

**Supporting information to
Metabolic Profiling of Murine Plasma Reveals Eicosapentaenoic Acid
Metabolites Protecting against Endothelial Activation and
Atherosclerosis**

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Supporting information Figure S1

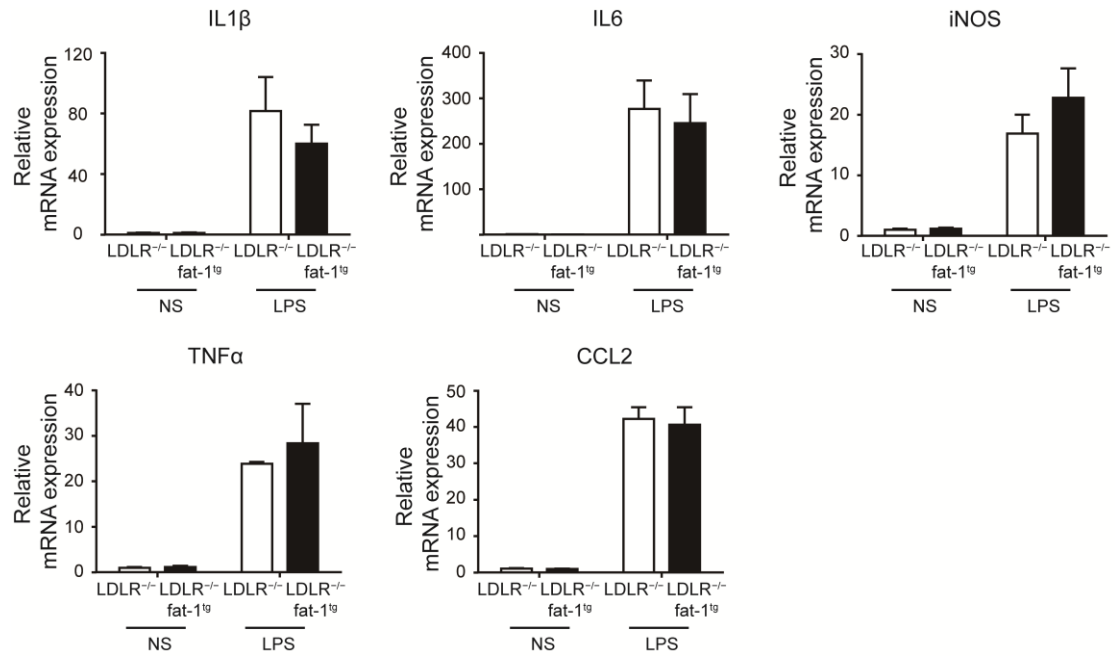


Figure S1. LPS induced the proinflammatory gene expression in macrophages from in LDLR^{-/-} and LDLR^{-/-}fat-1^{tg} mice.

Macrophages were isolated from LDLR^{-/-} and LDLR^{-/-}fat-1^{tg} mice. Proinflammatory gene expression were measured of the macrophages after lipopolysaccharide stimulation (1 ng ml⁻¹) for 4 h. n = 5 for each group. Data are mean \pm SEM.

