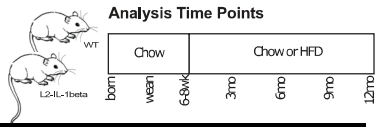
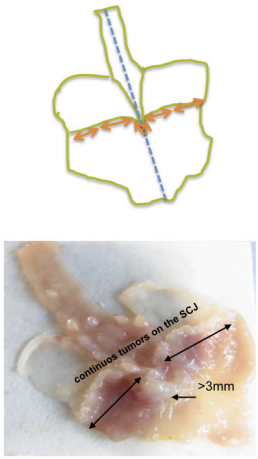
Supplementary Figure 1:

A



	V1124-000	S5745-E712
Dietary components	**Standard Chow**	**HFD Palm oil**
Gross Energy (GE)	16.7 MJ/kg	21.9 MJ/kg
Metabolizable Energy (ME)	14.0 MJ/kg	19.7 MJ/kg
Protein [kJ%]	27	18
Fat [kJ%]	12	48
Carbohydrates [kJ%]	61	34
Crude Nutrients [%]		
Protein	22.0	21.2
Fat	4.5	25.1
Fiber	3.9	5.0
Ash	6.2	5.3
Starch	34.2	26.7
Sugar	5.1	6.1
N free extracts	51.2	37.7
Amino Acids [%]		
Lysine	1.5	1.8
Methionine	0.5	0.8
Met + Cys	0.4	1.1
Threonine	0.9	0.9
Tryptophan	0.3	0.3
Minerals [%]		
Calcium	1.0	0.9
Phosphorus	0.7	0.7
Sodium	0.2	0.2
Magnesium	0.2	0.2
Vitamins [IU/kg]		
Vitamin A	25,000.00	18,000.00
Vitamin D_3	1,500.00	1,800.00
Vitamin E	135	180
Fatty acids [%]		
C 12:0	-	0.01
C 14:0	0.01	0.21
C 16:0	0.54	9.18
C 18:0	0.14	1.11
C 20:0	0.02	0.1
C 16:1	0.02	0.05
C 18:1	1.03	9.19
C 18:2	2.42	4.67
C 18:3	0.28	0.35

B



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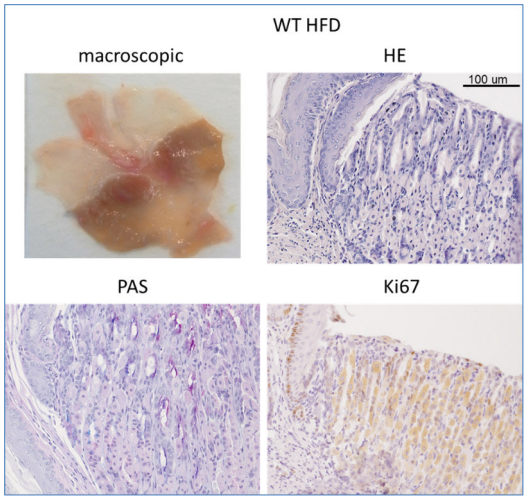


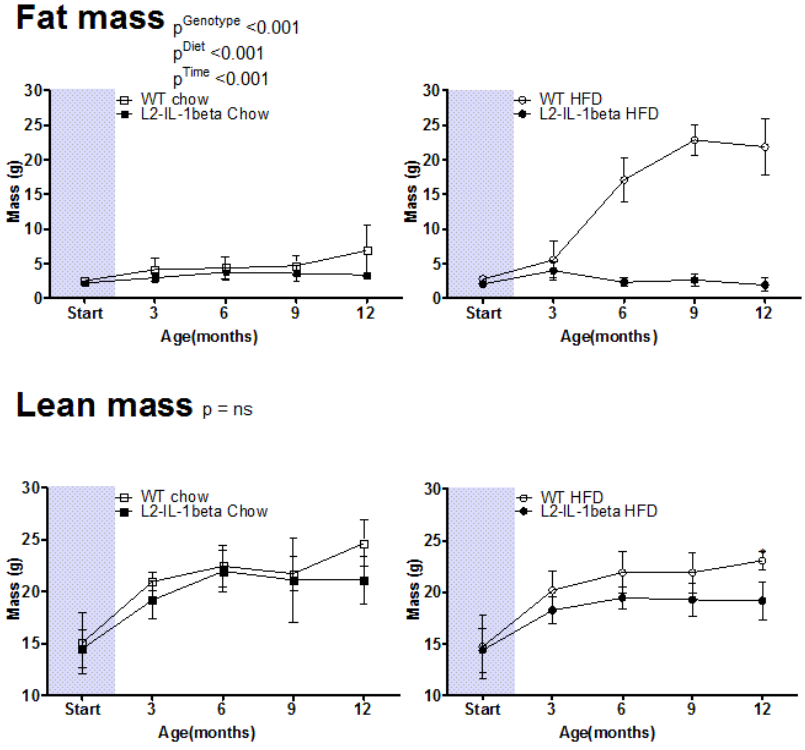
D

Tumor size		Tumor coverage	
0	No abnormalities	0	No abnormalities
1	<0.5 mm	1	Focal tumors (<20%)
2	>0.5-1 mm	2	Partial tumors (20-50%)
3	>1-2 mm	3	Increased tumors (>50-80%)
4	>2-3 mm	4	Continuous tumors (>80%)

