

Supplementary tables

Table S1 The physicochemical characteristics of the blueberry juices

Determination	BBJ	FBJ	CFBJ
pH	5.65±0.09 ^a	2.56±0.03 ^b	2.59±0.02 ^b
Acidity (mg lactate/mL)	6.04±0.23 ^c	46.93±0.05 ^a	34.29±0.09 ^b
Reducing sugar (mg glucose /mL)	3.64±0.14 ^a	0.42±0.02 ^b	0.50±0.03 ^b
Total sugar (mg glucose/mL)	163.30±2.07 ^a	80.46±0.95 ^b	75.62±1.74 ^c
Ethanol (%)	0.12±0.01 ^c	0.44±0.04 ^b	11.20±0.07 ^a
Total phenols (mg GA/mL)	1.28±0.04 ^c	1.48±0.03 ^a	1.40±0.02 ^b
Total ANC (mg C3G /L)	394.40±16.29 ^a	42.85±6.27 ^b	42.11±5.17 ^b
Tartaric acid (mg /mL)	3.54±0.19 ^a	2.75±0.09 ^b	3.36±0.03 ^a
D-Malate (mg /mL)	0.49±0.02	nd	nd
Lactate (mg /mL)	0.05±0.01 ^c	0.83±0.05 ^b	1.20±0.02 ^a
Acetate (mg /mL)	0.07±0.01 ^c	22.85±0.40 ^a	15.42±0.16 ^b
Citric acid (mg /mL)	0.25±0.03	0.27±0.02	0.31±0.05
Fumarate (mg /mL)	0.60±0.13 ^c	1.61±0.17 ^b	4.79±0.03 ^a
Energy (kcal/100 mL)	69.47	50.98	119.76
Bacteria (CFU/mL)	nd	nd	nd

Data are presented as the mean ± SD. nd represents not detected. GA means gallic acid, C3G means Cyanidin-3-O-glucoside. Values with different letters above are significantly different, $p < 0.05$, one-way ANOVA test.

Table S2 The ingredients and energy densities of the diets

Ingredients (g / 100 g diet)	Normal chow diet	High fat diet
Casein	18.96	23.31
L-Cystine	0.28	0.35
Corn Starch	29.86	8.48
Maltodextrin	3.32	11.65
Sucrose	33.17	20.14
Cellulose	4.74	5.83
Soybean Oil	2.37	2.91
Lard	1.90	20.68
Mineral Mix	2.68	3.31
Potassium Citrate, 1 H ₂ O	1.56	1.92
Vitamin Mix	0.95	1.16
Choline Bitartrate	0.19	0.23
Calories supplementation (kcal %)		
Proteins	20	20
Carbohydrates	70	35
Fats	10	45
Total calories (kcal / 100 g diet)	385	473

Table S3 The forward primer (F) and reverse primer (R) sequence used for qPCR

amplification.