Supporting information Table

Table S1. List of oligonucleotide primer pairs used in qPCR

Target Gene	Sense Primer	Antisense Primer
mCd68	5'-CCCAAGGAACAGAGGAAG-3'	5'-GTGGCAGGGTTATGAGTG-3'
mF4/80	5'-CTTTGGCTATGGGCTTCCAGTC-3'	5'-GCAAGGAGGACAGAGTTTATCGTG-3'
mVCAM1	5'-AGTTGGGGATTTCGGTTGTTCT-3'	5'-CCCCTCATTCTTACCACCC-3'
mICAM1	5'-GTGATGCTCAGGTATCCATCCA-3'	5'-CACAGTTCTCAAAGCACAGCG-3'
mE-Selectin	5'-ATGAAGCCAGTGCATACTGTC-3'	5'-CGGTGAATGTTTCAGATTGGAGT-3'
mP-Selectin	5'-CATCTGGTTCAGTGCTTTGATCT-3'	5'-ACCCGTGAGTTATTCCATGAGT-3'
mIL-1 β	5'-GCCATCCTCTGTGACTCAT-3'	5'-AGGCCACAGGTATTTTGTCTG-3'
mIL-4	5'-GGTCTCAACCCCCAGCTAGT-3'	5'-GCCGATGATCTCTCTCAAGTGAT-3'
mIL-6	5'-ACAACCACGGCCTTCCCTACTT-3'	5'-CACGATTTCCAGAGAACATGTG-3'
mIL-10	5'-GATTTTAATAAGCTCCAAGACCAAGGT-3'	5'-CTTCTATGCAGTTGATGAAGATGTCAA-3'
miNOS	5'-CCCCGCTACTACTCCATCAG-3'	5'-CCACTGACACTTCGCACAAA-3'
mTNF α	5'-CCAGACCCTCACACTCAGATC-3'	5'-CACTTGGTGGTTTGCTACGAC-3'
m β -actin	5'-CTGTCCCTGTATGCCTCT-3'	5'-ATGTCACGCACGATTTCC-3'
mCCL2	5'-AGCCAACTCTCACTGAAGCCA-3'	5'-TCTGGACCCATTCTTCTTGG-3'
mCCL3	5'-TTCTCTGTACCATGACACTCTGC-3'	5'-CGTGAATCTTCCGGCTGTAG-3'
mCCL4	5'-TTCCTGCTGTTTCTTTACACCT-3'	5'-CTGTCTGCCTCTTTTGGTCAG-3'
mCCL5	5'-TCGAGTGACAAACACGACTGC-3'	5'-GCTGCTTTGCCTACCTCTCC-3'
mCCL7	5'-GCTGCTTTCAGCATCCAAGTG-3'	5'-CCAGGGACACCGACTACTG-3'
hVCAM1	5'-CGAACCCAAACAAAGGCAGA-3'	5'-ACAGGATTTTCGGAGCAGGA-3'
hE-Selectin	5'-GCCTGCAATGTGGTTGAGTG-3'	5'-GCACCTCACAGAGCCATTCT-3'
hCCL2	5'-GATCTCAGTGACAGAGGCTCG-3'	5'-TTTGCTTGTCCAGGTGGTCC-3'
hGAPDH	5'-GAAGGTGAAGGTCGGAGTC-3'	5'-GAAGATGGTGATGGGATTTTC-3'

“m” indicates mouse gene ; “h” indicates human gene.

Table S2. Comparison of PUFA metabolites in plasma from LDLR^{-/-} with different diets