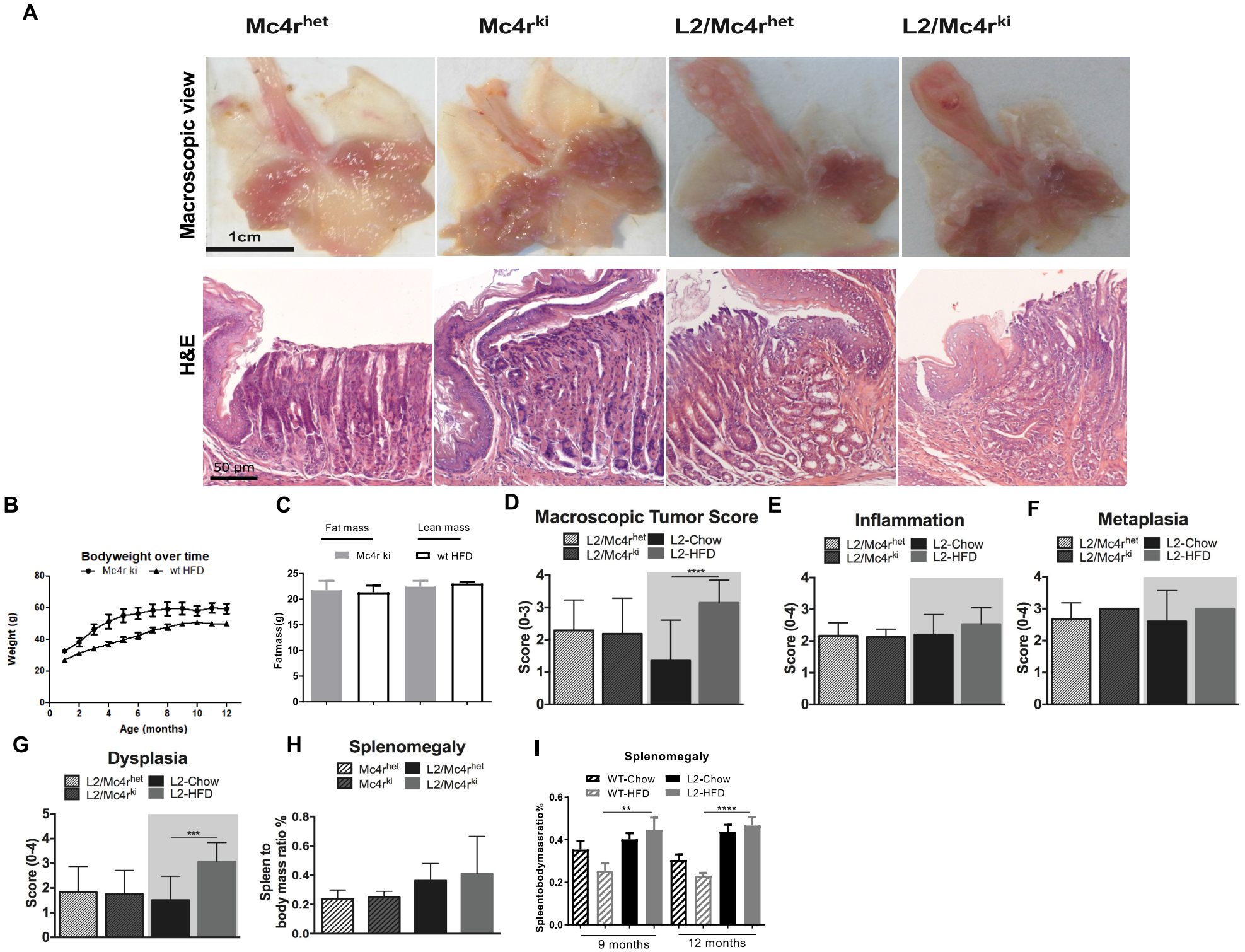
E

Score	Inflammation	Metaplasia	Dysplasia
0	no inflammation no immune cell influx	no metaplasia	no dysplasia
1	mild inflammation up to 10 immune cells	rare mucus cells	superficial epithelial atypia
2	moderate inflammation up to 30 immune cells	single metaplastic glands	atypia in glandular complexity
3	severe inflammation more than 30 immune cells	multiple metaplastic glands	low grade dysplasia
4			high grade dysplasia