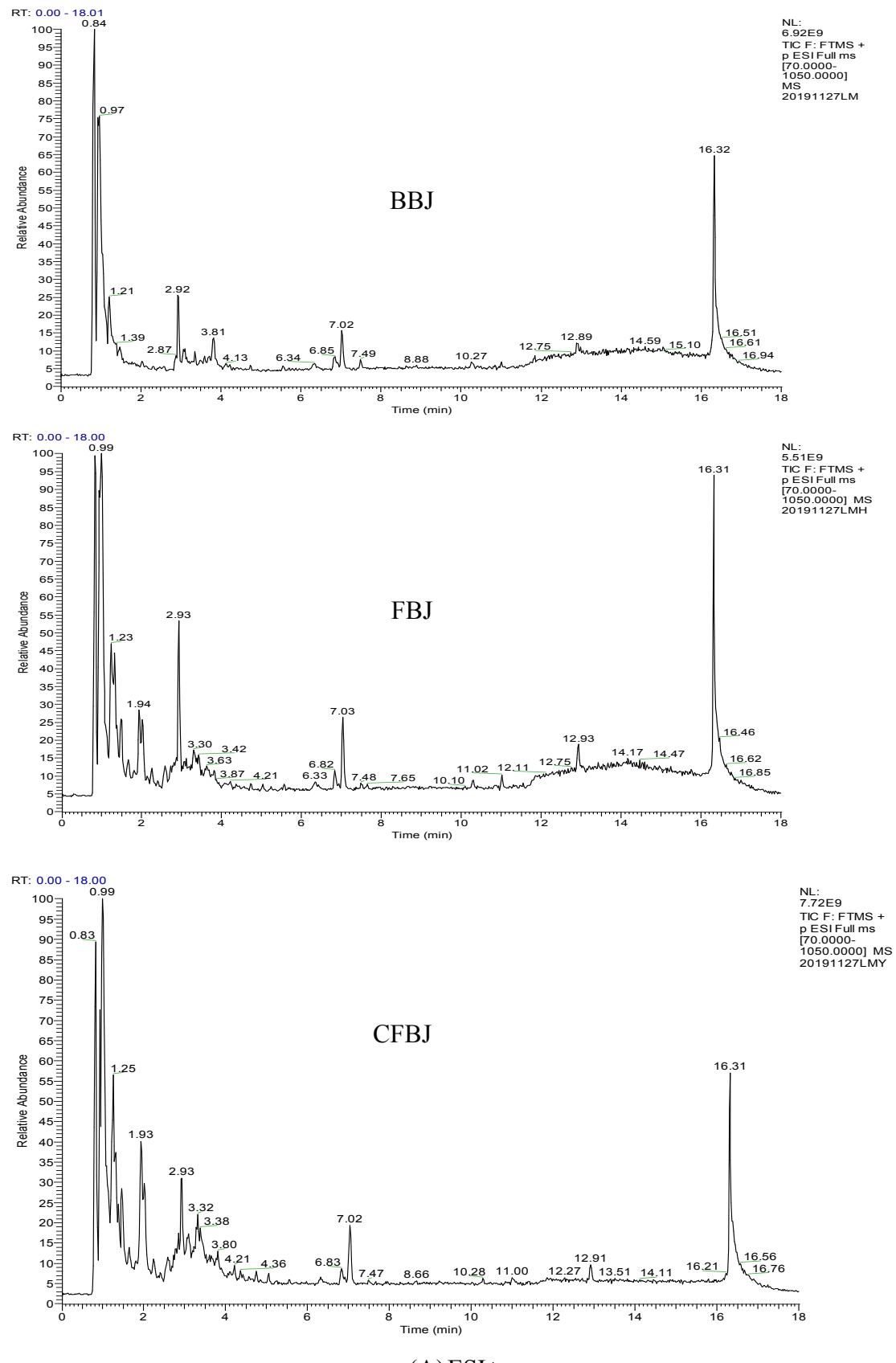
	Primer name	Sequence (5' to 3')
1	β-actin-F	GTGCTATGTTGCTCTAGACTTCG
2	β-actin-R	ATGCCACAGGATTCCATACC
3	Gck-F	TCCCTGTAAGGCACGAAGAC
4	Gck-R	ACGATGTTGTTCCCTTCTGC
5	PPARγ-F	GCATTCTGCTCCACACTATGA
6	PPARγ-R	TCGCACTTGGTATTCTGG
7	PPARα-F	GTCCTCAGTGCTCCAGAGG
8	PPARα-R	GGTCACCTACGAGTGGCATT
9	GLUT-4-F	GGGCTGTGAGTGAGTGCTTC
10	GLUT-4-R	CAGCGAGGCAAGGCTAGA
11	LDL-receptor-F	CAGCTCTGTGAAACCTGGA
12	LDL-receptor-R	TTCTTCAGGTTCGGGATCAG

