

Supplemental Table S1: Liver oxylipins in reference, tumor, chemotherapy, and fish oil group animals.

Oxylipins (pg/mg)	PUFA	Reference	Tumor	Chemo	Fish Oil	P-value
9-HODE	LA	116±18.3 ^a	143±15.1 ^a	133±30.4 ^a	79.1±18.8 ^b	<.001
9-OxoODE		108±14.7	89.5±17.4	88.6±21.8	62.2±21.6	0.016
13-HODE		116±25.7 ^a	122±10.4 ^a	127±29.4 ^a	68.9±15.0 ^b	<.001
13-OxoODE		31.1±8.42 ^a	27.3±8.51 ^a	24.1±7.30 ^a	13.8±2.92 ^b	0.004
9,10,13-TriHOME		50.0±11.3 ^a	50.7±8.42 ^a	66.4±29.7 ^a	28.4±2.52 ^b	0.002
9,12,13-TriHOME		16.2±2.94 ^a	16.7±2.71 ^a	22.0±10.9 ^a	9.56±1.21 ^b	0.002
9,10-DiHOME		11.2±4.65	11.9±3.77	14.3±5.75	5.87±1.16	0.015
12,13-DiHOME		7.32±2.02	6.71±0.93	6.25±1.55	4.97±1.82	0.126
9,10-EpOME		2.75±1.45	2.30±0.99	1.66±0.64	1.02±0.54	0.013
13-HOTrE-γ	GLA	5.89±1.82 ^a	6.74±1.45 ^a	5.47±1.65 ^a	1.99±0.41 ^b	<.001
PGD ₁	DGLA	1.44±0.42 ^a	1.31±0.26 ^a	1.34±0.39 ^a	0.32±0.29 ^b	<.001
15k-PGE ₁		0.17±0.03 ^a	0.17±0.02 ^a	0.15±0.01 ^a	0.11±0.03 ^b	<.001
8-HETrE		2.35±0.53 ^a	2.09±0.65 ^{ab}	1.58±0.44 ^{bc}	1.26±0.33 ^c	0.006
15-HETrE		9.76±2.43 ^a	11.0±1.29 ^a	9.17±2.57 ^a	6.33±1.23 ^b	0.006
PGA ₂		0.64±0.26 ^b	0.68±0.22 ^b	1.56±1.36 ^a	0.69±0.38 ^b	<.001
PGD ₂	AA	43.8±7.52 ^a	36.7±8.01 ^a	46.9±17.5 ^a	13.8±4.59 ^b	<.001
15Δ-PGD ₂		0.12±0.03	0.14±0.03	0.19±0.11	0.10±0.06	0.112
PGE ₂		16.3±4.46 ^a	15.1±1.94 ^a	17.5±4.16 ^a	5.51±1.17 ^b	<.001
11β-PGE ₂		4.60±1.17 ^a	4.10±0.51 ^a	4.69±1.07 ^a	1.53±0.34 ^b	<.001
15k-PGE ₂		6.44±2.06 ^a	5.71±1.09 ^a	5.41±1.18 ^a	2.27±0.61 ^b	<.001
PGF _{2α}		48.0±12.0 ^a	45.8±5.34 ^a	51.8±10.9 ^a	16.8±2.86 ^b	0.003
Dhk-PGF _{2α}		1.29±0.58 ^{ab}	2.15±0.41 ^a	1.50±0.45 ^{ab}	0.27±0.59 ^b	<.001
6k-PGF _{1α}		4.37±1.60 ^b	4.47±0.78 ^b	6.32±3.69 ^a	1.72±0.44 ^c	<.001
15k-PGF _{2α}		22.3±6.26 ^a	21.8±2.86 ^a	21.7±4.74 ^a	8.69±2.49 ^a	<.001
PGJ ₂		0.40±0.13	0.42±0.13	0.83±0.69	0.40±0.20	0.381
15Δ-PGJ ₂		1.67±1.14	1.66±0.93	5.20±4.00	1.31±1.08	0.095
TXB ₂		19.7±3.30 ^{ab}	15.4±2.38 ^b	24.8±8.50 ^a	5.87±2.22 ^c	<.001
12-HHTrE		289±49.4 ^a	298±56.0 ^a	316±57.4 ^a	102±25.7 ^b	<.001
5-HETE		21.9±1.73 ^a	17.8±1.93 ^b	16.5±1.57 ^b	10.3±1.28 ^c	<.001
5-OxoETE		8.46±1.49 ^a	5.98±1.46 ^b	6.40±1.68 ^b	3.59±0.75 ^c	<.001
8-HETE		27.0±5.00 ^a	24.2±7.72 ^{ab}	18.1±6.24 ^{bc}	11.9±2.53 ^c	0.001
9-HETE		29.0±6.11 ^a	22.7±5.04 ^b	21.2±4.46 ^b	14.0±3.57 ^c	<.001
11-HETE		29.1±8.32	29.3±5.36	25.2±8.49	16.7±3.95	0.018
12-HETE		48.4±11.5 ^a	39.7±7.90 ^a	27.8±8.52 ^{ab}	17.0±6.93 ^c	<.001
12-OxoETE		46.1±14.3 ^a	32.7±8.28 ^b	31.6±9.78 ^b	13.3±2.26 ^c	<.001
15-HETE		43.9±6.83 ^a	47.7±8.13 ^a	45.6±17.1 ^a	26.7±5.83 ^b	<.001
15-OxoETE		5.24±1.33 ^a	3.68±0.96 ^b	3.49±1.16 ^b	2.53±0.73 ^b	0.004
5,15-DiHETE		0.82±0.23	0.94±0.39	0.77±0.15	1.94±1.50	0.663