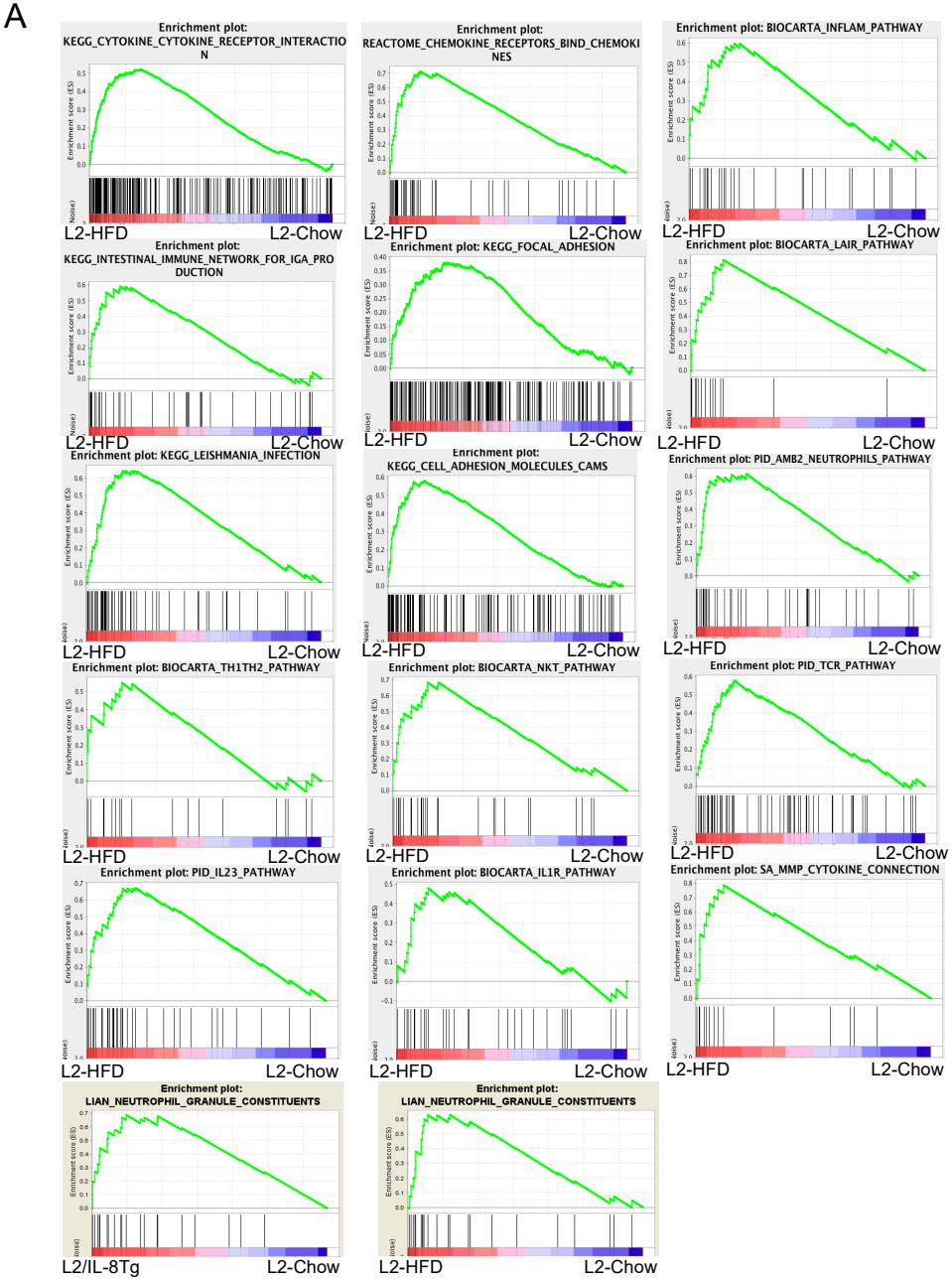
F

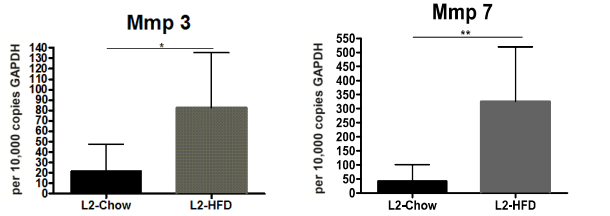


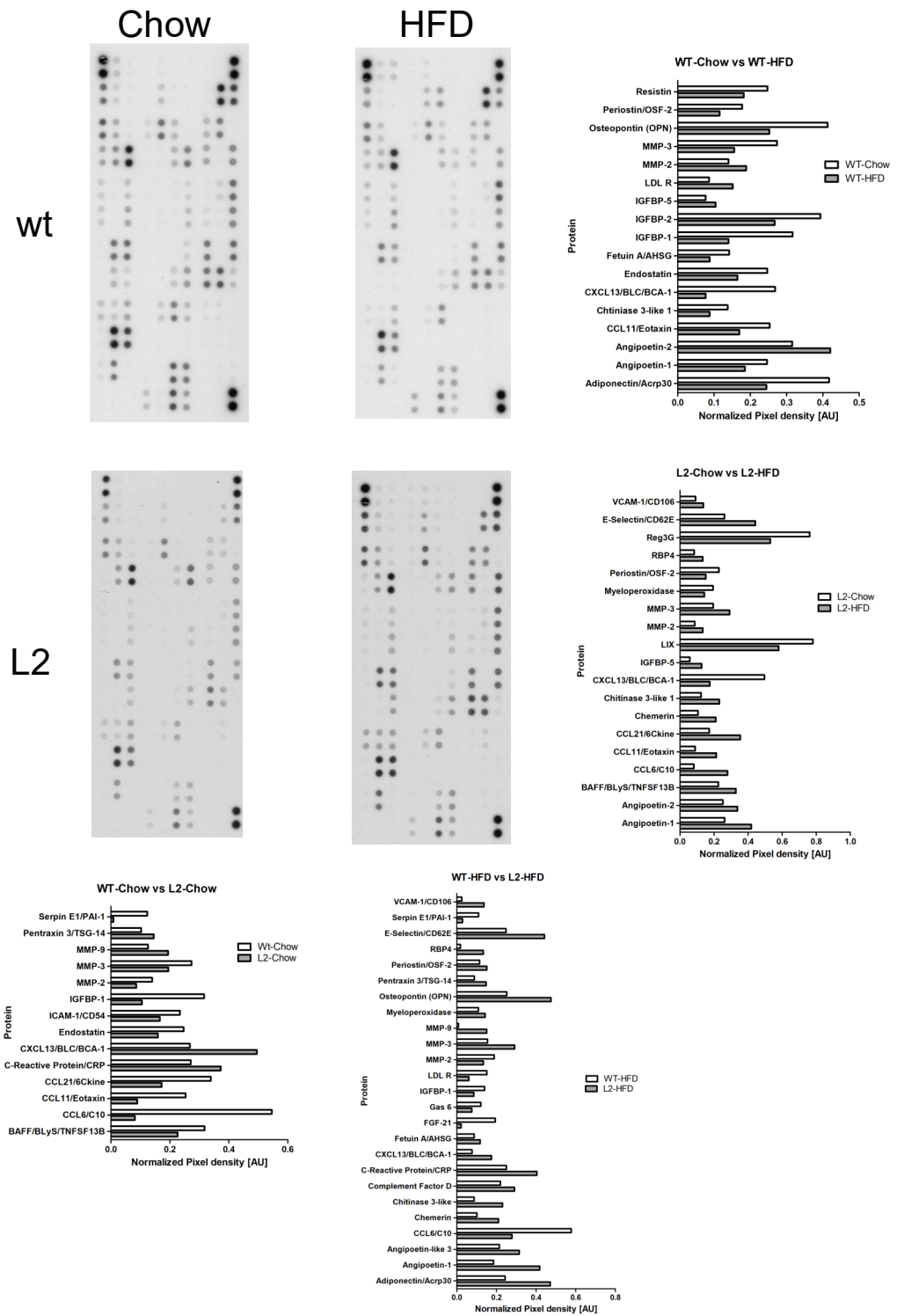
Supplementary Figure 2:



Supplementary Figure 3:





