}_{\text{time}}$) and Wilcoxon paired test for differences compared to baseline. Trial-related pairwise comparisons were performed using Wilcoxon paired test ($\hat{p}_{\text{trial}}$). UA; uric acid, TBARS; thiobarbituric acid reactive substances, PC; protein carbonyls, SOD; superoxide dismutase, GPx; glutathione peroxidase, $\wedge p$ trend from RMANOVA, $\dagger p$ value from Paired samples t-test, Friedman, Wilcoxon test, [#] $p \leq 0.05$ compared to baseline