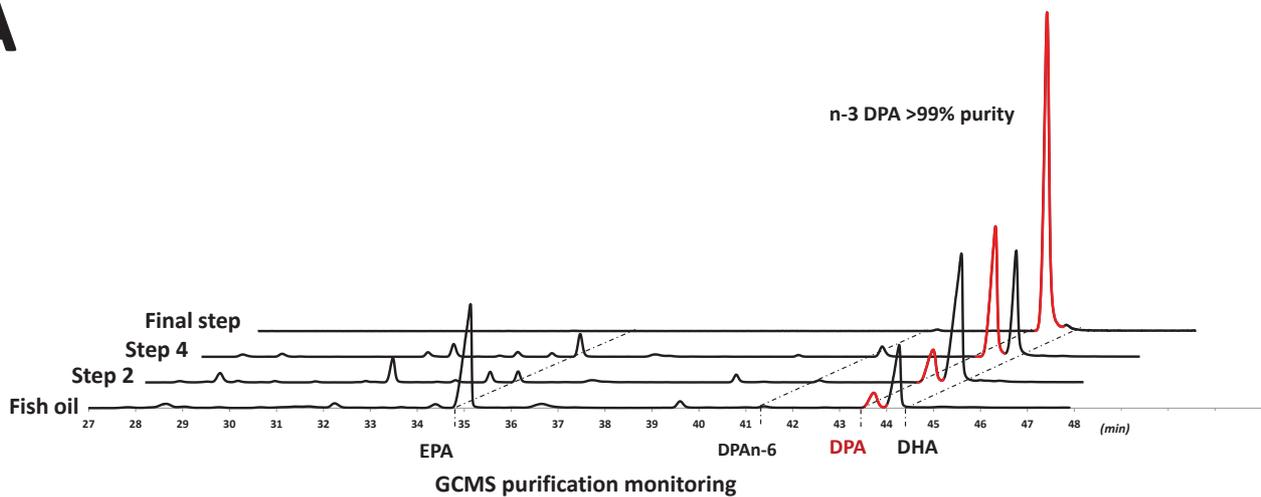


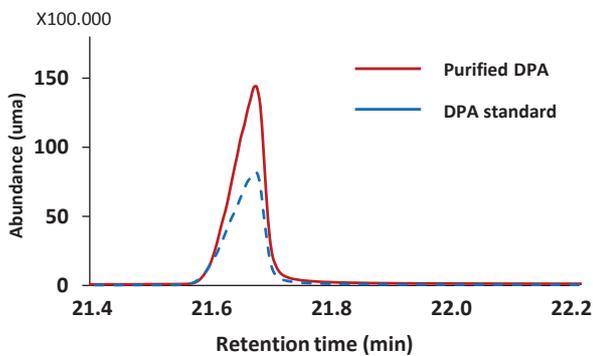
Supplementary Material A

Supplementary Material A - Figure S1: Purification of n-3 DPA by liquid chromatography

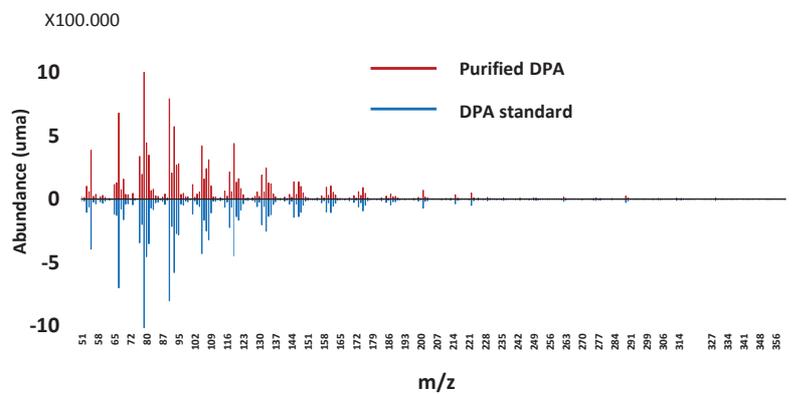
A



B

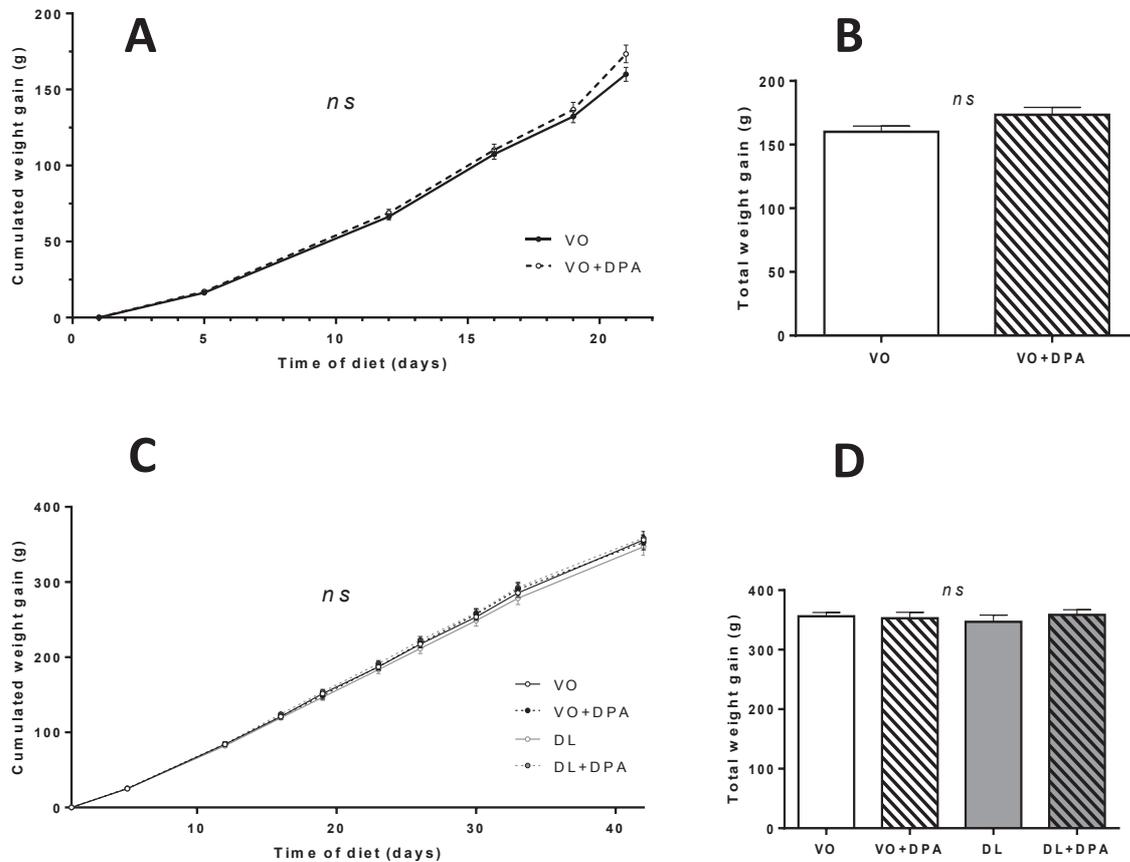


C



(A) Follow-up of the n-3 DPA purification as ethyl ester. Chromatograms represented the GC-MS analysis of the pooled collected fractions corresponding to the n-3 DPA fraction separated by liquid chromatography. The n-3 DPA is represented in red. Comparison of **(B)** retention times and **(C)** mass spectra of the purified n-3 DPA (red) with a commercial standard of n-3 DPA (blue) (Larodan). Purified n-3 DPA completely matched commercial n-3 DPA standard.

Supplementary Material A - Figure S2: Rats cumulated body weight gain (A) and total weight gain (B)



Cumulated weigh gain (A-C) and total weight gain (B-D) of rats fed from weaning for 3 weeks (A-B) (experiment 1) or 6 weeks (C-D) (experiment 2) are presented as mean \pm SEM ($n = 8$ /group). Animals were fed with a blend of vegetable oils (VO) or a blend of vegetable oils and dairy lipids (DL), not supplemented or supplemented with 0.5% n-3 DPA (VO+DPA and DL+DPA). Groups were compared by Student t-test (experiment 1) or type III two-way ANOVA followed by Tukey's post-hoc test adjusted by false discovery rate method (experiment 2). *ns*: non-significant.

