Supplemental Table S1a. Oxylipins scanned but below the level of detection (<3 times baseline)

Kidney

AA oxylipins

COX: 15d-PGA_2; 15k-PGD_2; dhk-PGD_2; Dihomo-15d-PGD_2; 6k-PGE_1; 19oh-PGE_2; 20oh-PGE_2; dhk-PGE_2; bicyclo PGE_2; 11β-PGE_2; 15k-$PGF_{1\alpha}$; dh-$PGF_{2\alpha}$; 19oh-$PGF_{2\alpha}$; 20oh-$PGF_{2\alpha}$; 11β-$PGF_{2\alpha}$; 2,3-dinor-8-*iso*-$PGF_{2\alpha}$; 15k-$PGF_{2\alpha}$; dhk-$PGF_{2\alpha}$; 11β-$PGF_{2\alpha}$; 2,3-dinor-6k-$PGF_{1\alpha}$; tetranor-PGDM; tetranor-PGEM; tetranor-PGFM; PGJ_2; 2,3-dinor-11β-$PGF_{2\alpha}$; PGK_2; PGK_1; 2,3-dinor-TXB_2; 11-dehydro-TXB_2; HXA_3;

LOX: 20oh-LTB_4; 20cooh-LTB_4;12-epi-LTB_4; 6t-12-epi-LTB_4; 12-oxo-LTB_4; LTC_4; LTD_4; LTE_4; 6R-LXA_4; 6S-LXA_4; 15R-LXA_4; 14,15-LTC_4 (EXC_4); 14,15-LTD_4 (EXD_4); 14,15-LTE_4 (EXE_4); 6R-LXA_4; LXB_4;

CYP: 20cooh-AA; 5,6-diHETE; 5,6-EpETrE; 8,9-EpETrE; 11,12-EpETrE; 14,15-EpETrE; 17-HETE; 19-HETE;

Other oxylipins

Dihomo-PGJ_2; TXB_1; PGD_1; 9,10-EpOME; 12,13-EpOME; 12,13-EpODE; PGD_3; 11-HEPE; RvE_1; 14,15 EpETE; 17,18-EpETE; 16,17-EpDPE; 19,20-EpDPE; 17k-DPA; 7R-Maresin-1; RvD_1; RvD $_2$; 17k-DHA; 9-Nitrooleate; 10-Nitrooleate

Liver

AA oxylipins

COX: 15d-PGA_2; PGB_2; 12-HHTrE; HXA_3; HXB_3; 15k-PGD_2; dhk-PGD_2; 19oh-PGE_2; 20oh-PGE_2; 15k-PGE_2; 11β-PGE_2; dh-PGE_2; dh-$PGF_{2\alpha}$; 19oh-$PGF_{2\alpha}$; 20oh-$PGF_{2\alpha}$; 2,3-dinor-11β-$PGF_{2\alpha}$; 11β-$PGF_{2\alpha}$; 15k-$PGF_{2\alpha}$; 11β-dhk-$PGF_{2\alpha}$; PGJ_2; PGK_2; 2,3-dinor-TXB_2; 11-dehydro-TXB_2; tetranor-PGDM; tetranor-PGEM; tetranor-PGFM;

LOX: 20oh-LTB4; 20cooh-LTB_4; 6t-LTB_4; 12epi-LTB_4; 6t, 12epi-LTB_4; 12oxo-LTB_4; LTC_4; LTD_4; LTE_4; 14,15-LTC_4 (EXC_4); 14,15-LTD_4 (EXD_4); 14,15-LTE_4 (EXE_4); 6R-LXA_4; 15R-LXA_4; LXA_5; 6S-LXA_4; LXB_4; 5,15-DiHETE; 5,6 diHETE;

CYP: 20cooh-AA; 5,6-EpETrE; 11,12-EpETrE; 14,15-EpETrE; 14,15-EpETE; 17,18-EpETE;

Other oxylipins

8-iso 15k-$PGF_{2\beta}$; 2,3-dinor-8-*iso*-$PGF_{2\alpha}$; Dihomo-15d-PGD_2; Dihomo-PGE_2; Dihomo-PGJ_2; PGD_1; PGE_1; 6k-PGE_1; 6,15-dk-dh-$PGF_{1\alpha}$; 15k-$PGF_{1\alpha}$; Δ^{17}-6k-$PGF_{1\alpha}$; 2,3-dinor-6k-$PGF_{1\alpha}$; PGK_1; TXB_1; 9,10-EpODE; 15,16-diHODE; 9,10-diHODE; 12,13-diHODE ; 12,13-EpODE; 15,16-EpODE; 13-oxoOTrE; $PGF_{3\alpha}$; PGD_3;11-HEPE; 8-iso $PGF_{3\alpha}$; 7R-Maresin-1; 16,17-EpDPE; RvD_2; RvD_1; PD_1; 15t-PD_1; 17k-DHA; 17k-DPA; 9-Nitrooleate; 10-Nitrooleate

Serum

AA oxylipins

COX: 12-HHTrE; PGA_2; 15d-PGA_2; PGB_2; 15k-PGD_2; dhk-PGD_2; 15d-PGD_2; 20oh-PGE_2; dhk-PGE_2; 11β-PGE_2; PGK_2; bicyclo PGE_2; 19oh-PGE_2; 15k-$PGF_{2\alpha}$; dh-$PGF_{2\alpha}$; 11β-dhk-$PGF_{2\alpha}$; 19oh-$PGF_{2\alpha}$; 20oh-$PGF_{2\alpha}$; 2,3-dinor-11β-$PGF_{2\alpha}$; 15k-$PGF_{2\beta}$; dhk-PGF_{2a}; tetranor-PGDM; tetranor-PGEM; tetranor-PGFM; 2,3-dinor-TXB_2; 11-dehydro-TXB_2;

LOX: HXA_3; 20oh-LTB_4; 20cooh-LTB_4; 12-epi-LTB_4; LXB_4; 6t-LTB_4; 12-epi-LTB_4; 12-oxo-LTB_4; LTC_4; LTD_4; LTE_4; 14,15-LTC_4(EXC_4); 14,15-LTD_4(EXD_4); 14,15-LTE_4(EXE_4); 6R-LXA_4; 6S-LXA_4; 15R-LXA_4; LXA_5; 5,6 diHETE;

CYP: 5,6 EpETrE; 14,15 EpETE; 16-HETE; 19-HETE; 20cooh-AA;

Other oxylipins

8-iso $PGF_{2\alpha}$III; 2,3-dinor-8-*iso*-$PGF_{2\alpha}$; 5-HETrE; Dihomo-PGD_2; Dihomo-15d-PGD_2; Dihomo-PGE_2; Dihomo-$PGF_{2\alpha}$; 2,3-dinor-6k-$PGF_{1\alpha}$; TXB_1; PGE_1; 6,15-dk-dh-$PGF_{1\alpha}$; 15k-$PGF_{1\alpha}$; PGK_1; 8-iso $PGF_{3\alpha}$; 15-oxoEDE; 9,10-DiHODE; 12,13-DiHODE; 15,16-EpODE; 13-oxoOTrE 9,10-EpODE; 15,16-DiHODE; PGD_3; 11-HEPE; 9-HEPE; RvE_1; 17k-DPA; RvD_1; 15t-PD_1; RvD_2; 7R-Maresin-1; PD_1; PDX; 17k-DHA; 9-Nitrooleate; 10-Nitrooleate;

Supplemental Table S1b. Oxylipins detected (>3 times baseline) but below the level of quantitation (< 5 times baseline)

Kidney
Δ^{17}-6k-$PGF_{1\alpha}$; 6,15-dk-dh-$PGF_{1\alpha}$; 11β-dhk-$PGF_{2\alpha}$; LTB_4; 6t-LTB_4; 8-*iso*-$PGF_{3\alpha}$; LXA_5; PGE_1; 12,13-DiHODE

Liver
8,9-EpETrE; Dihomo-PGD_2

Serum
8,15-DiHETE; LTB_4; 8,9-EpETrE

Supplemental Table S2. Oxylipin mass transitions, retention times, deuterated internal standards and response factors.

Component Name	Mass Transition	Retention Time*	Deuterated Internal Standard	Dose Response Factor
12-HHTrE	279.0 / 217.0	13.53	5-HETE-d_8	0.3646
PGA_2	333.0 / 271.0	9.68	15d-PGJ_2-d_4	11.454
15d-PGA_2	315.0 / 271.0	15.19	15d-PGJ_2-d_4	2.6609
PGB_2	333.0 / 271.0	12.29	15d-PGJ_2-d_4	1.0891
PGD_2	351.0 / 271.0	7.78	PGD_2-d_4	1.6144
15d-PGD_2	333.0 / 271.0	11.81	15d-PGJ_2-d_4	29.722
dhk-PGD_2	351.0 / 207.0	9.15	PGD_2-d_4	2.34
15k-PGD_2	349.0 / 235.0	8.64	PGD_2-d_4	No Primary
tetranor-PGDM	327.0 / 247.0	2.39	PGD_2-d_4	0.0984
PGE_2	351.0 / 271.0	7.43	PGE_2-d_4	7.8596
11β-PGE_2	351.0 / 271.0	7.58	PGE_2-d_4	4.9206
19oh PGE_2	367.0 / 243.0	3.25	PGE_2-d_4	0.3835
bicyclo-PGE_2	333.0 / 175.0	11.00 10.17	PGE_2-d_4	0.7943
15k-PGE_2	349.0 / 235.0	7.78	PGE_2-d_4	1.3377
20oh-PGE_2	367.0 / 175.0	3.15	PGE_2-d_4	No Primary
dhk-PGE_2	351.0 / 207.0	8.44	PGE_2-d_4	0.529
tetranor-PGEM	327.0 / 291.0	2.30	PGE_2-d_4	0.4032
$PGF_{2\alpha}$	353.0 / 193.0	7.25	$PGF_{2\alpha}$-d_4	3.4181
dhk-$PGF_{2\alpha}$	353.0 / 291.0	8.64	dhk-$PGF_{2\alpha}$-d_4	4.9299
dh-$PGF_{2\alpha}$	355.0 / 283.0	7.97	$PGF_{2\alpha}$-d_4	No Primary
19oh-$PGF_{2\alpha}$	369.0 / 192.0	3.25	$PGF_{2\alpha}$-d_4	No Primary
20oh-$PGF_{2\alpha}$	369.0 / 165.0	3.15	$PGF_{2\alpha}$-d_4	No Primary
11β-dhk-$PGF_{2\alpha}$	353.0 / 113.0	8.20	$PGF_{2\alpha}$-d_4	0.8673
11β-$PGF_{2\alpha}$	353.0 / 335.0	6.74	$PGF_{2\alpha}$-d_4	0.1703
15k-$PGF_{2\alpha}$	351.0 / 219.0	7.68	$PGF_{2\alpha}$-d_4	0.6609
6k-$PGF_{1\alpha}$	369.0 / 245.0	5.34	6k-$PGF_{1\alpha}$-d_4	3.6495
2,3-dinor-6k-$PGF_{1\alpha}$	363.0 / 281.0	6.60	$PGF_{2\alpha}$-d_4	No Primary
2,3-dinor-11β-$PGF_{2\alpha}$	325.0 / 227.0	5.40	$PGF_{2\alpha}$-d_4	1.2716
tetranor-PGFM	329.0 / 247.0	2.30	$PGF_{2\alpha}$-d_4	No Primary
PGJ_2	333.0 / 189.0	9.87	15d-PGJ_2-d_4	3.6267
15d-PGJ_2	315.0 / 203.0	14.57	15d-PGJ_2-d_4	1.4436
PGK_2	349.0 / 249.0	7.71	PGE_2-d_4	1.8211
TXB_2	369.0 / 169.0	6.61	TXB_2-d_4	6.3658
11d-TXB_2	367.0 / 305.0	7.39	TXB_2-d_4	2.375
2,3-dinor-TXB_2	341.0 / 137.0	5.22	TXB_2-d_4	0.3628
5-HETE	319.0 / 115.0	17.19	5-HETE-d_8	1.169
5-oxoETE	317.0 / 203.0	17.56	5-oxoETE-d_7	0.8498
5,15-DiHETE	335.0 / 201.0	11.46	LTB_4-d_4	0.5267
5,6-DiHETE	335.0 / 115.0	15.29	LTB_4-d_4	0.4905
8-HETE	319.0 / 155.0	16.71	5-HETE-d_8	2.311
8,15-DiHETE	335.0 / 235.0	10.98	LTB_4-d_4	0.1268
9-HETE	319.0 / 123.0	16.84	5-HETE-d_8	0.2492
11-HETE	319.0 / 167.0	16.41	5-HETE-d_8	5.3158
12-HETE	319.0 / 135.0	16.6	15-HETE-d_8	0.189
Tetranor-12-HETE	265.0 / 109.0	13.28	15-HETE-d_8	2.0436
12-oxoETE	317.0 / 153.0	16.60	5-oxoETE-d_7	1.5173
15-HETE	319.0 / 175.0	16.07	15-HETE-d_8	0.9018
15-oxoETE	317.0 / 113.0	16.14	5-oxoETE-d_7	2.2341
HXA_3	335.0 / 195.0	14.6	LTB_4-d_4	No Primary
HXB_3	335.0 / 183.0	14.8	LTB_4-d_4	No Primary
LTB_4	335.0 / 195.0	11.93	LTB_4-d_4	1.2507
6t-LTB_4	335.0 / 195.0	11.44	LTB_4-d_4	0.9015
6t-12-epi-LTB_4	335.0 / 195.0	11.58	LTB_4-d_4	0.6674
12-epi-LTB_4	335.0 / 195.0	11.89	LTB_4-d_4	1.4375
12-oxo-LTB_4	333.0 / 179.0	12.60	LTB_4-d_4	1.4903

