SUPPLEMENTARY DATA

Supplementary Table 1. Body characteristics and plasma parameters after dietary treatment with different fatty acids.

Parameter	**Lean (*db/+*)**	**Obese (*db/db*)**			
	LF	**LF**	**HF/S**	**HF/6**	**HF/S3**
Food intake (g)/ day	3.4 ± 0.1	4.0 ± 0.1	7.2 ± 0.4	7.5 ± 0.3	8.0 ± 0.4
Body weight before diet (g)	25.8 ± 0.3	41.4 ± 0.8	42.2 ± 0.7	40.9 ± 0.8	41 ± 0.5
Body weight after diet (g)	29.3 ± 0.5***	46 ± 0.7***	54.7 ± 1.0	53 ± 2.0	59.6 ± 0.9**
GWAT$^{\#}$ weight (g)	0.41 ± 0.03***	2.0 ± 0.1**	2.5 ± 0.1	2.6 ± 0.1	2.9 ± 0.1*
Fasting glucose, on§ (mg/dl)	71 ± 2***	228 ± 31***	501 ± 18	457 ± 28	314 ± 23***
Fasting glucose, 5 hours (mg/dl)	102 ± 8***	261 ± 20***	459 ± 16	452 ± 26	465 ± 14
Adiponectin (µg/ml)	3.7 ± 0.1***	2.2 ± 0.2***	1.4 ± 0.1	1.4 ± 0.1	2.3 ± 0.1***
C-reactive protein (ng/ml)	0.20 ± 0.02***	0.41 ± 0.02*	0.8 ± 0.2	0.8 ± 0.2	0.5 ± 0.1
Insulin (µU/ml)	10 ± 2***	73 ± 13**	26 ± 7	16 ± 8	19 ± 2
Triglycerides (mg/dl)	78 ± 3	112 ± 20**	227 ± 28	159 ± 19	126 ± 19**
Cholesterol (mg/dl)	58 ± 2***	107 ± 6***	152 ± 7	120 ± 9*	130 ± 5*
Free fatty acids (µmol/l)	331 ± 50	332 ± 27	443 ± 49	450 ± 41	281 ± 27**

Blood parameters were analyzed in plasma, except fasting glucose was measured in total blood samples. Within *db/db* mice all diets were compared with animals fed a HF/S diet, while asterisks in the lean (*db/+*) group indicate differences to *db/db* mice on LF diet (n = 10 animals per group except plasma data of HF/6 - n = 5 animals per group). Results are expressed as mean ± SEM. *P < 0.05; **P < 0.01; ***P < 0.001. $^{\#}$GWAT, gonadal adipose tissue; §on, overnight.

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SUPPLEMENTARY DATA

Supplementary Table 2. Body characteristics and plasma parameters after Vehicle, DHA and 17-HDHA and treatment.

Parameter	**WT LF**	**WT HF**		
		Vehicle	**DHA**	**17-HDHA**
Body weight (g)	30.2 ± 0.7	47.1 ± 0.5	47.5 ± 0.7	47.4 ± 0.6
GWAT[#] weight (g)	0.5 ± 0.03	1.9 ± 0.1	2.1 ± 0.1	2.2 ± 0.2
Fasting Glucose, on[§] (mg/dl)	122 ± 11	211 ± 9	218 ± 6	204 ± 11
Fasting Glucose, 5 hours (mg/dl)	132 ± 9	192 ± 4	200 ± 7	197 ± 5
C-reactive protein (ng/ml)	0.23 ± 0.01	0.49 ± 0.05	0.48 ± 0.06	0.38 ± 0.04
Triglycerides (mg/dl)	48 ± 2	58.9 ± 3	58.4 ± 2	54.8 ± 2
Cholesterol (mg/dl)	56 ± 5	146 ± 8	150 ± 5	140 ± 8
Free fatty acids (µmol/l)	302 ± 27	330 ± 23	309 ± 23	375 ± 32

Blood parameters were analyzed in plasma, except fasting glucose was measured in total blood samples. WT HF mice treated with DHA and 17-HDHA were compared with vehicle treated group (n = 12 animals per group, except plasma data of WT LF - n = 8 animals per group). Results are expressed as mean ± SEM. There were no statistically significant differences between the WT HF groups for all analyzed parameters, except for a trend reduction of CRP in the 17-HDHA treated group (P:0.1). [#]GWAT, gonadal adipose tissue; [§]on, overnight.

