

Table S1: Composition of fatty acid and control diets manufactured for continuous exposure studies by Research Diets Inc (New Brunswick, NJ). Data shown as g/1000g diet except where indicated.

Fatty Acid Gm/kg Diet	AIN	HFO	HFB	HFS	LFO	LFB	LFS
Palmitic	7.3	23.1	53.3	13.7	4.8	9.2	3.3
Oleic	17.0	134.4	53.7	26.4	23.2	11.0	6.9
Linoleic	37.5	33.3	14.3	154.8	11.5	8.8	29.8
Linolenic	5.5	2.4	4.2	1.6	1.3	1.6	1.2
Omega-3 FA	5.5	2.4	4.2	1.6	1.3	1.6	1.2
Sat.	10	28.8	121.7	18.7	6.1	19.7	4.5
MUFA	17	136.9	61.1	26.4	23.6	12.1	6.9
PUFA	43	35.7	18.5	156.4	12.8	10.4	31
Total FA	70.0	201.5	201.5	201.5	42.4	42.4	42.4
tBHQ(mg/kg diet)	1.4	4.10	4.10	4.10	0.86	0.86	0.86
n-6/n-3 (ratio)	6.82	13.71	3.44	95.4	9.08	5.44	25.5
Protein (%)	20.30	23.37	23.37	23.37	19.65	19.65	19.65
Carbohydrate (%)	63.95	46.40	46.40	46.40	67.63	67.63	67.63
Fat (%) - Total	7.00	20.15	20.15	20.15	4.24	4.24	4.24
% Total Fat							
Soybean Oil (%)	100.00	8.57	8.57	8.57	34.25	34.25	34.25
Olive Oil (%)	0.00	91.43	0.00	0.00	65.75	0.00	0.00
Safflower Oil (%)	0.00	0.00	0.00	91.43	0.00	0.00	65.75
Butter, Anhydrous (%)	0.00	0.00	91.43	0.00	0.00	65.75	0.00
kcal/gm	4.00	4.60	4.60	4.60	3.87	3.87	3.87

Figure S1: Genes differentially expressed in fatty diets in comparison to the reference diet at 21 and 50 days. Heatmap depicts differences in average log₂ expression levels with red color representing up-regulation and green color down-regulation of gene expression for fatty acid diets. AIN-93G= reference diet, HFO=39% olive oil diet, HFB= 39% butter diet, HFS= 39% safflower oil diet, LFO=10% olive oil diet, LFB= 10% butter diet, LFS= 10% safflower oil diet.

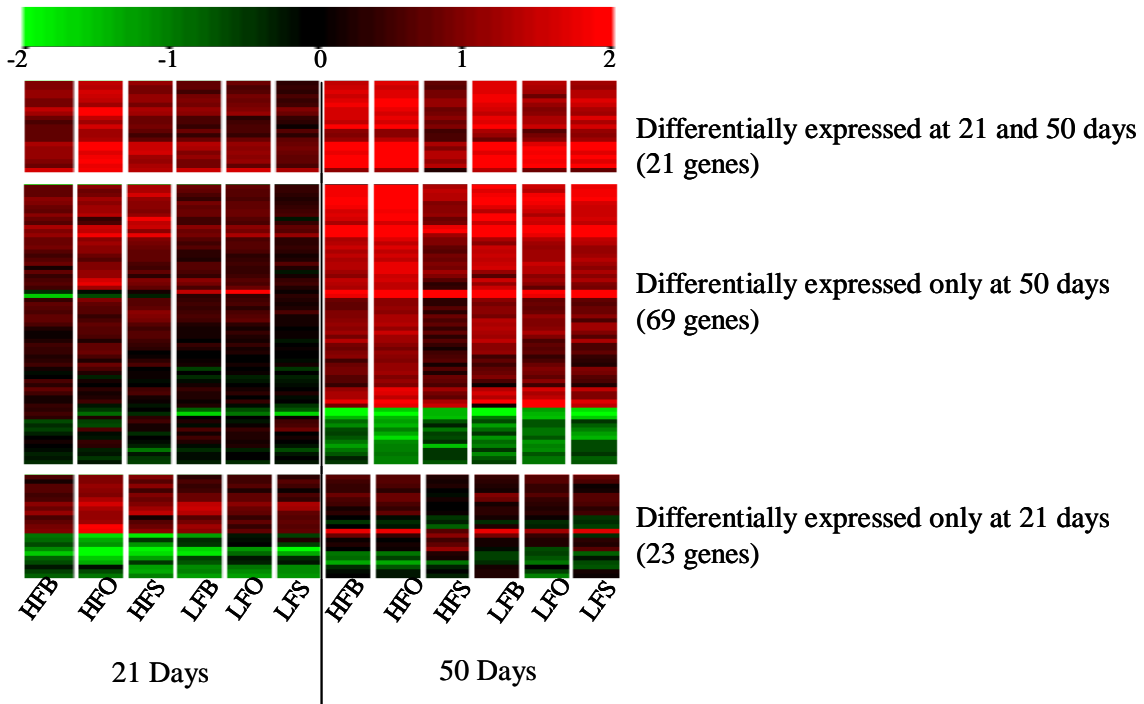


Figure S2: Cell cycle genes disregulated in fatty acid diets in comparison to the reference diet. Bar graphs represent the difference in average \log_2 expression levels between individual fatty diets and the corresponding AIN-93G control group. Red bars represent differences statistically significant at our highest stringency level ($fdr < 0.1$ and two-fold differential expression), green bars represent statistical significance at $\alpha = 0.01$ level.