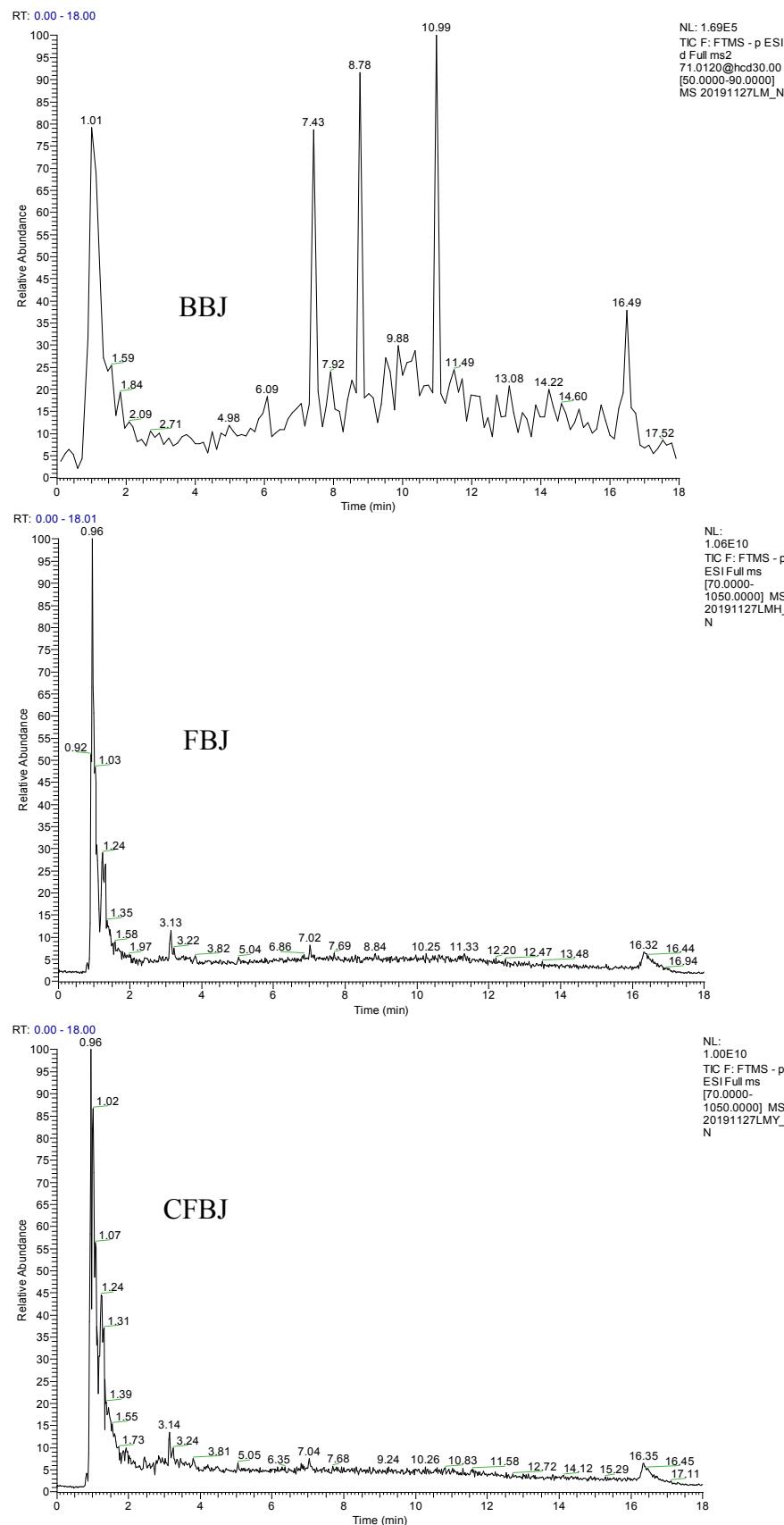
Table S4 Fasting serum glucose level and insulin level

	NCD	HFD	BBJ	FBJ	CFBJ
GLU(mmol/L)	2.99 ± 0.52c	5.98 ± 0.95a	4.04 ± 0.51bc	4.15 ± 1.15bc	4.78 ± 1.12b
INS(mU/L)	9.80 ± 1.73a	7.60 ± 1.65a	7.85 ± 1.30a	7.01 ± 1.57a	7.27 ± 3.06a

GLU means serum glucose level, INS means serum insulin level. Different letters indicate statistically significant differences between groups

Supplementary figures





(B) ESI-

Fig. S1 The total ion chromatography of BBJ, FBJ and CFBJ.

