

Table S1 The composition and energy supply ratio of the experimental diets

Name	Composition (g/kcal)		
	NFD	HFD	GLU
Casein	140/560	200/800	200/800
L-cystine	1.8/7.2	3/12	3/12
Corn starch	495.7/1983	0/0	0/0
Maltodextrin	125/500	125/500	125/500
Sucrose	100/400	68.8/275	68.8/275
Cellulose	50/0	50/0	50/0
Soybean oil	40/360	25/225	25/225
Lard	0/0	245/2205	245/2205
t-Butylhydroquinone	0.008/0	0/0	0/0
Mineral mix	35/0	10/0	10/0
Vitamin mix	10/40	10/40	10/40
Choline bitartrate	2.6/0	2/0	2/0
Dicalcium phosphate	0/0	13/0	13/0
Calcium carbonate	0/0	5.5/0	5.5/0
Potassium citrate, 1 H ₂ O	0/0	16.5/0	16.5/0
----- Energy supply ratio (g%/kcal%)			
	NFD	HFD	GLU
Protein	14.2/14.7	23.25/18.14	23.25/18.14
Carbohydrate	73.71/75.9	34.55/60.65	34.55/60.65
Fat	4/9.4	27.2/21.22	27.2/21.22

Table S2 Primer sequence of the genes used in the present study

Gene name	Primers	Sequence (5'–3')
AMPK	Forward	acacctcagegctcctgttc
	Reverse	ctgtgctggaatcgacact
ACC	Forward	ccaacatgaggactataacttct
	Reverse	tacatacgtgccgtcaggcttcac
CPT1	Forward	tcttcaactgagttccgatggg
	Reverse	acgccagagatgectttcc
SREBP-1c	Forward	gatgtgcgaactggacacag
	Reverse	catagggggcgtcaaacag
FAS	Forward	ccaacatgaggactataacttct
	Reverse	tacatacgtgccgtcaggcttcac
GAPDH	Forward	agcttgtcatcaacgggaag
	Reverse	tttgatgtagtggggctctcg

Fig. S1 Alpha diversity boxplot of mice (n=4): A. Chao index; B. Shannon index; C. Coverage index. Graph bars with different amounts of * or # on top are considered significantly different (*HFD group compared with the NFD group, $*=p<0.05$, $**=p<0.01$, $***=p<0.001$; # HFD group compared with the GLU group, $\#=p<0.05$, $\##=p<0.01$, $\###=p<0.001$) based on the Tukey–Kramer method.

Fig. S2 Analysis of significantly differential lipid species in NFD, HFD, and GLU groups (n=6): A. PCA score plots of in liver sample of mice between the control, NFD, HFD and GLU group (Positive ion mode); B. PCA score plots of in liver sample of mice between the control, NFD, HFD and GLU group (Negative ion mode); C. PLS-DA score plots of in liver sample of mice between the control (HFD vs NFD); D. PLS-DA score plots of in liver sample of mice between the control (HFD vs GLU).

Fig. S1

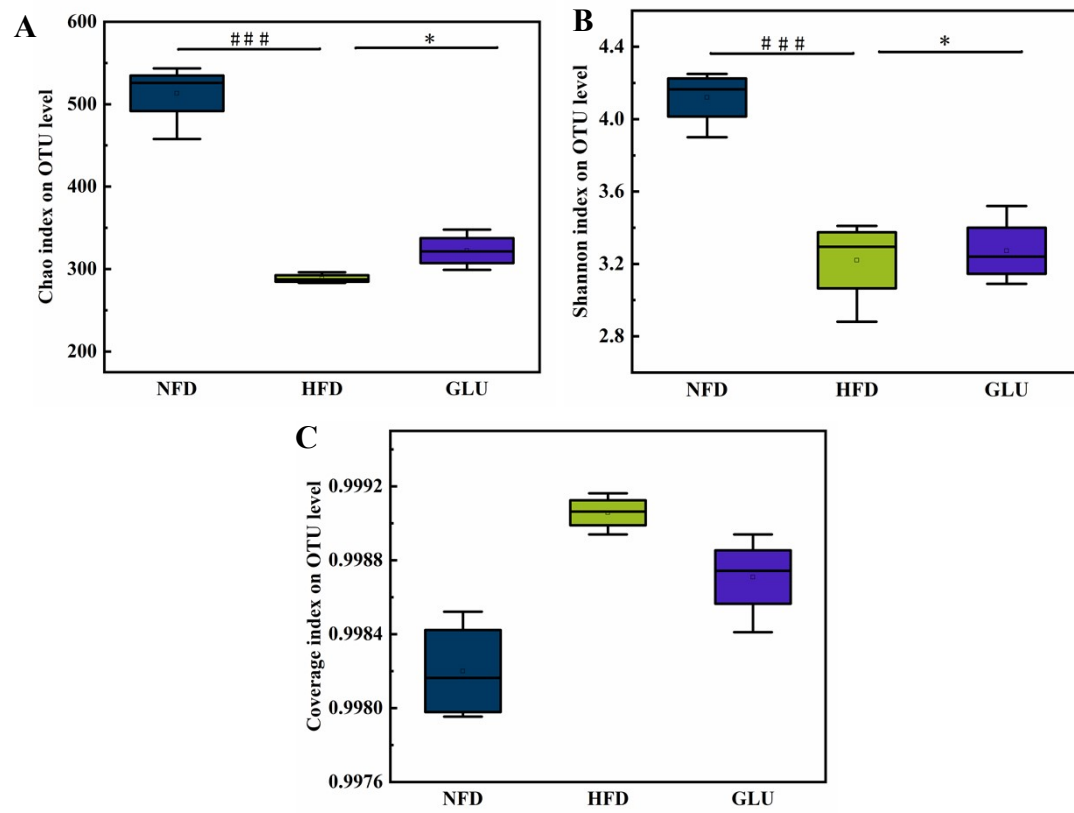


Fig. S2