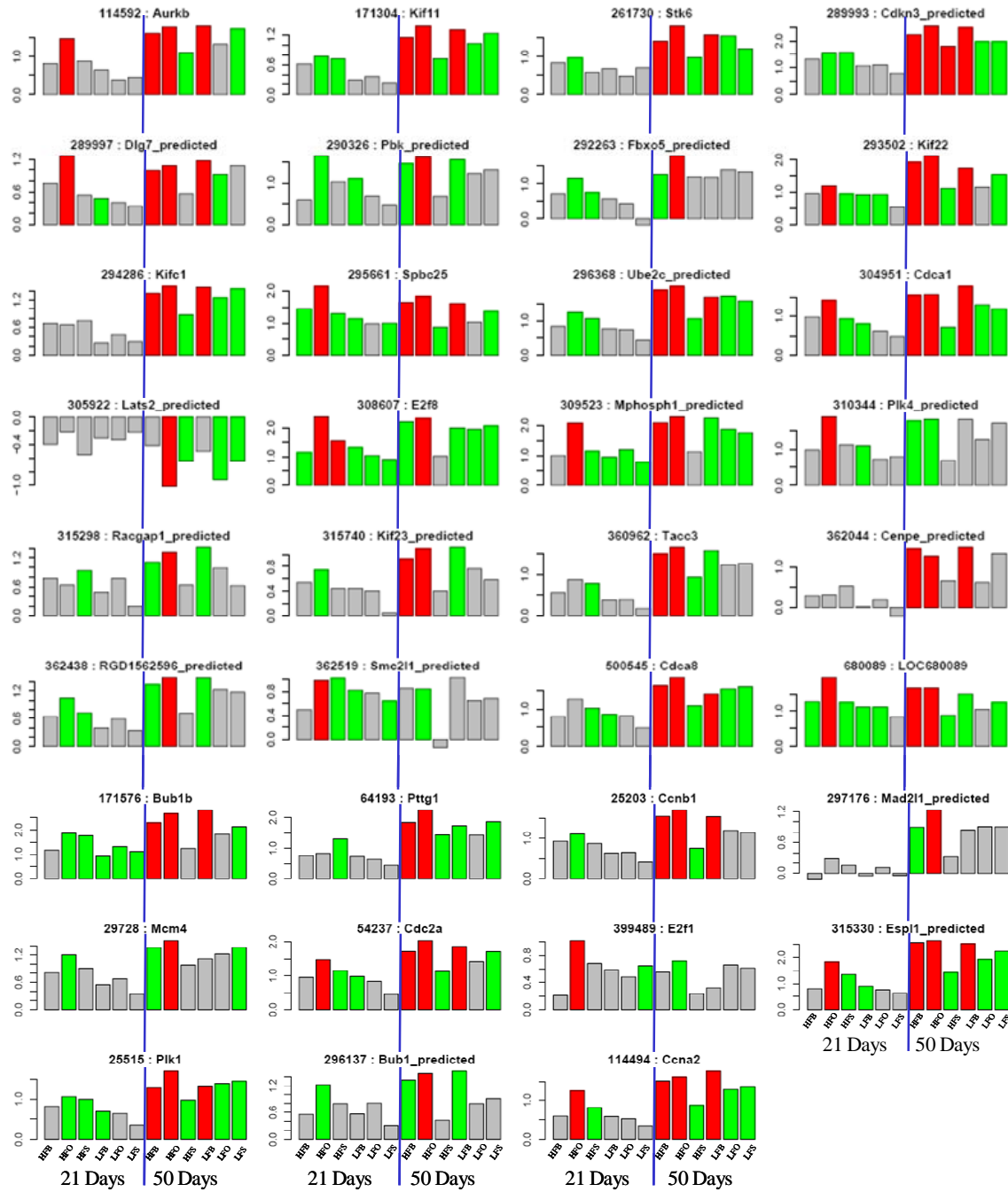


Table S2: Differences in average log2 expression levels between different fatty acid diets and corresponding reference AIN-93G diet for differentially expressed genes

Genes Differentially Expressed at 21 and 50 days		Day 21						Day 50					
Gene ID	Symbol	HFB	HFO	HFS	LFB	LFO	LFS	HFB	HFO	HFS	LFB	LFO	LFS
114494	Ccna2	0.6	1.3	0.8	0.6	0.5	0.3	1.5	1.6	0.9	1.8	1.3	1.4
114592	Aurkb	0.8	1.5	0.9	0.6	0.4	0.4	1.6	1.8	1.1	1.8	1.3	1.7
25448	Fshprh1	0.8	1.2	0.7	0.8	0.6	0.7	1.1	1.1	0.5	1.3	0.7	1.2
289997	Dlg7_predicted	0.8	1.3	0.5	0.5	0.4	0.3	1.0	1.1	0.6	1.2	0.9	1.1
293502	Kif22	1.0	1.2	0.9	0.9	0.9	0.5	1.9	2.1	1.1	1.7	1.2	1.5
295538	Depdc1a_predicted	0.8	1.6	0.9	0.4	0.6	0.1	1.9	2.3	1.0	2.4	1.6	1.7
295661	Spbc25	1.4	2.1	1.3	1.1	1.0	1.0	1.6	1.8	0.9	1.6	1.0	1.4
296060	RGD1309107	1.1	1.6	0.9	0.5	0.7	0.4	1.7	1.7	0.9	1.8	1.2	1.4
303575	RGD1310360	1.1	1.6	1.2	0.9	0.9	0.6	1.6	1.7	0.9	1.9	0.9	1.4
304951	Cdca1	1.0	1.4	0.9	0.8	0.6	0.5	1.5	1.6	0.7	1.8	1.3	1.2
307805	RGD1309383	1.2	1.7	1.6	1.0	1.2	0.8	1.8	2.1	1.4	1.7	1.9	1.7
308607	E2f8	1.1	2.4	1.6	1.3	1.1	0.9	2.2	2.3	1.0	2.0	2.0	2.1
309523	Mphosph1_predicted	1.0	2.1	1.1	0.9	1.2	0.8	2.1	2.3	1.1	2.2	1.8	1.8
310621	lqgap3_predicted	1.6	1.9	1.4	1.6	1.6	1.3	1.1	1.2	0.3	1.4	0.9	0.8
315330	Esp1_predicted	0.8	1.8	1.3	0.9	0.8	0.6	2.6	2.6	1.4	2.5	1.9	2.2
360243	Top2a	0.7	1.3	0.8	0.8	0.8	0.7	1.2	1.4	0.6	0.8	1.1	1.2
360847	Ube2t_predicted	1.0	1.4	1.2	0.7	0.8	0.3	1.5	1.7	0.7	1.7	1.4	1.2
361921	Ect2_predicted	1.3	2.3	1.5	1.4	1.2	0.9	2.2	2.4	1.3	2.3	1.7	2.0
362510	Melk_predicted	1.1	1.9	1.2	1.1	1.1	0.7	2.5	2.4	1.4	2.2	2.1	2.1
54237	Cdc2a	1.0	1.5	1.1	1.0	0.8	0.5	1.7	2.0	1.1	1.9	1.4	1.7
680089	LOC680089	1.3	2.0	1.3	1.1	1.1	0.8	1.7	1.7	0.9	1.5	1.1	1.3