20cooh-LTB_4	365.0 / 195.0	5.35	LTB_4-d_4	0.1691
20oh-LTB_4	351.0 / 195.0	5.60	LTB_4-d_4	0.6127
LTC_4	624.0 / 272.0	10.75	LTB_4-d_4	0.3364
14,15-LTC_4 (EXC_4)	624.0 / 272.0	7.50	LTB_4-d_4	No Primary
LTD_4	495.0 / 177.0	9.19	LTB_4-d_4	1.0476
14,15-LTD_4 (EXD_4)	495.0 / 177.0	10.98	LTB_4-d_4	No Primary
LTE_4	438.0 / 333.0	10.57	LTB_4-d_4	0.9368
14,15-LTE_4 (EXE_4)	438.0 / 333.0	9.00	LTB_4-d_4	No Primary
15(R)-LXA_4	351.0 / 165.0	8.50	LTB_4-d_4	No Primary
6(R)-LXA_4	351.0 / 217.0	8.50	LTB_4-d_4	0.1535
6(S)-LXA_4	351.0 / 115.0	8.78	LTB_4-d_4	0.292
LXB_4	351.0 / 221.0	7.58	LTB_4-d_4	0.3733
20cooh-AA	333.0 / 271.0	14.38	EPA-d_5	1.1049
5,6-EpETrE	319.0 / 191.0	18.13	11,12-DiHETrE-d_{11}	3.7275
5,6-DiHETrE	337.0 / 145.0	15.56	11,12-DiHETrE-d_{11}	3.6065
8,9-EpETrE	319.0 / 155.0	17.90	8,9-DiHETrE-d_{11}	1.2994
8,9-DiHETrE	337.0 / 127.0	14.85	8,9-DiHETrE-d_{11}	5.5366
11,12-EpETrE	319.0 / 167.0	17.70	11,12-DiHETrE-d_{11}	9.1336
11,12-DiHETrE	337.0 / 167.0	14.27	11,12-DiHETrE-d_{11}	16.4237
14,15-EpETrE	319.0 / 175.0	17.24	14,15-DiHETrE-d_{11}	1.0437
14,15-DiHETrE	337.0 / 207.0	13.54	14,15-DiHETrE-d_{11}	10.939
16-HETE	319.0 / 189.0	15.51	15-HETE-d_8	0.5383
17-HETE	319.0 / 247.0	15.40	15-HETE-d_8	3.0768
18-HETE	319.0 / 261.0	15.28	20-HETE-d_6	3.2074
19-HETE	319.0 / 231.0	14.89	20-HETE-d_6	0.2715
20-HETE	319.0 / 245.0	15.02	20-HETE-d_6	0.3998
2,3-dinor-8-*iso*-$PGF_{2\alpha}$	325.0 / 237.0	5.09	$PGF_{2\alpha}$-d_4	5.3857
5-*iso*-$PGF_{2\alpha}$VI	353.0 / 115.0	7.02	$PGF_{2\alpha}$-d_4	1.5803
8-*iso*-$PGF_{2\alpha}$III	353.0 / 193.0	6.50	$PGF_{2\alpha}$-d_4	1.9211
8-iso-15k-$PGF_{2\beta}$	351.0 / 219.0	6.96	$PGF_{2\alpha}$-d_4	3.6218
9-HODE	295.0 / 171.0	15.95	9-HODE-d_4	1.4704
9-oxoODE	293.0 / 185.0	16.28	5-oxoETE-d_7	1.4353
13-HODE	295.0 / 195.0	15.8	13-HODE-d_4	2.9546
13-oxoODE	293.0 / 167.0	15.96	5-oxoETE-d_7	0.2717
9,10,13-TriHOME	329.0 / 171.0	7.32	9-HODE-d_4	3.1287
9,12,13-TriHOME	329.0 / 211.0	7.19	9-HODE-d_4	6.1871
9,10-EpOME	295.0 / 171.0	17.41	9,10-DiHOME-d_4	3.7629
9,10-DiHOME	313.0 / 201.0	13.22	9,10-DiHOME-d_4	16.426
12,13-EpOME	295.0 / 195.0	17.21	12,13-DiHOME-d_4	10.516
12,13-DiHOME	313.0 / 183.0	12.66	12,13-DiHOME-d_4	11.798
15-oxoEDE	321.0 / 223.0	17.92	5-oxoETE-d_7	1.1612
13-HOTrE-γ	293.0 / 193.0	14.89	13-HODE-d_4	1.6998
PGD_1	353.0 / 235.0	7.74	PGD_2-d_4	1.0006
PGE_1	353.0 / 235.0	7.67	PGE_2-d_4	1.4269
6k-PGE_1	367.0 / 331.0	5.65	PGE_2-d_4	0.9207
$PGF_{1\alpha}$	355.0 / 293.0	7.24	$PGF_{2\alpha}$-d_4	3.0675
15k-$PGF_{1\alpha}$	353.0 / 221.0	7.68	$PGF_{2\alpha}$-d_4	No Primary
6,15-dk-dh-$PGF_{1\alpha}$	369.0 / 267.0	6.52	$PGF_{2\alpha}$-d_4	0.4899
PGK_1	351.0 / 251.0	7.76	PGD_2-d_4	4.2079
TXB_1	371.0 / 171.0	6.33	TXB_2-d_4	3.6782
5-HETrE	321.0 / 205.0	18.65	5-HETE-d_8	0.2746
8-HETrE	321.0 / 157.0	17.12	5-HETE-d_8	1.8141
15-HETrE	321.0 / 221.0	16.74	15-HETE-d_8	2.9424
Dihomo-PGD_2	379.0 / 299.0	9.70	PGD_2-d_4	No Primary
Dihomo-15d PGD_2	361.0 / 299.0	14.08	15d-PGJ_2-d_4	No Primary
Dihomo-PGE_2	379.0 / 299.0	9.40	PGE_2-d_4	No Primary
Dihomo-$PGF_{2\alpha}$	381.0 / 337.0	9.20	$PGF_{2\alpha}$-d_4	2.812
Dihomo-PGJ_2	361.0 / 299.0	12.52	15d-PGJ_2-d_4	No Primary
9-HOTrE	293.0 / 171.0	14.46	9-HODE-d_4	2.006
9-oxoOTrE	291.0 / 185.0	14.98	5-oxoETE-d_7	2.2547
13-HOTrE	293.4 / 195.0	14.59	13-HODE-d_4	0.6216

13-oxoOTrE	291.0 / 247.0	14.80	5-oxoETE-d_7	0.0856
12,13-EpODE	293.0 / 183.0	16.19	13-HODE-d_4	2.4048
12,13-DiHODE	311.0 / 183.0	11.12	12,13-DiHOME-d_4	4.4379
15,16-EpODE	293.0 / 235.0	15.49	12,13-DiHOME-d_4	No Primary
15,16-DiHODE	311.0 / 223.0	10.62	12,13-DiHOME-d_4	No Primary
9,10-EpODE	293.0 / 171.0	16.39	9,10-DiHOME-d_4	No Primary
9,10-DiHODE	311.0 / 201.0	11.62	9,10-DiHOME-d_4	No Primary
PGD_3	349.0 / 269.0	6.79	PGD_2-d_4	0.5356
PGE_3	349.0 / 269.0	6.52	PGE_2-d_4	1.3408
$PGF_{3\alpha}$	351.0 / 193.0	6.27	$PGF_{2\alpha}$-d_4	1.2284
TXB_3	367.0 / 169.0	5.73	TXB_2-d_4	5.4993
Δ^{17}-6k-$PGF_{1\alpha}$	367.0 / 163.0	4.68	$PGF_{2\alpha}$-d_4	2.0835
5-HEPE	317.0 / 115.0	15.81	5-HETE-d_8	1.1101
8-HEPE	317.0 / 155.0	15.34	5-HETE-d_8	1.1697
9-HEPE	317.0 / 149.0	15.48	5-HETE-d_8	0.6765
11-HEPE	317.0 / 215.0	15.23	5-HETE-d_8	No Primary
12-HEPE	317.0 / 179.0	15.33	15-HETE-d_8	1.7239
15-HEPE	317.0 / 219.0	15.00	15-HETE-d_8	1.8731
LXA_5	349.0 / 215.0	7.32	LTB_4-d_4	0.3762
RvD_1	375.0 / 141.0	8.36	LTB_4-d_4	0.5531
14,15-EpETE	317.0 / 207.0	16.27	14,15-DiHETrE-d_{11}	2.6835
17,18-EpETE	317.0 / 259.0	15.88	14,15-DiHETrE-d_{11}	1.8647
18-HEPE	317.0 / 215.0	14.50	20-HETE-d_6	1.3858
RvE_1	349.0 / 195.0	5.51	LTB_4-d_4	0.2271
8-*iso*-$PGF_{3\alpha}$	351.0 / 307.0	5.50	$PGF_{2\alpha}$-d_4	No Primary
17k-DHA	341.0 / 297.0	16.31	LTB_4-d_4	1.1412
4-HDoHE	343.0 / 101.0	17.37	5-HETE-d_8	0.4409
7-HDoHE	343.0 / 141.0	16.70	5-HETE-d_8	0.5523
8-HDoHE	343.0 / 109.0	16.77	5-HETE-d_8	0.4476
10-HDoHE	343.0 / 153.0	16.36	5-HETE-d_8	2.1831
11-HDoHE	343.0 / 149.0	16.50	5-HETE-d_8	0.8501
13-HDoHE	343.0 / 221.0	16.18	15-HETE-d_8	0.603
14-HDoHE	343.0 / 205.0	16.30	15-HETE-d_8	0.7806
16-HDoHE	343.0 / 233.0	16.00	15-HETE-d_8	3.3544
17-HDoHE	343.0 / 245.0	16.06	15-HETE-d_8	0.2779
20-HDoHE	343.0 / 241.0	15.72	20-HETE-d_6	1.3316
7R-Maresin-1	359.0 / 177.0	11.33	LTB_4-d_4	0.2837
PD_1	359.0 / 153.0	10.80	LTB_4-d_4	No Primary
15t-PD_1	359.0 / 153.0	11.00	LTB_4-d_4	No Primary
10S,17S-DiHDoHE (PDX)	359.0 / 153.0	11.19	LTB_4-d_4	1.0292
RvD_2	375.0 / 175.0	7.64	LTB_4-d_4	0.3639
RvD_5	359.2 / 199.0	11.34	LTB_4-d_4	No Primary
16,17-EpDPE	343.0 / 193.0	17.36	14,15-DiHETrE-d_{11}	0.2435
19,20-DiHDoPE	361.0 / 229.0	13.31	14,15-DiHETrE-d_{11}	1.1322
19,20-EpDPE	343.0 / 241.0	16.91	14,15-DiHETrE-d_{11}	2.2213
10-Nitrooleate	326.0 / 169.0	19.65	EPA-d_5	No Primary
9-Nitrooleate	326.0 / 168.0	19.65	EPA-d_5	No Primary

