Supplementary

Table S1. Sequence, GenBank number and reference for primers used in qPCR analysis of rat liver.

Gene	Sequence (5'-3')	Genbank no	Reference
Fads1	GTTTGTGTGGGTGACGCAGAT TTGAAGGCTGACTGGTGAACG	NM_053445	Zhou et al., 2008
Fads2	CGGGAGAAGATGCTACGGATG GCCCTGAAGTCCTCGGTGAT	NM_031344	Zhou et al., 2008
Elovl5	CTCACCCTGCTGTCTCTCTA ATCTGGTGGTTGTTCTTACG	NM_134382.1	Rodriguez-Cruz et al., 2011
Eif3a	CAGACTCCTGAGAGTGTTCTCTT ACCCAGGGAGTCAGTAGCAA	NM_001047087	

Table S2. Biometric factors. Data are mean shown with standard deviation (BMI = body mass index, BW = body weight, Wat epi = epididymal visceral adipose tissue).

	Ctrl			CA			CA25+SA75			CA50+SA50			CA75+SA25			SA		
Weight, start (g)	434.3	±	15.8	425.0	±	15.7	421.0	±	11.1	425.3	±	18.5	420.8	±	24.1	427.7	±	6.4
Weight, final (g)	534.3	±	28.1	511.8	±	28.6	512.5	±	17.6	509.4	±	18.8	524.5	±	30.5	525.0	±	26.6
BMI	0.9	±	0.0	0.9	±	0.0	0.9	±	0.0	0.9	±	0.0	0.9	±	0.0	0.9		0.0
Liver/kg BW	55.1	±	4.5	54.0	±	5.4	54.3	±	2.9	62.1	±	11.9	55.2	±	4.3	58.6	±	7.9
Wat epi/kg BW	17.0	±	2.8	16.7	±	1.8	17.3	±	2.3	16.8	±	2.5	18.3	±	0.6	15.4	±	1.7

Table S3. Analyses of serum and plasma. Ctrl = control, CA = Camelina, SA = Sandeel. Data are means shown with standard deviation (n = 5-6). CRP = C-reactive protein, HDL = high-density lipoprotein, NEFA = non-esterified fatty acids, ALAT = alanine transaminase, ASAT = aspartate transaminase

	Ctrl	CA	CA75+SA25	CA50+SA50	CA25+SA75	SA
CRP (mg/ml)	0.33 ± 0.09	0.33 ± 0.05	0.32 ± 0.15	0.39 ± 0.11	0.37 ± 0.06	0.41 ± 0.08
Cholesterol (mmol/L)	8.3 ± 2.4	8.0 ± 2.7	7.5 ± 0.7	7.3 ± 1.1	8.3 ± 3.3	7.0 ± 0.7
HDL-cholesterol (mmol/L)	1.6 ± 1.9	1.7 ± 1.0	2.3 ± 1.5	2.3 ± 1.8	2.1 ± 1.4	2.4 ± 2.5
Triacylglycerol (mmol/L)	28.7 ± 17.3	28.0 ± 21.6	21.3 ± 9.6	18.3 ± 13.2	21.0 ± 15.8	17.7 ± 12.3
NEFA (mmol/L)	0.55 ± 0.24	0.58 ± 0.25	0.56 ± 0.10	0.48 ± 0.15	0.40 ± 0.24	0.36 ± 0.03
Bile acids (umol/L)	43 ± 22	32 ± 9	51 ± 29	40 ± 20	38 ± 19	35 ± 16
ALAT (U/L)	91 ± 24	82 ± 32	91 ± 16	96 ± 28	81 ± 19	89 ± 30
ASAT (U/L)	93 ± 49	84 ± 28	85 ± 20	104 ± 25	90 ± 19	103 ± 51

Table S4: Fatty acid composition (% of total fatty acids) in blood cells. Data are means (n=6) shown with standard deviation. Different letters indicate

significant differences (p<0.05) evaluated using one-way ANOVA followed by Tukey's HSD. Ctrl = Control, CA = Camelina oil, SA = Sandeel oil.