8,15-DiHETE		7.96±1.28	8.62±2.64	8.09±2.00	7.65±2.54	0.895
5,6-DiHETrE		1.71±0.52 ^a	1.39±0.22 ^{ab}	1.07±0.13 ^{bc}	0.96±0.31 ^c	0.002
8,9-DiHETrE		4.65±1.72	4.47±0.91	5.41±1.49	3.02±0.77	0.039
11,12-DiHETrE		5.42±1.93	5.03±1.15	6.56±2.81	2.65±0.79	0.017
14,15-DiHETrE		5.31±1.40	4.72±0.61	5.37±1.86	3.25±0.98	0.048
5,6-EpETrE		4.66±1.01 ^a	4.05±1.28 ^a	3.84±0.93 ^a	1.85±0.53 ^b	<.001
11,12-EpETrE		2.02±0.84 ^a	1.63±0.61 ^{ab}	1.14±0.50 ^{bc}	0.55±0.19 ^c	0.002
14,15-EpETrE		0.58±0.34	0.40±0.11	0.31±0.17	0.24±0.13	0.030
16-HETE		15.3±3.08	22.4±6.19	14.9±7.94	14.9±9.10	0.222
17-HETE		0.82±0.27	0.87±0.34	0.73±0.56	0.74±0.48	0.938
18-HETE		1.67±0.45	1.18±0.42	1.16±0.38	1.23±0.55	0.207
20-HETE		11.0±1.41	9.55±1.41	8.86±1.51	7.47±3.46	0.064
8-Iso-PGF _{2α} III*		1.35±0.21 ^a	1.37±0.16 ^a	1.39±0.42 ^a	0.74±0.29 ^b	0.003
9-HOTrE	ALA	3.54±0.59 ^a	4.53±0.66 ^a	4.12±1.26 ^a	2.15±0.40 ^b	<.001
9-OxoOTrE		2.69±1.64	1.57±0.50	1.68±0.59	2.15±0.64	0.295
13-HOTrE		4.02±0.74 ^b	5.33±1.02 ^a	4.54±0.62 ^{ab}	2.87±0.66 ^c	<.001
PGE ₃	EPA	1.49±0.43 ^b	1.45±0.53 ^b	1.48±0.46 ^b	6.38±3.19 ^a	0.005
PGF _{3α}		2.24±0.67 ^b	1.61±0.33 ^b	1.48±0.27 ^b	7.26±3.25 ^a	0.001
TXB ₃		0.19±0.13 ^{bc}	0.01±0.07 ^d	0.12±0.08 ^{bcd}	1.23±0.42 ^a	<0.001
8-HEPE		1.95±0.92 ^b	2.10±0.58 ^b	1.98±0.50 ^b	15.6±2.90 ^a	0.004
11-HEPE		5.62±2.18 ^b	5.15±1.19 ^b	2.78±1.00 ^c	30.0±12.7 ^a	<0.001
12-HEPE		6.91±1.41 ^b	5.23±1.15 ^b	2.35±0.67 ^c	30.7±9.81 ^a	<.001
15-HEPE		5.53±2.26 ^b	5.21±1.27 ^b	3.70±1.43 ^b	51.2±22.9 ^a	0.002
14,15-DiHETE		21.9±8.15 ^b	20.4±2.52 ^b	17.9±6.36 ^b	241±51.5 ^a	0.005
17,18-DiHETE		16.7±5.88 ^b	15.6±2.34 ^b	15.2±2.59 ^b	205±61.4 ^a	0.004
18-HEPE		4.55±1.43 ^b	4.12±1.48 ^b	3.29±0.91 ^b	49.5±12.6 ^a	0.002
4-HDoHE	DHA	14.8±2.11 ^b	14.4±2.59 ^b	11.5±1.49 ^b	18.4±4.46 ^a	0.005
7-HDoHE		6.37±0.82 ^b	6.89±2.57 ^b	5.66±1.58 ^b	12.7±1.77 ^a	<.001
8-HDoHE		16.7±3.77	13.5±3.28	11.8±3.75	19.9±6.32	0.028
10-HDoHE		4.68±0.92 ^{bc}	5.11±1.06 ^b	3.71±0.58 ^c	6.68±2.72 ^a	<.001
11-HDoHE		7.43±1.18 ^b	7.67±1.53 ^b	5.98±0.99 ^b	9.94±2.86 ^a	0.010
13-HDoHE		12.3±4.91 ^b	11.1±1.23 ^b	9.45±4.04 ^c	16.8±4.11 ^a	<.001
14-HDoHE		9.55±1.63 ^b	10.5±2.78 ^{ab}	7.46±2.22 ^c	14.5±4.52 ^a	0.006
16-HDoHE		7.94±1.11 ^b	7.80±1.34 ^b	5.98±0.91 ^c	11.1±2.34 ^a	<.001
17-HDoHE		24.1±5.93 ^{ab}	28.3±7.72 ^a	20.4±4.60 ^{bc}	35.9±11.4 ^a	0.003
16,17-DiHDoPE		0.87±0.19 ^b	0.83±0.11 ^b	1.05±0.12 ^b	1.34±0.35 ^a	0.003
19,20-DiHDoPE		2.30±0.75	2.43±0.44	2.42±0.92	3.22±1.05	0.254
20-HDoHE		11.8±1.99 ^b	11.1±1.81 ^b	9.86±2.19 ^b	16.7±3.64 ^a	<.001