*Retention times were based on retention times of primary standards if available. For those with no primary, the retention time was estimated based on comparisons of known and unknown retention time of oxylipins in our samples and the retention times of oxylipins reported by Dumlao DS, Buczynski MW, Norris PC, Harkewicz R, Dennis EA. High-throughput lipidomic analysis of fatty acid derived eicosanoids and N-acylethanolamines. BBA-Mol Cell Biol L 2011;1811(11):724-36. doi: 10.1016/j.bbalip.2011.06.005, and by Wang Y, Armando AM, Quehenberger O, Yan C, Dennis EA. Comprehensive ultra-performance liquid chromatographic separation and mass spectrometric analysis of eicosanoid metabolites in human samples. Journal of Chromatography A 2014;1359:60-9. doi: 10.1016/j.chroma.2014.07.0006.

Supplemental Table S3. Body weights in rats given control, LA and LA+ALA diets for six weeks

	Control		LA		LA+ALA		Diet	Sex
	Female	**Male**	**Female**	**Male**	**Female**	**Male**		
Week	**grams** (mean±SE) (n=6)							
0	118±2.95	128±5.11	113±3.05	128±2.83	115±3.43	128±4.92		0.0003
2	215±6.46	279±4.74	202±2.46	274±7.44	208±5.87	265±5.38		<.0001
4	280±10.9	415±5	257±3.85	401±12.3	277±2.39	398±6.62		<.0001
6	318±11.1	510±7.32	289±4.18	493±16.5	322±2.79	494±11.2		<.0001

Supplemental Table S4. Distributions of oxylipin compared to precursor PUFA mass for all tissues and diets

				% of total oxylipins/PUFA					
Tissue	**Diet**	**Sex**	**Oxylipin /PUFA**	**AA**	**LA**	**Other n-6 PUFA**	**ALA**	**EPA**	**DHA**
Kidney	**Control**	Female	Oxylipin	29.4	48.7	1.0	0.9	0.8	19.2
			Fatty Acid	66	19.1	4.8	0.2	0.6	9.3
		Male	Oxylipin	35.7	48.4	1.3	1.1	1.2	12.3
			Fatty Acid	67.0	22.0	5.8	0.2	0.5	4.7
	LA	Female	Oxylipin	26.0	61.4	1.1	0.6	0.6	10.4
			Fatty Acid	61.1	25.5	6.5	0.3	0.3	6.4
		Male	Oxylipin	32.1	56.9	1.4	0.8	0.7	8.1
			Fatty Acid	64.4	25.3	6.4	0.2	0.2	3.6
	LA+ALA	Female	Oxylipin	21.5	59.4	0.9	1.4	0.8	16.0
			Fatty Acid	58.0	28.0	5.1	0.5	0.7	7.8
		Male	Oxylipin	24.3	62.5	1.1	1.9	0.8	9.3
			Fatty Acid	62.1	28.0	5.1	0.4	0.4	4.1
Liver	**Control**	Female	Oxylipin	43.2	33.1	2.6	1.5	1.4	18.2
			Fatty Acid	55.0	13.1	6.9	0.1	0.7	24.1
		Male	Oxylipin	44.0	32.8	3.7	1.4	1.5	16.6
			Fatty Acid	53.7	18.2	10.9	0.2	0.7	16.4
	LA	Female	Oxylipin	29.7	54.8	2.4	2.2	0.8	10.0
			Fatty Acid	56.6	17.4	7.5	0.1	0.2	18.3
		Male	Oxylipin	32.2	56.2	2.2	1.7	0.6	7.1
			Fatty Acid	56.7	20.9	11.1	0.2	0.3	10.9
	LA+ALA	Female	Oxylipin	26.3	56.1	1.9	2.7	1.3	11.8
			Fatty Acid	52.1	18.7	6.9	0.2	0.8	21.4
		Male	Oxylipin	28.6	53.6	2.1	4.2	1.8	9.7
			Fatty Acid	52.1	23.8	9.6	0.3	0.7	13.6
Serum	**Control**	Female	Oxylipin	81.0	11.9	0.4	0.8	1.1	4.9
			Fatty Acid	52.6	32.7	3.4	1.6	0.7	9.1
		Male	Oxylipin	81.5	11.4	0.6	0.7	1.7	4.2
			Fatty Acid	41.7	44.5	4.9	2.7	0.7	5.5
	LA	Female	Oxylipin	75.3	19.2	0.4	0.6	1.0	3.5
			Fatty Acid	39.0	49.5	4.2	1.5	0.2	5.6
		Male	Oxylipin	75.3	19.4	0.5	0.6	0.8	3.4
			Fatty Acid	37.3	52.3	5.0	1.6	0.1	3.7
	LA+ALA	Female	Oxylipin	73.1	16.5	0.4	1.8	2.0	6.2
			Fatty Acid	39.6	46.4	2.6	3.1	0.6	7.7
		Male	Oxylipin	76.0	16.0	0.4	1.3	1.9	4.4
			Fatty Acid	36.5	51.6	3.5	3.9	0.4	4.2

Supplemental Table S5a. Kidney n-6 Oxylipins in Rats Given Control, LA and LA+ALA Diets for Six Weeks

Diet	Control		LA		LA+ALA			
Sex	Female	Male	Female	Male	Female	Male	Diet	Sex
			ng/g tissue					
ARA oxylipins								
PGD_2	235±33.1	299±56.9	286±40.1	305±27.2	289±71.7	356±44.7		
15d-PGD_2	32.1±4.20^{B}	45.8±12.5	101±21.9^{A}	96.1±15.1	37.8±17.5^{AB}	83.5±25.5	0.0087	
15d-PGJ_2	40.2±4.87	55.3±6.92	61.9±13.0	97.0±10.7	37.8±17.5	61.9±21.0		0.0369
PGE_2	263±40.8	231±38.9	256±21.4	218±28.3	241±54.3	240±37.1		
15k-PGE_2	13.5±2.52^{c}	28.0±5.88^{b}	21.2±2.45^{b}	29.2±1.40^{ba}	12.5±1.71^{c}	39.9±5.59^{a}	0.0346†	
PGA_2	140±34.7	142±11.8	164±32.6	162±17.1	164±35.0	126±33.8		
$PGF_{2\alpha}$	203±21.2	269±33.4	272±54.8	230±32.8	253±48.1	221±32.6		
6k-$PGF_{1\alpha}$	184±19.1	219±35.2	210±32.3	216±20.8	214±74.3	189±20.5		
TXB_2	168±36.4	145±17.7	145±5.77	140±11.5	133±27.8	151±10.1		
12-HHTrE	1487±248	1435±195	1792±203	1388±134	1708±140	1548±156		
5-HETE	3174±303^{d}	4095±233^{abc}	3846±245^{bcd}	5095±376^{a}	3479±422^{cd}	4967±587^{ab}	0.0235	
5,15-DiHETE	152±22.5^{B}	178±17.3	224±33.7^{A}	247±31.5	154±23.5^{BA}	228±27.0	0.0423	
5-oxoETE	524±86.6	690±60.9	643±161	1079±245	399±72.7	715±110		0.0147
8-HETE	200±24.7^{B}	230±18.0	275±24.5^{A}	301±26.6	274±38.2^{BA}	265±36.7	0.0416	
8,15-DiHETE	2493±301	2795±328	2811±253	3160±285	2703±380	3801±534		
9-HETE	882±31.3^{B}	1184±78.7	1330±134^{A}	1879±323	1284±132^{A}	1578±239	0.0092	0.0201
11-HETE	1004±141	971±152	1317±73.9	1508±207	1186±152	1181±202		
12-HETE	1196±86.3^{B}	1588±198	1845±252^{A}	3178±743	2116±457^{A}	2964±588	0.0113	0.0259
12-oxoETE	35.0±6.95^{B}	40.1±8.03	63.5±15.8^{A}	93.2±18.7	31.5±5.39^{B}	53.9±14.2	0.0032	
tetranor-12-HETE	1.92±0.878^{B}	3.97±0.48	3.93±0.60^{A}	7.50±1.28	2.50±0.42^{B}	4.49±0.42	0.0030	0.0004
HXB_3*	0.58±0.17	0.61±0.14	0.80±0.27	1.04±0.19	0.50±0.086	1.08±0.25		
15-HETE	3296±330^{B}	3117±689	4748±242^{A}	5231±645	4071±715^{BA}	4641±934	0.0404	
15-oxoETE	275±62.0	421±98.8	396±80.6	632±156	260±59.3	472±101		0.0278
16-HETE	458±43.1^{b}	629±44.3^{ab}	623±49.4^{ab}	845±46.6^{ab}	548±94.1^{ab}	889±175^{a}	0.0030	
20-HETE	77.3±25.5	37.5±7.73	74.8±24.6	35.3±3.13	70.0±21.0	52.0±9.72		0.0409
5,6-DiHETrE	56.4±10.8^{ab}	63.0±12.5^{ab}	53.4±8.79^{ab}	80.9±13.9^{a}	93.9±23.2^{a}	43.6±15.7^{b}	0.0474	
8,9-DiHETrE	19.4±3.40	19.8±3.06	16.2±1.58	21.8±1.87	17.0±2.18	19.3±1.94		
11,12-DiHETrE	57.6±16.6	39.8±4.97	41.9±3.75	41.3±2.96	41.3±4.90	44.4±5.59		
14,15-DiHETrE	39.8±6.02	41.0±4.47	46.7±3.34	57.0±5.87	42.7±2.93	57.3±7.79		
5-*iso*-$PGF_{2\alpha}$VI	202±35.0^{B}	295±21.9	279±35.3^{A}	408±20.0	235.7±47.7^{AB}	394±38.4	0.0247	<0.0001
8-*iso*-$PGF_{2\alpha}$III	170±17.9	231±20.5	235±21.1	279±26.6	207±36.8	280±25.8		0.0081
8-*iso*-15k $PGF_{2\beta}$	14.6±2.04^{B}	28.8±4.09	28.7±8.38^{A}	38.0±2.58	23.0±3.83^{A}	37.2±2.76	0.0135	0.0002
Sum	17093±438^{B}	19569±690	22212±1257^{A}	27211±2453	20359±1977^{A}	25190±2868	0.0048	0.0132
LA oxylipins								
9-HODE	8525±854^{B}	9166±1551	17446±2051^{A}	18129±1480	19507±3460^{A}	23348±3492	<0.0001	
9-oxoODE	273±21.6^{B}	529±71.9	820±234^{A}	980±178	657±175^{B}	463±110	0.0037	
13-HODE	4674±592^{B}	5741±838	11940±1152^{A}	12237±1286	12059±1621^{A}	15816±2780	<0.0001	
13-oxoODE	670±85.1^{B}	1426±292	1751±222^{A}	2523±503	1632±461^{A}	2550±737	0.0440	0.0408
9,12,13-TriHOME	14013±6206^{B}	9482±878	20325±5860^{AB}	14096±2265	22343±7529^{A}	22026±4010	0.0232	
9,10-DiHOME	114±40.2	64.1±6.19	130±16.4	124±16.4	124±14.1	153±28.7		
12,13-DiHOME	80.8±20.7^{B}	80.5±12.7	105±10.0^{AB}	124±11.8	124±9.58^{A}	165±26.0	0.0032	
Sum	28349±5963^{B}	26489±2472	52517±7923^{A}	48213±4251	56264±8999^{A}	64703±9591	<0.0001	
GLA oxylipin								
13-HOTrE-γ	78.0±6.05^{B}	102±19.8	187±32.1^{A}	237±54.1	142±19.5^{A}	208±30.3	0.0027	
DGLA oxylipins								
$PGF_{1\alpha}$	40.2±2.22	48.1±4.54	40.0±6.05	48.5±8.23	32.4±4.86	42.0±3.95		
8-HETrE	101±12.6	177±8.94	155±14.2	189±29.4	166±26.4	207±28.3		0.0103
15-HETrE	276±23.2^{B}	326±27.5	435±37.1^{A}	563±116	407±83.6^{A}	551±113	0.0200	
Sum	417±33.2	551±29.1	630±51.6	800±149	504±137	800±141		0.0352
EDA oxylipin								
15-oxoEDE	11.9±2.12^{B}	14.8±1.85	25.5±6.30^{A}	34.7±5.39	19.1±4.50^{B}	31.9±5.43	0.0036	0.0360
AdA oxylipins								
Dihomo-PGD_2*	0.023±0.001	0.041±0.007	0.045±0.002	0.060±0.009	0.035±0.008	0.133±0.084		
Dihomo-PGE_2*	0.050±0.024	0.050±0.015	0.056±0.003	0.072±0.013	0.036±0.008	0.058±0.012		
Dihomo-$PGF_{2\alpha}$	55.9±15.6^{B}	66.7±9.21	86.3±12.1^{A}	108±14.3	53.9±11.4^{BA}	81.3±6.42	0.0087	0.0185
Sum n-6	46006±6112^{B}	46792±2861	75658±8214^{A}	76604±4830	77444±10846^{A}	91015±12067	<0.0001	