Supplementary Material A - Table S1: Organs weight at the end of the experimentation

Experiment 1

A	Liver	Heart	Lung	Spleen	Kidney	Bone marrow
VO	3.65 ±0.11	0.42 ±0.01	0.52 ±0.01	0.50 ±0.01*	0.86 ±0.03	0.04 ±0.0
VO+DPA	3.94 ±0.17	0.42 ±0.01	0.50 ±0.01	0.46 ±0.02	0.90 ±0.02	0.05 ±0.0
	Stomach	EAT	Testis	Pancreas	Intestin	Muscle
VO	0.43 ±0.01	1.13 ±0.08	0.86 ±0.02	0.11 ±0.01	0.74 ±0.02	0.46 ±0.02
VO+DPA	0.42 ±0.02	1.08 ±0.08	0.86 ±0.03	0.11 ±0.01	0.72 ±0.04	0.46 ±0.01

Experiment 2

B	Liver	Brain	Heart	Lung	Spleen
VO	3.09 ±0.24	0.37 ±0.03	0.31 ±0.02	0.34 ±0.02	0.31 ±0.06
VO+DPA	3.14 ±0.36	0.36 ±0.02	0.33 ±0.04	0.35 ±0.02	0.30 ±0.01
DL	3.24 ±0.16	0.50 ±0.03	0.35 ±0.02	0.39 ±0.03	0.31 ±0.04
DL+DPA	3.29 ±0.35	0.37 ±0.03	0.31 ±0.02	0.36 ±0.04	0.31 ±0.07
ANOVA	<i>ns</i>	*	<i>ns</i>	<i>ns</i>	<i>ns</i>

Organs weight at the end of the experimentation of rats fed from weaning during **A**) 3 weeks (experiment 1) or **B**) 6 weeks (experiment 2) are presented as mean ± SEM (n = 8 /group). Animals were fed with a blend of vegetable oils (VO) or a blend of vegetable oils and dairy lipids (DL), not supplemented or supplemented with 0.5% n-3 DPA (VO+DPA and DL+DPA). Groups were compared by Student t-test (experiment 1) or type III two-way ANOVA followed by a post-hoc test of Tukey adjusted by false discovery rate method (experiment 2). *ns*: non-significant. EAT: epididymal adipose tissue.

Supplementary Material B

Supplementary Material B – Table S1: Liver, red blood cells and plasma total lipid fatty acid composition.

Supplementary Material B – Table S2: Gut, stomach and heart fatty acid composition of total lipids

Supplementary Material B – Table S3: Kidney, brain and retina fatty acid composition of total lipids

Supplementary Material B – Table S4: Spleen, lung and bone marrow fatty acid composition of total lipids

Supplementary Material B – Table S5: Pancreas, epididymal adipose tissue (TAE) and skin fatty acid composition of total lipids

Supplementary Material B – Table S6: Sub-cutaneous adipose tissue (SCAT), muscle and testis fatty acid composition of total lipids

Legend for all Tables of the Supplementary Material B:

The mass percentages of the identified fatty acids in tissues of rats fed the vegetable oils blend diet (VO) not supplemented or supplemented with 0.5% DPA (VO+DPA) for 3 weeks are presented as mean \pm SEM (n=8/group, Experiment 1). Fatty acids with a proportion <0.1% are noted as trace (Tr). Groups were compared with multiple Student t-test (* p <0.05, ** p <0.01, *** p <0.001). The tissues are presented in the same order than in Figure 1, section 3.2.1.

Supplementary Material SB – Table 1: Liver, red blood cells and plasma total lipid fatty acid composition.

% of total fatty acids	Liver		Red blood cells		Plasma	
	Ctrl	DPA	Ctrl	DPA	Ctrl	DPA
C12:0	0.16 ±0.01	0.16 ±0.02	0.64 ±0.15	0.62 ±0.07	0.75 ±0.17	0.87 ±0.15
C14:0	0.71 ±0.06	0.72 ±0.06	1.31 ±0.31	1.00 ±0.12	2.35 ±0.32	1.82 ±0.28
C16:0	26.05 ±1.24	24.54 ±1.45	19.27 ±0.31	19.47 ±0.70	22.05 ±0.70	21.53 ±1.19
C18:0	10.81 ±1.07	11.23 ±0.82	13.47 ±0.51	13.49 ±0.46	11.63 ±1.39	10.98 ±1.42
C20:0	nd	nd	nd	nd	nd	nd
C24:0	nd	nd	nd	nd	0.32 ±0.07	0.29 ±0.06
Σsaturated	37.73 ±0.49	36.65 ±0.82	34.69 ±0.44	34.57 ±0.82	37.10 ±1.91	35.50 ±2.84
C16:1 n-9	0.61 ±0.06	0.61 ±0.05	3.30 ±1.93	3.67 ±2.01	nd	nd
C18:1 n-9	32.20 ±1.51	33.03 ±1.36	16.10 ±1.25	17.05 ±1.49	25.43 ±2.35	24.76 ±1.07
C20:1 n-9	Tr	Tr	Tr	Tr	Tr	Tr
C20:3 n-9	nd	nd	0.37 ±0.15	0.47 ±0.13	0.46 ±0.04	0.47 ±0.03
Σ n-9	32.81 ±1.57	33.64 ±1.41	19.77 ±1.33	21.19 ±1.59	25.90 ±2.34	25.24 ±1.08
C16:1 n-7	2.99 ±0.53	2.39 ±0.46	0.88 ±0.12	1.27 ±0.28	2.30 ±0.22	2.15 ±0.06
C18:1 n-7	2.98 ±0.43	2.40 ±0.04	2.37 ±0.12	2.22 ±0.08	1.66 ±0.12	1.75 ±0.12
C20:1 n-7	nd	nd	nd	nd	nd	nd
Σ n-7	5.98 ±0.59	4.79 ±0.45	3.25 ±0.21	3.49 ±0.32	3.96 ±0.31	3.90 ±0.13
C18:2 n-6	6.83 ±0.61	8.31 ±0.85	5.54 ±0.35	6.40 ±0.54	8.76 ±0.48	9.17 ±0.65
C18:3 n-6	0.25 ±0.04	0.31 ±0.06	0.36 ±0.03	0.56 ±0.12	nd	nd
C20:2 n-6	0.15 ±0.01	0.15 ±0.02	0.66 ±0.04	0.79 ±0.17	Tr	Tr
C20:3 n-6	0.11 ±0.01	0.11 ±0.01	0.42 ±0.02	0.42 ±0.08	0.37 ±0.04	0.36 ±0.03
C20:4 n-6	11.04 ±1.07	10.65 ±1.00	25.88 ±1.13	22.26 ^{td} ±1.68	18.99 ±1.87	19.01 ±2.01
C22:4 n-6	0.07 ±0.01	0.07 ±0.01	1.46 ±0.08	1.34 ±0.13	0.55 ±0.08	0.82* ±0.09
C22:5 n-6	0.12 ±0.01	0.08* ±0.02	0.82 ±0.07	0.64 ±0.12	0.25 ±0.03	0.20 ±0.02
Σ n-6	18.58 ±1.70	19.67 ±1.91	35.13 ±1.15	32.4 ±1.39	28.91 ±2.03	29.56 ±2.27
C18:3 n-3	0.26 ±0.03	0.37 ±0.05	0.39 ±0.08	0.66 ±0.17	0.65 ±0.04	0.82 ±0.09
C20:5 n-3	0.09 ±0.01	0.22* ±0.04	0.36 ±0.03	0.56 ±0.12	0.50 ±0.15	1.03* ±0.14
C22:5 n-3	0.18 ±0.02	0.21 ±0.02	1.87 ±0.13	2.63* ±0.36	0.39 ±0.06	0.52 ±0.07
C22:6 n-3	4.37 ±0.42	4.45 ±0.41	4.53 ±0.17	4.50 ±0.30	2.58 ±0.39	3.42 ±0.33
Σ n-3	4.91 ±0.47	5.25 ±0.50	7.15 ±0.29	8.34^{td} ±0.48	4.13 ±0.47	5.80* ±0.50

For legend and statistical analysis, see the top of Supplementary Material B - page 1.