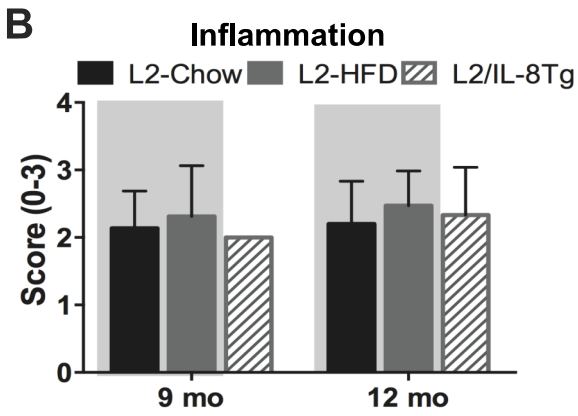


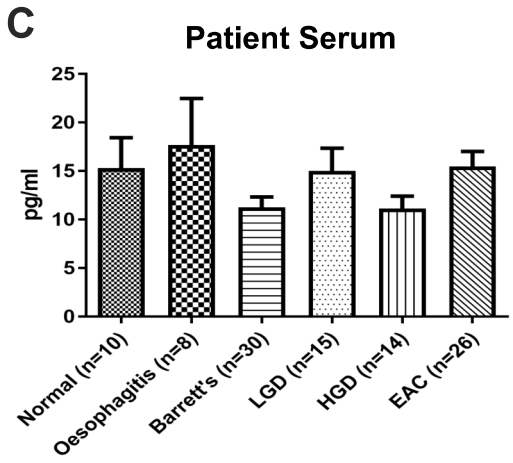
Supplemental Figure4 :

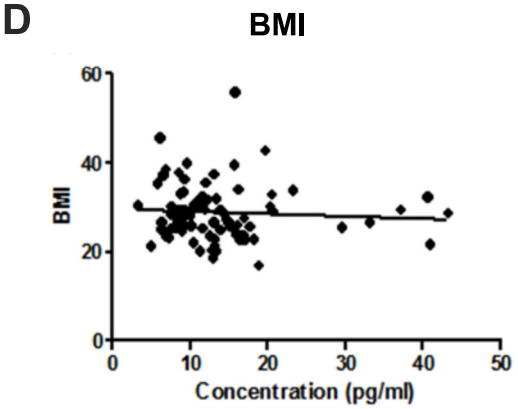
A

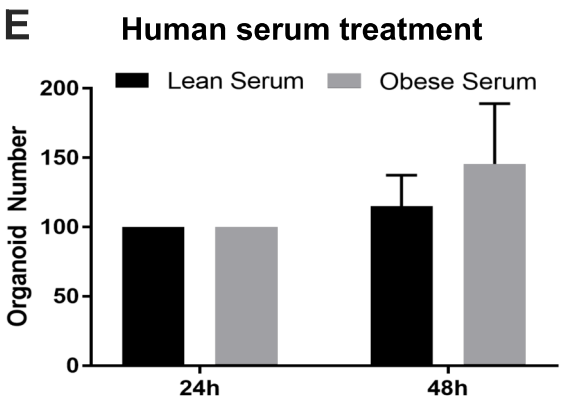
Serum profiles of lean and obese patients

Variables	All	Normal	Obese	p.value
BMI				
Males	30.1 (19.5, 49.7)	22.4 (19.5,25)	37.75 (35.2, 49.7)	<0.001
Females	36.1 (19.7, 46.1)	22.4 (19.7,24.9)	38.1 (36.1,46.1)	<0.001
Age				
Males	48 (40, 68)	48.5 (40,66)	48 (42,68)	1
Females	56 (45, 66)	57 (47,61)	56 (45,66)	0.682
CRP				
Males	1.21 (0.25, 12.42)	0.53 (0.25,4.04)	2.78 (0.52,12.42)	0.015
Females	2.74 (0.12, 15.04)	0.28 (0.12,3.6)	6.14 (1.71,15.04)	<0.001
Adiponectin				
Males	5.48 (2.61, 22.75)	6.59 (4.34,14.68)	5.04 (2.61,22.75)	0.218
Females	10.37 (2.55, 26.36)	18.04 (10.26,26.36)	6.17 (2.55,19.24)	<0.001
Leptin				
Males	6.53 (0.14, 74.41)	1.04 (0.14,3.58)	19.51 (9.47,74.41)	<0.001
Females	32.33 (2.77, 68.98)	9.28 (2.77,37.75)	47.87 (20.76,68.98)	<0.001
LeptAdipRatio				
Males	0.44 (0.02, 13.95)	0.14 (0.02,0.46)	4.87 (0.42,13.95)	<0.001
Females	2.83 (0.12, 21.3)	0.54 (0.12,2.83)	8.59 (1.08,21.3)	<0.001
Insulin				
Males	5.15 (1.7, 51.39)	3.78 (1.7,6.81)	12.47 (5.03,51.39)	<0.001
Females	7.92 (3.45, 28.1)	4.79 (3.45,9.3)	11.58 (6.85,28.1)	0.001
Glucose				
Males	84.06 (69.34, 109.01)	78.95 (69.34,98.79)	89.77 (73.54,109.01)	0.028
Females	89.77 (74.14, 111.41)	84.36 (74.14,93.38)	102.39 (80.16,111.41)	0.003
IL-6				
Males	2.1 (0.68, 6.69)	1.72 (0.68,4.95)	2.65 (1.4,6.69)	0.052
Females	2.41 (0.81, 4.57)	1.26 (0.81,1.96)	3.14 (2.41,4.57)	<0.001
Testosterone				
Males	7.19 (4.8, 13.6)	8.2 (5.54,10.02)	5.94 (4.8,13.6)	0.052
Estradiol				
Females	20.58 (5.92, 67.31)	14.51 (5.92,67.31)	26.52 (17.24,34.16)	0.006
SHBG				
Females	55.5 (8.25, 242.97)	86.03 (38,242.97)	36.89 (8.25,76.29)	<0.001
Estradiol:SHBGRatio				
Females	0.28 (0.08, 2.5)	0.15 (0.08,0.28)	0.78 (0.23,2.5)	<0.001