Differing UPPER case superscript letters shown on the female values within a row indicate differences between diets. Differing lower case superscript letters within a row indicate differences between means.
Shading: higher or lower than control; female or male higher in at least one of the diets.
†P values listed across diet and sex are the P value for diet×sex interaction or for Wilcoxin's test P value if the data were not normally distributed.
*Denotes no primary standard so not quantified. Values are not included in the sums.
Values are mean±SE (n=5-6 for each), and are based on dry tissue weight.

Supplemental Table S5b. Kidney n-3 Oxylipins in Rats Given Control, LA and LA+ALA Diets for Six Weeks

Diet	Control		LA		High LA+ALA		Effect	
Sex	Female	Male	Female	Male	Female	Male	Diet	Sex
			ng/g tissue					
ALA oxylipins								
9-HOTrE	347±62.8^{B}	347±42.2	289±58.3^{B}	345±59.5	719±90.4^{A}	1111±282	<0.0001	
9-oxoOTrE	32.5±3.04	70.9±11.2	47.8±7.15	84.9±22.1	43.5±8.58	151±51.6		0.0018
13-HOTrE	156±13.0^{B}	192±26.7	206±50.6^{B}	245±49.5	507±73.8^{A}	739±166	<0.0001	
12,13-EpODE	58.2±6.40^{B}	67.2±9.13	69.0±13.8^{B}	69.4±12.7	156±14.3^{A}	205±37.9	<0.0001	
Sum	535±72.4^{B}	609±71.8	542±105^{B}	674±106	1270±153^{A}	2001±440	<0.0001	
EPA oxylipins								
PGE_3	23.1±4.28^{AB}	24.6±4.01	18.0±2.53^{B}	22.3±2.14	27.2±4.80^{A}	33.5±4.47	0.0406	
$PGF_{3\alpha}$	20.1±5.37	6.49±0.81	23.7±5.16	4.75±0.69	19.5±4.30	7.03±1.00		<0.0001
5-HEPE	144±11.8	251±30.0	159±20.2	263±79.5	230±33.7	288±36.6		0.0091
9-HEPE	48.1±11.6^{B}	60.2±7.77	37.5±8.45^{B}	52.6±8.54	85.1±8.83^{A}	76.8±12.0	0.0029	
12-HEPE	51.5±5.85^{B}	75.1±9.28	50.6±7.25^{B}	70.4±14.8	114±12.5^{A}	145±22.3	<0.0001	0.0393
15-HEPE	50.8±4.06^{B}	65.6±6.16	50.7±3.89^{B}	67.7±10.9	93.8±9.9^{A}	111±19.1	0.0005	
18-HEPE	138±19.5^{B}	146±30.7	136±8.72^{B}	96.4±13.3	230±35.4^{A}	209±39.3	0.0026	
Sum	475±75.9^{B}	629±15.3	476±64.9^{B}	577±39.5	800±68.4^{A}	870±64	0.0001	
DHA oxylipins								
4-HDoHE	2065±236^{BA}	1834±219	1572±82.3^{B}	1599±207	2733±410^{A}	2357±500	0.0195	
7-HDoHE	274±28.4^{ab}	155±7.88^{b}	206±5.79^{ab}	230±71.1^{b}	374±54.8^{a}	202±15.7^{ab}	0.0048†	
8-HDoHE	465±31.3^{B}	270±31.3	341±26.6^{B}	309±28.9	591±90.1^{A}	353±34.0	0.0135	0.0001
10-HDoHE	396±65.5^{B}	181±16.0	295±30.0^{B}	193±26.5	532±94.6^{A}	271±41.1	0.0133	<0.0001
11-HDoHE	514±52.2^{B}	324±25.7	393±20.4^{B}	327±25.1	723±85.4^{A}	445±65.5	0.0006	0.0003
13-HDoHE	836±142^{BA}	394±50.9	622±62.8^{B}	425±73.0	1048±151^{A}	591±97.0	0.0210	0.0001
14-HDoHE	1150±129^{B}	692±107	917±91.0^{B}	838±135	1721±201^{A}	1239±239	0.0015	0.0181
16-HDoHE	563±85.8^{B}	275±27.9	456±35.7^{B}	364±69.5	769±84.4^{A}	439±68.2	0.0089	0.0001
17-HDoHE	1834±308^{B}	781±189	1609±207^{B}	1403±351	2779±278^{A}	1550±381	0.0220	0.0023
20-HDoHE	3019±257^{B}	1798±185	2449±430^{B}	1467±195	3854±218^{A}	2104±232	0.0020	<0.0001
19,20-DiHDoPE	72.0±18.2^{A}	26.6±4.17	33.4±4.79^{B}	20.0±2.10	55.9±5.47^{A}	27.5±1.60	0.0108	<0.0001
Sum	11194±1021^{B}	6734±686	8902±705^{B}	6839±715	15199±1235^{A}	9591±1288	0.0002	<0.0001
Sum n-3	12204±1002^{B}	7972±663	9920±722^{B}	8090±717	17268±1110^{A}	12461±1601	<0.0001	0.0002

Differing UPPER case superscript letters shown on the female values within a row indicate differences between diets. Differing lower case superscript letters within a row indicate differences between means.
Shading: higher or lower than control; female or male higher in at least one of the diets.
†P values listed across diet and sex are the P value for diet×sex interaction or for Wilcoxin's test P value if the data were not normally distributed.
Values are mean±SE (n=5-6 for each), and are based on dry tissue weight.

Supplemental Table S6a. Liver n-6 Oxylipins in Rats Given Control, LA and LA+ALA Diets for Six Weeks