Supplementary Material B – Table S2: Intestin, stomach and heart fatty acid composition of total lipids

% of total fatty acids	Gut		Stomach		Heart	
	Ctrl	DPA	Ctrl	DPA	Ctrl	DPA
C12:0	0.14 ±0.04	0.10 ±0.03	<i>nd</i>	<i>nd</i>	0.12 ±0.02	0.11 ±0.02
C14:0	0.93 ±0.11	0.89 ±0.06	1.44 ±0.08	1.18* ±0.07	0.36 ±0.05	0.37 ±0.05
C16:0	20.81 ±0.49	21.36 ±0.38	21.93 ±0.33	21.69 ±0.44	14.01 ±0.25	13.81* ±0.55
C18:0	11.93 ±1.36	13.00 ±0.62	5.34 ±0.29	7.02* ±0.60	22.45 ±0.23	20.98 ^{td} ±0.53
C20:0	0.31 ±0.03	0.29 ±0.04	0.20 ±0.02	0.39 ±0.09	<i>Tr</i>	<i>Tr</i>
C24:0	<i>nd</i>	<i>nd</i>	0.21 ±0.04	0.29 ±0.03	<i>nd</i>	<i>nd</i>
Σsaturated	34.11 ±0.93	35.64 ±0.38	29.12 ±0.31	30.56* ±0.51	36.94 ±0.42	35.27 ±0.72
C16:1 n-9	0.51 ±0.04	0.57 ^{td} ±0.06	0.44 ±0.01	0.41 ±0.01	0.31 ±0.03	0.29 ±0.02
C18:1 n-9	29.92 ±3.19	27.24 ±1.40	46.16 ±0.71	41.09* ±1.82	10.87 ±0.63	14.97* ±1.48
C20:1 n-9	0.59 ±0.03	0.63 ±0.06	0.40 ±0.02	0.55 ±0.10	0.24 ±0.04	0.18 ±0.04
C20:3 n-9	0.43 ±0.04	0.45 ±0.03	0.20 ±0.01	0.29 ^{td} ±0.04	<i>nd</i>	<i>nd</i>
Σ n-9	31.45 ±3.13	28.89 ±1.34	47.19 ±0.69	42.33* ±1.76	11.42 ±0.64	15.44* ±1.48
C16:1 n-7	2.53 ±0.33	2.40 ±0.32	3.72 ±0.25	3.20 ±0.39	0.58 ±0.05	0.62 ±0.12
C18:1 n-7	2.95 ±0.09	2.94 ±0.07	2.95 ±0.08	3.11 ±0.10	4.33 ±0.13	4.25 ±0.17
C20:1 n-7	0.21 ±0.04	0.19 ±0.03	<i>nd</i>	<i>nd</i>	<i>nd</i>	<i>nd</i>
Σ n-7	5.68 ±0.28	5.53 ±0.32	6.67 ±0.30	6.31 ±0.37	4.91 ±0.15	4.87 ±0.20
C18:2 n-6	7.86 ±0.33	6.86 ±0.16	9.64 ±0.21	10.07 ±0.33	12.74 ±0.60	12.27 ±0.52
C18:3 n-6	<i>nd</i>	<i>nd</i>	<i>nd</i>	<i>nd</i>	<i>nd</i>	<i>nd</i>
C20:2 n-6	<i>nd</i>	<i>nd</i>	<i>nd</i>	<i>nd</i>	0.21 ±0.01	0.20 ±0.02
C20:3 n-6	0.70 ±0.08	0.83 ±0.07	0.18 ±0.02	0.29* ±0.03	0.23 ±0.01	0.27 ±0.03
C20:4 n-6	14.02 ±1.86	15.21 ±0.96	4.84 ±0.47	7.44* ±1.01	22.73 ±0.16	20.10*** ±0.57
C22:4 n-6	1.90 ±0.23	2.25 ±0.19	0.49 ±0.05	0.67 ±0.09	0.60 ±0.02	0.42** ±0.05
C22:5 n-6	0.32 ±0.04	0.27 ±0.02	0.12 ±0.02	0.15 ±0.02	0.83 ±0.07	0.51** ±0.06
Σ n-6	24.81 ±2.17	25.42 ±1.13	15.27 ±0.67	18.63* ±1.39	37.34 ±0.45	33.77** ±0.91
C18:3 n-3	0.78 ±0.31	0.47 ±0.04	0.88 ±0.03	0.75 ^{td} ±0.05	0.16 ±0.01	0.14 ±0.01
C20:5 n-3	0.14 ±0.03	0.12 ±0.02	0.11 ±0.01	0.26* ±0.05	0.16 ±0.03	0.15 ±0.03
C22:5 n-3	0.57 ±0.08	1.08*** ±0.07	0.24 ±0.02	0.40 ^{td} ±0.08	0.74 ±0.05	1.48** ±0.14
C22:6 n-3	2.45 ±0.37	2.86 ±0.17	0.51 ±0.05	0.76 ^{td} ±0.12	8.33 ±0.61	8.88 ±0.41
Σ n-3	3.94 ±0.36	4.52 ±0.19	1.74 ±0.05	2.18^{td} ±0.20	9.39 ±0.65	10.65 ±0.49

For legend and statistical analysis, see the top of Supplementary Material B - page 1.

Supplementary Material B – Table S3: Kidney, brain and retina fatty acid composition of total lipids

% of total fatty acids	Kidney		Brain		Retina	
	Ctrl	DPA	Ctrl	DPA	Ctrl	DPA
C12:0	0.06 ±0.03	0.14 ±0.04	<i>nd</i>	<i>nd</i>	0.23 ±0.06	0.22 ±0.06
C14:0	0.71 ±0.03	0.90 ^{td} ±0.08	<i>nd</i>	<i>nd</i>	1.91 ±0.59	1.26 ±0.11
C16:0	22.77 ±0.20	23.34 ±0.25	20.94 ±0.21	20.73 ±0.20	25.45 ±0.55	25.97 ±0.96
C18:0	15.64 ±0.28	14.58* ±0.39	20.18 ±0.20	20.09 ±0.23	13.24 ±0.72	17.22** ±0.76
C20:0	<i>nd</i>	<i>nd</i>	0.31 ±0.02	0.30 ±0.04	<i>nd</i>	<i>nd</i>
C24:0	<i>nd</i>	<i>nd</i>	0.13 ±0.02	0.12 ±0.01	<i>nd</i>	<i>nd</i>
Σsaturated	39.19 ±0.33	38.96 ±0.36	41.56 ±0.29	41.25 ±0.35	40.82 ±1.42	44.67 ±1.56
C16:1 n-9	0.77 ±0.03	0.92 ^{td} ±0.06	0.48 ±0.06	0.44 ±0.03	0.64 ±0.06	0.76 ±0.09
C18:1 n-9	15.82 ±0.72	18.54 ^{td} ±1.17	19.68 ±0.31	19.73 ±0.41	29.59 ±2.08	25.73 ±1.79
C20:1 n-9	<i>nd</i>	<i>nd</i>	1.39 ±0.19	1.55 ±0.08	<i>nd</i>	<i>nd</i>
C20:3 n-9	0.31 ±0.01	0.31 ±0.01	<i>nd</i>	<i>nd</i>	<i>nd</i>	<i>nd</i>
Σ n-9	16.90 ±0.73	19.77* ±1.11	21.55 ±0.43	21.71 ±0.46	30.22 ±2.08	26.5 ±1.79
C16:1 n-7	1.17 ±0.11	1.41 ±0.19	0.67 ±0.06	0.62 ±0.02	3.24 ±0.27	2.42 ^{td} ±0.34
C18:1 n-7	2.77 ±0.06	2.58** ±0.03	4.16 ±0.10	4.04 ±0.06	3.00 ±0.28	2.96 ±0.16
C20:1 n-7	<i>nd</i>	<i>nd</i>	0.60 ±0.17	0.43 ±0.02	<i>nd</i>	<i>nd</i>
Σ n-7	3.94 ±0.14	3.99 ±0.20	5.42 ±0.22	5.09 ±0.06	6.24 ±0.47	5.39 ±0.46
C18:2 n-6	7.92 ±0.20	8.39 ±0.30	0.81 ±0.09	0.91 ±0.08	7.91 ±0.72	6.10 ±0.77
C18:3 n-6	0.26 ±0.09	0.09 ^{td} ±0.01	<i>nd</i>	<i>nd</i>	<i>nd</i>	<i>nd</i>
C20:2 n-6	<i>Tr</i>	<i>Tr</i>	0.21 ±0.01	0.19 ±0.01	0.25 ±0.02	0.29 ±0.02
C20:3 n-6	0.50 ±0.03	0.52 ±0.03	0.36 ±0.01	0.40 ±0.02	0.33 ±0.03	0.38 ±0.03
C20:4 n-6	27.17 ±0.68	24.14* ±0.89	11.27 ±0.10	11.27 ±0.13	6.07 ±0.50	8.21* ±0.47
C22:4 n-6	0.57 ±0.03	0.49 ±0.05	2.81 ±0.07	2.85 ±0.11	1.53 ±0.27	1.78 ±0.24
C22:5 n-6	0.14 ±0.03	0.03* ±0.03	0.61 ±0.02	0.56 ^{td} ±0.02	0.26 ±0.05	0.27 ±0.04
Σ n-6	36.57 ±0.60	33.66* ±0.98	16.17 ±0.16	16.32 ±0.24	16.35 ±0.68	17.03 ±1.09
C18:3 n-3	0.30 ±0.04	0.31 ±0.02	<i>nd</i>	<i>nd</i>	0.95 ±0.14	0.82 ±0.14
C20:5 n-3	0.39 ±0.04	0.47 ±0.06	<i>nd</i>	<i>nd</i>	<i>nd</i>	<i>nd</i>
C22:5 n-3	0.34 ±0.02	0.44** ±0.03	0.13 ±0.02	0.13 ±0.01	0.43 ±0.12	0.42 ±0.05
C22:6 n-3	2.37 ±0.07	2.40 ±0.11	15.17 ±0.27	15.5 ±0.27	4.97 ±0.94	5.17 ±1.70
Σ n-3	3.40 ±0.09	3.62 ±0.19	15.3 ±0.27	15.63 ±0.27	6.36 ±0.99	6.41 ±1.61
C24:4 n-6	<i>nd</i>	<i>nd</i>	0.11 ±0.02	0.14 ±0.03	<i>nd</i>	<i>nd</i>
Σ others	<i>nd</i>	<i>nd</i>	0.11 ±0.02	0.14 ±0.03	<i>nd</i>	<i>nd</i>

For legend and statistical analysis, see the top of Supplementary Material B - page 1.