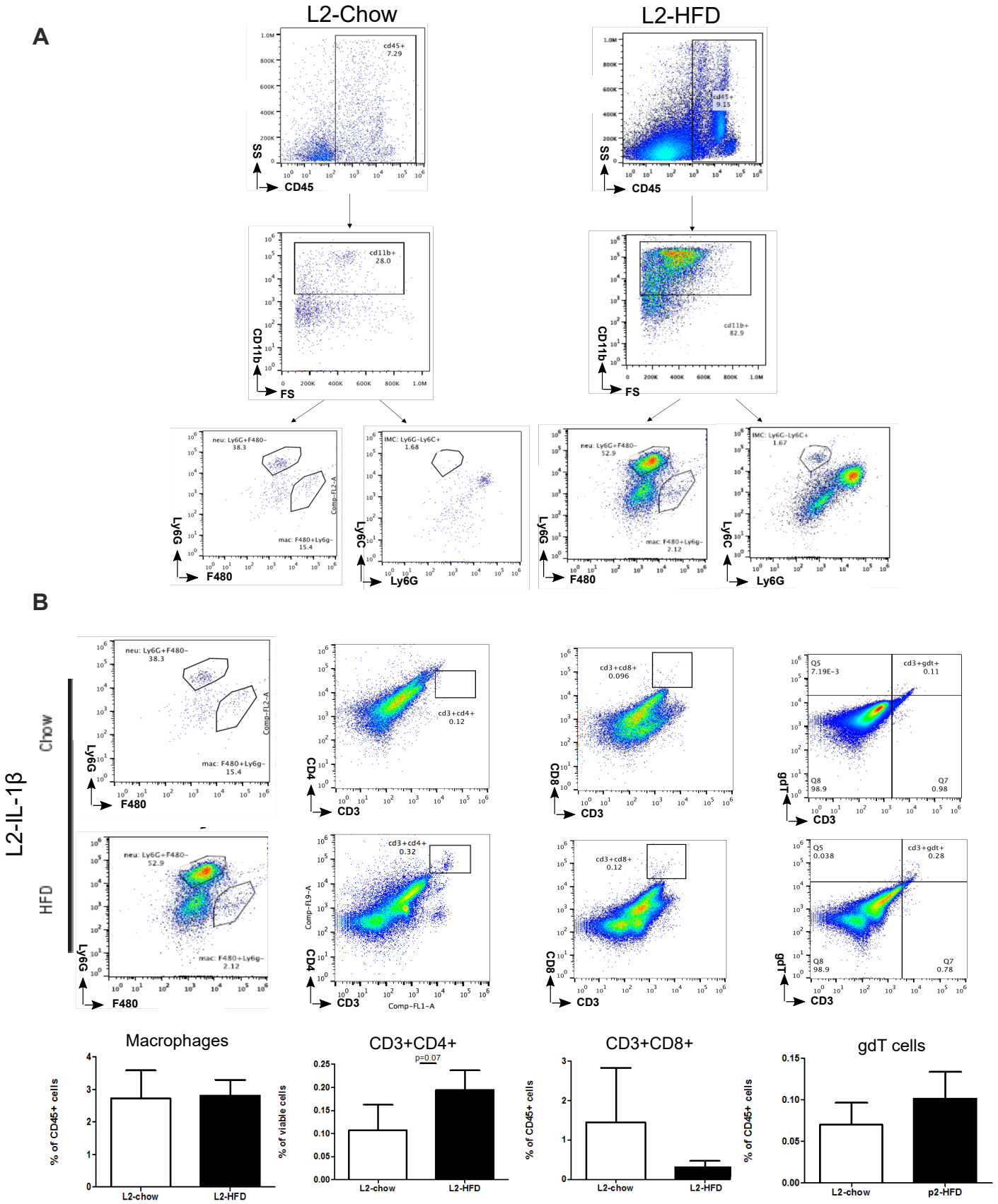




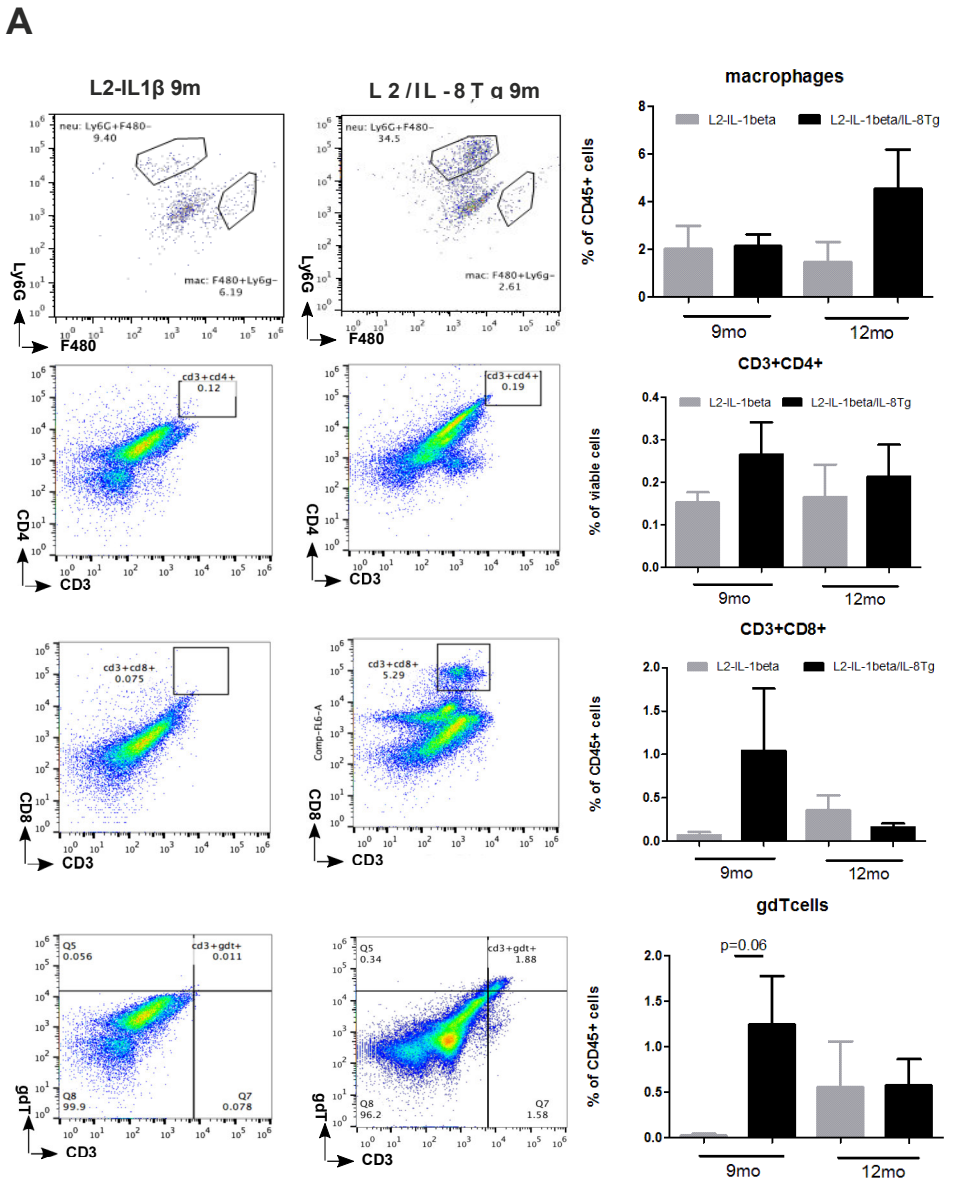