Diet	Control		LA		LA+ALA			
Sex	Female	Male	Female	Male	Female	Male	Diet	Sex
			ng/g tissue					
AA oxylipins								
PGD_2	354±84.2^{AB}	533±71.3	514±105^{A}	471±43.1	244±36.8^{B}	399±46.9	0.0239	0.0181
15d-PGD_2	21.4±6.47	34.0±3.92	26.3±5.31	45.8±8.03	13.8±2.87	31.4±3.77		0.0007
15d-PGJ_2	43.4±11.3^{B}	17.8±10.9	91.8±12.7^{A}	84.7±9.55	51.3±10.4^{A}	80.6±13.0	0.0001	
PGE_2	166±34.4	247±29.5	211±34.6	239±16.2	121±15.8	226±34.8		0.0051
bicyclo-PGE_2	10.7±3.98^{B}	10.6±4.25	65.8±20.1^{A}	41.3±11.4	42.6±11.8^{A}	56.8±27.7	0.0010	
PGA_2	33.4±10.4^{bc}	20.2±13.1^{c}	82.4±15.0^{a}	33.1±8.13^{bc}	33.5±3.66^{bc}	58.2±13.0^{ba}	0.0130†	
$PGF_{2\alpha}$	242±49.9	186±15.4	260±13.6	203±21.2	166±22.5	168±18.1		
6k-$PGF_{1\alpha}$	8.04±0.73^{B}	9.00±0.40	9.50±1.41^{A}	15.4±1.04	6.19±1.04^{A}	11.8±1.85	0.0038	0.0001
TXB_2	27.2±3.76	36.8±4.77	32.0±3.02	42.4±5.23	22.4±3.57	35.1±5.19		0.0051
5-HETE	1021±300	1377±176	1401±322	1825±246	786±95.3	1489±329		0.0089
5-oxoETE	135±33.9	87.8±9.63	179±44.5	205±49.4	129±25.6	143±34.4		
8-HETE	177±48.5^{B}	151±24.1	287±59.2^{A}	235±39.3	103±12.8^{B}	199±47.4	0.0167	
8,15-DiHETE	494±133	731±83.7	828±268	985±179	550±80.3	880±240		
9-HETE	636.8±200^{AB}	746±126	1031±209^{A}	948±156	434±54.3^{B}	797±198	0.0466	
11-HETE	461±158	457±81.2	644±135	428±100	315±117	425±133		
12-HETE	3891±1122	2892±614	3689±1663	3072±657	2517±350	3666±1104		
tetranor-12-HETE	11.6±2.33	3.24±0.840	23.5±8.22	7.89±2.38	12.0±3.04	7.93±2.67		0.0076
12-oxoETE	24.6±4.85^{B}	16.8±2.24	39.0±5.48^{A}	30.6±5.08	27.3±3.33^{B}	20.7±4.07	0.0073	0.0275
15-HETE	1795±503	2471±602	1737±357	2189±243	1657±212	2372±419		
15-oxoETE	40.9±12.8^{B}	30.3±4.64	61.4±11.9^{A}	63.0±10.6	42.3±8.55^{B}	38.0±6.72	0.0109	
LTB_4	–#^{b}	–^{b}	7.62±1.85^{a}	7.19±1.02^{a}	6.20±0.99^{a}	7.12±1.28^{a}	0.0002	
16-HETE	3689±534	3080±390	4138±1038	3542±682	3909±875	3768±876		
17-HETE	54.5±4.44	52.9±7.71	52.3±11.8	53.9±8.83	50.8±11.2	68.7±13.2		
19-HETE	115±22.9	430±89.7	230±82.3	427±108	138±11.3	363±73.7		0.0003
20-HETE	45.5±9.54^{B}	55.1±10.8	106±33.2^{A}	82.3±20.4	63.5±10.9^{B}	45.2±9.41	0.0415	
20cooh-AA*	0.461±0.098	0.450±0.121	0.765±0.116	0.419±0.061	0.888±0.248	0.412±0.096		0.0187
5,6-DiHETrE	87.7±31.8	199±41.4	75.8±8.77	319±64.2	46.4±5.81	197±42.2		<0.0001
8,9-DiHETrE	35.2±7.41	289±47.9	50.6±10.5	416±127	30.3±2.66	261±41.2		<0.0001
11,12-DiHETrE	115±23.9	831±144	172±44.8	1053±296	102±9.58	698±119		<0.0001
14,15-DiHETrE	101±22.5	917±198	157±20.6	1170±329	96.2±11.6	735±145		<0.0001
5-*iso*-$PGF_{2\alpha}$VI	37.8±10.1^{B}	48.1±5.36	53.8±12.3^{A}	95.4±15.8	31.7±5.80^{B}	61.1±15.8	0.0205	0.0080
8-*iso*-$PGF_{2\alpha}$III	28.2±6.31^{B}	34.0±4.04	43.5±7.69^{A}	59.6±9.41	26.0±3.22^{B}	43.4±9.64	0.0174	0.0329
Sum	13901±2846	15988±2210	16253±2914	18382±1630	11116±792	17343±3183		
LA oxylipins								
9-HODE	3698±1008^{B}	5420±1070	10408±2804^{A}	11221±2733	6130±1091^{A}	12016±3039	0.0013	0.0500
9-oxoODE	89.8±24.2^{B}	45.1±6.57	202±41.4^{A}	339±89.5	175±41.4^{A}	194±41.4	<0.0001	
13-HODE	1610±452^{B}	2651±647	5192±1413^{A}	4599±1176	2630±457^{A}	4989±1245	0.0028	
13-oxoODE	101±33.7^{B}	83.9±16.4	448±114^{A}	490±84.9	312±86.7^{A}	336±25.9	<0.0001	
9,12,13-TriHOME	4570±1086^{B}	2017±357	12199±4065^{A}	12357±4839	13450±3873^{A}	12560±5221	0.0005	
9,10-EpOME	28.7±8.68	35.8±9.6	76.8±26.1	48.3±20.1	42.4±4.61	39.7±7.52		
9,10-DiHOME	348±103^{B}	931±145	1111±372^{A}	1767±402	755±84.3^{A}	1412±159	0.0006	0.0001
12,13-EpOME	23±7.1	28.5±7.26	41.9±18	42.8±14.2	27.2±5.51	39.5±5.82		
12,13-DiHOME	159±37.7^{B}	705±145	317±45.4^{A}	1237±309	231±23.9^{A}	935±123	0.0077	<0.0001
Sum	10628±2199^{B}	11917±1970	29995±7348^{A}	32095±8676	23754±5297^{A}	32521±9391	0.0001	
GLA oxylipins								
13-HOTrE-γ	77.2±20.3^{b}	94.4±16.3^{b}	263±64.9^{a}	121±8.86^{b}	87.0±13.6^{ab}	167±43.4^{b}	0.0128	
EDA oxylipins								
15-oxoEDE	1.96±0.569^{B}	2.51±0.597	10.7±2.67^{A}	18.9±5.74	6.57±1.19^{A}	14.3±4.27	<0.0001	0.0338
DGLA oxylipins								
$PGF_{1\alpha}$	16.3±4.89	15.4±3.47	23.9±2.31	9.45±3.09	11.4±3.68	5.87±3.77		0.0259
5-HETrE	41.5±8.83^{A}	149±21.8	39.6±12.7^{B}	77.4±13.1	13.6±1.44^{C}	45.9±7.49	<0.0001	<0.0001
8-HETrE	36.0±9.29	96.1±27.4	57.2±9.61	62.9±8.83	32.2±5.24	55.8±14.6		0.0169
15-HETrE	647±128	958±243	808±233	887±172	607±141	927±285		
Sum	741±145	1218±280	928±255	1036±175	665±145	1035±299		
AdA oxylipins								
Dihomo-$PGF_{2\alpha}$	24.7±3.97^{B}	22.6±4.77	101±15^{A}	84.7±13.3	28.4±2.94^{B}	44.5±11.7	<0.0001	
n-6 Sum	25373±4901^{B}	29242±4211	47550±10410^{A}	51718±9756	35656±5625^{A}	51125±12675	0.0082	

Differing UPPER case superscript letters shown on the female values within a row indicate differences between diets. Differing lower case superscript letters within a row indicate differences between means.
Shading: higher or lower than control; female or male higher in at least one of the diets.
†P values listed across diet and sex are the P value for diet×sex interaction or for Wilcoxin's test P value if the data were not normally distributed.
#Not detected.
*Denotes no primary standard so not quantified. Values are not included in the sums.
Values are mean±SE (n=5-6 for each), and are based on dry tissue weight.

Supplemental Table S6b. Liver n-3 Oxylipins in Rats Given Control, LA and LA+ALA Diets for Six Weeks

Diet	Control		LA		LA+ALA			
Sex	Female	Male	Female	Male	Female	Male	Diet	Sex
			ng/g tissue					
ALA oxylipins								
9-HOTrE	408±116^{B}	423±97.9	1031±378^{AB}	809±320	974±265^{A}	2144±946	0.0305	
9-OxoOTrE	11.7±3.27^{B}	4.06±0.40	21.1±3.72^{A}	26.6±6.57	28.3±4.69^{A}	38.1±12.8	<0.0001	
13-HOTrE	61.6±16.8^{B}	68.8±12.5	167±41.8^{A}	137±45.4	159±41.4^{A}	354±136	0.0002	
Sum	481±134^{B}	496±110	1218±419^{AB}	973±371	1156±297^{A}	2536±1090	0.0124	
EPA oxylipins								
PGE$_3$	19.4±2.76^{A}	54.8±7.41	14.8±1.01^{B}	31.1±3.75	24.9±5.09^{A}	73.4±12.3	0.0025	<0.0001
5-HEPE	38.9±9.68	98.6±28.1	46.5±16.8	57.7±6.80	51.0±9.11	110±15.8		0.0004
8-HEPE	12.7±2.91^{b}	16.4±2.17^{b}	16.2±2.56^{b}	16.6±2.55^{b}	16.4±3.00^{b}	34.5±7.01^{a}	0.0260†	
9-HEPE	21.8±4.90^{b}	35.5±7.08^{ba}	33.9±7.97^{ba}	21.3±3.38^{b}	22.8±4.48^{b}	59.2±17.1^{a}	0.0146	
12-HEPE	196±50.6^{AB}	165±33.2	200±87.1^{B}	111±27.8	248±62.0^{A}	403±129	0.0235	
15-HEPE	110±28.5	94.9±11.9	94.3±34.3	81.3±18.8	132±46.4	278±106		
18-HEPE	35.5±10.4	73.6±22.1	38.5±11.7	34.5±5.89	38.4±4.61	96.0±17.0		0.0089
RvE$_1$	6.14±1.09	13.3±2.84	4.98±1.92	11.8±2.35	6.53±1.63	7.88±1.30		0.0009
Sum	441±105^{AB}	552±106	446±155^{B}	365±65	540±127^{A}	1062±291	0.0258	
DHA oxylipins								
4-HDoHE	668±171^{A}	1005±255	475±109^{B}	363±104	421±71.8^{B}	503±123	0.0179	
7-HDoHE	184±60.6	150±11.6	226±74.1	179±59.6	133±17.2	180±37.5		
8-HDoHE	270±82.8	271±31.6	273±76.0	235±42.1	188±18.5	264±46.2		
10-HDoHE	136±35.1	130±13.4	187±39.8	106±18.9	142±42.1	136±26.0		
11-HDoHE	271±74.5	326±47.3	290±79.2	215±40.8	206±46.0	247±49.2		
13-HDoHE	754±175	520±89.3	697±169	319±70.6	605±68.8	477±93.9		0.0066
14-HDoHE	1327±407	879±141	728±119	593±126	912±89.4	977±198		
16-HDoHE	249±68.1	219±30.4	296±91.0	175±34.7	283±49.9	290±42.1		
17-HDoHE	944±259	963±119	1349±355	786±165	1189±170	1431±260		
20-HDoHE	928±291	1198±211	1000±346	865±128	796±72.9	1119±189		
19,20-EpDPE	18.2±4.88	21.8±4.76	13.8±5.38	10.2±1.91	9.63±1.61	13.7±2.96		
19,20-DiHDoPE	110±25.1	346±50.8	87.3±9.23	220±26.6	91.4±10.6	263±46.8		<0.0001
Sum	5859±1534	6027±936	5501±1186	4066±711	4976±444	5900±827		
Sum n-3	6781±1732	7075±1106	7165±1510	5403±1098	6673±592	9498±1902		

Differing UPPER case superscript letters shown on the female values within a row indicate differences between diets. Differing lower case superscript letters within a row indicate differences between means.
Shading: higher or lower than control; female or male higher in at least one of the diets.
†P values listed across diet and sex are the P value for diet×sex interaction or for Wilcoxin's test P value if the data were not normally distributed.
Values are mean±SE (n=5-6 for each), and are based on dry tissue weight.

Supplemental Table S7a. Serum n-6 Oxylipins in Rats Given Control, LA and LA+ALA Diets for Six Weeks