	Ctrl			CA			CA75+SA25			CA50+SA50			CA25+SA75			SA		
14:0	0.63	±	0.2	0.56	±	0.1	0.70	±	0.2	0.61	±	0.3	0.82	±	0.2	0.76	±	0.3
16:0	25.91	±	2.3	25.90	±	2.1	25.63	±	0.9	25.52	±	1.4	26.00	±	0.9	26.44	±	1.4
18:0	11.73	±	2.4	12.02	±	2.4	11.97	±	1.4	12.24	±	2.6	10.84	±	1.8	11.46	±	1.9
24:0	0.50	±	0.2	0.47	±	0.1	0.49	±	0.1	0.59	±	0.2	0.46	±	0.1	0.53	±	0.2
ΣSFA	39.26	±	1.2	39.43	±	1.5	39.30	±	0.8	39.54	±	1.4	38.63	±	1.8	39.72	±	1.4
16:1n-7	3.01	±	1.0	2.61	±	0.6	2.68	±	0.6	2.56	±	1.5	3.36	±	0.5	3.21	±	1.3
18:1n-9	16.75	±	4.4	16.16	±	5.0	15.07	±	1.9	13.34	±	5.0	15.82	±	3.2	14.28	±	3.6
18:1n-7	2.93 ± 0.3 a			2.48 ± 0.3 ab			2.35 ± 0.1 b			2.42 ± 0.3 b			2.47 ± 0.1 ab			2.49 ± 0.2 ab		
20:1n-9	0.26 ± 0.1 b			0.91 ± 0.3 a			0.90 ± 0.2 a			0.78 ± 0.3 a			0.85 ± 0.1 a			0.69 ± 0.2 a		
24:1n-9	0.30 ± 0.1 b			0.51 ± 0.1 ab			0.52 ± 0.1 ab			0.67 ± 0.3 a			0.49 ± 0.1 ab			0.58 ± 0.2 ab		
ΣMUFA	23.70	±	5.6	23.09	±	6.0	21.94	±	2.7	20.14	±	6.8	23.40	±	3.8	21.62	±	5.1
18:2n-6	12.30 ± 2.2 a			9.55 ± 0.9 b			9.56 ± 0.9 b			9.09 ± 1.5 b			9.64 ± 0.2 b			8.58 ± 0.9 b		
20:3n-6	0.73 ± 0.1 c			0.78 ± 0.1 bc			0.83 ± 0.1 abc			0.78 ± 0.1 bc			1.00 ± 0.1 a			0.97 ± 0.0 ab		
20:4n-6	15.53	±	5.6	15.13	±	4.8	15.28	±	3.4	16.50	±	6.1	12.27	±	2.1	13.83	±	5.0
22:4n-6	1.03 ± 0.2 a			0.63 ± 0.1 b			0.55 ± 0.1 b			0.57 ± 0.2 b			0.44 ± 0.1 b			0.47 ± 0.1 b		
22:5n-6	0.75 ± 0.1 a			0.31 ± 0.1 b			0.29 ± 0.0 b			0.28 ± 0.1 b			0.24 ± 0.0 b			0.27 ± 0.1 b		
Σn-6 PUFA	30.75	±	3.9	26.86	±	4.3	26.93	±	2.5	27.53	±	4.8	23.92	±	2.2	24.37	±	4.3
18:3n-3	0.70 ± 0.2 c			2.21 ± 0.7 a			2.01 ± 0.7 ab			1.38 ± 0.8 abc			1.13 ± 0.3 bc			0.44 ± 0.2 c		
20:5n-3	0.17 ± 0.0 d			0.71 ± 0.2 cd			1.17 ± 0.2 bc			1.60 ± 0.2 b			2.51 ± 0.5 a			2.70 ± 0.5 a		
22:5n-3	0.84 ± 0.2 b			1.75 ± 0.4 a			1.80 ± 0.1 a			1.94 ± 0.2 a			2.10 ± 0.2 a			2.17 ± 0.2 a		
22:6n-3	1.99 ± 0.4 c			3.05 ± 0.7 b			3.85 ± 0.3 b			4.12 ± 0.5 b			5.33 ± 0.9 a			5.53 ± 0.4 a		
Σn-3 PUFA	3.70 ± 0.5 d			7.86 ± 1.1 c			8.99 ± 1.0 c			9.11 ± 1.1 bc			11.28 ± 1.0 a			11.00 ± 1.2 ab		

Table S5. Fatty acid composition (% of total fatty acids) and fat content (%) in liver. Data are means shown with standard deviation (n=6). Different letters indicate significant differences (p<0.05) evaluated using one-way ANOVA followed by Tukey's HSD. CA = Camelina, SA = Sandeel.