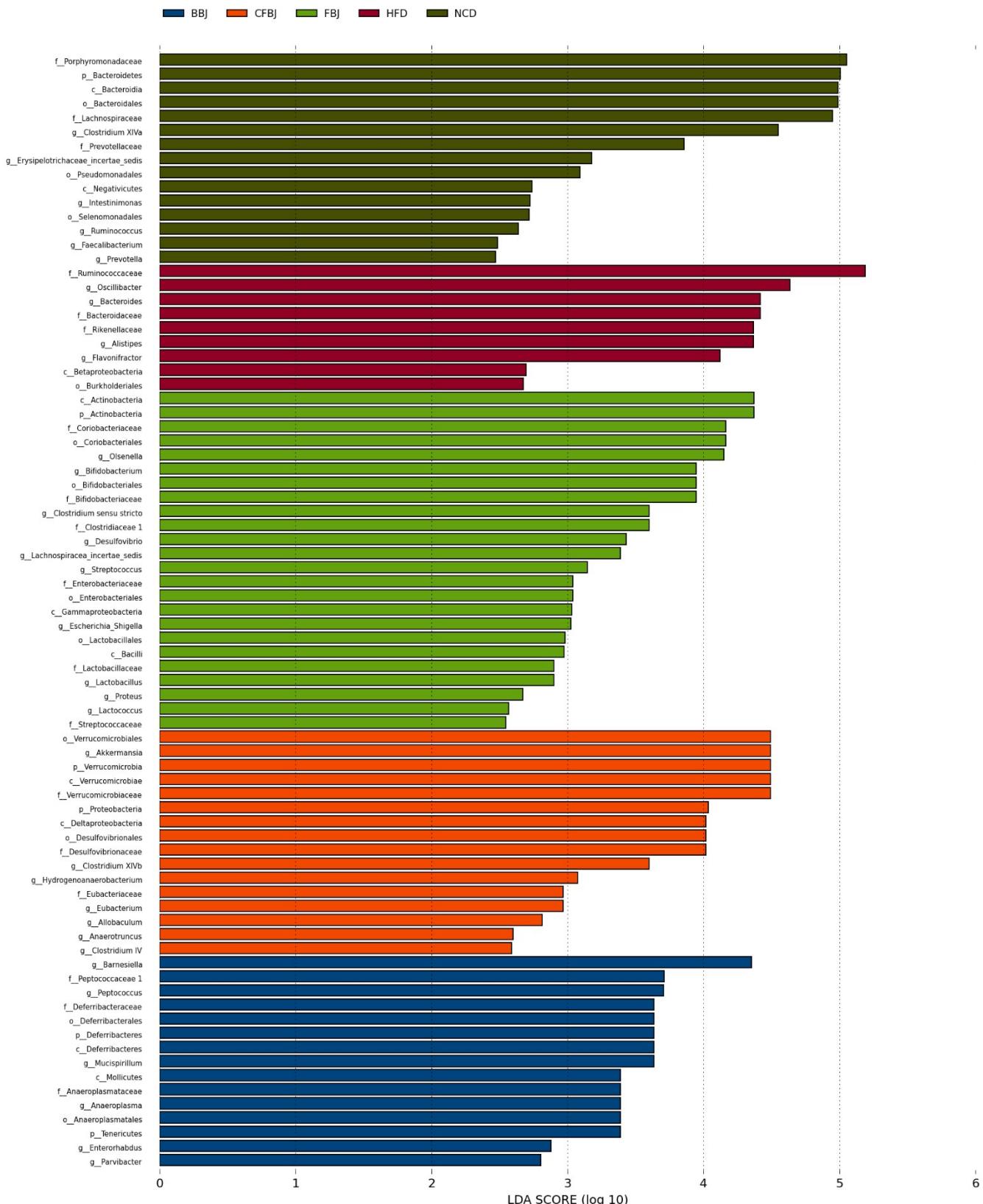


Fig. S2 LEfSe analysis was applied to discriminate the gut microbiota among all the experimental groups (Log LDA > 2.0)