Diet	Control		LA		LA+ALA			
Sex	Female	Male	Female	Male	Female	Male	Diet	Sex
				ng/ml				
AA oxylipins								
PGD_2	2.18±0.59	3.34±0.80	2.48±0.74	3.13±1.02	1.42±0.28	2.67±0.73		
PGJ_2	0.63±0.16	2.85±1.25	0.59±0.17	1.57±0.63	0.36±0.13	1.62±0.43		0.0005
15d-PGJ_2	0.25±0.05	0.29±0.06	0.20±0.07	0.29±0.11	0.10±0.01	0.26±0.07		
PGE_2	3.64±0.96	5.01±1.10	4.11±1.25	5.48±1.88	2.79±0.57	4.87±1.29		
15k-PGE_2	0.023±0.007	0.082±0.032	0.019±0.004	0.059±0.020	0.028±0.013	0.086±0.040		0.0116
$PGF_{2\alpha}$	1.19±0.29	1.92±0.34	1.41±0.32	2.12±0.55	0.97±0.14	2.12±0.47		0.0075
6k-$PGF_{1\alpha}$	0.086±0.024	0.108±0.015	0.050±0.006	0.098±0.025	0.057±0.015	0.084±0.014		0.0044
TXB_2	29.7±9.90	48.9±7.73	30.2±7.46	41.6±11.1	21.2±3.38	44.6±11.3		0.0195
5-HETE	2.09±0.169	3.62±0.651	2.43±0.299	4.03±0.649	2.11±0.219	3.91±0.795		0.0001
5,15-DiHETE	0.024±0.004	0.036±0.008	0.021±0.005	0.043±0.007	0.031±0.005	0.064±0.020		0.0054
5-oxoETE	0.83±0.08	1.07±0.22	1.36±0.28	1.68±0.41	0.89±0.13	1.68±0.54		
8-HETE	0.504±0.091	0.709±0.094	0.618±0.090	0.681±0.095	0.430±0.081	0.665±0.154		
9-HETE	1.19±0.15	1.70±0.29	1.39±0.21	1.73±0.25	1.14±0.18	1.71±0.53		
11-HETE	8.07±2.18	15.5±3.61	8.27±1.67	9.71±2.14	5.54±0.99	11.4±3.06		0.0182
12-HETE	121±30.9	175±29.0	139±25.5	146±24.1	103±15.8	153±34.7		
tetranor-12-HETE	0.141±0.038	0.128±0.020	0.179±0.045	0.165±0.023	0.125±0.020	0.188±0.026		
12-oxoETE	1.80±0.62	0.90±0.13	1.34±0.16	1.61±0.42	0.84±0.04	1.78±0.38		
HXB_3	0.69±0.16	1.09±0.18	0.98±0.16	1.09±0.17	0.87±0.11	1.10±0.25		
15-HETE	7.77±1.80	15.3±3.55	8.08±1.62	11.1±2.29	6.40±1.04	12.0±2.89		0.0055
15-oxoETE	0.70±0.26	0.66±0.12	0.68±0.11	0.95±0.24	0.47±0.059	1.05±0.31		
6t -12-epi-LTB_4	0.226±0.035	0.570±0.130	0.238±0.046	0.481±0.144	0.205±0.035	0.379±0.074		0.0002
5-*iso*-$PGF_{2\alpha}$VI	–#[b]	0.104±0.007[a]	–[b]	0.089±0.038[ab]	0.068±0.068[ab]	0.131±0.0134[a]	0.0011	
Sum	184±47.4	271±36.3	205±37.4	236±44.1	151±22.7	248±56.3		0.0451
LA oxylipins								
9-HODE	10.9±1.48	16.3±1.44	18.1±2.60	22.7±3.53	14.2±4.55	18.7±4.73		0.0288
9-oxoODE	0.368±0.095[B]	0.287±0.057	0.945±0.127[A]	0.879±0.196	0.586±0.208[A]	0.932±0.323	0.0006	
13-HODE	6.67±0.95	11.0±1.33	12.0±1.65	14.8±1.95	7.22±0.96	14.4±3.53		
13-oxoODE	2.77±0.38[B]	2.19±0.34	6.74±0.75[A]	6.18±1.20	3.67±0.72[A]	5.79±1.65	0.0001	
9,12,13-TriHOME	3.02±0.52[B]	4.42±0.74	5.51±1.19[A]	7.44±1.46	5.45±1.69[A]	8.67±2.61	0.0303	0.0323
9,10-EpOME	0.098±0.027	0.101±0.028	0.227±0.053	0.220±0.074	0.181±0.074	0.123±0.067		
9,10-DiHOME	1.63±0.30[B]	1.58±0.26	5.51±0.54[A]	5.76±0.28	1.77±0.24[B]	1.70±0.18	<0.0001	
12,13-EpOME	0.351±0.064[B]	0.348±0.068	0.614±0.089[A]	0.527±0.073	0.456±0.097[AB]	0.446±0.168	0.0489	
12,13-DiHOME	1.24±0.23[B]	1.61±0.39	2.57±0.22[A]	2.35±0.098	1.55±0.34[B]	1.47±0.22	0.0012	
Sum	27.0±3.41[B]	37.7±4.11	52.2±6.16[A]	60.8±8.00	33.9±6.85[B]	52.2±13.2	0.0045	0.0273
GLA oxylipins								
13-HOTrE-γ	0.293±0.069	0.304±0.077	0.437±0.106	0.509±0.092	0.320±0.106	0.365±0.070		
DGLA oxylipins								
PGD_1	0.174±0.062	0.344±0.083	0.149±0.021	0.294±0.067	0.125±0.035	0.227±0.066		0.0301
$PGF_{1\alpha}$	0.049±0.023	0.102±0.032	0.024±0.024	0.078±0.031	0.037±0.018	0.055±0.025		
8-HETrE	0.039±0.004	0.0934±0.017	0.077±0.010	0.096±0.017	0.070±0.017	0.096±0.017		0.0031
15-HETrE	0.38±0.06	1.04±0.17	0.45±0.09	0.63±0.15	0.38±0.07	0.67±0.13		0.0004
Sum	0.64±0.13	1.58±0.27	0.70±0.13	1.10±0.25	0.61±0.11	1.05±0.22		0.0008
n-6 Sum	212±47.3	311±39.4	258±43.1	299±50	186±28.3	302±65.8		0.0349

Differing UPPER case superscript letters shown on the female values within a row indicate differences between diets. Differing lower case superscript letters within a row indicate differences between means.
Shading: higher or lower than control; female or male higher in at least one of the diets.
†P values listed across diet and sex are the P value for diet×sex interaction or for Wilcoxin's test P value if the data were not normally distributed.
#Not detected.
Values are mean±SE (n=5-6 for each), and are based on dry tissue weight.

Supplemental Table 7b. Serum n-3 Oxylipins in Rats Given Control, LA and LA+ALA Diets for Six Weeks

Diet	Control		LA		LA+ALA			
Sex	Female	Male	Female	Male	Female	Male	Diet	Sex
				ng/ml				
ALA oxylipins								
9-HOTrE	0.53±0.10^{B}	0.83±0.13	0.60±0.11^{B}	0.73±0.13	1.42±0.58^{A}	1.50±0.40	0.0084	
9-oxoOTrE	0.121±0.014^{B}	0.097±0.021	0.131±0.020^{B}	0.144±0.035	0.204±0.061^{A}	0.279±0.087	0.0228	
13-HOTrE	0.95±0.21^{AB}	1.27±0.22	0.83±0.17^{B}	0.95±0.15	1.82±0.56^{A}	2.29±0.69	0.0095	
12,13-DiHODE	0.123±0.026	0.105±0.026	0.140±0.021	0.089±0.007	0.163±0.023	0.117±0.022		0.0435
Sum	1.72±0.32^{B}	2.30±0.38	1.70±0.27^{B}	1.92±0.29	3.61±1.21^{A}	4.18±1.16	0.0097	
EPA oxylipins								
PGF$_{3\alpha}$	0.212±0.062^{AB}	0.041±0.011	0.274±0.072^{A}	0.090±0.039	0.130±0.034^{B}	0.028±0.008	0.0088	<0.0001
TXB$_3$	0.043±0.009	0.104±0.022	0.034±0.005	0.046±0.007	0.038±0.012	0.086±0.018		0.0001
5-HEPE	0.058±0.010	0.141±0.021	0.066±0.010	0.095±0.012	0.090±0.014	0.146±0.023		0.0002
8-HEPE	0.0301±0.005^{A}	0.0402±0.006	0.0280±0.006^{B}	0.0211±0.003	0.0472±0.0107^{A}	0.0505±0.007	0.0022	
12-HEPE	1.93±0.40^{AB}	5.04±1.20	2.19±0.58^{B}	2.12±0.38	3.62±0.67^{A}	5.36±1.09	0.0266	0.0220
15-HEPE	0.061±0.007^{A}	0.155±0.025	0.040±0.006^{B}	0.068±0.009	0.079±0.012^{A}	0.182±0.040	<0.0001	<0.0001
18-HEPE	0.061±0.010^{A}	0.118±0.024	0.048±0.013^{B}	0.066±0.010	0.099±0.025^{A}	0.188±0.045	0.0027	0.0039
Sum	2.40±0.46^{AB}	5.64±1.25	2.68±0.60^{B}	2.51±0.38	4.10±0.74^{A}	6.04±1.19	0.0282	0.0250
DHA oxylipins								
4-HDoHE	1.02±0.16	1.07±0.15	0.75±0.16	0.76±0.13	1.05±0.16	1.12±0.20		
7-HDoHE	0.203±0.016	0.156±0.024	0.153±0.027	0.143±0.020	0.205±0.031	0.177±0.037		
8-HDoHE	0.253±0.035	0.243±0.052	0.168±0.031	0.162±0.026	0.247±0.040	0.254±0.039		
10-HDoHE	0.246±0.027	0.247±0.025	0.206±0.040	0.176±0.031	0.221±0.032	0.243±0.061		
11-HDoHE	0.104±0.013	0.131±0.021	0.0742±0.019	0.110±0.020	0.101±0.020	0.146±0.038		
13-HDoHE	0.456±0.037	0.511±0.052	0.337±0.060	0.371±0.068	0.426±0.062	0.511±0.105		
14-HDoHE	4.05±0.68	5.10±0.86	3.61±0.70	3.44±0.68	3.68±0.55	4.70±1.40		
16-HDoHE	0.284±0.023	0.303±0.036	0.230±0.045	0.249±0.043	0.316±0.046	0.302±0.059		
17-HDoHE	3.32±0.20^{AB}	4.93±0.72	3.14±0.37^{B}	4.03±0.54	5.25±0.63^{A}	5.54±1.21	0.0424	
20-HDoHE	0.488±0.060	0.573±0.117	0.498±0.121	0.602±0.118	0.662±0.095	0.697±0.188		
16,17-EpDPE	0.088±0.0214	0.152±0.023	0.057±0.036	0.113±0.051	0.085±0.042	0.112±0.060		
19,20-EpDPE	0.0849±0.0103	0.0849±0.0095	0.0845±0.0181	0.0774±0.0066	0.0884±0.0182	0.0731±0.0106		
19,20-DiHDoPE	0.520±0.069	0.468±0.073	0.349±0.066	0.390±0.059	0.442±0.036	0.637±0.103		
Sum	11.1±0.69	14.0±1.68	9.66±1.24	10.6±1.54	12.8±0.77	14.5±3.18		
Sum n-3	15.2±1.01^{AB}	21.9±2.90	14.0±1.87^{B}	15.1±2.00	20.5±2.34^{A}	24.7±5.25	0.0181	

Differing UPPER case superscript letters shown on the female values within a row indicate differences between diets. Differing lower case superscript letters within a row indicate differences between means.
Shading: higher or lower than control; female or male higher in at least one of the diets.
Values are mean±SE (n=5-6 for each), and are based on dry tissue weight.

Supplemental Table S8. Kidney phospholipid fatty acids in rats given control, LA and LA+ALA diets for six weeks

Diet	Adequate LA		High LA		High LA+ALA			
Sex	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Diet**	**Sex**
				µg/g tissue				
14:0	104±8.91^{B}	136±13.6	151±10.9^{A}	163±25.1	79±4.96^{B}	122±14.7	0.0024	0.0245
16:0	18378±1377^{A}	15823±804	14683±853^{B}	14126±704	15643±862^{AB}	16548±533	0.0202	
16:1	527±104	618±125	425±53.0	438±88.5	598±74.2	520±65.6		
17:0	140±23.3	224±103	197±31.5	340±134	210±29.7	195±20.1		
18:0	16288±1205	15098±1269	13203±928	14132±877	13543±1134	15856±1044		
18:1	10034±249^{A}	6891±689	5095±363^{B}	3930±166	5034±333^{B}	4478±225	<0.0001	<0.0001
18:2n6	7803±501^{B}	8268±638	8597±527^{B}	9100±538	9996±745^{A}	11798±535	0.0002	
18:3n3	99.2±8.8^{B}	63.6±12.1	89.4±9.28^{B}	60.4±10.5	171±16.1^{A}	152±11.6	<0.0001	0.0078
18:3n6	62.7±4.69^{ab}	41.5±10.0^{b}	79.9±6.50^{a}	62.8±16.6^{ab}	64.3±10.4^{ab}	90.0±8.38^{a}	0.0467†	
20:0	345±27.9^{a}	210±10.8^{c}	270±18.1^{b}	200±14^{c}	256±26.1^{cb}	228.67±15.46^{cb}	0.0348	
20:1	193±15.3^{a}	138±10.3^{b}	88.5±9.48^{c}	90.4±9.56^{c}	93.6±19.8^{c}	100±6.15^{c}	0.0385	
20:2n6	180±9.81^{B}	146±12.4	333±20.5^{A}	283±22.0	300±35.5^{A}	320±31.8	<0.0001	
20:3n3	65.9±22.9	72±15.3	96.4±6.46	71.4±10.4	92.6±21.8	119±16.9		
20:3n6	694±59.6	1057±102	614±54.2	789±67.1	690±79.2	865±61.4		0.0005
20:4n6	27022±2088	25223±2181	20579±1504	23170±1455	20700±1559	26161±1290		
20:5n3	229±23.7^{A}	173±20.1	88.7±8.08^{B}	75.2±4.75	245±19.3^{A}	168±4.30	<0.0001	0.0022
22:0	840±89.4	465±24.8	659±59.7	465±29.4	692±48.7	531±28.6	0.2352	<0.0001
22:1	55.7±10.8	28.8±4.38	12.9±6.14	23.4±11.9	24.6±6.31	29.4±9.55		
22:2n6	93.3±42.2	111±40.6	107±44.0	167±41.2	149±35.3	129±39.2		
22:4n6	637±51.2	550±45.4	655±50.3	625±34.6	506±44.4	610±22.4		
22:5n3	242±26.8^{AB}	209±21.0	212±35.7^{B}	167±13.9	258±35.6^{A}	282±33.0	0.0303	
22:5n6	302±45.5^{B}	259±46.9	402±34.6^{A}	390±39.0	103±21.8^{C}	125±14.2	<0.0001	
22:6n3	3800±352^{A}	1777±188	2156±218^{B}	1279±61.6	2774±211^{A}	1712±122	0.0001	<0.0001
24:0	3979±462	3253±224	3427±381	3396±257	3698±295	3728±208		
24:1	1655±117^{A}	1421±79.0	800±34.9^{B}	829±69.9	921±58.9^{B}	981±50.6	<0.0001	
n6/n3 ratio	8.59±0.246^{C}	16.2±0.545	12.7±0.897^{A}	22±0.745	9.73±0.493^{B}	16.9±0.293	<0.0001	<0.0001

†P values listed across diet and sex effects are the P value for a diet x sex interaction when there was a significant interaction or the P value for the Wilcoxin test if the data were not normally distributed.