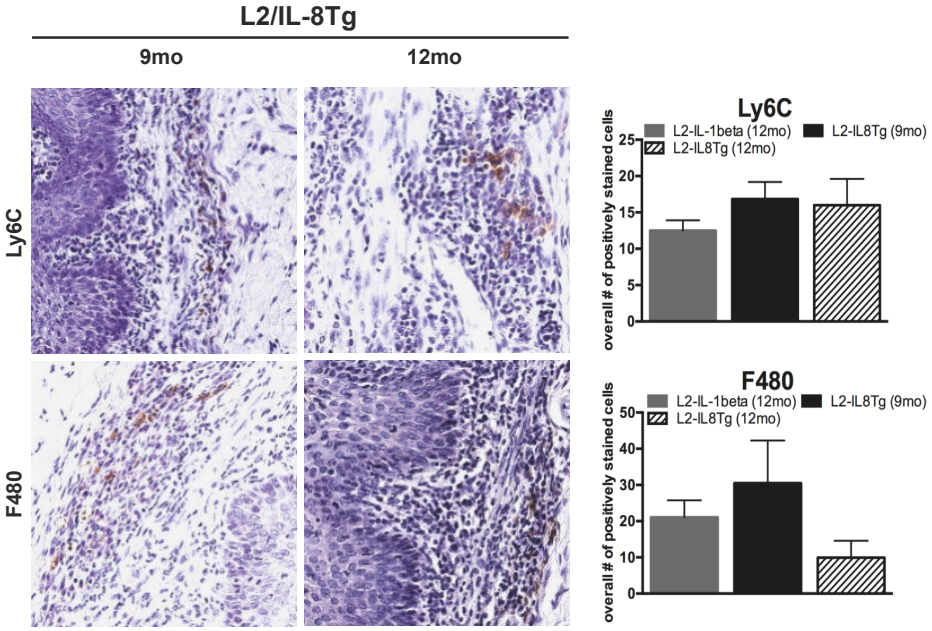


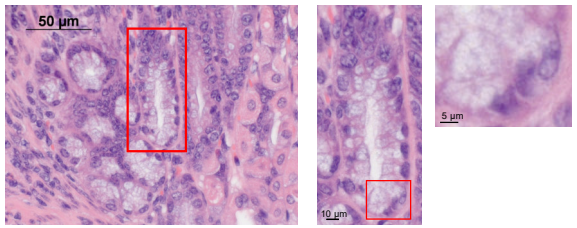
Supplemental Figure5 :