Supplementary Material B – Table S4: Spleen, lung and bone marrow fatty acid composition of total lipids

% of total fatty acids	Spleen		Lung		Bone marrow	
	Ctrl	DPA	Ctrl	DPA	Ctrl	DPA
C12:0	<i>nd</i>	<i>nd</i>	<i>nd</i>	<i>nd</i>	0.99 ±0.15	0.78 ±0.11
C14:0	0.57 ±0.08	0.56 ±0.09	1.22 ±0.08	1.16 ±0.05	2.21 ±0.23	1.86 ±0.22
C16:0	27.04 ±0.60	26.77 ±0.29	29.26 ±0.53	30.04 ±0.40	21.5 ±0.91	23.58 ^{td} ±0.55
C18:0	15.78 ±0.65	16.24 ±0.40	10.74 ±0.35	11.29 ±0.27	7.70 ±1.21	9.98 ±1.02
C20:0	0.31 ±0.06	0.23 ±0.05	0.22 ±0.02	0.22 ±0.01	0.13 ±0.03	0.15 ±0.03
C24:0	0.07 ±0.02	0.07 ±0.01	<i>nd</i>	<i>nd</i>	<i>nd</i>	<i>nd</i>
Σsaturated	43.76 ±1.19	43.87 ±0.51	41.43 ±0.74	42.71 ±0.57	32.52 ±1.66	36.35^{td} ±1.07
C16:1 n-9	0.69 ±0.10	0.64 ±0.07	2.29 ±0.11	2.44 ±0.13	0.68 ±0.03	0.94 ^{td} ±0.13
C18:1 n-9	15.69 ±0.78	14.77 ±0.62	24.54 ±1.29	22.87 ±1.07	35.52 ±2.43	29.87 ^{td} ±2.08
C20:1 n-9	1.07 ±0.15	0.97 ±0.08	0.70 ±0.04	0.72 ±0.03	0.56 ±0.06	0.75 ±0.11
C20:3 n-9	0.80 ±0.02	0.83 ±0.02	0.57 ±0.02	0.54 ±0.01	0.46 ±0.04	0.51 ±0.05
Σ n-9	18.48 ±0.75	17.42 ±0.60	28.45 ±1.14	26.92 ±0.94	37.22 ±2.35	32.06 ±1.95
C16:1 n-7	1.22 ±0.11	1.11 ±0.13	1.72 ±0.09	1.57 ±0.11	4.72 ±0.84	3.86 ±0.79
C18:1 n-7	3.35 ±0.10	3.22 ±0.07	2.44 ±0.07	2.30 ±0.07	3.45 ±0.13	3.38 ±0.11
C20:1 n-7	0.32 ±0.09	0.26 ±0.07	0.18 ±0.08	0.20 ±0.07	0.18 ±0.03	0.22 ±0.05
Σ n-7	4.88 ±0.16	4.59 ±0.19	4.35 ±0.19	4.08 ±0.20	8.35 ±0.90	7.47 ±0.78
C18:2 n-6	5.18 ±0.14	5.23 ±0.17	5.20 ±0.51	4.73 ±0.31	11.01 ±0.80	9.43 ±0.60
C18:3 n-6	<i>nd</i>	<i>nd</i>	0.14 ±0.03	0.13 ±0.03	0.23 ±0.08	0.30 ±0.10
C20:2 n-6	<i>Tr</i>	<i>Tr</i>	<i>Tr</i>	<i>Tr</i>	<i>Tr</i>	<i>Tr</i>
C20:3 n-6	0.73 ±0.06	0.78 ±0.03	0.43 ±0.02	0.47 ±0.01	0.27 ±0.04	0.35 ±0.05
C20:4 n-6	20.35 ±0.40	20.66 ±0.56	12.77 ±0.58	12.88 ±0.51	7.35 ±1.16	9.90 ±1.59
C22:4 n-6	2.33 ±0.10	2.02* ±0.06	2.79 ±0.17	2.57 ±0.13	0.94 ±0.15	1.03 ±0.16
C22:5 n-6	0.48 ±0.03	0.38 ^{td} ±0.04	0.45 ±0.03	0.34* ±0.02	0.19 ±0.03	0.22 ±0.03
Σ n-6	29.07 ±0.56	29.06 ±0.56	21.91 ±0.31	21.24 ±0.38	19.99 ±1.01	21.22 ±1.36
C18:3 n-3	0.35 ±0.06	0.28 ±0.05	0.33 ±0.04	0.27 ±0.04	0.70 ±0.06	0.80 ±0.23
C20:5 n-3	0.17 ±0.01	0.31*** ±0.02	0.29 ±0.03	0.40** ±0.02	0.08 ±0.02	0.14 ^{td} ±0.03
C22:5 n-3	1.08 ±0.04	1.79*** ±0.06	1.04 ±0.05	1.78*** ±0.06	0.36 ±0.06	0.63* ±0.10
C22:6 n-3	2.20 ±0.08	2.67** ±0.13	2.16 ±0.12	2.55* ±0.09	0.79 ±0.13	1.33 ^{td} ±0.27
Σ n-3	3.80 ±0.16	5.06*** ±0.16	3.86 ±0.14	5.05*** ±0.11	1.93 ±0.17	2.90* ±0.36

For legend and statistical analysis, see the top of Supplementary Material B - page 1.

Supplementary Material B – Table S5: Pancreas, epididymal adipose tissue (TAE) and skin fatty acid composition of total lipids

% of total fatty acids	Pancreas		TAE		Skin	
	Ctrl	DPA	Ctrl	DPA	Ctrl	DPA
C12:0	0.34 ±0.20	0.31 ±0.14	0.36 ±0.05	0.38 ±0.05	1.10 ±0.18	1.21 ±0.12
C14:0	0.96 ±0.28	0.99 ±0.29	1.58 ±0.03	1.60 ±0.06	2.29 ±0.13	2.33 ±0.12
C16:0	24.51 ±0.93	24.57 ±1.37	23.23 ±0.63	22.85 ±0.47	20.97 ±0.26	20.93 ±0.37
C18:0	9.20 ±2.99	8.39 ±2.79	2.63 ±0.08	2.63 ±0.10	3.54 ±0.10	3.61 ±0.12
C20:0	0.37 ±0.34	0.26 ±0.13	0.08 ±0.01	0.06 ±0.01	0.13 ±0.01	0.13 ±0.01
C24:0	nd	nd	nd	nd	nd	nd
Σsaturated	35.38 ±3.31	34.51 ±3.60	27.88 ±0.61	27.52 ±0.49	28.3 ±0.30	28.48 ±0.39
C16:1 n-9	0.54 ±0.11	0.55 ±0.13	0.54 ±0.01	0.54 ±0.02	0.47 ±0.01	0.47 ±0.01
C18:1 n-9	27.08 ±12.41	30.43 ±11.81	52.82 ±0.35	53.44 ±0.65	49.32 ±0.59	49.21 ±0.57
C20:1 n-9	0.68 ±0.32	0.55 ±0.13	0.33 ±0.02	0.32 ±0.02	0.40 ±0.01	0.40 ±0.01
C20:3 n-9	0.55 ±0.20	0.47 ±0.21	0.18 ±0.04	0.14 ±0.04	0.21 ±0.01	0.20 ±0.01
Σ n-9	28.86 ±12.05	32.00 ±11.65	53.87 ±0.38	54.43 ±0.65	50.48 ±0.58	50.36 ±0.58
C16:1 n-7	2.35 ±1.44	2.50 ±1.10	5.42 ±0.21	5.08 ±0.41	2.74 ±0.24	2.65 ±0.26
C18:1 n-7	2.95 ±0.25	2.89 ±0.21	2.96 ±0.10	2.85 ±0.06	2.74 ±0.07	2.71 ±0.06
C20:1 n-7	0.22 ±0.21	0.14 ±0.11	0.07 ±0.01	0.06 ±0.01	0.13 ±0.02	0.15 ±0.01
Σ n-7	5.52 ±1.15	5.53 ±1.06	8.45 ±0.24	8.00 ±0.46	5.61 ±0.28	5.51 ±0.31
C18:2 n-6	11.24 ±1.27	11.56 ±1.50	8.22 ±0.32	8.51 ±0.35	12.58 ±0.41	12.68 ±0.46
C18:3 n-6	nd	nd	0.06 ±0.01	0.04 ±0.01	0.11 ±0.01	0.09 ±0.01
C20:2 n-6	nd	nd	nd	nd	nd	nd
C20:3 n-6	0.35 ±0.21	0.29 ±0.15	nd	nd	0.07 ±0.01	0.07 ±0.01
C20:4 n-6	13.86 ±6.54	11.38 ±5.41	0.33 ±0.11	0.23 ±0.07	1.33 ±0.06	1.24 ±0.05
C22:4 n-6	0.51 ±0.22	0.36 ±0.17	0.05 ±0.02	0.03 ±0.02	0.11 ±0.01	0.10 ±0.01
C22:5 n-6	0.36 ±0.16	0.22 ±0.13	nd	nd	nd	nd
Σ n-6	26.33 ±8.18	23.81 ±7.21	8.66 ±0.43	8.81 ±0.32	14.20 ±0.44	14.19 ±0.51
C18:3 n-3	0.59 ±0.37	0.33 ±0.16	1.04 ±0.04	1.07 ±0.02	1.15 ±0.02	1.16 ±0.01
C20:5 n-3	1.01 ±0.46	1.43 ^{td} ±0.64	nd	nd	nd	nd
C22:5 n-3	0.47 ±0.23	0.82 ^{td} ±0.26	Tr	0.06* ±0.02	0.09 ±0.01	0.14* ±0.01
C22:6 n-3	1.84 ±0.95	1.96 ±1.03	0.09 ±0.04	0.07 ±0.03	0.16 ±0.01	0.18 ±0.01
Σ n-3	3.91 ±1.77	4.14^{td} ±1.85	1.15 ±0.07	1.24 ±0.05	1.41 ±0.03	1.47^{td} ±0.02