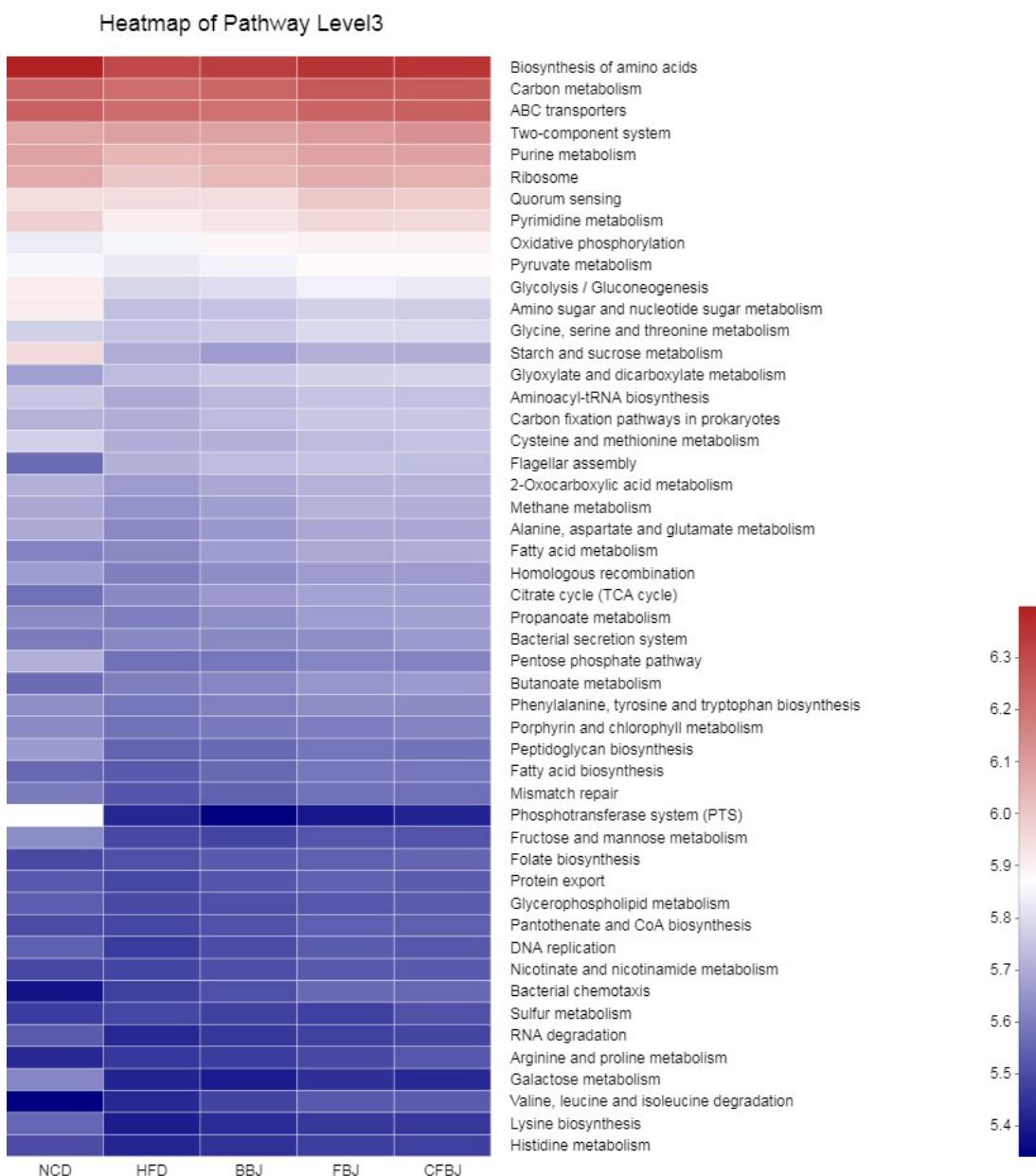