Name of metabolites	WD (ng μL^{-1})		WD+ ω -3 (ng μL^{-1})		p value (non-parametric)	-log (p value)
	mean	SD	mean	SD		
15d-PGJ2	0.006	0.005	0.056	0.061	0.035	1.45
6k-PGF1a	0.144	0.065	0.119	0.060	0.166	0.78
PGB2	0.010	0.008	0.209	0.241	0.000	4.33
PGD2	0.710	0.564	0.612	0.548	0.468	0.33
PGE2	0.120	0.075	0.308	0.169	0.000	4.07
PGF2a	0.198	0.111	0.094	0.047	0.000	3.55
PGJ2	0.006	0.008	0.005	0.005	0.813	0.09
11-HETE	0.518	0.550	0.479	0.434	0.741	0.13
12-HETE	17.995	12.991	16.031	16.121	0.488	0.31
15-HETE	1.355	1.151	1.363	1.014	0.843	0.07
15-oxo-ETE	0.374	0.364	0.671	0.631	0.235	0.63
5-HETE	2.349	1.589	2.703	2.274	0.947	0.02
5-oxo-ETE	0.740	0.784	1.439	1.557	0.198	0.70
6R-LXA4	0.640	1.024	41.470	58.860	0.000	5.24
8-HETE	1.320	1.216	0.659	0.777	0.051	1.30
9-HETE	3.302	3.710	2.548	3.374	0.407	0.39
LTB4	0.367	0.634	0.506	0.760	0.569	0.25
11,12-EET	0.458	0.313	0.483	0.592	0.338	0.47
11,12 DHET	0.280	0.151	0.145	0.064	0.001	2.91
14,15-EET	0.632	0.417	0.762	0.710	0.843	0.07
14,15 DHET	0.702	0.337	0.361	0.177	0.001	3.12
17-HETE	0.051	0.043	0.109	0.116	0.113	0.95
18-HETE	0.203	0.092	0.294	0.224	0.338	0.47
5,6-EET	0.447	0.391	0.203	0.181	0.040	1.39
5,6-DHET	1.186	1.317	0.321	0.242	0.064	1.19
8,9-EET	0.674	0.358	0.606	0.576	0.086	1.07
8,9-DHET	0.540	0.410	0.197	0.105	0.000	3.95
10-HDoHE	1.410	0.724	8.249	7.065	0.000	5.08
11-HDoHE	1.312	0.762	10.248	8.963	0.000	4.94
13-HDoHE	0.887	0.680	5.697	4.278	0.000	5.63
14-HDoHE	20.636	12.252	132.250	135.583	0.000	4.88
20-HDoHE	1.785	2.024	21.517	23.620	0.000	5.70
4-HDoHE	1.997	1.282	22.724	16.859	0.000	6.06
7-HDoHE	0.777	0.580	4.716	3.070	0.000	5.42
8-HDoHE	1.611	1.073	12.084	9.250	0.000	4.88
RvD1	0.139	0.214	0.775	1.022	0.042	1.38
16,17-EDP	0.715	0.707	6.084	4.747	0.000	5.70
19,20-EDP	2.326	2.478	19.015	12.817	0.000	5.49
PGF3a	0.732	0.376	0.892	0.419	0.222	0.65
11-HEPE	0.078	0.056	4.752	4.092	0.000	6.35
12-HEPE	10.851	8.270	605.688	617.493	0.000	5.98
15-HEPE	0.426	0.588	23.568	32.301	0.000	6.21
5-HEPE	0.404	0.220	28.466	37.938	0.000	5.91

8-HEPE	0.234	0.177	4.945	3.967	0.000	6.35
9-HEPE	0.379	0.213	20.399	18.865	0.000	5.84
11,12-DiHETE	5.559	4.097	123.114	70.278	0.000	6.35
11,12-EEQ	0.106	0.061	3.570	2.527	0.000	6.35
14,15-DiHETE	0.725	0.475	11.215	4.973	0.000	6.35
14,15-EEQ	0.056	0.045	3.284	2.084	0.000	6.35
17,18-DiHETE	0.547	0.375	5.866	3.274	0.000	6.35
17,18-EEQ	0.221	0.195	9.722	7.491	0.000	6.35
18-HEPE	0.200	0.185	10.262	10.802	0.000	6.35
5,6-DiHETE	0.396	0.135	4.330	1.873	0.000	6.35
5,6-EEQ	0.428	0.497	11.031	11.548	0.000	6.28
8,9-DiHETE	2.019	1.221	36.227	22.079	0.000	6.35
8,9-EEQ	0.135	0.124	3.602	2.454	0.000	6.35

Table S3. Comparison of PUFA metabolites in plasma from LDLR^{-/-} and LDLR^{-/-}-fat-1^{tg} mice with WTD