Values are expressed as mean ng/g tissue ± SD. Differing lower case superscript letters indicate significant simple effect differences between values (p<0.008). Reference, healthy rats did not undergo tumor implantation nor received chemotherapy, consumed control diet only; Tumor, tumor bearing

animals did not receive chemotherapy, consumed control diet only; Chemo, tumor bearing animals received chemotherapy, consumed control diet only; Fish Oil, tumor bearing animals received chemotherapy, consumed fish oil diet.

Abbreviations: AA, Arachidonic acid; ALA, Alpha-linolenic acid; D γ LA, Dihomo-gamma-linolenic acid; DHA, Docosahexaenoic acid; DiHDoHE, Dihydroxy-docosahexaenoic acid; DiHDPE, Dihydroxy-docosapentaenoic acid; DiHETrE, Dihydroxy-eicosatrienoic acid; DiHOME, Dihydroxy-octadecenoic acid; EPA, Eicosapentaenoic acid; HDoHE, Hydroxy-docosahexaenoic acid; HEPE, Hydroxy-eicosapentaenoic acid; HETE, Hydroxy-eicosatetraenoic acid; HETrE, Hydroxy-eicosatrienoic acid; HODE, Hydroxy-octadecadienoic acid; HOTrE, Hydroxy-octadecatrienoic acid; k, keto; LA, Linoleic acid; oxo-ETE, oxo-Eicosatetraenoic acid; oxo-ODE, oxo-Octadecadienoic acid; oxo-OTrE, oxo-Octadecatrienoic acid; PG, Prostaglandin; PUFA, polyunsaturated fatty acid; TriHOME, Trihydroxy-octadecenoic acid.

Supplemental Table S2: Liver cytokines.

	Reference	Tumor	Chemo	Chemo+Fish Oil	P-value
Eotaxin	20.63 \pm 1.54 ^{ab}	21.05 \pm 2.66 ^{ab}	22.48 \pm 0.77 ^a	18.81 \pm 2.41 ^b	0.021
IFN- γ	370.1 \pm 21.2	376.7 \pm 23.3	374.8 \pm 73.1	388.9 \pm 40.0	0.872
IL-1 α	154.8 \pm 15.0	167.4 \pm 13.6	186.4 \pm 48.7	181.1 \pm 16.2	0.122
IL-1 β	570.3 \pm 47.9	574.4 \pm 40.2	623.1 \pm 48.5	564.1 \pm 48.3	0.108
IL-6	2956 \pm 507 ^b	2541 \pm 376 ^b	3766 \pm 793 ^a	2857 \pm 688 ^b	0.009
IL-10	296.6 \pm 35.9 ^{ab}	272.5 \pm 28.2 ^b	323.1 \pm 13.5 ^a	293.0 \pm 31.8 ^{ab}	0.038
IL-17A	12.65 \pm 3.71	12.94 \pm 1.72	16.3 \pm 4.84	13.80 \pm 3.84	0.273
IL-18	609.2 \pm 79.9 ^{ab}	662.8 \pm 49.9 ^a	520.8 \pm 85.9 ^{bc}	494.0 \pm 33.8 ^c	<.001
TNF- α	11.53 \pm 2.11 ^b	8.560 \pm 1.06 ^c	16.49 \pm 2.54 ^a	15.26 \pm 2.46 ^a	<.002

Values are expressed as mean pg/mL tissue \pm SD. Differing lower case superscript letters indicate significant simple effect differences between values ($p < 0.05$). Reference, healthy rats did not undergo tumor implantation nor received chemotherapy, consumed control diet only; Tumor, tumor bearing animals did not receive chemotherapy, consumed control diet only; Chemo, tumor bearing animals received chemotherapy, consumed control diet only; Fish Oil, tumor bearing animals received chemotherapy, consumed fish oil diet.

MCP-1 was below the detection limit of the assay for all groups.

Abbreviation: IFN- γ , interferon gamma; IL, interleukin; MCP-1, monocyte chemoattractant protein 1; TNF- α , tumor necrosis factor alpha.