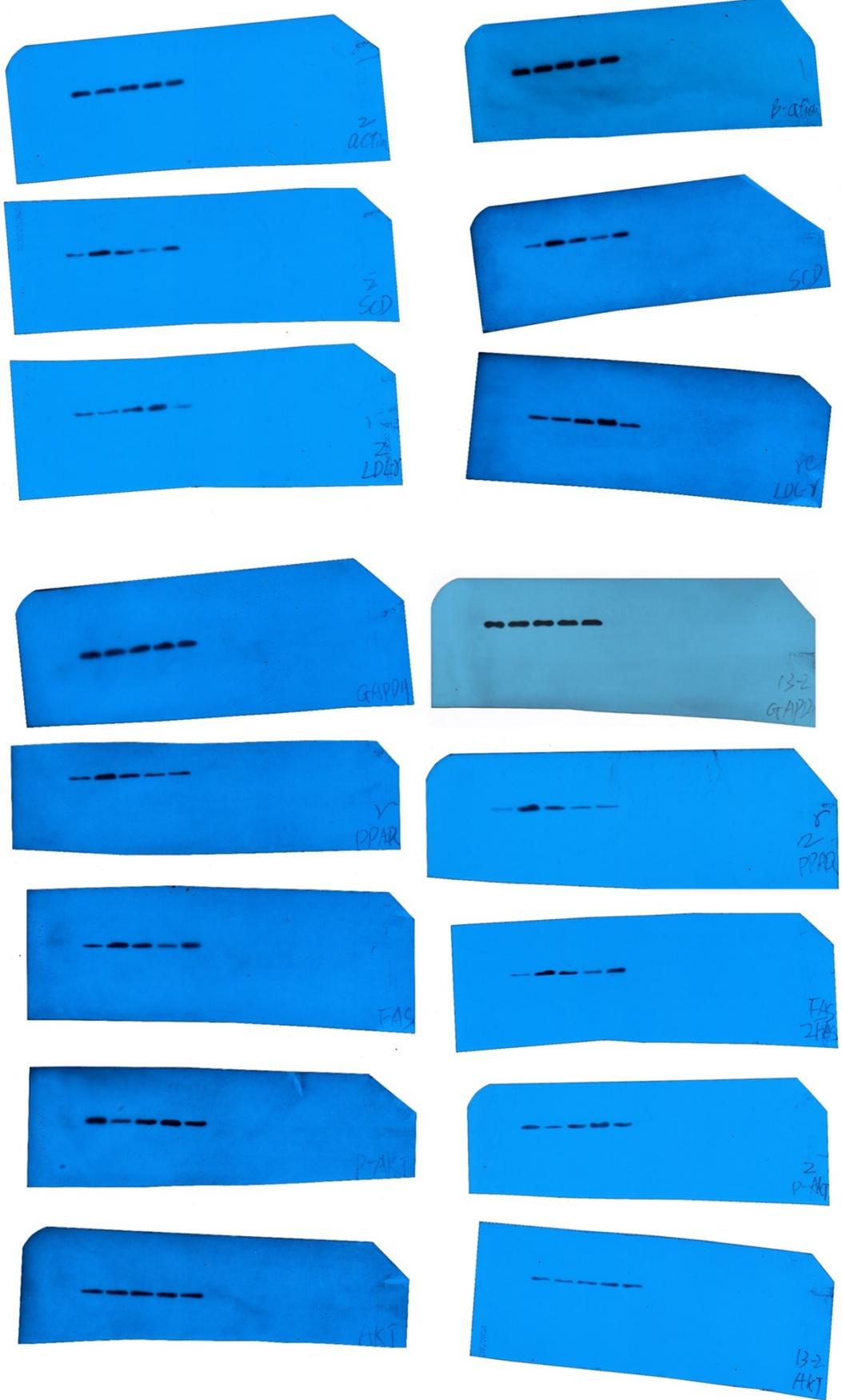