For legend and statistical analysis, see the top of Supplementary Material B - page 1.

Supplementary Material B – Table S6: Sub-cutaneous adipose tissue (SCAT). muscle and testis fatty acid composition of total lipids

% of total fatty acids	SCAT		Muscle		Testis	
	Ctrl	DPA	Ctrl	DPA	Ctrl	DPA
C12:0	1.26 ±0.15	1.21 ±0.16	0.19 ±0.02	0.22 ±0.05	0.13 ±0.03	0.11 ±0.03
C14:0	2.52 ±0.15	2.52 ±0.17	0.71 ±0.05	0.76 ±0.09	0.58 ±0.03	0.63 ±0.05
C16:0	22.02 ±0.39	22.41 ±0.31	20.81 ±0.64	20.92 ±0.22	32.12 ±0.39	31.98 ±0.38
C18:0	2.66 ±0.05	2.59 ±0.08	11.73 ±0.29	11.8 ±0.57	7.78 ±0.31	7.55 ±0.18
C20:0	Tr	Tr	0.11 ±0.03	0.09 ±0.03	Tr	Tr
C24:0	nd	nd	nd	nd	nd	nd
Σsaturated	28.45 ±0.31	28.73 ±0.48	33.54 ±0.63	33.79 ±0.45	40.6 ±0.58	40.27 ±0.34
C16:1 n-9	0.46 ±0.01	0.46 ±0.01	0.57 ±0.03	0.57 ±0.03	0.44 ±0.02	0.45 ±0.03
C18:1 n-9	50.06 ±0.56	49.99 ±0.71	21.54 ±1.21	21.94 ±1.80	15.6 ±0.76	16.25 ±0.67
C20:1 n-9	0.33 ±0.01	0.32 ±0.01	0.34 ±0.04	0.3 ±0.03	0.39 ±0.11	0.5 ±0.10
C20:3 n-9	0.18 ±0.01	0.16 ±0.01	Tr	Tr	nd	nd
Σ n-9	51.03 ±0.56	50.93 ±0.71	22.45 ±1.23	22.81 ±1.81	16.43 ±0.83	17.2 ±0.71
C16:1 n-7	3.79 ±0.33	4.13 ±0.23	1.38 ±0.11	1.23 ±0.07	0.91 ±0.10	0.91 ±0.10
C18:1 n-7	2.57 ±0.09	2.66 ±0.07	3.16 ±0.09	3.06 ±0.08	2.34 ±0.06	2.18* ±0.04
C20:1 n-7	0.07 ±0.01	0.05 ±0.01	0.11 ±0.02	0.09 ±0.02	nd	nd
Σ n-7	6.43 ±0.41	6.85 ±0.28	4.65 ±0.19	4.38 ±0.11	3.25 ±0.16	3.08 ±0.11
C18:2 n-6	12.42 ±0.74	11.93 ±0.52	15.84 ±0.40	15.73 ±0.31	4.21 ±0.18	4.4 ±0.15
C18:3 n-6	0.1 ±0.01	0.09 ±0.01	0.13 ±0.03	0.11 ±0.02	nd	nd
C20:2 n-6	Tr	Tr	0.42 ±0.02	0.39 ±0.02	Tr	Tr
C20:3 n-6	nd	nd	0.46 ±0.02	0.45 ±0.03	0.51 ±0.02	0.54 ±0.02
C20:4 n-6	0.27 ±0.03	0.21 ^{td} ±0.01	11.92 ±0.47	11.43 ±0.73	16.21 ±0.29	16.16 ±0.30
C22:4 n-6	nd	nd	0.49 ±0.04	0.45 ±0.02	1.42 ±0.03	1.44 ±0.03
C22:5 n-6	nd	nd	0.56 ±0.07	0.63 ±0.11	13.45 ±0.42	12.95 ±0.32
Σ n-6	12.79 ±0.75	12.24 ±0.54	29.81 ±0.87	29.2 ±0.93	37.29 ±0.55	36.93 ±0.49
C18:3 n-3	1.29 ±0.06	1.25 ±0.02	0.35 ±0.05	0.32 ±0.05	0.17 ±0.05	0.27 ±0.08
C20:5 n-3	nd	nd	0.22 ±0.01	0.26 ±0.02	0.24 ±0.04	0.15 ^{td} ±0.02
C22:5 n-3	nd	nd	1.45 ±0.13	1.73 ±0.20	nd	nd
C22:6 n-3	nd	nd	7.52 ±0.28	7.5 ±0.51	2.01 ±0.07	2.1 ±0.05
Σ n-3	1.29 ±0.06	1.25 ±0.02	9.56 ±0.34	9.83 ±0.62	2.43 ±0.05	2.51 ±0.05
C24:4 n-6	nd	nd	nd	nd	0.73 ±0.03	0.73 ±0.03
C24:5 n-6	nd	nd	nd	nd	0.76 ±0.04	0.71 ±0.04
Others	nd	nd	nd	nd	1.49 ±0.06	1.44 ±0.03

For legend and statistical analysis, see the top of Supplementary Material B - page 1.

Supplementary Material C

Supplementary Material C – Table S1: Liver fatty acids composition of total lipids

Supplementary Material C – Table S2: Heart fatty acids composition of total lipids

Supplementary Material C – Table S3: Lung fatty acids composition of total lipids

Supplementary Material C – Table S4: Spleen fatty acids composition of total lipids

Supplementary Material C – Table S5: Red blood cells fatty acids composition of total lipids

Supplementary Material C – Table S6: Brain fatty acids composition of phospholipids

Legend for all Tables:

The mass percentages of the identified fatty acids in tissues of rats fed the vegetable oils blend diet (VO) or the vegetable oil and dairy lipid blend diet (DL); not supplemented or supplemented with 0.5% DPA (VO+DPA and DL+DPA) for 6 weeks are presented as mean \pm SEM (n=8/group, Experiment 2). Fatty acids with a proportion <0.1% are noted as trace (Tr). DPA supplementation effect (DPA) compared both not supplemented groups with both supplemented groups, lipid mixture effect (LM) compared both VO groups with both DL groups, by 2-ways ANOVA considering the interaction between both effects (DPA*LM) (* p <0.05, ** p <0.01, *** p <0.001). Different superscript characters indicate significant differences for multiple comparisons (Tukey post-hoc, p <0.05).