Name of metabolites	LDLR ^{-/-} mice (ng μL ⁻¹)		LDLR ^{-/-} -Fat-1 ^{tg} mice (ng μL ⁻¹)		p value (non-parametric)	-log (p value)
	mean	SD	mean	SD		
15d-PGJ2	0.008	0.003	0.013	0.004	0.279	0.55
6k-PGF1a	0.136	0.071	0.161	0.084	0.798	0.10
PGB2	0.011	0.008	0.018	0.013	0.959	0.02
PGD2	0.740	0.546	0.884	0.532	0.878	0.06
PGE2	0.120	0.081	0.234	0.265	0.959	0.02
PGF2a	0.199	0.128	0.172	0.110	0.382	0.42
PGJ2	0.008	0.008	0.021	0.031	1.000	0.00
11-HETE	0.437	0.423	0.653	0.608	0.959	0.02
12-HETE	16.458	12.982	19.274	20.276	0.130	0.88
15-HETE	1.346	0.960	1.582	1.738	0.645	0.19
15-oxo-ETE	0.356	0.323	0.363	0.232	0.442	0.35
5-HETE	2.418	1.672	3.314	3.672	0.105	0.98
5-oxo-ETE	0.638	0.654	0.846	0.868	0.959	0.02
6R-LXA4	0.505	0.932	0.693	0.760	0.959	0.02
8-HETE	1.691	1.220	1.165	1.266	0.130	0.88
9-HETE	3.282	3.810	1.082	0.956	0.161	0.79
LTB4	0.501	0.699	0.339	0.648	0.161	0.79
11,12-EET	0.474	0.319	0.503	0.421	0.065	1.19
11,12 DHET	0.247	0.156	0.179	0.099	0.001	2.96
14,15-EET	0.597	0.355	1.112	1.244	0.442	0.35
14,15 DHET	0.602	0.312	0.457	0.262	0.001	2.96
17-HETE	0.036	0.042	0.078	0.063	0.328	0.48
18-HETE	0.200	0.108	0.156	0.088	0.161	0.79
5,6-EET	0.405	0.423	0.552	0.628	0.328	0.48
5,6-DHET	1.412	1.480	1.734	2.848	0.574	0.24
8,9-EET	0.707	0.353	0.478	0.515	0.065	1.19
8,9-DHET	0.548	0.478	0.445	0.411	0.105	0.98
10-HDoHE	1.497	0.772	2.584	2.927	0.721	0.14
11-HDoHE	1.457	0.844	5.254	9.961	0.959	0.02
13-HDoHE	0.749	0.539	2.964	4.620	0.130	0.88
14-HDoHE	20.389	13.908	71.588	136.287	0.959	0.02
20-HDoHE	1.535	1.258	5.072	5.131	0.001	3.21
4-HDoHE	1.956	1.087	4.511	4.272	0.235	0.63
7-HDoHE	0.745	0.480	1.102	1.313	0.959	0.02
8-HDoHE	1.539	0.973	6.281	12.603	1.000	0.00
RvD1	0.158	0.244	0.190	0.170	1.000	0.00
16,17-EDP	0.681	0.684	3.091	4.692	0.028	1.55
19,20-EDP	2.372	2.303	6.403	5.350	0.001	3.21
PGF3a	0.697	0.381	0.324	0.219	0.005	2.33
11-HEPE	0.080	0.056	0.511	1.076	0.065	1.19
12-HEPE	11.309	9.694	41.345	91.027	0.721	0.14
15-HEPE	0.124	0.067	0.711	1.672	0.878	0.06

5-HEPE	0.413	0.253	1.121	1.259	0.161	0.79
8-HEPE	0.231	0.194	1.463	2.984	0.065	1.19
9-HEPE	0.360	0.233	1.712	3.513	0.721	0.14
11,12-DiHETE	5.656	4.755	7.747	4.935	0.382	0.42
11,12-EEQ	0.105	0.070	0.343	0.424	0.161	0.79
14,15-DiHETE	0.666	0.496	0.670	0.295	0.574	0.24
14,15-EEQ	0.055	0.045	0.158	0.167	0.195	0.71
17,18-DiHETE	0.484	0.376	0.889	0.311	0.050	1.30
17,18-EEQ	0.181	0.144	0.530	0.507	0.050	1.30
18-HEPE	0.206	0.165	0.674	0.550	0.003	2.53
5,6-DiHETE	0.393	0.139	0.744	0.491	0.721	0.14
5,6-EEQ	0.305	0.165	0.621	0.458	0.442	0.35
8,9-DiHETE	1.953	1.235	3.632	3.016	0.235	0.63
8,9-EEQ	0.113	0.066	0.229	0.212	0.798	0.10