Fig. S3 The DNA abundances of KEGG pathways in level-3 functional prediction by PICRUSt (n=9-10).



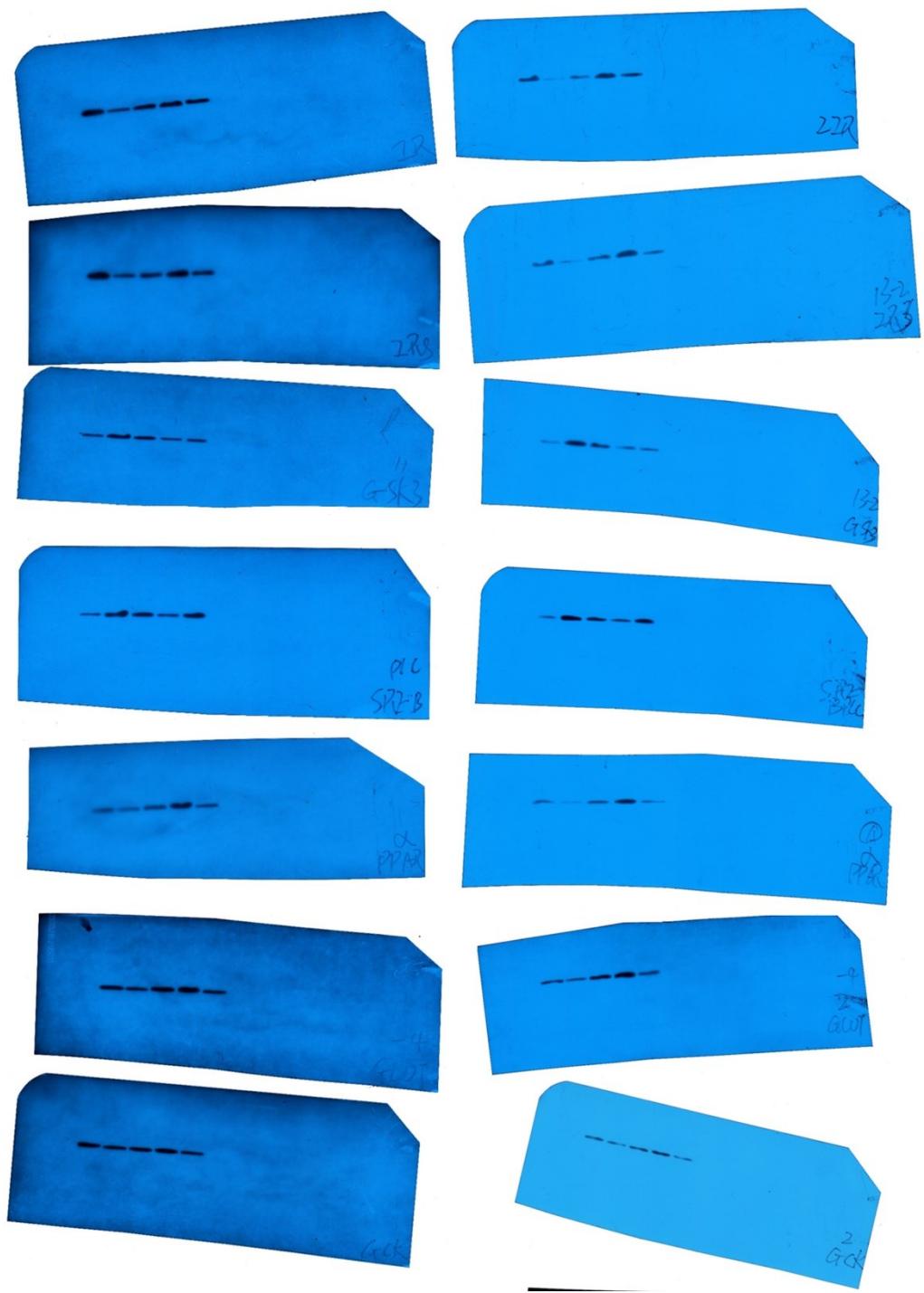


Fig. S4 Uncropped images of Western blot (the bands from left to right were NCD, HFD, BBJ, FBJ and CFBJ, respectively).