Supplementary Material C– Table S1: Liver fatty acids composition of total lipids

% FA	VO		VO+DPA		DL		DL+DPA		DPA	LM	DPA*LM
C14:0	0.53 ^a	±0.05	0.59 ^a	±0.11	0.88 ^b	±0.06	0.89 ^b	±0.11		***	
C15:0	0.30 ^a	±0.04	0.35 ^{ab}	±0.04	0.41 ^b	±0.03	0.39 ^{ab}	±0.05		*	
C16:0	21.73	±0.26	23.19	±0.45	22.37	±0.29	22.43	±0.64			
C18:0	14.33	±0.64	13.13	±0.75	12.32	±0.49	12.88	±0.87			
Σ saturated	36.89	±0.47	37.26	±0.39	35.97	±0.46	36.59	±0.67			
C16:1 n-9	0.37	±0.02	0.46	±0.05	0.40	±0.02	0.49	±0.10			
C18:1 n-9	27.54 ^{ab}	±0.95	27.22 ^a	±1.48	24.83 ^{ab}	±1.00	23.79 ^b	±1.51		*	
Σ n-9	27.91	±0.97	27.68	±1.53	25.23	±1.01	24.29	±1.57		*	
C16:1 n-7	1.32 ^a	±0.15	1.83 ^{ab}	±0.24	2.65 ^c	±0.25	2.31 ^{bc}	±0.41		**	
C18:1 n-7	3.03 ^a	±0.07	3.24 ^{ab}	±0.27	4.09 ^c	±0.18	3.62 ^{bc}	±0.25		***	
Σ n-7	4.35^a	±0.22	5.07^{ab}	±0.46	6.74^c	±0.41	5.93^{bc}	±0.64		***	
C18:2 n-6	7.58 ^a	±0.35	6.83 ^b	±0.27	9.38 ^c	±0.27	10.25 ^d	±0.26	*	***	**
C18:3 n-6	0.12 ^a	±0.02	0.12 ^a	±0.02	0.19 ^b	±0.02	0.14 ^{ab}	±0.02		*	
C20:2 n-6	0.11	±0.01	0.10	±0.01	0.11	±0.02	0.12	±0.02			
C20:3 n-6	0.49 ^a	±0.04	0.50 ^a	±0.06	0.65 ^{ab}	±0.09	0.70 ^b	±0.07		*	
C20:4 n-6	14.96	±0.63	14.26	±0.92	14.06	±0.54	12.84	±1.00			
C22:4 n-6	0.26 ^a	±0.02	0.21 ^{ab}	±0.02	0.19 ^b	±0.01	0.18 ^b	±0.02		*	
C22:5 n-6	0.22 ^a	±0.02	0.19 ^a	±0.02	0.19 ^a	±0.01	0.11 ^b	±0.01	**		
Σ n-6	23.75	±0.58	22.2	±1.10	24.77	±0.73	24.34	±1.13			
C18:3 n-3	0.48 ^a	±0.07	0.50 ^a	±0.07	0.63 ^{ab}	±0.06	0.69 ^b	±0.05		**	
C20:5 n-3	0.14 ^a	±0.01	0.16 ^a	±0.02	0.33 ^b	±0.04	0.67 ^c	±0.07	***	**	***
C22:5 n-3	0.37 ^a	±0.02	0.44 ^a	±0.02	0.47 ^a	±0.02	0.96 ^b	±0.07	***	*	***
C22:6 n-3	6.11	±0.29	6.69	±0.52	5.86	±0.21	6.53	±0.53			
Σ n-3	7.10^a	±0.28	7.78^{ab}	±0.54	7.29^a	±0.22	8.85^b	±0.55	*		

For table legend, see page 1.

Supplementary Material C – Table S2: Heart fatty acids composition of total lipids

% FA	VO	VO+DPA	DL	DL+DPA	DPA	LM	DPA*LM
C14:0	0.20 ^{ab} ±0.02	0.18 ^a ±0.01	0.27 ^b ±0.01	0.27 ^b ±0.03		**	
C15:0	Tr	Tr	0.13 ±0.02	0.15 ±0.02		***	
C16:0	11.85 ^a ±0.27	11.82 ^a ±0.17	11.19 ^b ±0.13	11.66 ^{ab} ±0.14		*	
C18:0	20.44 ±0.33	19.97 ±0.22	19.86 ±0.22	19.97 ±0.17			
Σ saturated	32.49 ±0.51	31.97 ±0.22	31.46 ±0.14	32.05 ±0.13		*	
C16:1 n-9	0.25 ±0.07	0.19 ±0.02	0.17 ±0.01	0.21 ±0.04			
C18:1 n-9	10.31 ^a ±0.55	10.10 ^{ab} ±0.48	8.83 ^b ±0.30	8.85 ^b ±0.42		**	
C20:1 n-9	0.21 ±0.01	0.21 ±0.01	0.22 ±0.01	0.19 ±0.02			
C20:3 n-9	0.41 ^{ab} ±0.03	0.48 ^a ±0.05	0.38 ^{ab} ±0.03	0.36 ^b ±0.05			
Σ n-9	11.18^a ±0.54	10.99^a ±0.46	9.61^b ±0.30	9.61^b ±0.43		*	
C16:1 n-7	0.71 ±0.12	0.45 ±0.03	0.60 ±0.05	0.64 ±0.07			*
C18:1 n-7	4.63 ±0.16	4.51 ±0.12	4.69 ±0.13	4.48 ±0.08			
C20:1 n-7	0.16 ^a ±0.03	0.31 ^b ±0.05	0.27 ^{ab} ±0.04	0.30 ^b ±0.06	*		
Σ n-7	5.49 ±0.23	5.26 ±0.13	5.56 ±0.15	5.42 ±0.15			
C18:2 n-6	12.99 ^{ab} ±0.31	12.63 ^a ±0.36	15.02 ^c ±0.34	13.82 ^b ±0.18	**	***	*
C20:2 n-6	0.14 ±0.02	0.13 ±0.02	0.16 ±0.01	0.13 ±0.02			
C20:3 n-6	0.51 ^a ±0.03	0.53 ^a ±0.02	0.73 ^b ±0.02	0.65 ^b ±0.04		***	
C20:4 n-6	21.61 ±0.34	21.02 ±0.27	20.90 ±0.33	20.67 ±0.39			
C22:4 n-6	0.89 ^a ±0.04	0.72 ^b ±0.07	0.91 ^a ±0.03	0.72 ^b ±0.05	**		
C22:5 n-6	1.03 ^a ±0.07	0.84 ^b ±0.05	0.86 ^{ab} ±0.06	0.69 ^b ±0.04	**	**	
Σ n-6	37.18^a ±0.47	35.87^c ±0.42	38.58^b ±0.43	36.68^{ac} ±0.42	***	*	
C18:3 n-3	0.25 ±0.03	0.34 ±0.07	0.35 ±0.04	0.33 ±0.06			
C20:5 n-3	0.10 ^a ±0.02	0.13 ^{ab} ±0.01	0.19 ^c ±0.01	0.16 ^{bc} ±0.02		***	*
C22:5 n-3	1.38 ^a ±0.15	2.36 ^c ±0.08	1.83 ^b ±0.08	2.51 ^c ±0.26	***	*	
C22:6 n-3	11.93 ^a ±0.47	13.09 ^b ±0.24	12.43 ^{ab} ±0.40	13.24 ^b ±0.29	*		
Σ n-3	13.66^a ±0.50	15.92^{bc} ±0.26	14.79^{ab} ±0.47	16.24^c ±0.52	***		

For table legend, see page 1.

Supplementary Material C – Table S3: Lung fatty acids composition of total lipids

% FA	VO	VO+DPA	DL	DL+DPA	DPA	LM	DPA*LM
C14:0	1.02 ^a ±0.03	0.92 ^a ±0.03	1.74 ^b ±0.09	1.69 ^b ±0.17	***		
C15:0	0.19 ^a ±0.01	0.20 ^a ±0.01	0.51 ^b ±0.02	0.47 ^b ±0.02	***		
C16:0	28.19 ^a ±0.31	30.18 ^b ±0.53	29.06 ^{ab} ±0.33	29.15 ^{ab} ±0.40			*
C18:0	10.53 ^a ±0.31	11.57 ^b ±0.38	12.36 ^b ±0.16	12.31 ^b ±0.31	***		
C20:0	0.16 ^a ±0.02	0.19 ^a ±0.01	0.24 ^b ±0.01	0.24 ^b ±0.01	***		
Σ saturated	40.10^a ±0.31	43.06^b ±0.71	43.90^b ±0.36	43.85^b ±0.59	***		**
C16:1n-9	2.36 ^a ±0.10	2.88 ^b ±0.17	2.52 ^{ab} ±0.08	2.45 ^a ±0.10			*
C18:1n-9	29.61 ^a ±1.50	23.91 ^b ±1.88	18.90 ^c ±0.46	19.61 ^c ±0.83	***		*
C20:1n-9	0.66 ±0.05	0.70 ±0.05	0.64 ±0.02	0.63 ±0.03			
C20:3n-9	0.34 ^a ±0.04	0.47 ^b ±0.05	0.35 ^a ±0.02	0.41 ^{ab} ±0.04	*		
C22:1n-9	0.16 ^a ±0.02	0.30 ^b ±0.04	0.45 ^c ±0.05	0.44 ^c ±0.04	***		*
Σ n-9	33.13^a ±1.32	28.25^b ±1.61	22.87^c ±0.40	23.53^c ±0.77	***		*
C16:1n-7	1.96 ^{ab} ±0.15	1.76 ^a ±0.06	2.30 ^{ab} ±0.11	2.55 ^b ±0.28	**		
C18:1n-7	3.00 ±0.06	2.85 ±0.07	3.09 ±0.09	3.11 ±0.08	*		
C20:1n-7	0.19 ±0.03	0.23 ±0.04	0.26 ±0.02	0.25 ±0.02			
Σ n-7	5.15^{ab} ±0.21	4.84^a ±0.13	5.65^{bc} ±0.19	5.90^c ±0.34	**		
C18:2n-6	5.21 ^a ±0.17	4.33 ^b ±0.27	4.95 ^{ab} ±0.21	5.20 ^a ±0.33			*
C18:3n-6	0.04 ^a ±0.01	0.07 ^{ab} ±0.01	0.09 ^b ±0.01	0.08 ^{ab} ±0.01	**		*
C20:3n-6	0.31 ^a ±0.03	0.40 ^a ±0.04	0.61 ^b ±0.05	0.56 ^b ±0.04	***		
C20:4n-6	10.77 ^a ±0.60	12.43 ^{ab} ±0.69	14.27 ^b ±0.30	13.23 ^b ±0.55	***		*
C22:4n-6	2.30 ^a ±0.25	2.48 ^a ±0.23	3.11 ^b ±0.11	2.74 ^{ab} ±0.14	**		
C22:5n-6	0.23 ±0.03	0.27 ±0.04	0.27 ±0.02	0.24 ±0.02			
Σ n-6	18.87^a ±0.79	19.97^a ±0.77	23.31^b ±0.39	22.04^b ±0.45	***		*
C18:3n-3	0.34 ±0.03	0.26 ±0.04	0.32 ±0.03	0.32 ±0.05		*	
C20:5n-3	0.30 ^a ±0.04	0.34 ^{ab} ±0.04	0.42 ^b ±0.03	0.37 ^{ab} ±0.03		*	
C22:5n-3	0.61 ^a ±0.06	1.26 ^b ±0.12	1.38 ^b ±0.04	1.80 ^c ±0.11	***	***	
C22:6n-3	1.51 ^a ±0.19	2.02 ^b ±0.18	2.16 ^b ±0.07	2.19 ^b ±0.09	*	**	*
Σ n-3	2.76^a ±0.29	3.88^b ±0.34	4.27^{bc} ±0.09	4.68^c ±0.16	**	***	*

