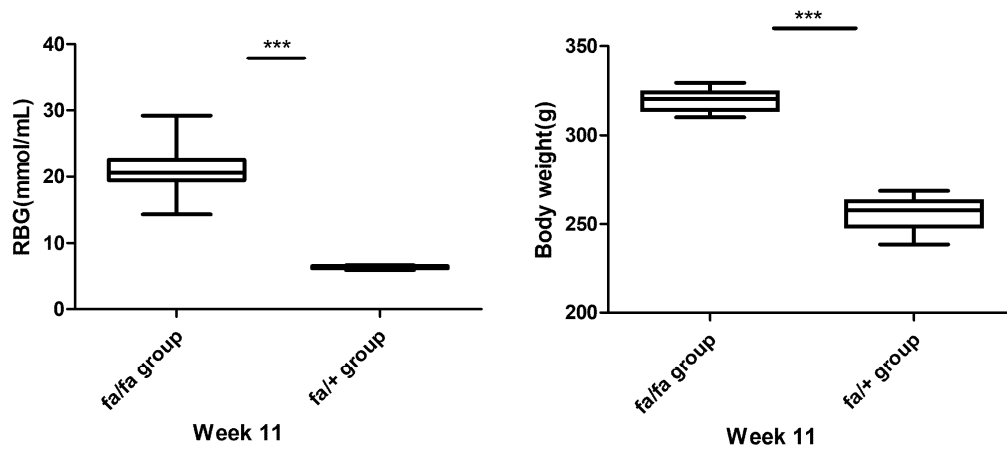
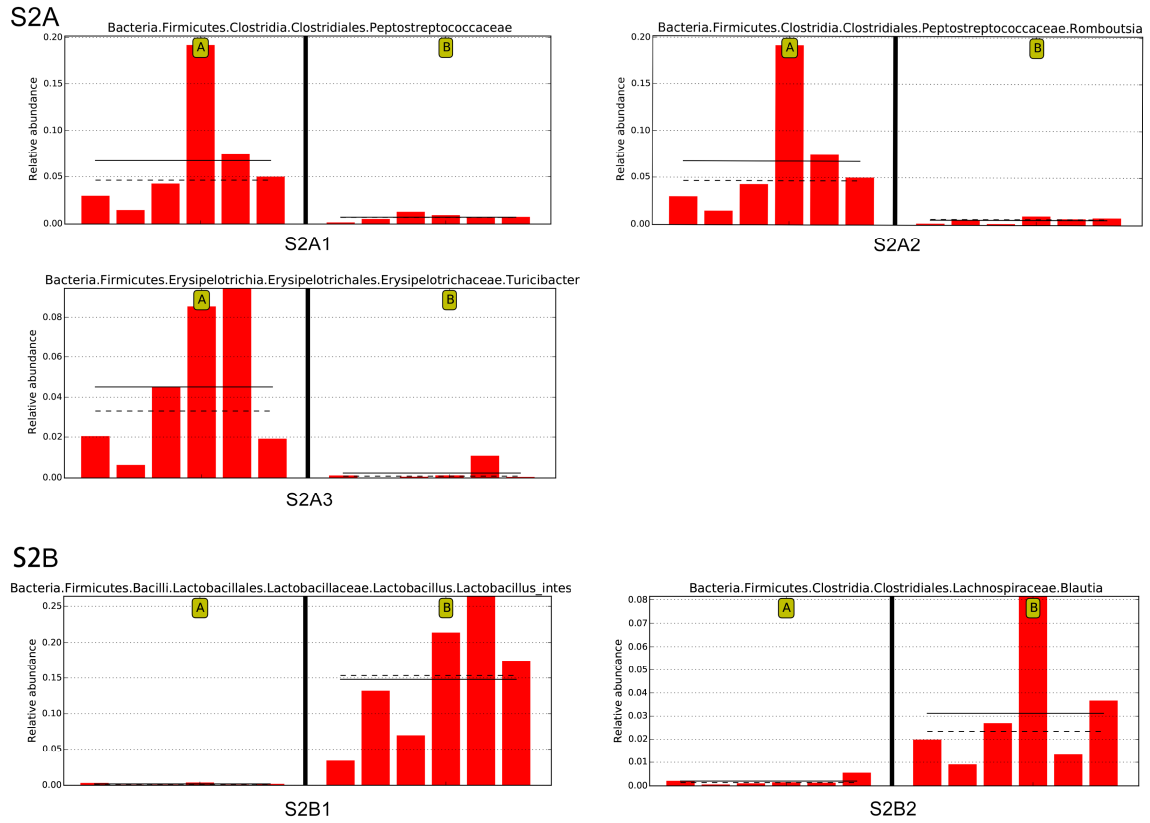


Supplement Figure 1 Random blood glucose and body weight. **(A)** Random blood glucose of fa/fa group was significantly higher than fa/+ group. ***p < 0.001, fa/fa vs. fa/+. **(B)** Body weight of fa/fa group was significantly higher than fa/+ group. ***p < 0.001, fa/fa vs. fa/+.



Supplement Figure 2 Comparative figure of relative abundance of each biomarker in fa/fa and fa/+ group, respectively.



Supplementary Table 1

Taxonomy	fa/fa group							fa/+ group						
	gN.1	gN.2	gN.3	gN.4	gN.5	gN.6	Percentage	gP.1	gP.2	gP.3	gP.4	gP.5	gP.6	Percentage
Firmicutes	37589	48887	39471	40788	42738	33270	58.778%	45953	61456	64531	49353	43851	48461	69.902%
Bacteroidetes	36239	24226	2788	31904	26824	39409	39.079%	27529	12705	9448	24517	26236	26031	28.189%
Proteobacteria	184	192	57	381	48	259	0.271%	663	136	141	452	3222	170	1.066%
Verrucomicrobia	182	208	42	663	2442	389	0.951%	44	11	183	112	70	108	0.118%
Tenericutes	204	563	108	266	888	448	0.600%	96	166	80	249	1676	250	0.561%
Actinobacteria	37	99	139	64	186	76	0.146%	37	81	215	39	52	23	0.100%
unidentified_Bacteria	9	34	8	35	87	31	0.049%	0	0	0	0	2	2	0.001%
Melainabacteria	24	48	0	3	3	29	0.026%	9	6	7	45	5	25	0.022%
Lentisphaerae	15	3	1	6	1	42	0.016%	1	1	3	16	11	3	0.008%
Deferribacteres	6	4	0	27	5	0	0.010%	10	0	0	8	11	1	0.007%
Fusobacteria	2	0	0	0	0	0	0.000%	2	0	0	1	12	0	0.003%
Cyanobacteria	1	1	0	9	1	8	0.005%	1	4	0	1	2	4	0.003%
Thermotogae	0	0	0	6	0	0	0.001%	0	0	0	0	0	1	0.000%
Planctomycetes	0	0	1	0	0	0	0.000%	0	0	0	0	3	0	0.001%
Others	71	69	1	52	19	64	0.067%	17	9	4	34	15	14	0.021%
Total	74563	74334	42616	74204	73242	74025	100.000%	74362	74575	74612	74827	75168	75093	100.000%