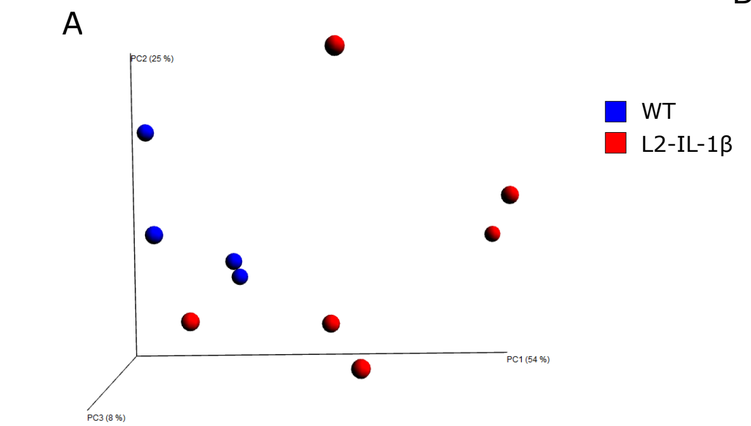
Supplemental Figure6

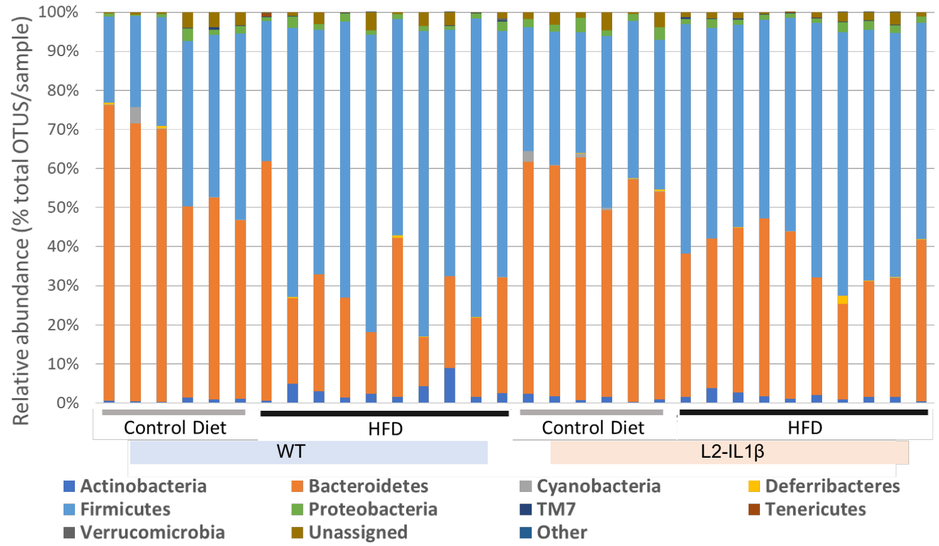


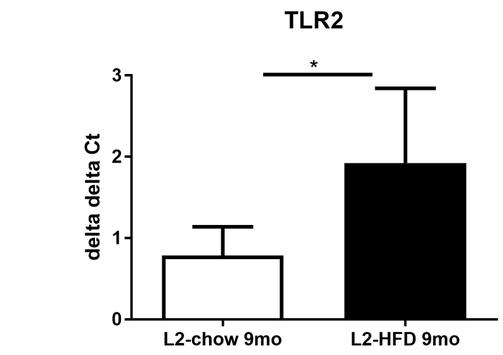


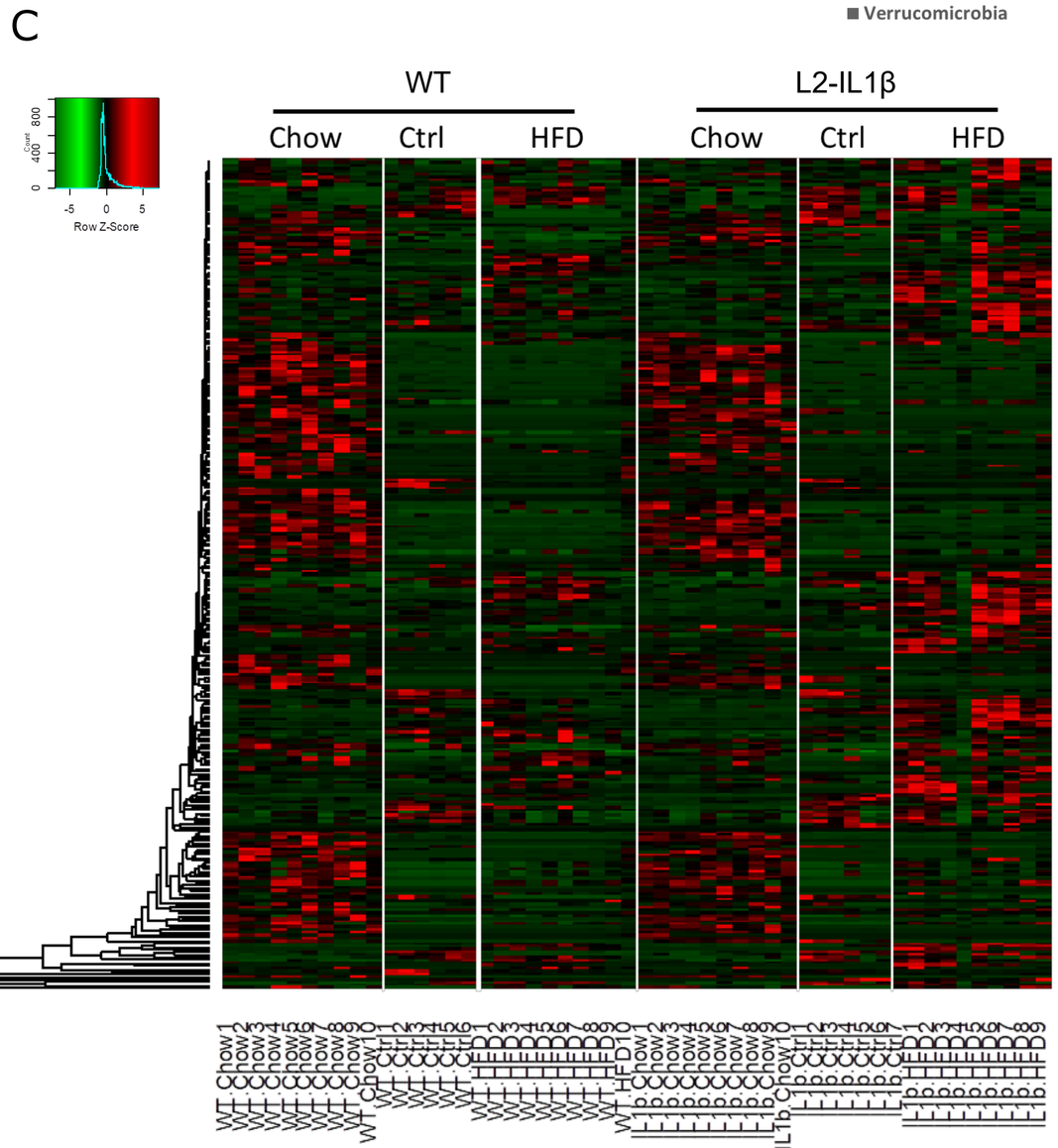


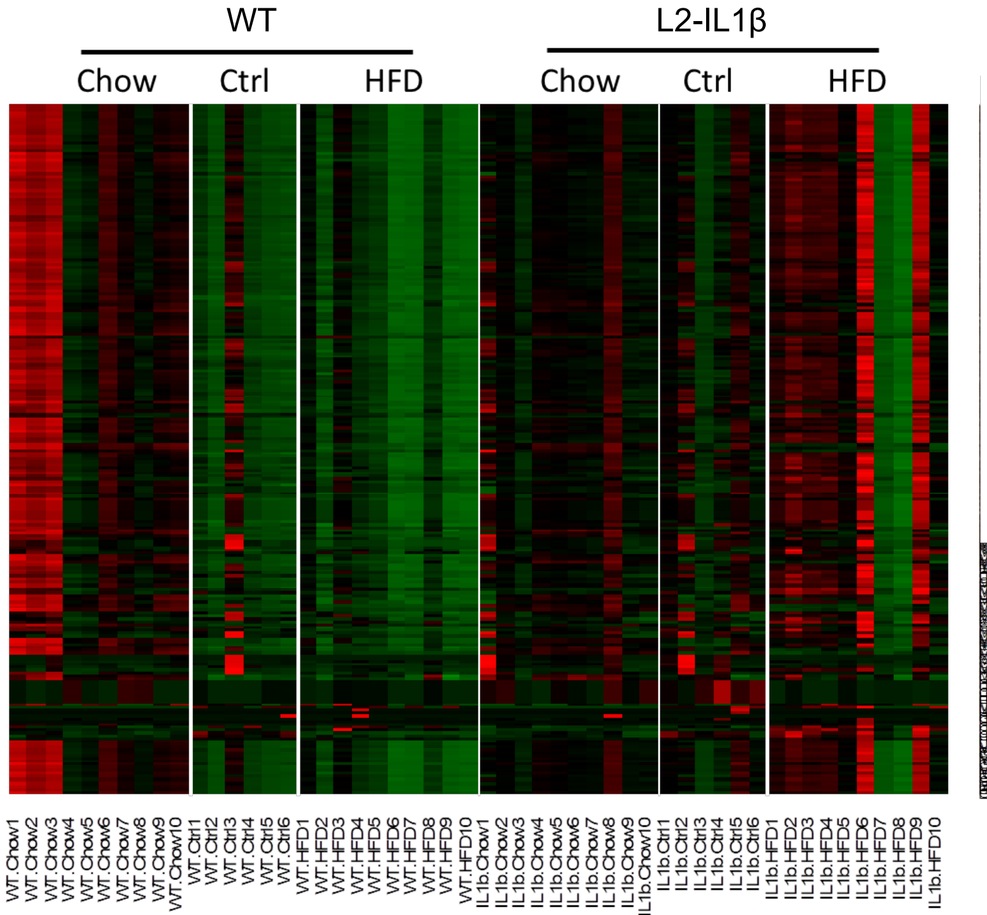
Supplemental Figure 7









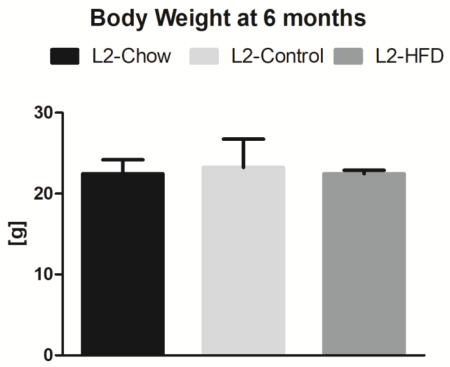


Supplemental Figure8

A

Dietary components	V1124-000 Standard Chow	S5745-E712 HFD Palm oil	S5745-E702 Control	RMH3000 Germfree Chow
Gross Energy (GE)	16.7 MJ/kg	21.9 MJ/kg	16.9 MJ/kg	17.2
Metabolizable Energy (ME)	14.0 MJ/kg	19.7 MJ/kg	15.3 MJ/kg	13.3888
Protein [kJ%]	27	18	23	23
Fat [kJ%]	12	48	13	14
Carbohydrates [kJ%]	61	34	64	60
Crude Nutrients [%]				
Protein	22.0	21.2	21.2	22.5
Fat	4.5	25.1	5.1	5.4
Fiber	3.9	5.0	5.0	4.0
Ash	6.2	5.3	5.3	6.1
Starch	34.2	26.7	45.9	30.4
Sugar	5.1	6.1	6.1	1.3
N free extracts	51.2	37.7	56.8	52.0
Amino Acids [%]				
Lysine	1.5	1.8	1.8	1.3