Genes Differentially Expressed at 50, but not 21 days		Day 21						Day 50					
Gene ID	Symbol	HFB	HFO	HFS	LFB	LFO	LFS	HFB	HFO	HFS	LFB	LFO	LFS
171162	Reg3a	0.3	-0.4	0.0	-0.7	-0.6	-0.7	-2.2	-1.6	-1.4	-2.0	-1.2	-1.7
171304	Kif11	0.6	0.8	0.7	0.3	0.4	0.2	1.1	1.4	0.7	1.3	1.0	1.2
171576	Bub1b	1.2	1.9	1.8	0.9	1.3	1.1	2.3	2.7	1.2	2.8	1.8	2.1
192110	Pou3f1	-0.5	0.6	0.2	0.6	0.4	0.8	-0.6	-1.0	-0.9	-0.8	-0.9	-1.0
24268	Cp	-0.1	-0.3	-0.9	-0.4	-0.3	-0.6	-0.9	-1.0	-0.4	-0.4	-1.1	-0.6
24373	Fst	-0.3	-0.2	-0.2	-0.1	0.0	-0.2	-0.7	-0.9	-0.4	-1.1	-0.7	-0.4
24584	Mylpf	-0.4	-0.1	0.2	1.5	2.1	0.1	3.2	4.2	6.3	2.7	4.8	4.7
24618	Pap	0.5	-0.9	-0.3	-1.6	-0.9	-1.7	-3.7	-2.5	-1.4	-2.7	-1.4	-2.8
246268	Oas1b	0.0	0.3	-0.3	-0.1	0.3	-0.2	-1.2	-1.0	-1.5	-1.0	-1.0	-0.6
25202	Gucy1b3	-0.3	-0.1	-0.4	0.2	0.3	0.0	-0.5	-1.4	-0.5	-0.5	-0.9	-1.2
25203	Ccnb1	0.9	1.1	0.9	0.6	0.7	0.4	1.5	1.7	0.8	1.5	1.2	1.1
25261	Id1	0.0	-0.2	-0.1	0.6	0.3	0.2	-0.7	-1.7	-0.6	-1.1	-0.7	-1.4
252915	Mxd3	0.7	0.6	1.5	0.5	0.6	0.4	1.3	1.7	0.9	1.6	1.5	1.5
25515	Plk1	0.8	1.1	1.0	0.7	0.6	0.4	1.3	1.7	1.0	1.3	1.4	1.5
261730	Stk6	0.8	1.0	0.6	0.7	0.5	0.7	1.4	1.8	1.0	1.6	1.6	1.2
289054	Aspm_predicted	1.0	1.5	1.1	0.9	0.9	0.7	2.8	2.9	1.9	2.8	2.2	2.5
289993	Cdkn3_predicted	1.3	1.6	1.6	1.1	1.1	0.8	2.2	2.6	1.8	2.5	2.0	2.0
290326	Pbk_predicted	0.6	1.7	1.0	1.1	0.7	0.5	1.5	1.6	0.7	1.6	1.2	1.3
291441	RGD1310784_predicted	1.1	1.2	1.2	0.5	0.6	0.3	2.6	2.7	1.4	2.7	2.0	2.1
292263	Fbxo5_predicted	0.7	1.2	0.8	0.6	0.4	-0.2	1.3	1.8	1.2	1.2	1.4	1.3
294286	Kifc1	0.7	0.7	0.7	0.3	0.4	0.3	1.3	1.5	0.9	1.5	1.2	1.4
294712	Solt_predicted	0.6	1.8	0.9	0.9	0.6	0.5	1.4	1.5	0.3	1.2	1.1	1.0
29504	Slc22a3	-0.4	-0.6	0.2	-0.1	0.1	0.6	-1.1	-1.4	-0.3	-1.3	-0.6	-0.7
296137	Bub1_predicted	0.6	1.2	0.8	0.6	0.8	0.3	1.3	1.5	0.4	1.5	0.8	0.9
296368	Ube2c_predicted	0.8	1.2	1.1	0.8	0.7	0.4	1.9	2.0	1.0	1.7	1.7	1.6
297176	Mad2l1_predicted	-0.1	0.3	0.2	-0.1	0.1	0.0	0.9	1.2	0.3	0.8	0.9	0.9
29728	Mcm4	0.8	1.2	0.9	0.5	0.7	0.3	1.4	1.5	1.0	1.1	1.2	1.4
298559	Tcea3	0.0	-0.3	0.1	-0.3	-0.3	-0.3	0.6	1.0	0.9	1.0	0.7	0.7
300219	Troap_predicted	0.8	0.7	0.7	0.5	0.6	0.2	0.8	1.0	0.4	0.9	0.8	0.7
303175	Hist3h2ba_predicted	0.7	0.3	0.5	0.5	0.2	0.1	1.2	1.8	1.2	1.4	1.6	1.5
304648	Asf1b_predicted	0.8	1.1	1.3	0.9	0.7	0.5	1.9	2.2	1.3	1.9	1.5	1.8
305922	Lats2_predicted	-0.4	-0.2	-0.5	-0.3	-0.3	-0.2	-0.4	-1.0	-0.6	-0.5	-0.9	-0.6
305984	Cdca2	0.5	1.0	0.7	0.5	0.6	0.3	0.8	1.0	0.4	1.0	0.8	0.8
306464	LOC306464	0.2	0.3	0.2	0.3	0.0	-0.1	1.3	1.5	0.8	1.4	1.5	1.0