	Ctrl			CA			CA75+SA25			CA50+SA50			CA25+SA75			SA		
Fat %	13.5	±	6.8	11.2	±	4.0	11.8	±	4.6	15.2	±	6.1	12.2	±	1.1	14.3	±	6.1
14:0	1.2	±	0.2	1.1	±	0.1	1.2	±	0.2	1.1	±	0.2	1.3	±	0.2	1.3	±	0.1
16:0	31.7	±	1.4	31.4	±	1.0	31.9	±	1.4	31.5	±	1.8	30.2	±	4.6	31.4	±	1.4
18:0	7.7	±	2.3	8.4	±	1.5	8.4	±	2.3	6.4	±	2.3	6.5	±	1.4	6.3	±	1.2
ΣSFA	41.0	±	1.4	41.3	±	0.9	41.9	±	1.2	39.4	±	1.8	38.4	±	6.0	39.5	±	1.0
14:1 n-5	0.3	±	0.1	0.2	±	0.1	0.3	±	0.1	0.3	±	0.1	0.3	±	0.0	0.3	±	0.1
16:1 n-9	0.6	±	0.1	0.5	±	0.0	0.4	±	0.3	0.6	±	0.1	0.5	±	0.1	0.5	±	0.1
16:1 n-7	6.1	±	1.5	5.2	±	0.5	5.6	±	1.2	5.9	±	0.9	6.2	±	1.2	6.6	±	0.7
18:1 n-9	25.2	±	4.4	24.4	±	4.4	24.6	±	4.7	27.6	±	6.4	23.9	±	4.0	25.6	±	5.6
18:1 n-7	3.4 ± 0.5 a			2.8 ± 0.3 ab			2.7 ± 0.3 b			2.9 ± 0.2 ab			2.6 ± 0.5 b			2.9 ± 0.1 ab		
20:1 n-9	0.1 ± 0.0 b			0.4 ± 0.0 a			0.3 ± 0.1 a			0.3 ± 0.1 a			0.3 ± 0.1 a			0.4 ± 0.1 a		
ΣMUFA	36.0	±	6.3	33.8	±	4.6	34.1	±	6.1	37.9	±	6.9	34.3	±	5.5	37.0	±	5.8
18:2 n-6	8.8 ± 0.8 a			7.8 ± 0.5 ab			7.2 ± 0.4 ab			7.3 ± 0.9 ab			6.3 ± 1.4 b			7.3 ± 1.2 ab		
20:3 n-6	0.5	±	0.2	0.6	±	0.1	0.7	±	0.2	0.5	±	0.3	0.6	±	0.2	0.7	±	0.3
20:4 n-6	7.0	±	2.6	6.9	±	1.9	6.4	±	2.3	4.6	±	2.3	4.1	±	1.5	3.9	±	1.1
22:4 n-6	0.4 ± 0.2 a			0.2 ± 0.0 b			0.1 ± 0.0 bc			0.1 ± 0.1 bc			0.0 ± 0.0 c			0.1 ± 0.1 bc		
Σn-6 PUFA	17.3 ± 3.5 a			15.9 ± 2.4 ab			14.8 ± 2.9 ab			12.8 ± 3.2 ab			11.4 ± 3.1 b			12.3 ± 2.5 ab		
18:3 n-3	0.4 ± 0.1 e			1.8 ± 0.2 a			1.4 ± 0.2 ab			1.1 ± 0.3 bc			0.8 ± 0.2 cd			0.5 ± 0.1 de		
20:5 n-3	0.1 ± 0.0 c			0.4 ± 0.1 bc			0.6 ± 0.2 bc			0.7 ± 0.3 b			0.9 ± 0.2 b			1.5 ± 0.6 a		
22:5 n-3	0.3 ± 0.1 c			0.9 ± 0.2 bc			0.9 ± 0.2 b			0.9 ± 0.3 bc			0.9 ± 0.3 b			1.5 ± 0.5 a		
22:6 n-3	2.2 ± 0.9 b			3.4 ± 0.9 ab			3.9 ± 1.2 ab			3.5 ± 1.5 ab			4.1 ± 1.4 ab			5.5 ± 1.8 a		
Σn-3 PUFA	3.1 ± 1.1 b			6.7 ± 1.3 ab			6.9 ± 1.7 a			6.3 ± 2.4 ab			6.8 ± 1.9 a			9.1 ± 3.1 a		
EPA+DHA	2.3 ± 0.9 b			3.9 ± 1.1 b			4.5 ± 1.3 ab			4.2 ± 1.8 ab			5.0 ± 1.5 ab			6.9 ± 2.4 a		
n-6/n-3	5.9 ± 1.3 a			2.4 ± 0.2 b			2.2 ± 0.2 b			2.1 ± 0.4 b			1.7 ± 0.1 b			1.5 ± 0.5 b		

Table S6. Fatty acid composition (% of total fatty acids) and fat content (%) in heart. Data are means shown with standard deviation (n=6). Different letters indicate significant differences (p<0.05) evaluated using one-way ANOVA followed by Tukey's HSD. CA = Camelina, SA = Sandeel.