Differing UPPER case superscript letters shown on the female values within a row indicated differences between diets. Differing lower case superscript letters within a row indicate differences between means.

Values are mean±SE (*n*=5-6).

Supplemental Table S9. Liver phospholipid fatty acids in rats given control, LA and LA+ALA diets for six weeks

Diet	Adequate LA		High LA		High LA+ALA			
Sex	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Diet**	**Sex**
				µg/g tissue				
14:0	68.4±16.8	134±9.53	98.2±10.3	164±29.8	61.5±2.76	141±15.2		<0.0001
16:0	7698±527	9709±625	8131±514	11129±726	7954±257	10863±479		<0.0001
16:1	310±30.9^{b}	466±101^{a}	180±14.1^{b}	576±45.9^{a}	207±24.4^{b}	572±30.2^{a}	0.0469†	
17:0	113±22.2^{B}	69.7±13.2	187±17.2^{A}	108±18.2	1234±11.4^{AB}	110±13.7	0.0074	0.0019
18:0	20612±4601	15148±1707	24802±1828	14828±1187	24143±1661	11795±1037		<0.0001
18:1	1928±57.5^{A}	2678±181	1233±94.5^{B}	1794±127	1185±77.6^{B}	1788±81.8	<0.0001	<0.0001
18:2n6	4435±411^{B}	5147±549	6930±511^{A}	7650±799	6701±406^{A}	7643±580	<0.0001	0.093
18:3n3	45.9±20.4	48.3±18.1	46.7±17.6	66.5±15.9	74.1±15.1	105±19.7		
18:3n6	39±9.39	129±21.6	87.1±30.4	183±27.8	66.4±11	158±15.1		<.0001
20:0	71.3±7.94^{B}	62.1±7.61	95.8±4.86^{A}	88.6±15.4	75.9±7.96^{AB}	70.5±9.3	0.0454	
20:1	90.6±10.4	111±8.1	82±4.14	110±16.5	71.5±7.97	132±15.6		0.0006
20:2n6	166±29.1^{B}	155±12.2	438±30^{A}	469±77.4	316±15.4^{A}	439±59.4	<0.0001	
20:3n3	50.3±18^{B}	18.3±7.73	24.8±1.29^{B}	26.8±4.97	62.7±6.97^{A}	69.2±12.2	0.0002	
20:3n6	651±44.1	1501±207	690±175	1279±112	869±140	1588±122		<0.0001
20:4n6	18705±726^{B}	15177±635	22598±1918^{A}	20745±1695	18717±971^{B}	16745±1115	0.0019	0.0136
20:5n3	251±65.5^{A}	190±39	61.9±7.96^{B}	94.1±30.1	273±36.1^{A}	214±22.6	<0.0001	
22:0	351±57.9	290±39.9	363±52.7	284±49.2	360±27.7	318±43.6		
22:1	34.9±19.8	205±84	67.6±58.6	140±76.8	33.2±19.8	196±46.9		0.0068
22:2n6	326±198	246±120	406±246	31.4±17.1	465±195	51.6±39.4		0.0348
22:4n6	300±55.7^{bc}	260±18^{bc}	446±90.2^{ab}	545±93.7^{a}	240±36.4^{c}	351±58.6^{bc}	0.0087	
22:5n3	198±33^{B}	364±51.5	320.2±62.7^{AB}	423±72.7	386±55.1^{A}	608±79.3	0.003	0.001
22:5n6	871±136^{B}	799±69.5	938±90^{A}	1547±200	502±35.3^{C}	488±101	<0.0001	
22:6n3	8199±938	4638±257	7296±746	3986±377	7683±555	4377±428		<0.0001
24:0	808±100	411±19.9	872±60.2	537±55.4	791±48.9	475±36.4		<0.0001
24:1	521±63.9^{A}	259±14.4	341±31.2^{B}	227±18.5	277±32.2^{C}	164±10.1	<0.0001	<0.0001
n6/n3 ratio	3.28±0.072^{d}	4.55±0.08^{bc}	4.32±0.264^{c}	6.82±0.532^{a}	3.34±0.093^{d}	5.31±0.252^{b}	<0.0001	

†P values listed across diet and sex effects are the P value for a diet x sex interaction when there was a significant interaction or the P value for the Wilcoxin test if the data were not normally distributed.

Differing UPPER case superscript letters shown on the female values within a row indicated differences between diets. Differing lower case superscript letters within a row indicate differences between means.

Values are mean±SE (*n*=5-6).

Supplemental Table S10. Serum total fatty acids in rats given control, LA and LA+ALA diets for six weeks

Diet	Adequate LA		High LA		High LA+ALA			
Sex	**Female**	**Male**	**Female**	**Male**	**Female**	**Male**	**Diet**	**Sex**
				µg/mL				
14:0	26.8±1.94^{A}	32.5±7.19	25±6.84^{A}	39.2±7.11	10.9±1.91^{B}	19.9±4.66	0.009	
16:0	826±107^{A}	753±59.3	419±92.7^{B}	561±87.2	677±70.4^{AB}	586±94.5	0.0073	
16:1	78.3±12.5^{ba}	103±17.4^{a}	16.8±3.28^{d}	54.9±8.65^{bc}	34.8±4.64^{c}	67.7±13.9^{ba}	0.045†	
17:0	5.37±1.15	3.22±0.940	4.23±1.35	1.81±0.120	4.08±0.97	3.27±0.630		
18:0	640±77.1^{A}	345±39.7	377±51.7^{B}	313±61.2	665±44.3^{A}	305±59.9	0.0335	<0.0001
18:1	1293±192^{A}	976±146	295±68.6^{C}	365±66.5	606±58.9^{B}	477±65.7	<0.0001	
18:2n6	548±54.6^{B}	645±45.5	750±158^{AB}	842±106	1036±101^{A}	839±135	0.0178	
18:3n3	27.1±3.2^{B}	38.7±5.12	23.1±5.78^{B}	25.3±4.11	68.7±10.7^{A}	62.8±12.0	0.0001	
18:3n6	8.42±1.24	7.57±1.01	7.26±0.630	5.69±1.05	9.52±0.73	5.46±0.950		0.0108
20:0	4.85±0.33	5.86±0.510	4.27±0.860	4.26±0.58	5.37±0.49	4.94±0.760		
20:1	7.58±1.27^{A}	9.37±1.57	1.69±0.640^{C}	3.72±0.900	4.23±0.46^{B}	4.61±1.08	<0.0001	
20:2n6	4.09±0.260^{c}	7.54±0.440^{bc}	9.14±2.39^{b}	13.8±1.29^{a}	8.94±0.470^{b}	10.2±1.49^{ab}	0.0031	
20:3n3	0.48±0.1^{B}	0.87±0.29	2.35±1.91^{A}	5.49±2.14	0.81±0.1^{AB}	2.65±1.11	0.0371	0.0125
20:3n6	16±1.44^{b}	27.4±4.65^{a}	10.7±1.52^{c}	14.5±1.98^{bc}	20.02±0.97^{ba}	16.5±3.21^{bc}	0.0413	
20:4n6	884±117	605±68.3	591±60.7	602±105	885±91.7	594±107		0.0208
20:5n3	11.0±1.55^{A}	10.5±1.81	2.82±0.460^{B}	1.93±0.23	13.6±0.85^{A}	6.83±1.03	<0.0001	0.0063
22:0	6.41±0.32^{B}	7.48±0.38	6.33±0.87^{B}	8.06±0.82	10.7±0.55^{A}	10.3±1.77	0.0006	
22:1	0.910±0.06	0.770±0.200	0.640±0.120	0.330±0.270	0.870±0.0800	0.540±0.110		
22:2n6	0.700±0.660	0.480±0.380	0.110±0.0800	0.160±0.160	0.770±0.660	0.120±0.0800		
22:4n6	6.96±0.410^{B}	9.91±0.59	23.2±4.32^{A}	23.3±4.08	7.82±0.63^{B}	12.8±1.86	<0.0001	0.0155
22:5n3	5.21±0.66^{B}	10.2±1.01	5.55±0.93^{B}	7.43±1.02	9.3±0.62^{A}	12.6±1.79	0.0017	0.0009
22:5n6	20.5±2.17^{A}	18.1±2.78	13.9±1.41^{A}	23.8±3.43	11.9±1.15^{B}	11.2±3.07	0.0064	
22:6n3	152±18.0^{A}	79.7±5.78	84.5±11.8^{B}	59.4±10.1	173±16.8^{A}	68.4±9.55	0.0018	<0.0001
24:0	12.1±1.73	10.7±0.600	11.3±1.35	10.8±1.57	13.4±0.43	10.6±1.95		
24:1	12.7±0.94	13.8±1.81	8.45±0.73	11.1±1.57	10.4±1.31	12.8±4.06		
n6/n3 ratio	7.35±0.515^{B}	9.50±0.581	11.9±0.461^{A}	14.9±0.811	7.48±0.221^{B}	8.94±0.717	<0.0001	0.0001

†P values listed across diet and sex effects are the P value for a diet x sex interaction when there was a significant interaction or the P value for the Wilcoxin test if the data were not normally distributed.

Differing UPPER case superscript letters shown on the female values within a row indicated differences between diets. Differing lower case superscript letters within a row indicate differences between means.

Values are mean±SE (*n*=5-6).