For table legend, see page 1.

Supplementary Material C – Table S4: Spleen fatty acids composition of total lipids

% FA	VO	VO+DPA	DL	DL+DPA	DPA	LM	DPA*LM
C14:0	0.43 ^a ±0.02	0.65 ^b ±0.08	0.97 ^c ±0.08	0.92 ^c ±0.09		***	
C16:0	25.37 ±0.34	24.80 ±0.41	25.40 ±0.37	25.27 ±0.53			
C18:0	14.96 ^{ab} ±0.48	12.96 ^b ±0.95	15.07 ^{ab} ±0.44	15.85 ^a ±0.44			*
C20:0	0.34 ^a ±0.14	0.11 ^b ±0.01	0.12 ^b ±0.01	0.15 ^{ab} ±0.02		*	
Σ saturated	41.11^{ab} ±0.88	38.52^b ±1.24	41.56^a ±0.45	42.18^a ±0.43			
C16:1n-9	0.42 ^{ab} ±0.01	0.44 ^a ±0.01	0.37 ^c ±0.02	0.39 ^{bc} ±0.02		**	
C18:1n-9	19.92 ^{ab} ±1.20	24.83 ^a ±2.96	17.39 ^b ±0.83	17.17 ^b ±0.90		**	
C20:1n-9	0.75 ±0.14	0.89 ±0.04	0.78 ±0.06	0.92 ±0.10			
C20:3n-9	0.58 ^a ±0.04	0.50 ^{ab} ±0.04	0.38 ^b ±0.04	0.41 ^b ±0.04		**	
C22:1n-9	0.10 ±0.01	0.10 ±0.01	0.10 ±0.01	0.09 ±0.01			
Σ n-9	22.08^a ±1.16	27.12^b ±2.88	19.73^a ±0.81	19.65^a ±0.85		**	
C16:1n-7	1.10 ±0.09	1.62 ±0.21	1.53 ±0.15	1.45 ±0.16			
C18:1n-7	3.91 ±0.25	3.51 ±0.09	3.96 ±0.15	3.92 ±0.18			
C20:1n-7	0.17 ^a ±0.03	0.10 ^b ±0.01	0.14 ^{ab} ±0.01	0.19 ^a ±0.02			**
Σ n-7	5.18 ±0.28	5.24 ±0.15	5.63 ±0.25	5.56 ±0.25			
C18:2n-6	4.19 ^a ±0.91	5.87 ^b ±0.35	6.35 ^b ±0.13	6.52 ^b ±0.24		**	
C20:2n-6	0.35 ^a ±0.04	0.24 ^b ±0.02	0.33 ^a ±0.01	0.33 ^a ±0.02			*
C20:3n-6	0.59 ^a ±0.11	0.62 ^a ±0.06	0.90 ^b ±0.05	0.95 ^b ±0.06		***	
C20:4n-6	20.74 ^a ±0.74	16.86 ^b ±1.61	19.60 ^{ab} ±0.65	18.66 ^{ab} ±1.16	*		
C22:4n-6	2.29 ^a ±0.11	1.68 ^c ±0.17	2.11 ^{ab} ±0.08	1.86 ^{bc} ±0.13	**		
C22:5n-6	0.29 ^a ±0.02	0.23 ^b ±0.03	0.24 ^{ab} ±0.01	0.20 ^b ±0.02	*	*	
Σ n-6	28.46^{ab} ±0.70	25.50^a ±1.54	29.53^b ±0.69	28.52^{ab} ±1.14		*	
C18:3n-3	0.27 ±0.05	0.64 ±0.22	0.33 ±0.02	0.49 ±0.12	*		
C20:5n-3	0.18 ^{ab} ±0.03	0.13 ^a ±0.02	0.19 ^{ab} ±0.02	0.22 ^b ±0.03			
C22:5n-3	0.72 ^a ±0.03	1.00 ^b ±0.12	1.09 ^b ±0.06	1.39 ^c ±0.08	**	***	
C22:6n-3	2.02 ±0.10	1.95 ±0.20	1.93 ±0.11	1.98 ±0.15			
Σ n-3	3.18^a ±0.14	3.62^{ab} ±0.35	3.55^{ab} ±0.17	4.08^b ±0.21		*	

For table legend, see page 1.

Supplementary Material C – Table S5: Red blood cells fatty acids composition of total lipids

% FA	VO	VO+DPA	DL	DL+DPA	DPA	LM	DPA*LM
C14:0	0.67 ^{ab} ±0.05	0.56 ^a ±0.08	0.82 ^b ±0.07	0.72 ^{ab} ±0.05		*	
C16:0	21.12 ^a ±0.35	21.19 ^a ±0.22	22.58 ^b ±0.51	20.92 ^a ±0.26	**	**	*
C18:0	17.09 ±0.22	16.47 ±0.29	16.84 ±0.46	16.90 ±0.62			
Σ saturated	38.88^{ab} ±0.58	38.22^a ±0.27	40.24^b ±0.68	38.55^{ab} ±0.80			
C16:1 n-9	0.40 ^a ±0.03	0.36 ^a ±0.04	0.82 ^b ±0.17	0.39 ^a ±0.07	**	**	*
C18:1 n-9	16.6 ^{ab} ±0.58	16.64 ^{ab} ±0.86	17.47 ^a ±0.98	14.75 ^b ±0.88	*		
Σ n-9	17.00^{ab} ±0.59	17.00^{ab} ±0.89	18.29^a ±0.98	15.14^b ±0.86	*		
C16:1 n-7	0.68 ^a ±0.05	0.63 ^a ±0.10	1.16 ^b ±0.20	0.75 ^a ±0.07	*	**	
C18:1 n-7	2.76 ±0.15	2.63 ±0.10	2.66 ±0.21	2.70 ±0.04			
Σ n-7	3.44 ±0.15	3.26 ±0.17	3.82 ±0.36	3.45 ±0.09			
C18:2 n-6	6.30 ^a ±0.17	6.38 ^a ±0.13	8.83 ^b ±0.71	8.15 ^b ±0.85		***	
C20:2 n-6	0.25 ±0.04	0.35 ±0.10	0.34 ±0.09	0.27 ±0.04			
C20:3 n-6	0.50 ^{ab} ±0.04	0.55 ^b ±0.03	0.43 ^a ±0.05	0.69 ^c ±0.04	***		*
C20:4 n-6	26.76 ^a ±0.69	26.30 ^a ±0.96	21.17 ^b ±1.07	25.76 ^a ±0.78	**	***	**
C22:4 n-6	1.02 ±0.10	0.92 ±0.09	0.81 ±0.08	0.92 ±0.08			
C22:5 n-6	0.46 ±0.02	0.45 ±0.02	0.40 ±0.05	0.38 ±0.02			
Σ n-6	35.29^a ±0.76	34.93^a ±0.97	31.99^b ±0.86	36.17^a ±0.34	***	**	**
C18:3 n-3	0.59 ^a ±0.11	0.68 ^{ab} ±0.23	1.06 ^b ±0.09	0.42 ^a ±0.07	**	*	*
C20:5 n-3	0.35 ^a ±0.06	0.48 ^{ab} ±0.11	0.47 ^{ab} ±0.04	0.63 ^b ±0.10			
C22:5 n-3	0.80 ^a ±0.05	1.20 ^c ±0.03	1.05 ^b ±0.05	1.46 ^d ±0.07	***	***	
C22:6 n-3	3.66 ^{ab} ±0.20	4.23 ^a ±0.17	3.38 ^b ±0.14	4.18 ^a ±0.37	**		
Σ n-3	5.39^a ±0.26	6.58^b ±0.29	5.96^a ±0.23	6.70^b ±0.43	**		