Continued Genes Differentially Expressed at 50, but not 21 day

Gene ID	Symbol	Day 21						Day 50					
		HFB	HFO	HFS	LFB	LFO	LFS	HFB	HFO	HFS	LFB	LFO	LFS
311569	Acss2_predicted	-0.6	-0.5	0.5	0.3	-0.2	0.5	-0.9	-1.3	-0.7	-0.6	-0.7	-0.4
311598	RGD1565583_predicted	0.5	0.8	0.4	0.3	0.2	0.1	0.8	0.9	0.2	1.1	0.6	0.6
314675	Btbd11_predicted	0.2	0.4	-0.2	0.3	0.2	0.1	-0.9	-1.0	-0.3	-0.8	-1.1	-0.6
315298	Racgap1_predicted	0.8	0.6	0.9	0.5	0.8	0.2	1.1	1.3	0.6	1.4	1.0	0.6
315740	Kif23_predicted	0.5	0.7	0.4	0.4	0.4	0.1	0.9	1.1	0.4	1.1	0.8	0.6
360962	Tacc3	0.6	0.9	0.8	0.4	0.4	0.2	1.5	1.6	0.9	1.6	1.2	1.3
361047	RGD1307201_predicted	0.2	0.7	0.6	0.2	0.2	0.1	1.1	1.2	0.4	1.4	1.1	1.2
361308	Kif20a_predicted	1.1	1.4	1.1	0.8	0.8	0.6	1.7	2.0	1.2	2.2	1.3	1.5
361416	RGD1310953	0.1	0.7	0.6	0.2	0.4	0.1	1.2	1.5	0.8	1.3	1.3	1.0
361705	Cnih2	0.5	0.8	0.6	0.2	0.2	0.2	0.8	1.2	0.2	0.5	0.8	0.2
362044	Cenpe_predicted	0.3	0.3	0.5	0.0	0.2	-0.2	1.4	1.3	0.7	1.5	0.6	1.3
362438	RGD1562596_predicted	0.6	1.0	0.7	0.4	0.6	0.3	1.3	1.5	0.7	1.5	1.2	1.2
363028	Spbc24_predicted	0.8	0.9	1.6	0.6	0.7	0.4	1.9	2.1	1.4	1.9	1.9	1.9
363093	Mns1	0.2	0.5	0.1	0.1	0.4	0.0	1.8	2.4	1.4	2.0	2.0	1.7
363460	Fgd1	0.3	0.0	-0.1	0.2	-0.1	-0.1	0.4	1.0	0.6	0.1	0.5	0.3
363632	Sox15_predicted	0.4	0.3	0.3	0.1	-0.1	-0.1	0.5	1.0	0.7	0.7	0.6	0.3
364240	Dnajc9_predicted	0.5	1.1	0.4	0.5	0.5	0.2	1.1	1.6	1.0	0.7	1.1	1.1
378947	Bst2	0.4	-0.2	-0.2	0.3	-0.1	-0.4	0.9	1.8	1.5	0.2	2.1	1.5
499204	RGD1559690_predicted	0.2	0.6	0.7	0.2	0.3	0.2	0.9	1.2	0.4	1.2	1.0	0.7
500545	Cdca8	0.8	1.3	1.0	0.8	0.8	0.5	1.6	1.8	1.1	1.4	1.5	1.6
501097	RGD1560271_predicted	0.6	0.2	-0.1	-0.1	-0.2	-0.2	0.7	1.2	0.7	0.6	1.1	0.6
50559	Cte1	0.5	0.9	0.0	0.0	0.3	0.1	1.0	1.1	0.6	1.1	0.8	0.8
58921	Foxm1	0.6	0.7	1.1	0.5	0.6	0.6	1.0	1.1	0.4	1.1	0.8	0.8
58958	Pom210	0.2	0.6	0.1	-0.5	0.0	-0.4	0.9	1.1	0.7	0.7	1.0	1.0
64124	Eltd1	-0.2	-0.5	-0.4	-0.1	0.1	-0.1	-0.3	-1.0	-0.4	-0.7	-0.9	-0.7
64193	Pttg1	0.8	0.8	1.3	0.7	0.6	0.4	1.9	2.3	1.4	1.7	1.4	1.9
654441	Cox6b2	0.5	0.2	0.6	0.3	0.4	0.3	1.3	1.7	0.9	1.7	1.3	1.0
680047	LOC680047	0.4	0.3	0.4	0.0	0.0	0.1	-1.4	-1.4	-1.5	-0.9	-1.5	-1.5
680312	LOC680312	0.9	0.4	1.9	0.5	0.7	-0.2	1.7	2.1	0.9	2.3	1.6	1.7
680531	LOC680531	0.7	0.4	1.0	0.6	0.7	0.2	1.0	1.4	0.8	0.9	1.2	1.1
685462	LOC685462	0.3	0.6	0.1	0.0	0.1	-0.1	1.1	1.1	0.6	0.5	0.5	0.4
689399	LOC689399	1.0	1.1	1.1	0.9	0.8	0.4	2.0	2.2	1.0	2.0	1.9	1.7

Genes Differentially Expressed at 21, but not 50 days

Gene ID	Symbol	Day 21						Day 50					
		HFB	HFO	HFS	LFB	LFO	LFS	HFB	HFO	HFS	LFB	LFO	LFS
114122	Cspg2	0.6	1.3	0.8	0.8	0.7	0.4	0.6	0.8	0.2	0.8	0.4	0.7
24450	Hmgcs2	-0.9	-1.7	-1.8	-1.2	-0.2	-0.6	0.8	0.4	1.1	1.0	0.4	-0.3
25117	Hsd11b2	0.7	1.1	1.1	0.5	0.7	0.5	0.4	0.6	0.3	0.3	0.4	0.2
25675	Hmgcr	0.6	1.1	0.2	0.7	0.4	0.7	0.1	-0.1	-0.4	0.2	0.1	-0.4
25719	Sgne1	-0.2	-0.1	-1.3	-1.0	-0.9	-1.1	-0.3	-0.7	-0.3	0.2	-0.1	-0.7
287678	Krt1-23	-0.5	-0.6	-1.3	-1.0	-1.1	-1.1	-0.1	-0.2	0.0	0.3	-0.5	0.2
287910	Ccl6	-0.6	-1.2	-1.2	-0.4	0.0	-0.5	0.3	0.2	0.8	0.2	0.3	0.3
29168	Ubd	-1.1	-2.1	-1.9	-1.7	-1.2	-2.0	-0.1	0.1	1.2	-0.1	-0.6	0.7
29230	Sqle	0.9	2.0	0.9	1.2	0.5	0.7	0.0	-0.2	-0.7	0.3	-0.3	-0.6
295703	Serping1	-0.7	-1.6	-1.2	-0.5	-0.2	-0.4	-0.8	-0.5	0.2	-0.5	-0.7	-0.2
303330	Tmem97	0.8	1.3	1.3	1.5	0.9	1.3	0.2	0.4	-0.1	0.4	0.3	0.3
305341	Rhoh	-1.6	-2.0	-1.7	-1.8	-0.8	-1.3	-0.9	-0.9	0.3	-0.5	-0.5	-0.7
306748	Cxcl14	-0.6	-1.3	-0.5	-0.7	-0.3	-0.2	-1.3	-1.3	-1.0	-0.4	-0.9	-0.6
310344	Plk4_predicted	1.0	1.9	1.1	1.1	0.7	0.8	1.8	1.8	0.7	1.8	1.3	1.7
360887	Cabc1	-0.8	-1.3	-0.4	-0.4	-0.2	0.3	0.1	0.1	0.5	0.2	0.3	0.3
362519	Smc2l1_predicted	0.5	1.0	1.0	0.8	0.8	0.6	0.8	0.8	-0.1	1.0	0.6	0.7
362605	Tmem54	1.2	1.2	1.5	1.4	0.8	0.7	0.4	0.7	0.2	0.3	0.4	0.5
399489	E2f1	0.2	1.0	0.7	0.6	0.5	0.7	0.6	0.7	0.2	0.3	0.7	0.6
499933	LOC499933	0.7	1.1	0.6	0.5	0.3	0.1	0.4	0.4	0.1	0.2	0.4	0.2
500972	Stt3a_predicted	0.8	1.2	0.7	0.9	0.8	0.8	-0.4	-0.4	-0.3	-0.3	-0.3	-0.4
64157	Ddah1	1.1	1.6	1.0	1.5	1.1	1.3	0.5	0.6	-0.1	0.2	0.3	0.6
65053	Pamci	-0.8	-0.9	-1.0	-1.3	-1.2	-1.2	-0.1	-0.2	-0.3	0.3	-1.0	0.1
84490	Fen1	0.6	1.0	1.0	0.4	0.5	0.4	0.7	0.7	0.3	0.5	0.6	0.8

Figure S3: Cluster analysis of 1,109 genes implicated by the less stringent criteria for statistical significance (p -value <0.01 and 1.5 fold differential expression) of differences between fatty acids diets and reference diet. The heatmap displays the hierarchical clustering of all 1,109 genes and the statistical significance of the most enriched GO categories. Three relevant clusters of co-expressed and functionally related genes identified by cluster analysis are denoted by vertical bars on the right hand side.

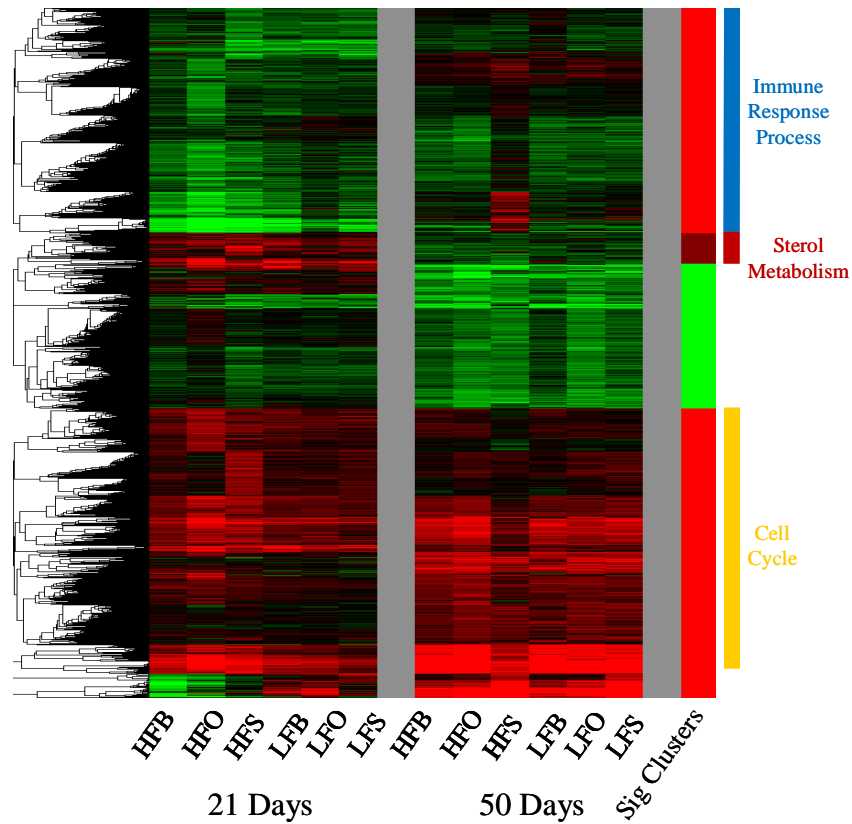


Table S3: Differences in average log2 expression levels between different fatty acid diets and corresponding reference AIN diet for cell cycle genes in the “cell cycle” cluster

Gene ID	Symbol	Day 21						Day 50					
		HFB	HFO	HFS	LFB	LFO	LFS	HFB	HFO	HFS	LFB	LFO	LFS
24924	Ptn	0.4	0.7	0.3	0.8	0.4	0.3	0.7	0.9	0.4	1.0	0.6	0.7
25203	Ccnb1	0.9	1.1	0.9	0.6	0.7	0.4	1.5	1.7	0.8	1.5	1.2	1.1
25515	Plk1	0.8	1.1	1.0	0.7	0.6	0.4	1.3	1.7	1.0	1.3	1.4	1.5
25729	Ccne1	0.7	1.4	1.5	0.9	0.7	0.9	0.8	1.0	0.3	0.5	0.7	0.7
25737	Pcna	0.4	1.0	0.6	0.5	0.4	0.3	0.6	0.7	0.1	0.6	0.4	0.7
54237	Cdc2a	1.0	1.5	1.1	1.0	0.8	0.5	1.7	2.0	1.1	1.9	1.4	1.7
64012	Rad50	-0.1	0.1	0.0	0.1	0.2	-0.1	0.6	0.6	0.5	0.4	0.6	0.5
64193	Pttg1	0.8	0.8	1.3	0.7	0.6	0.4	1.9	2.3	1.4	1.7	1.4	1.9
64515	Cdc20	0.4	0.6	1.1	0.7	0.7	0.5	0.9	1.5	0.4	1.1	0.8	1.6
64557	Bard1	0.3	0.2	0.6	0.1	0.0	0.1	0.4	0.7	0.3	0.4	0.4	0.4
64576	Ptprv	0.5	0.6	0.6	0.3	0.3	0.0	0.3	0.4	0.2	0.2	0.3	0.2
64709	Nucks	0.1	0.7	0.3	0.4	0.3	0.1	0.6	0.7	0.4	0.5	0.6	0.5
65179	Ppp5c	-0.4	-0.3	-0.1	-0.1	0.1	0.4	0.5	1.1	1.0	0.4	0.9	0.9
79433	Myh10	0.5	0.9	0.3	0.6	0.7	0.4	0.7	0.8	0.4	0.7	0.7	0.6
85241	Pola1	0.8	1.5	1.0	0.7	0.8	0.5	1.1	1.3	0.7	0.9	0.9	1.2
114494	Ccna2	0.6	1.3	0.8	0.6	0.5	0.3	1.5	1.6	0.9	1.8	1.3	1.4
114592	Aurkb	0.8	1.5	0.9	0.6	0.4	0.4	1.6	1.8	1.1	1.8	1.3	1.7
116490	Snai1	0.2	0.3	0.4	0.5	0.6	0.5	-0.1	0.2	0.1	-0.2	0.3	0.0
117524	Ccnf	0.3	0.6	0.1	0.3	0.3	0.1	0.8	0.7	0.4	0.5	0.6	0.4
140583	Chek1	0.6	0.9	0.7	0.7	0.6	0.5	0.5	0.6	-0.1	0.2	0.4	0.1
171304	Kif11	0.6	0.8	0.7	0.3	0.4	0.2	1.1	1.4	0.7	1.3	1.0	1.2
246060	Cdkn1c	0.2	0.3	0.1	0.1	-0.1	0.0	1.2	1.2	1.1	1.2	1.0	0.9
252921	Tubg1	0.2	-0.2	0.6	0.2	0.0	0.2	0.4	0.6	0.2	0.5	0.5	0.5
259229	Ppm1g	0.1	-0.1	0.0	0.1	0.1	0.0	0.5	0.6	0.5	0.1	0.4	0.7
261730	Stk6	0.8	1.0	0.6	0.7	0.5	0.7	1.4	1.8	1.0	1.6	1.6	1.2
288778	Pa2g4	0.5	0.7	0.4	0.2	0.6	0.1	0.0	0.5	0.1	0.0	0.4	0.3
289993	Cdkn3_predicted	1.3	1.6	1.6	1.1	1.1	0.8	2.2	2.6	1.8	2.5	2.0	2.0
289997	Dlg7_predicted	0.8	1.3	0.5	0.5	0.4	0.3	1.0	1.1	0.6	1.2	0.9	1.1
290326	Pbk_predicted	0.6	1.7	1.0	1.1	0.7	0.5	1.5	1.6	0.7	1.6	1.2	1.3
292071	Ris2_predicted	0.5	1.5	1.2	0.7	0.7	0.8	0.8	1.0	0.2	0.7	0.7	1.2
292263	Fbxo5_predicted	0.7	1.2	0.8	0.6	0.4	-0.2	1.3	1.8	1.2	1.2	1.4	1.3
293502	Kif22	1.0	1.2	0.9	0.9	0.9	0.5	1.9	2.1	1.1	1.7	1.2	1.5
294286	Kifc1	0.7	0.7	0.7	0.3	0.4	0.3	1.3	1.5	0.9	1.5	1.2	1.4
295661	Spbc25	1.4	2.1	1.3	1.1	1.0	1.0	1.6	1.8	0.9	1.6	1.0	1.4
296137	Bub1_predicted	0.6	1.2	0.8	0.6	0.8	0.3	1.3	1.5	0.4	1.5	0.8	0.9
296344	Mybl2_predicted	0.6	1.2	0.8	0.5	0.4	0.3	0.8	0.8	0.2	0.6	0.5	0.5
296368	Ube2c_predicted	0.8	1.2	1.1	0.8	0.7	0.4	1.9	2.0	1.0	1.7	1.7	1.6
297176	Mad2l1_predicted	-0.1	0.3	0.2	-0.1	0.1	0.0	0.9	1.2	0.3	0.8	0.9	0.9
298441	Nasp	0.4	0.7	0.6	0.4	0.4	0.1	0.2	0.3	-0.1	0.4	0.2	0.5
301701	Kntc2_predicted	0.5	0.6	0.7	0.4	0.5	0.3	0.6	0.7	0.2	0.8	0.4	0.6
304477	Kntc1_predicted	0.1	0.4	0.6	-0.1	0.3	0.2	0.7	0.6	0.2	0.7	0.8	0.5
304951	Cdca1	1.0	1.4	0.9	0.8	0.6	0.5	1.5	1.6	0.7	1.8	1.3	1.2
308607	E2f8	1.1	2.4	1.6	1.3	1.1	0.9	2.2	2.3	1.0	2.0	2.0	2.1
308870	Numa1	0.2	-0.1	0.0	0.0	0.2	0.0	0.2	0.5	0.5	0.1	0.6	0.7
308937	Wee1	0.0	0.7	0.1	0.3	0.2	0.5	0.2	-0.1	0.0	0.1	0.4	0.1
309523	Mphosph1_predicted	1.0	2.1	1.1	0.9	1.2	0.8	2.1	2.3	1.1	2.2	1.8	1.8
310344	Plk4_predicted	1.0	1.9	1.1	1.1	0.7	0.8	1.8	1.8	0.7	1.8	1.3	1.7
315298	Racgap1_predicted	0.8	0.6	0.9	0.5	0.8	0.2	1.1	1.3	0.6	1.4	1.0	0.6
315330	Espl1_predicted	0.8	1.8	1.3	0.9	0.8	0.6	2.6	2.6	1.4	2.5	1.9	2.2
315740	Kif23_predicted	0.5	0.7	0.4	0.4	0.4	0.1	0.9	1.1	0.4	1.1	0.8	0.6
315852	Ttk_predicted	0.9	1.3	0.8	0.7	0.5	0.4	0.9	1.1	0.3	0.7	0.7	0.7
360643	Cdc27	0.5	0.6	0.5	0.4	0.1	0.2	0.3	0.2	-0.2	0.5	0.2	0.1
360804	Cdk2ap1_predicted	0.5	0.7	0.4	0.3	0.3	0.3	0.1	0.1	-0.2	0.1	-0.1	0.1
360962	Tacc3	0.6	0.9	0.8	0.4	0.4	0.2	1.5	1.6	0.9	1.6	1.2	1.3
361435	Fanca_predicted	0.6	0.7	0.9	0.4	0.5	0.3	0.4	0.4	0.3	0.2	0.3	0.2
362044	Cenpe_predicted	0.3	0.3	0.5	0.0	0.2	-0.2	1.4	1.3	0.7	1.5	0.6	1.3
362342	Hipk2_predicted	0.2	0.0	0.6	0.2	0.3	0.5	0.2	0.3	0.2	-0.3	0.2	0.4
362438	RGD1562596_predicted	0.6	1.0	0.7	0.4	0.6	0.3	1.3	1.5	0.7	1.5	1.2	1.2
362485	Ccne2_predicted	0.2	0.9	0.8	0.4	0.6	0.2	0.2	0.3	-0.2	0.3	0.2	0.2
362519	Smc2l1_predicted	0.5	1.0	1.0	0.8	0.8	0.6	0.8	0.8	-0.1	1.0	0.6	0.7
365388	Psm13_predicted	0.1	0.0	0.3	0.1	0.0	0.0	0.4	0.6	0.4	0.5	0.9	0.7
399489	E2f1	0.2	1.0	0.7	0.6	0.5	0.7	0.6	0.7	0.2	0.3	0.7	0.6

Table S4: Differences in average log2 expression levels between different fatty acid diets and corresponding reference AIN diet for immunity-related genes in the “immune” cluster.

Gene ID	Symbol	Day 21						Day 50					
		HFB	HFO	HFS	LFB	LFO	LFS	HFB	HFO	HFS	LFB	LFO	LFS
24499	Il6ra	-0.7	-1.1	-0.5	0.0	0.2	-0.1	-0.5	-0.5	-0.4	-0.7	-0.3	-0.3
24575	Mx1	-1.1	-1.0	-1.0	-0.9	0.5	-1.0	-0.3	0.0	0.7	-0.1	-0.3	0.7
24699	Ptprc	-0.4	-0.5	-0.6	-0.6	0.0	-0.4	0.0	-0.2	0.4	-0.2	-0.3	0.0
24747	RT1-M3	-0.3	-0.1	-0.7	-0.5	-0.1	-0.6	0.1	0.3	0.1	0.3	0.1	0.2
24796	Spn	-1.3	-1.6	-1.1	-1.2	-0.6	-1.2	-0.1	-0.2	0.2	-0.6	-0.3	-0.4
24930	Cd8a	-0.9	-1.3	-0.9	-0.8	-0.4	-0.7	-0.3	-0.4	0.5	-0.4	-0.3	-0.3
25047	Fcer1a	-1.2	-0.6	-1.3	-1.2	-0.8	-0.7	-0.5	-0.6	-0.2	0.2	-0.8	-0.5
25296	Bmp4	0.0	-0.4	-0.4	0.3	0.5	0.4	-0.8	-0.5	-0.1	-0.6	-0.4	-0.9
25316	Ms4a2	-0.5	-0.1	-0.6	-0.6	-0.5	-0.3	-0.3	-0.3	-0.1	0.0	-0.3	-0.4
25326	Jak3	-0.2	-0.9	-0.5	-0.7	-0.4	-0.5	-0.5	-0.2	0.2	-0.1	-0.2	-0.3
25464	Icam1	-0.8	-0.7	-1.1	-0.8	0.4	-0.6	0.1	-0.2	0.1	-0.2	-0.3	-0.1
25544	Sele	-1.0	-1.3	-0.5	0.0	0.3	0.0	0.0	-0.3	-0.1	0.1	0.1	0.4
25599	Cd74	-0.6	-1.0	-0.8	-0.3	-0.1	-0.7	-0.5	-0.1	0.5	0.0	-0.4	0.0
29168	Ubd	-1.1	-2.1	-1.9	-1.7	-1.2	-2.0	-0.1	0.1	1.2	-0.1	-0.6	0.7
29187	Cd69	-1.3	-1.2	-1.4	-1.5	-0.3	-1.0	-0.1	-0.2	1.1	-0.4	0.1	-0.5
29260	Tlr4	-0.6	-0.8	-0.6	0.0	-0.1	-0.7	-0.3	-0.2	-0.2	0.0	-0.2	-0.3
50654	Ctss	-0.7	-1.1	-0.8	-0.6	-0.5	-0.6	-0.1	-0.3	0.0	-0.3	-0.3	-0.3
54289	Rgs1	-1.9	-1.6	-2.1	-1.7	-1.2	-1.8	-0.1	-0.2	0.7	-0.1	-0.3	-0.7
64513	Pawr	-0.1	0.0	-0.9	-0.1	-0.2	-0.3	-0.1	-0.3	-0.4	0.1	-0.4	-0.3
64569	Lst1	-0.7	-1.1	-0.5	-0.6	0.1	-0.6	-0.5	-0.5	0.3	-0.7	-0.3	-0.3
79126	Cfi	0.8	0.3	-0.6	-0.8	-1.1	-1.4	-0.4	-0.2	-0.2	0.0	-0.1	0.1
81511	Lat	-0.9	-1.4	-0.8	-0.8	-0.2	-0.5	0.1	0.2	0.9	0.1	0.0	0.0
81780	Ccl5	-0.4	-0.6	-0.4	-0.5	-0.2	-0.4	-0.8	-0.7	0.0	-0.7	-0.6	-0.5
85420	Prkcq	-0.4	-0.5	-0.5	-0.2	0.5	0.3	-0.5	-0.5	0.2	-0.8	-0.8	-0.4
89804	Tek	-0.5	-0.9	-0.6	-0.5	-0.2	-0.2	-0.2	-0.7	0.0	-0.5	-0.6	-0.7
155151	Coro1a	-1.4	-2.4	-1.7	-1.2	-0.4	-1.2	-0.1	0.1	1.2	-0.4	-0.2	0.6
155918	Lcp2	-0.3	-0.2	-0.3	-0.6	-0.1	-0.4	0.0	0.0	0.6	-0.2	0.2	0.1
156767	Tnfrsf1b	0.1	-0.6	0.2	-0.1	0.5	0.1	-0.3	-0.4	0.2	-0.3	-0.2	-0.1
171108	P2ry14	-0.6	-0.8	-0.9	-0.9	-0.4	-0.4	-0.1	0.0	0.1	0.1	-0.3	-0.4
192262	C1s	-0.5	-0.6	-0.8	-0.4	0.0	-0.4	-0.7	-0.4	0.0	-0.4	-0.4	-0.5
286918	Mx2	-0.5	-0.3	-0.6	-0.4	0.2	-0.4	-0.1	0.0	-0.4	-0.2	-0.2	0.2
286975	Scap1	-1.1	-1.3	-1.1	-1.2	-0.5	-0.8	0.1	0.0	1.0	-0.2	-0.1	0.1
287561	Ccl7	-0.4	-1.0	-0.5	-0.9	0.4	-0.3	-0.4	-0.5	-0.1	-0.8	-0.3	-0.2
287910	Ccl6	-0.6	-1.2	-1.2	-0.4	0.0	-0.5	0.3	0.2	0.8	0.2	0.3	0.3
291359	Ly86_predicted	-0.6	-0.8	-1.0	-0.5	-0.3	-0.8	-0.6	-0.5	0.3	-0.4	-0.3	-0.3
294269	RT1-Da	-0.7	-0.8	-1.0	-0.1	-0.2	-0.5	-0.4	-0.4	0.0	-0.2	-0.4	-0.1
295703	Serping1	-0.7	-1.6	-1.2	-0.5	-0.2	-0.4	-0.8	-0.5	0.2	-0.5	-0.7	-0.2
296257	Cst7_predicted	-0.7	-0.8	-0.6	-0.7	0.0	0.0	-0.1	-0.2	0.5	-0.4	-0.2	0.1
300678	Cd3g	-2.6	-3.4	-2.2	-2.4	-0.9	-2.1	-0.7	-0.5	0.8	-0.8	-0.7	-0.4
305341	Rhoh	-1.6	-2.0	-1.7	-1.8	-0.8	-1.3	-0.9	-0.9	0.3	-0.5	-0.5	-0.7
309217	Ms4a1_predicted	-0.6	-1.3	-0.8	-0.7	0.5	-0.6	0.2	0.0	1.4	-0.2	0.3	-0.1
309452	Nfkb2	-0.1	-1.0	-0.3	-0.5	0.1	-0.3	-0.2	-0.1	0.1	-0.1	-0.3	-0.1
361795	Ltb	-1.1	-1.5	-1.1	-1.1	-0.4	-0.8	-0.1	-0.2	0.7	-0.2	-0.1	0.0
362456	Arhgdib	-0.5	-0.6	-0.7	-0.3	0.0	-0.3	0.3	0.0	0.7	0.0	-0.1	-0.4
366518	Tnfrsf14	-1.6	-1.9	-1.6	-1.4	-0.3	-1.2	0.2	-0.1	0.6	-0.4	-0.1	0.0
406163	Gpsm3	-0.3	-0.8	-0.1	-0.6	-0.2	-0.6	0.2	0.6	0.9	0.4	0.6	0.3
444986	Il22ra2	-2.1	-2.0	-1.5	-1.2	-0.3	-1.1	-1.0	-1.4	-0.1	-1.4	-1.4	-1.5
474143	Clecsf6	-0.6	-0.9	-0.6	0.0	-0.3	-0.4	-0.2	-0.5	-0.4	-0.3	-0.8	-0.6
498335	LOC498335	-1.0	-2.4	-2.2	-1.5	-0.2	0.0	-0.5	-0.4	1.3	-0.8	-0.2	0.3
499356	Blnk	-0.4	-0.8	-0.7	-0.6	-0.4	-0.6	-0.2	-0.4	0.1	0.1	-0.1	0.0

Table S5: Differences in average log₂ expression levels between different fatty acid diets and corresponding reference AIN-93G diet for sterol metabolism-related genes in the “steroid” cluster.