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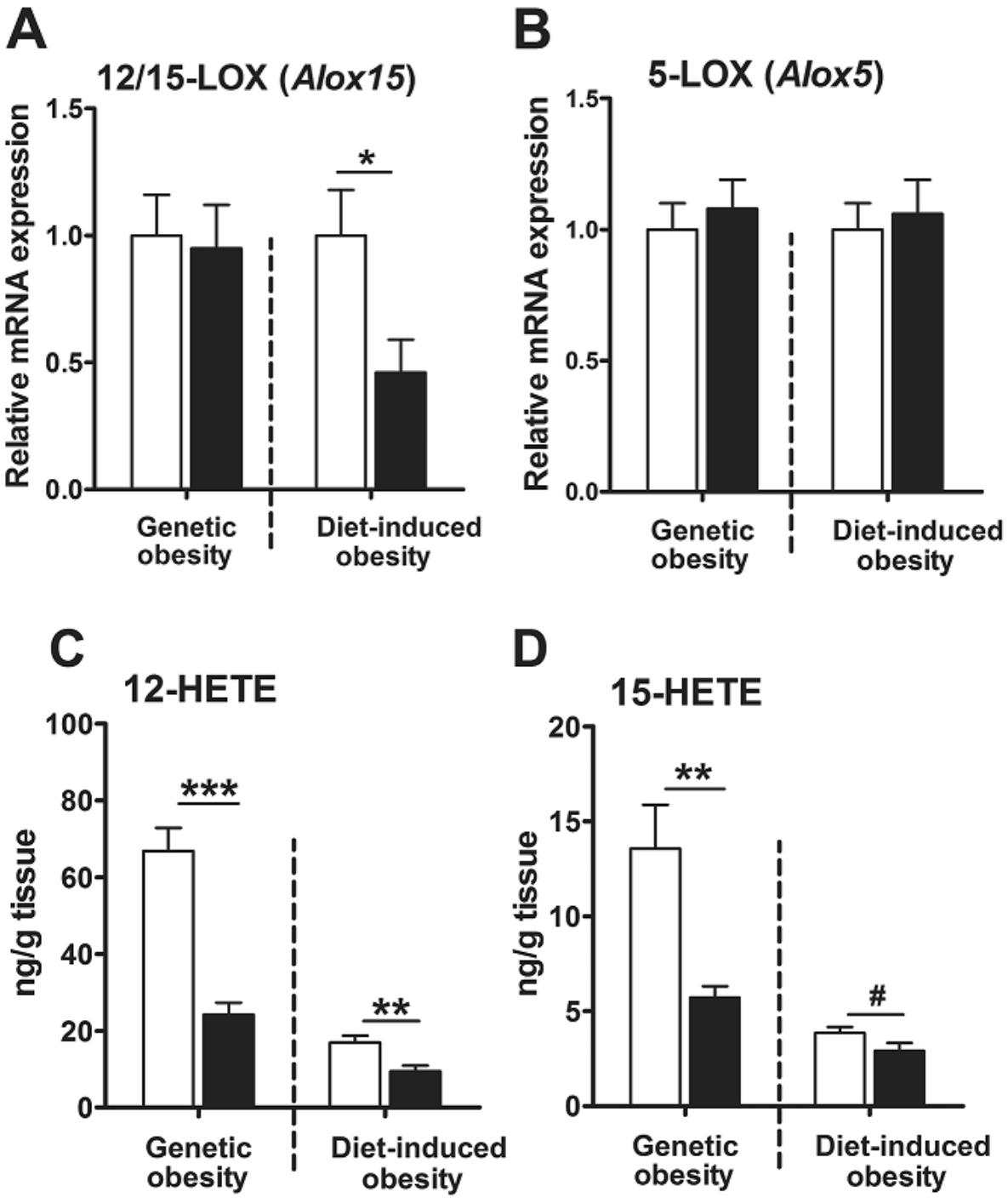
SUPPLEMENTARY DATA

Supplementary Figure 1. *A-B.* Gene expression of 12/15-LOX and 5-LOX was determined in gonadal adipose tissue of obese mice (black bars) and appropriate lean controls (white bars) using quantitative real-time RT-PCR (n = 10 animals per group). *C-D:* Analysis of 12-HETE and 15-HETE in murine gonadal adipose tissue of lean (white bars, n = 20 animals per group, pooled for n = 10 samples) and obese (black bars, n = 10 animals per group) mice in two different mouse models of obesity using solid-phase extraction and HPLC-tandem mass spectrometry. Genetically obese *db/db* mice were compared to lean *db/+* littermates both fed a normal standard chow, while HF diet-induced obese WT mice were compared to lean WT mice fed a LF diet. Data are mean ± SEM. $^{\#}P < 0.08$; $^{*}P < 0.05$; $^{**}P < 0.01$; $^{***}P < 0.001$.



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