Supplemental Table S11. Oxylipin/PUFA ratios for enzymes in kidney, liver and serum in rats given control, LA and LA+ALA diets for six weeks

A. COX-PGE synthase

		PGE_2/AA		PGE_1/DGLA		PGE_3/EPA			
		Female	Male	Female	Male	Female	Male	Effect	
Tissue	Diet	nmol/mol						Ratio	Sex
Kidney	Control	8.37±1.46^{C}	8.12±1.41	24.3±5.35^{B}	27.0±4.11	90.3±18.7^{A}	135±28	<.0001	
	LA	9.75±1.04^{C}	8.38±1.27	38.9±2.88^{B}	41.7±5.98	178±46.3^{A}	267±33	<.0001	
	LA+ALA	8.80±2.61^{C}	7.86±1.13	33.7±9.03^{B}	39.5±6.53	200±101^{A}	195±23.9	<.0001	
Liver	Control	7.01±1.53^{c}	14.1±1.54^{c}			49.1±17.7^{b}	272±44^{a}	0.0271†	
	LA	8.46±1.72^{B}	10.1±0.70			286±88^{A}	441±123	<.0001	
	LA+ALA	5.67±0.85^{B}	11.7±1.95			78.1±16^{A}	310±57.3	<.0001	<.0001
Serum	Control	3.85±1.09	10.5±3.04						0.0491
	LA	7.00±2.66	13.5±5.38						
	LA+ALA	5.03±2.81	8.17±1.71						

B. 5-LOX

		5-HETE/AA		9-HODE/LA		9-HOTrE/ALA		5-HEPE/EPA		7-HDoHE/DHA			
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Effect	
Tissue	Diet	nmol/mol										Ratio	Sex
Kidney	Control	111±12.5^{ef}	161±17.4^{e}	1010±96.2^{c}	1070±168^{c}	3200±749^{b}	8910±2020^{a}	649±132^{d}	1400±105^{c}	68.6±9.52^{g}	86.5±6.68^{fg}	0.0086	
	LA	49.2±0.32^{C}	77.7±0.55	400±164^{B}	617±176	954±3.58^{A}	3400±4.11	706±6.92^{B}	844±1.8	33.1±0.44^{D}	173±2.17	<.0001	0.0438
	LA+ALA	160±22.7^{C}	182±21.5	1610±334^{B}	2110±376	3480±688^{A}	9290±2590	874±115^{B}	2030±508	129±19.6^{C}	113±6.3	<.0001	0.0016
Liver	Control	1.07±0.44^{E}	2.07±0.47	751±164^{B}	980±176	7860±2250^{A}	10400±2400	188±45.9^{C}	568±195	19.8±4.01^{D}	31.4±3.32	<.0001	0.0009
	LA	62.2±16.7^{D}	83.4±7.29	1440±381^{B}	1330±173	4720±1220^{A}	10300±2000	612±178^{C}	872±200	31.6±11.0^{E}	42.5±11.6	<.0001	0.0275
	LA+ALA	41.1±6.47^{D}	86.6±19.3	891±196^{B}	1530±362	14300±3870^{A}	22100±6250	187±37.9^{C}	530±101	16.2±1.14^{E}	40.4±8.85	<.0001	<.0001
Serum	Control	2.41±0.32^{d}	5.55±0.55^{c}	25.6±6.92^{a}	24.1±1.8^{a}	18.8±3.58^{ba}	21.9±4.11^{a}	4.97±0.44^{c}	13.7±2.17^{b}	1.33±0.14^{e}	1.87±0.26^{ed}	0.0065	
	LA	4.36±1.00^{B}	8.85±1.94	31.4±9.03^{A}	29.6±7.65	37.2±11.9^{A}	33.2±13.9	29.6±10.4^{A}	51.1±6.84	1.98±0.54^{C}	2.37±0.48	<.0001	
	LA+ALA	2.10±0.08^{B}	8.60±2.06	9.60±1.85^{A}	16.2±3.76	14.7±4.99^{A}	17.7±5.92	6.00±1.22^{A}	22.4±3.85	1.79±0.77^{C}	2.62±0.52	<.0001	<.0001

C. 12-LOX

		12-HETE/AA		12-HEPE/EPA		14-HDoHE/DHA			
		Female	Male	Female	Male	Female	Male	Effect	
Tissue	Diet	nmol/mol						Ratio	Sex
Kidney	Control	41.2±2.25^{B}	61.0±6.67	222±26.3^{A}	420±38.7	282±31.7^{A}	386±56.4	<.0001	0.0001
	LA	78.3±16.8^{B}	97.8±11.1	512±132^{A}	947±222	372±37.7^{A}	607±104	<.0001	0.0069
	LA+ALA	98.0±25.1^{B}	106±20.0	464±95.0^{A}	901±108	780±198^{A}	662±100	<.0001	
Liver	Control	168±36.5^{B}	187±44.3	927±85.2^{A}	920±209	148±35.6^{B}	184±32.5	<.0001	
	LA	92.0±43.3^{B}	138±20.6	2540±958^{A}	2020±451	161±66.3^{B}	142±22.9	<.0001	
	LA+ALA	140±23.1^{B}	217±63.5	986±253^{A}	1990±697	121±13.2^{B}	219±41.3	<.0001	0.025
Serum	Control	140±34.9^{A}	279±41.9	194±47.6^{A}	523±153	27.9±6.63^{B}	63.0±12.9	<.0001	0.0002
	LA	247±63.4^{B}	305±60.1	909±339^{A}	1190±191	47.2±13.0^{C}	63.2±10.4	<.0001	
	LA+ALA	102±15.3^{B}	289±41.9	217±35.7^{A}	761±132	18.5±2.63^{C}	63.8±14.8	<.0001	<.0001

D.15-LOX

		15-HETE/AA		13-HODE/LA		15-HETrE/DGLA		13-HOTrE/ALA		15-HEPE/EPA		17-HDoHE/DHA			
		Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male		
Tissue	Diet	nmol/mol												Ratio	Sex
Kidney	Control	114±10.7^{g}	122±30.7^{g}	557±85.1^{dc}	681±113^{c}	374±13.2^{de}	303 ±29.7^{fe}	1530±257^{b}	3760±960^{a}	219±20.2^{f}	376±41.5^{de}	453±71.3^{dce}	490±86.1^{dce}	0.0331	
	LA	209±12.8^{D}	227±43.3	1230±89.5^{B}	1300±185	579±30.7^{C}	558±104	2150±336^{A}	4480±957	516±41.6^{C}	698±75.7	652±77.9^{C}	1120±348	<.0001	
	LA+ALA	157±29.4^{D}	167±32.4	992±192^{B}	1440±298	508±94.2^{C}	611±133	2420±424^{A}	6090±1610	358±16.5^{C}	693±98.8	1360±422^{B}	825±167	<.0001	0.0221
Liver	Control	79.1±19.1^{h}	189±38.3^{gf}	332±85.2^{ef}	463±91.6^{cd}	971±207^{abc}	656±174^{bcd}	1050±170^{ab}	1810±412^{a}	549±28.9^{bcd}	544±104^{cde}	104±16.6^{gh}	200±25.6^{f}	0.0465	
	LA	88.5±13.8^{e}	101±8.43^{e}	725±198c^{d}	548±80.5^{d}	1560±573^{bcd}	666±134^{cd}	12300±3830^{a}	1860±235^{b}	1220±429^{cd}	1580±444^{cb}	189±54.1^{e}	191±34.3^{e}	0.0057	
	LA+ALA	85.2±12.4^{D}	136±25.4	380±78.9^{B}	636±147	695±122^{B}	600±201	2230±393^{A}	3570±970	572±178^{B}	1300±529	154±29.4^{C}	304±35.2	<.0001	0.0012
Serum	Control	9.11±2.24^{d}	23.4±3.74^{bc}	15.6±4.02^{c}	16.2±1.66^{c}	23.5±4.53^{bc}	42.6±12^{ba}	35.2±10.0^{b}	33.8±7.26^{b}	5.69±0.82^{d}	14.9±1.81^{c}	22.4±3.02^{bc}	58.9±7.05^{a}	0.0253	
	LA	14.8±4.28^{e}	27.7±7.87^{bdec}	20.7±5.79^{de}	18.8±4.45^{dec}	49.6±15.7^{bac}	58.2±12.3^{ba}	49.7±15.9^{bac}	42.1±16.2^{bdac}	16.4±4.9^{e}	40.7±7.14^{bac}	37.6±4.96^{bac}	71.9±10.9^{a}	0.0003	0.0102
	LA+ALA	11.9±5.91^{B}	23.0±3.32	7.04±1.32^{B}	23.1±10.8	12.0±4.07^{B}	42.4±7.77	14.1±7.62^{B}	24.1±6.17	9.30±4.30^{B}	27.1±5.49	37.6±6.17^{A}	80.9±14.8	<.0001	<.0001

E. CYP Hydroxylase

		18-HETE/AA		18-HEPE/EPA		20-HDoHE/DHA			
		Female	Male	Female	Male	Female	Male	Effect	
Tissue	Diet	nmol/mol						Ratio	Sex
Kidney	Control	0.52±0.10^{B}	0.41±0.08	603±104^{A}	787±127	760±102^{A}	990±110	<.0001	
	LA	0.52±0.12^{B}	0.59±0.05	1440±119^{A}	1000±187	934±140^{A}	1130±188	<.0001	
	LA+ALA	0.53±0.07^{c}	0.49±0.07^{c}	869±116^{b}	1600±260^{a}	1640±316^{a}	1180±116^{ab}	0.0246	
Liver	Control	1.01±0.23^{B}	2.95±0.74	161±35.4^{A}	408±149	104±28.4^{A}	251±47.9	<.0001	0.0003
	LA	2.95±1.19^{C}	2.34±0.87	636±115^{A}	508±117	144±51.7^{B}	215±32.1	<.0001	
	LA+ALA	0.88±0.22^{C}	1.97±0.67	136±11.1^{A}	464±106	99.1±7.25^{B}	256±54.8	<.0001	<.0001
Serum	Control	0.16±0.02^{C}	0.29±0.04	5.42±0.56^{A}	11.0±1.89	3.13±0.29^{B}	6.79±1.31	<.0001	<.0001
	LA	0.36±0.10^{C}	0.53±0.08	21.9±10.0^{A}	33.5±7.80	6.57±2.24^{B}	8.81±1.42	<.0001	0.0145
	LA+ALA	0.18±0.03^{C}	0.82±0.25	5.39±0.84^{A}	28.9±6.67	3.26±0.35^{B}	10.1±2.36	<.0001	<.0001

F. CYP Epoxygenase

		5,6-DiHETE/AA		12,13-DiHOME/LA		12,13-DiHODE/ALA		19,20-DiHDoPE/DHA			
		Female	Male	Female	Male	Female	Male	Female	Male	Effect	
Tissue	Diet	Unit: nmol/mol								Ratio	Sex
Kidney	Control	1800±320^{C}	2280±500	10800±2230^{B}	8870±1780	65500±16000^{A}	167000±50900	18800±6670^{B}	14200±2640	<.0001	
	LA	2710±1060^{C}	3330±760	10200±900^{B}	12500±1580	59900±14100^{A}	61200±12800	12100±820^{B}	14500±1790	<.0001	
	LA+ALA	2240±660^{D}	3020±820	10200±1440^{C}	14900±3850	74900±7700^{A}	179000±53900	24200±5890^{B}	15000±1440	<.0001	
Liver	Control	3740±1400^{C}	12200±2790	32000±8080^{A}	121000±23800			12200±2750^{B}	68800±11200	<.0001	<.0001
	LA	3090±410^{C}	14500±3280	43600±9870^{A}	157000±42500			11400±1850^{B}	53400±9670	<.0001	<.0001
	LA+ALA	2240±290^{C}	12000±1980	31400±4220^{A}	115000±21000			10900±1160^{B}	54000±8450	<.0001	<.0001
Serum	Control	430±80^{e}	1780±370^{d}	2440±410^{bcd}	2260±580^{cd}	4240±1220^{a}	3090±570^{cd}	3290±560^{bc}	5680±1290^{a}	0.0006	
	LA	950±210^{c}	2540±550^{b}	3860±800^{ab}	2530±580^{b}	6960±2170^{a}	4500±960^{ab}	4390±1300^{ab}	5940±890^{a}	0.0407	
	LA+ALA	200±100^{d}	2680±1010^{c}	3360±930^{bc}	2120±730^{c}	58800±22400^{a}	1740±500^{c}	1170±380^{c}	9430±1710^{b}	<.0001	

†P values listed across ratio and sex effects are the P value for a ratio x sex interaction when there was a significant interaction or the P value for the Wilcoxin test if the data were not normally distributed.
Differing UPPER case superscript letters shown on the female values within a row indicate differences between oxylipin/PUFA ratios.
Differing lower case superscript letters within a row indicate differences between means.
Values are mean±SE (*n*=4-6); FA, fatty acid