Methionine	0.5	0.8	0.8	0.5
Met + Cys	0.4	1.1	1.1	0.8
Threonine	0.9	0.9	0.9	0.8
Tryptophan	0.3	0.3	0.3	0.3
Minerals [%]				
Calcium	1.0	0.9	0.9	1.0
Phosphorus	0.7	0.7	0.7	0.8
Sodium	0.2	0.2	0.2	0.3
Magnesium	0.2	0.2	0.2	0.2
Vitamins [IU/kg]				
Vitamin A	25,000.00	18,000.00	18,000.00	29,000.00
Vitamin D_3	1,500.00	1,800.00	1,800.00	2,400.00
Vitamin E	135	180	180	75
Fatty acids [%]				
C 12:0	-	0.01	0.01	NA
C 14:0	0.01	0.21	0.02	NA
C 16:0	0.54	9.18	0.58	NA
C 18:0	0.14	1.11	0.18	NA
C 20:0	0.02	0.1	0.02	NA
C 16:1	0.02	0.05	0.01	NA
C 18:1	1.03	9.19	1.29	NA
C 18:2	2.42	4.67	2.65	1.73
C 18:3	0.28	0.35	0.29	0.16

B



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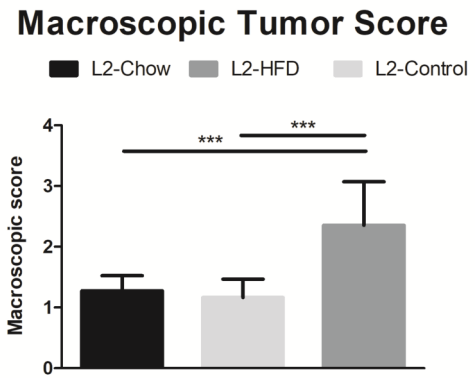
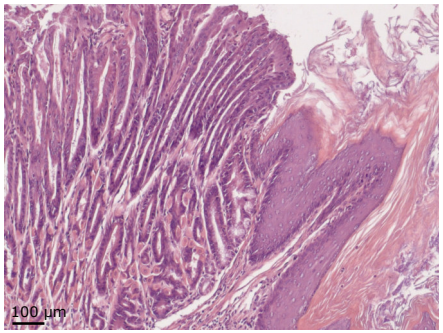


D

E



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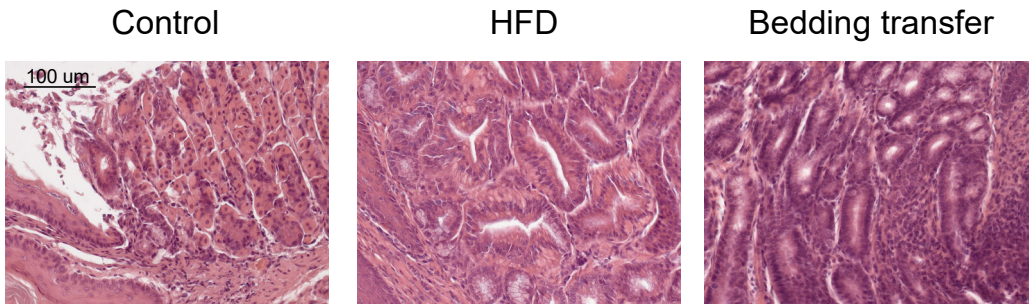

Supplementary Figure9: