Supplemental Material
Metabolomic Analysis
Significant changes ($p<0.05$) in the ratio of compound levels in mouse liver by diet at 9 weeks and 18 weeks

	BETWEEN DIETS RATIO						WITHIN DIETS RATIO		
		9 wk			18 wk		HF	WW	LF
BIOCHEMICAL NAME	WW/ HF	WW/ LF	HF/ LF	WW/ HF	WW/ LF	HF/ LF	9wk /18wk	9wk /18wk	9wk /18wk
serine									0.74
betaine							0.53		
N-acetylalanine							0.68		0.73
asparagine									0.77
N-acetylasparagine							0.65		
3-ureidopropionate					0.58				
glutamate					1.59				1.21
N-acetylglutamate					1.67				2.32
pipecolate									0.80
N2-acetyllysine		0.77	0.77						1.34
phenylalanine									0.81
p-cresol sulfate	0.51		1.96						
tyrosine									0.79
phenol sulfate				2.94		0.77			0.50
tryptophan									0.82
isoleucine									0.77
leucine									0.79
valine									0.82
alpha-hydroxyisovalerate		0.62	0.63						
2-methylbutyroylcarnitine					2.14				
tiglyl carnitine					2.80				
cysteine							0.57		
methionine sulfoxide				2.27	1.44	0.63			
hypotaurine				0.29		3.14			
S-adenosylhomocysteine (SAH)				0.78		1.20			
methionine									0.80
5-aminovalerate									0.68
homocitrulline									1.61
spermidine				0.75				1.24	
glutathione, reduced (GSH)									2.16
cysteine-glutathione disulfide							0.69		0.52
ophthalmate				3.70			2.14		
glycylisoleucine						0.67			0.53
pro-hydroxy-pro								1.76	
gamma-glutamylvaline							2.07		
gamma-glutamylleucine				2.22		0.41	1.73		
gamma-glutamylthreonine*				2.70			4.77		
fructose							3.30		2.42
mannose							2.58		
maltotriose									4.83
maltotetraose							4.63		4.53
maltopentaose							8.74		9.11
maltohexaose							6.89		19.47
1,5-anhydroglucitol (1,5-AG)	0.58			0.61					

glycerate									1.27
glucose-6-phosphate (G6P)									4.37
3-phosphoglycerate								0.58	0.65
lactate	0.74	0.73			0.73				
6-phosphogluconate								0.74	
ribitol					1.59			0.43	
gluconate		0.61						0.54	
ribose	0.78								
ribulose	0.56				0.63				
phosphate								0.87	
linolenate [alpha or gamma; (18:3n3 or 6)]		2.73	1.70	2.17	2.87				
eicosapentaenoate (EPA; 20:5n3)		2.06	1.67	1.89	2.44			0.56	0.66
docosapentaenoate (n3 DPA; 22:5n3)		1.92		1.43	2.52	1.77			
docosahexaenoate (DHA; 22:6n3)								0.77	
caproate (6:0)							2.15		1.54
pelargonate (9:0)							0.55		0.81
laurate (12:0)									0.83
myristate (14:0)				0.67	0.55		0.71		
myristoleate (14:1n5)					0.69				
palmitoleate (16:1n7)					0.45				
10-heptadecenoate (17:1n7)					0.61				
oleate (18:1n9)					0.72				
linoleate (18:2n6)		1.48		1.43	1.66			0.73	
stearidonate (18:4n3)		2.85			3.71				
nonadecanoate (19:0)					1.66				
10-nonadecenoate (19:1n9)					0.59				
eicosenoate (20:1n9 or 11)					0.56				
arachidonate (20:4n6)	0.73	0.64		0.80			0.72	0.66	
docosadienoate (22:2n6)					1.59				
2-hydroxystearate				1.96	2.10				
2-hydroxypalmitate					1.71				
13-HODE + 9-HODE		2.96	1.58	1.82	2.42				
deoxycarnitine							0.61		
3-dehydrocarnitine*	1.79		0.42	1.64			0.42	0.45	
12-dehydrocholate		0.28							
taurodeoxycholate			2.90					0.23	0.09
6-beta-hydroxylithocholate			3.13						0.18
ethanolamine								0.66	
phosphoethanolamine									0.56
glycerol 3-phosphate (G3P)					2.32				
myo-inositol								0.76	0.74
inositol 1-phosphate (I1P)							0.69		
3-hydroxybutyrate (BHBA)							0.36		
1-palmitoyl glycerophospho ethanolamine	0.60				0.83	0.76		0.50	
2-palmitoyl glycerophospho ethanolamine	0.41	0.30							
1-oleoyl glycerophospho ethanolamine								0.43	
2-oleoyl glycerophospho ethanolamine		0.54						0.39	
1-linoleoyl glycerophospho				2.50	2.54				

ethanolamine									
2-linoleoyl glycerophospho ethanolamine				2.08	1.81				0.54
1-arachidonoyl glycerophospho ethanolamine								0.50	
2-arachidonoyl glycerophospho ethanolamine					0.58				
2-docosahexaenoyl glycerophospho ethanolamine	0.54								
1-myristoyl glycerophospho choline	0.49								
1-palmitoleoyl glycerophospho choline	0.38				0.47				
2-palmitoleoyl glycerophospho choline	0.42	0.27			0.46				
1-oleoyl glycerophospho choline	0.38				0.55				
2-oleoylglycerophosphocholine*	0.41				0.34				
1-linoleoyl glycerophospho choline					1.49				
2-arachidonoyl glycerophospho choline	0.41				0.60				
2-docosahexaenoyl glycerophospho choline	0.58								
1-palmitoyl glycerophospho inositol				0.70					
1-arachidonoyl glycerophospho inositol								0.38	0.58
sphinganine	0.58				0.57				
sphingosine				0.44	0.56				
palmitoyl sphingomyelin								0.76	
squalene					0.57	0.58			
campesterol	0.29		3.39						
xanthine					0.90				0.70
inosine			1.13						
N1-methyladenosine							0.44	0.62	0.58
adenosine 2'-monophosphate (2'-AMP)									0.50
adenosine 3',5'-diphosphate								0.45	0.42
allantoin				0.76	0.76				0.69
uridine 5'-diphosphate (UDP)		0.57			0.29				0.20
methylphosphate								0.71	0.89
ascorbate (Vitamin C)		0.41					0.60		
5-methyltetrahydrofolate (5MeTHF)								0.39	0.57
dihydrobiopterin		0.41		0.40					
nicotinamide adenine dinucleotide (NAD+)								0.68	0.71
pantothenate				1.35	1.35			0.71	
thiamin (Vitamin B1)	1.92	1.40	0.72	1.37			0.62		
glycerol 2-phosphate					1.68			0.60	
ergothioneine							3.55		2.60
erythritol		0.68	0.49				0.47		