	Ctrl		CA		CA75+SA25		CA50+SA50		CA25+SA75		SA	
Fat %	4.2 ± 0.2		3.9 ± 0.8		4.6 ± 0.9		4.1 ± 1.0		4.8 ± 1.2		4.02 ± 0.4	
14:0	0.3 ± 0.1		0.3 ± 0.1		0.6 ± 0.2		0.4 ± 0.4		0.6 ± 0.3		0.5 ± 0.1	
16:0	15.6 ± 0.8		15.8 ± 1.5		17.9 ± 2.3		16.5 ± 2.7		17.8 ± 2.0		16.8 ± 0.5	
18:0	17.4 ± 0.9		16.9 ± 1.3		15.2 ± 2.2		15.7 ± 2.3		14.7 ± 2.0		15.8 ± 0.8	
ΣSFA	33.5 ± 0.2		33.2 ± 0.7		33.9 ± 0.5		32.9 ± 1.0		33.3 ± 0.4		33.4 ± 0.7	
16:1 n-7	1.3 ± 0.3		1.4 ± 0.7		2.5 ± 1.1		1.9 ± 1.3		2.5 ± 1.2		1.8 ± 0.4	
18:1 n-9	8.7 ± 1.3		9.2 ± 2.2		11.4 ± 3.3		9.8 ± 3.4		10.9 ± 3.4		9.1 ± 1.4	
18:1 n-7	4.0 ± 0.2	a	3.7 ± 0.2	b	3.7 ± 0.1	b	3.6 ± 0.1	b	3.5 ± 0.1	b	3.7 ± 0.1	b
20:1 n-9	0.1 ± 0.0	c	0.6 ± 0.0	a	0.6 ± 0.0	a	0.6 ± 0.1	ab	0.5 ± 0.1	ab	0.5 ± 0.1	b
22:1 n-11	0.0 ± 0.0	c	0.0 ± 0.0	c	0.0 ± 0.0	c	0.2 ± 0.2	bc	0.5 ± 0.1	ab	0.7 ± 0.4	a
ΣMUFA	14.2 ± 1.5		15.0 ± 2.8		18.5 ± 4.7		16.4 ± 5.1		18.3 ± 4.9		16.1 ± 1.8	
18:2 n-6	12.9 ± 0.8		12.3 ± 0.5		12.6 ± 0.5		12.9 ± 1.0		12.6 ± 1.1		12.0 ± 0.3	
20:2 n-6	0.2 ± 0.1	b	0.4 ± 0.1	a	0.3 ± 0.0	ab	0.3 ± 0.0	ab	0.2 ± 0.0	b	0.0 ± 0.1	c
20:3 n-6	0.7 ± 0.1		0.8 ± 0.1		0.7 ± 0.1		0.7 ± 0.2		0.7 ± 0.1		0.8 ± 0.1	
20:4 n-6	18.7 ± 1.0	a	16.3 ± 1.7	ab	13.8 ± 2.3	bc	14.3 ± 2.4	bc	12.1 ± 1.8	c	13.2 ± 0.7	c
22:4 n-6	1.8 ± 0.2	a	0.7 ± 0.1	b	0.5 ± 0.1	c	0.4 ± 0.1	cd	0.3 ± 0.0	cd	0.2 ± 0.1	d
22:5 n-6	2.7 ± 0.4	a	0.7 ± 0.1	b	0.4 ± 0.1	bc	0.4 ± 0.0	bc	0.3 ± 0.0	c	0.2 ± 0.1	c
Σn-6 PUFA	37.1 ± 0.8	a	31.1 ± 1.9	b	28.2 ± 2.2	bc	28.9 ± 2.7	bc	26.2 ± 2.0	c	26.5 ± 0.8	c
18:3 n-3	0.4 ± 0.1	de	1.2 ± 0.2	ab	1.4 ± 0.3	a	0.9 ± 0.3	bc	0.7 ± 0.2	cd	0.4 ± 0.1	e
20:5 n-3	0.1 ± 0.0	d	0.2 ± 0.0	cd	0.4 ± 0.1	bc	0.5 ± 0.1	b	0.8 ± 0.1	a	0.9 ± 0.2	a
22:5 n-3	2.7 ± 0.2	c	4.8 ± 0.4	a	3.6 ± 0.5	b	3.7 ± 0.7	b	3.5 ± 0.6	bc	3.6 ± 0.4	b
22:6 n-3	7.9 ± 1.1	c	10.4 ± 1.0	bc	10.6 ± 2.0	bc	12.6 ± 2.4	ab	13.5 ± 2.5	ab	15.2 ± 1.4	a
Σn-3 PUFA	11.1 ± 0.9	c	16.7 ± 1.0	ab	15.9 ± 2.2	b	17.7 ± 2.8	ab	18.5 ± 2.8	ab	20.1 ± 1.9	a
EPA+DHA	8.0 ± 1.0	c	10.6 ± 1.0	bc	11.0 ± 2.1	bc	13.1 ± 2.4	ab	14.3 ± 2.5	a	16.2 ± 1.6	a
n-6/n-3	3.4 ± 0.2	a	1.9 ± 0.1	b	1.8 ± 0.2	b	1.7 ± 0.2	bc	1.4 ± 0.1	c	1.3 ± 0.2	c