Gene ID	Symbol	Day 21						Day 50					
		HFB	HFO	HFS	LFB	LFO	LFS	HFB	HFO	HFS	LFB	LFO	LFS
25675	Hmgcr	0.6	1.1	0.2	0.7	0.4	0.7	0.1	-0.1	-0.4	0.2	0.1	-0.4
29540	Hsd17b7	0.7	1.7	1.0	0.6	0.4	1.0	-0.1	-0.2	-0.8	0.1	-0.2	-0.3
64191	Dhcr7	1.1	1.0	1.0	0.7	0.4	0.5	-0.3	-0.1	-0.3	0.0	-0.2	0.0
89784	Idi1	0.8	1.4	0.6	1.9	0.7	1.1	-0.2	-0.6	-0.6	0.6	-0.4	-0.3
298298	Dhcr24	0.9	1.7	1.0	2.4	1.1	1.8	-0.1	-0.4	-0.9	0.4	-0.2	-0.7
29230	Sqle	0.9	2.0	0.9	1.2	0.5	0.7	0.0	-0.2	-0.7	0.3	-0.3	-0.6

Figure S4: Expression profiles of 69 human homologs of genes up-regulated by fatty acid diets in the Miller et al breast cancer datasets. Expression levels were centered and averaged over all samples within the same quartile of the tumor sizes. The yellow color in the yellow-blue bar on the left hand side indicated the statistically significant difference between the expression levels in largest (Quartile 4) and smallest (Quartile 1) tumors.

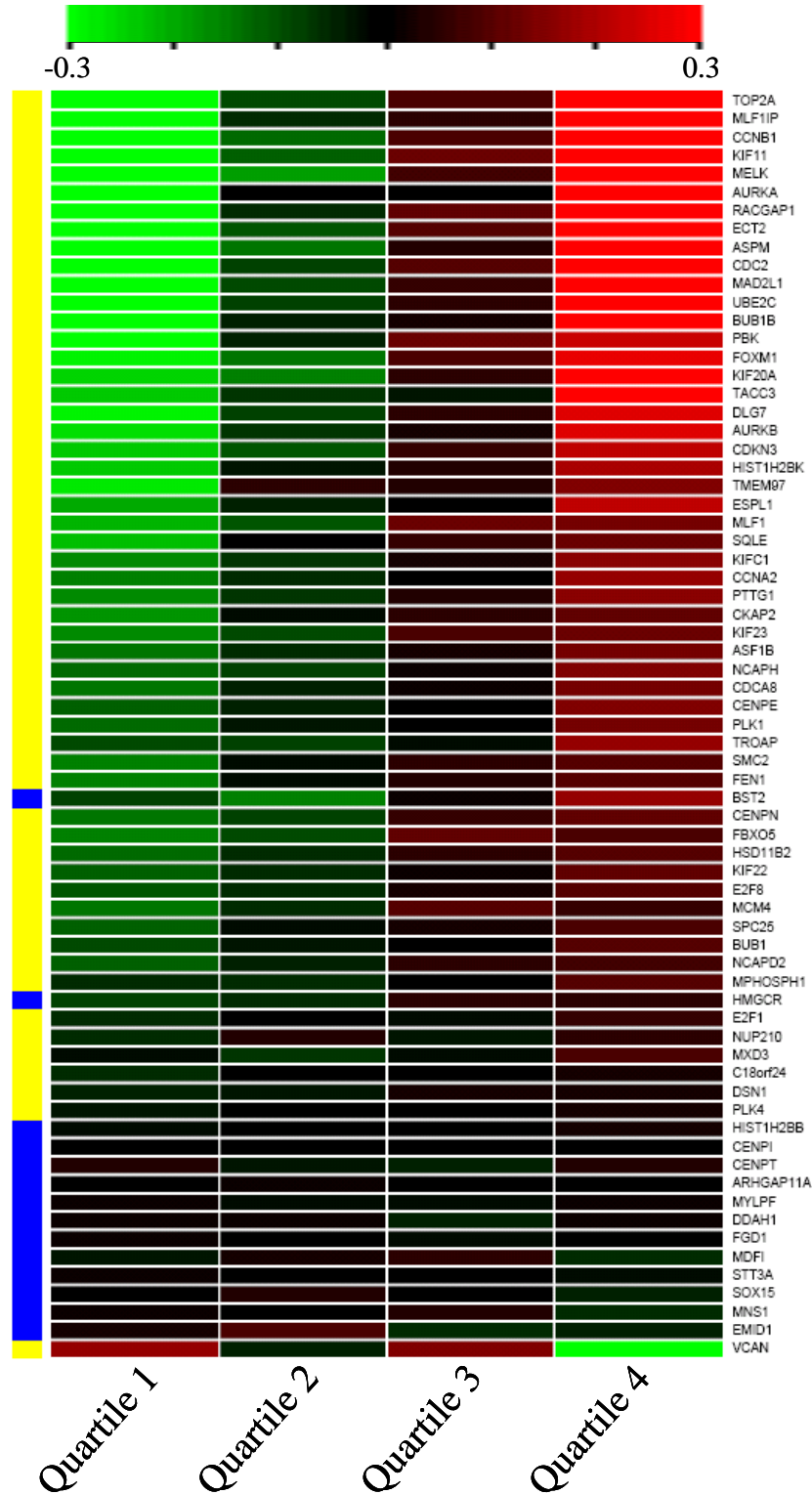


Figure S5: Expression profiles of 15 human homologs of genes down-regulated by fatty acid diets in the Miller et al breast cancer datasets. Expression levels were centered and averaged over all samples within the same quartile of the tumor sizes. The yellow color in the yellow-blue bar on the left hand side indicated the statistically significant difference between the expression levels in largest (Quartile 4) and smallest (Quartile 1) tumors.