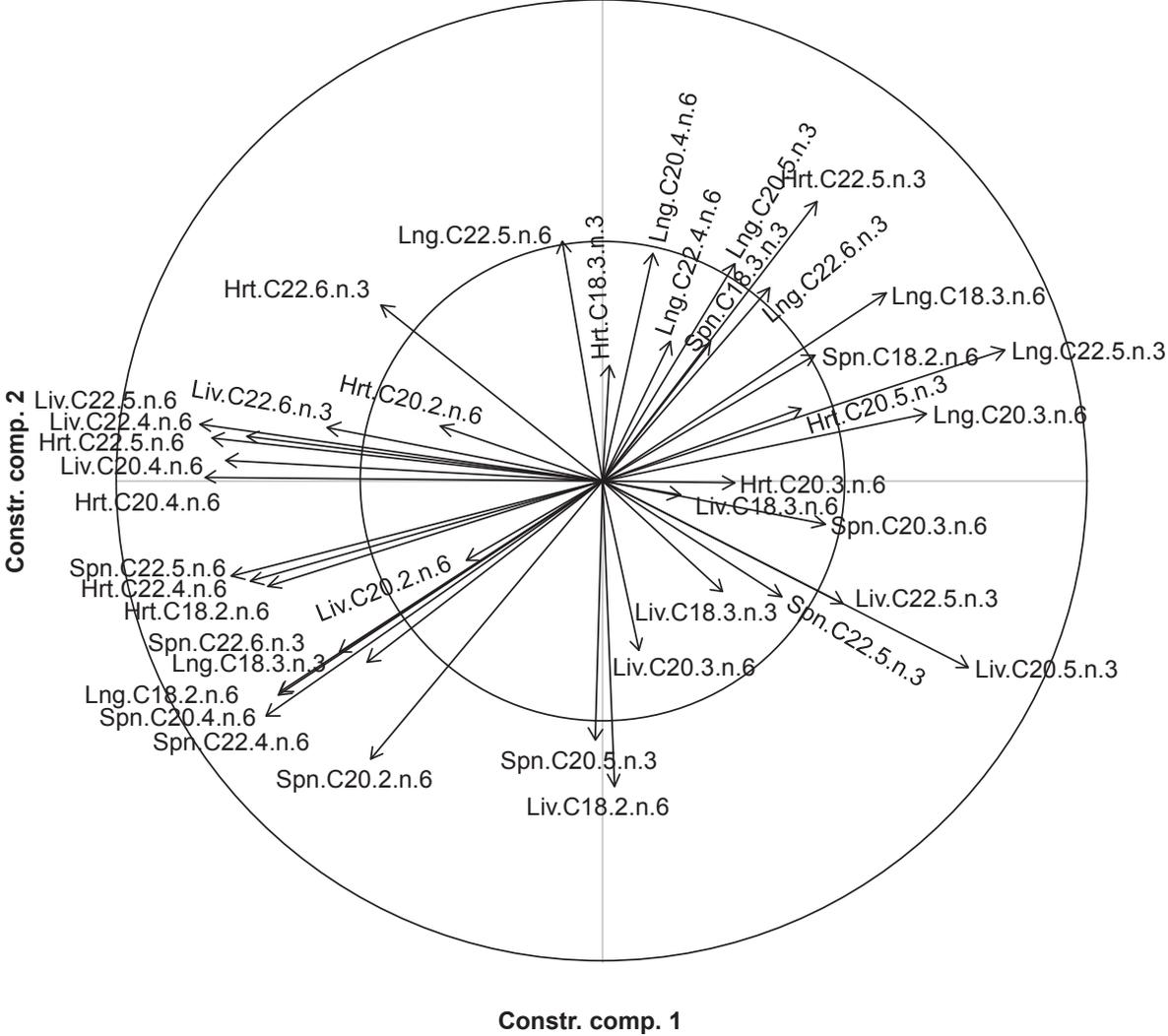
For table legend, see page 1.

Supplementary Material C – Table S6: Brain fatty acids composition of phospholipids

% FA	VO	VO+DPA	DL	DL+DPA	DPA	LM	DPA*LM
C14:0	0.12 ^{ab} ±0.01	0.11 ^a ±0.01	0.17 ^b ±0.04	0.13 ^{ab} ±0.01			
C16:0	20.85 ^a ±0.94	20.96 ^a ±0.47	18.56 ^b ±0.7	19.21 ^{ab} ±0.97		*	
C18:0	20.56 ^a ±0.51	20.42 ^a ±0.66	19.5 ^b ±0.55	20.72 ^{ab} ±0.69		**	
C20:0	0.21 ^a ±0.01	0.21 ^a ±0.01	0.27 ^b ±0.02	0.23 ^{ab} ±0.01		*	
C22:0	0.38 ±0.02	0.39 ±0.04	0.48 ±0.02	0.42 ±0.04			
Σ saturated	42.13^a ±0.63	42.08^a ±0.62	38.97^b ±1.13	40.70^{ab} ±1.02		*	
C16:1 n-9	0.18 ±0.04	0.15 ±0.01	0.16 ±0.02	0.15 ±0.02			
C18:1 n-9	17.42 ^a ±0.18	17.55 ^{ab} ±0.59	18.04 ^b ±0.66	17.84 ^{ab} ±0.50		*	
C20:1 n-9	1.03 ^a ±0.07	1.04 ^a ±0.08	1.38 ^b ±0.08	1.16 ^a ±0.05		**	
Σ n-9	18.63 ±0.20	18.73 ±0.56	19.58 ±0.69	19.15 ±0.51			
C16:1 n-7	0.37 ±0.01	0.39 ±0.01	0.41 ±0.04	0.38 ±0.02			
C18:1 n-7	3.99 ±0.12	3.88 ±0.22	4.17 ±0.18	4.29 ±0.17			
C20:1 n-7	0.39 ^a ±0.03	0.37 ^a ±0.03	0.49 ^b ±0.02	0.43 ^{ab} ±0.02		**	
C22:1 n-7	0.13 ^a ±0.01	0.13 ^a ±0.01	0.17 ^b ±0.01	0.14 ^a ±0.02		*	
Σ n-7	4.87 ±0.12	4.76 ±0.20	5.24 ±0.17	5.24 ±0.18			
C18:2 n-6	0.58 ^a ±0.04	0.60 ^b ±0.04	0.71 ^b ±0.03	0.68 ^b ±0.03		**	
C20:2 n-6	0.13 ±0.05	0.09 ±0.01	0.11 ±0.01	0.10 ±0.01			
C20:3 n-6	0.36 ^a ±0.02	0.36 ^a ±0.01	0.46 ^b ±0.02	0.41 ^{ab} ±0.02		***	
C20:4 n-6	11.75 ±0.43	11.87 ±0.68	11.82 ±0.27	11.48 ±0.68			
C22:4 n-6	3.53 ±0.12	3.48 ±0.13	3.51 ±0.09	3.22 ±0.19			
C22:5 n-6	0.65 ^a ±0.02	0.52 ^b ±0.02	0.51 ^b ±0.02	0.48 ^b ±0.02	***	***	*
Σ n-6	17.01 ±0.53	16.92 ±0.76	17.13 ±0.30	16.37 ±0.79			
C22:5 n-3	0.13 ^a ±0.01	0.13 ^a ±0.01	0.17 ^b ±0.01	0.14 ^{ab} ±0.01	*	**	
C22:6 n-3	17.23 ^a ±0.32	17.37 ^{ab} ±0.26	18.92 ^c ±0.60	18.39 ^{bc} ±0.62		**	
Σ n-3	17.36^a ±0.32	17.51^a ±0.27	19.08^b ±0.60	18.53^{ab} ±0.63		**	

For table legend, see page 1.

Supplementary Material D – Figure S2: Loadings plot of Figure 3 B.



Redundancy analysis of fatty acids (FA) composition of the liver, heart, lung, and spleen of all identified long-chain polyunsaturated fatty acids of rats fed the vegetable oils blend diet or the vegetable oil and dairy lipid blend diet not supplemented or supplemented with 0.5% DPA (n=8/group, Experiment 2).