1 **Supplementary information**

2 **Table S1.** ^{1}H NMR assignments of major metabolites in serum and urine of rats.

No.	Metabolites	Moieties	δ^{1}H/(multiplicity)	Samples
1	Butyrate	CH_3	0.94(t)	U.
2	Leucine	δCH_3, γCH	0.96(t), 1.71(m)	S.
3	Isoleucine	δCH_3, γCH_3, βCH	0.94(t), 1.01(d), 2.01(m)	S.
4	Valine	αCH , βCH	0.99(d), 2.27(m)	S.
5	3-hydroxybutyrate	γCH_3	1.20(d)	S.
6	Lactate	αCH , β CH_3	1.33(d), 4.12(q)	S. U
7	Threonine	γCH_3, αCH	1.33 (d), 3.60(q)	U
8	Alanine	β CH_3	1.48(d)	S.U
9	Acetate	CH_3	1.92(s)	S.U
10	2-hydroxygluteuic acid	-	1.97(s)	U
11	N-acetylaspaitic acid	-	2.03(s)	U
12	Glutamate	αCH, βCH_2, γCH_2	2.08(m), 2.35(m), 3.75(m)	S.
13	OAG[b]	CH_3	2.14(s)	S
14	Acetone	CH_3	2.23(s)	S
15	Pyruvate	CH_3	2.37(s)	S.
16	Succinate	CH_2	2.41(s)	U
17	α-ketoglutarate	$\beta CH2$, $\gamma CH2$	2.44(t),3.02(t)	U
18	Citrate	$CH_2(1/2)$,$CH_2(1/2)$	2.55(d), 2.67(d)	U
19	Methylamine	CH_3	2.61(s)	S.U
20	DMA	CH_3	2.72(s)	S.U
21	Trimethylamine	CH_3	2.85(s)	U
22	Dimethyglycine	CH_3	2.92(s)	U
23	Creatine	CH_3, CH_2	3.04(s), 3.95(s)	S.U
24	Creatinine	CH_3 , CH_2	3.05(s), 4.05(s)	U
25	Choline	$N(CH_3)_3$,N-CH_2	3.21(s) ,4.06(t)	S.
26	PC	N(CH3)3	3.22(s)	S.
27	GPC	$N(CH3)_3$	3.23(s)	S.
28	Phosphochine	$N(CH_3)_3$, OCH_2, NCH_2	3.23(s), 4.21(t), 3.61(t)	S.
29	TMAO[b]	CH_3	3.25(s)	S
30	Betaine	CH_3, CH_2	3.27(s), 3.91(s)	U.
31	Scyllo-inositol	CH	3.36(s)	S.U
32	Glycerol	half CH_2	3.56(dd)	S.
33	Cystine		3.42(s)	S.U
34	Taurine	-CH_2-S, -CH_2-NH_2	3.27(t), 3.43(t)	S.U
35	Sucrose		4.22 (d), 4.06 (t)	U
36	Glycine	CH_2	3.57(s)	S.U
37	Phenylacetylglutamine		3.60(s)	U
38	Guanidoacetate	CH_2	3.80(s)	U
39	β-Glucose	1-CH	4.64 (d)	S.U

40	α-Glucose	1-CH	5.24(d,)	S.U
41	Allantonin		5.38(s)	S.U
42	Fumarate	CH=CH	6.53(s)	U
43	Tyrosine	3or5-CH,2or6-CH	6.90(d), 7.19(d)	S.
44	Histidine	2-CH,4-CH	7.10(s), 7.91(s)	S.
45	Phenylalanine	2or6-CH,3or5-CH	7.42(m) , 7.32(m)	S.
46	Hippurate	CH_2, 3,5-CH, 4-CH, 2,6-CH	7.57(t), 7.65(t), 7.84(d)	U
47	Xanthine	CH	7.88(s)	U
48	Formate	CH	8.46(s)	S.U
49	Trigonerine	2-CH, 4-CH, 6-CH, 5-CH, CH_3	9.12(s), 8.85(m), 8.83(dd), 8.19(m), 4.44(s)	U
50	N-methylnicotinamide	CH3, 4-CH, 5-CH, 6-CH, 2-CH	4.48(s), 8.19(m), 8.91(m), 8.97(d), 9.28(s)	U

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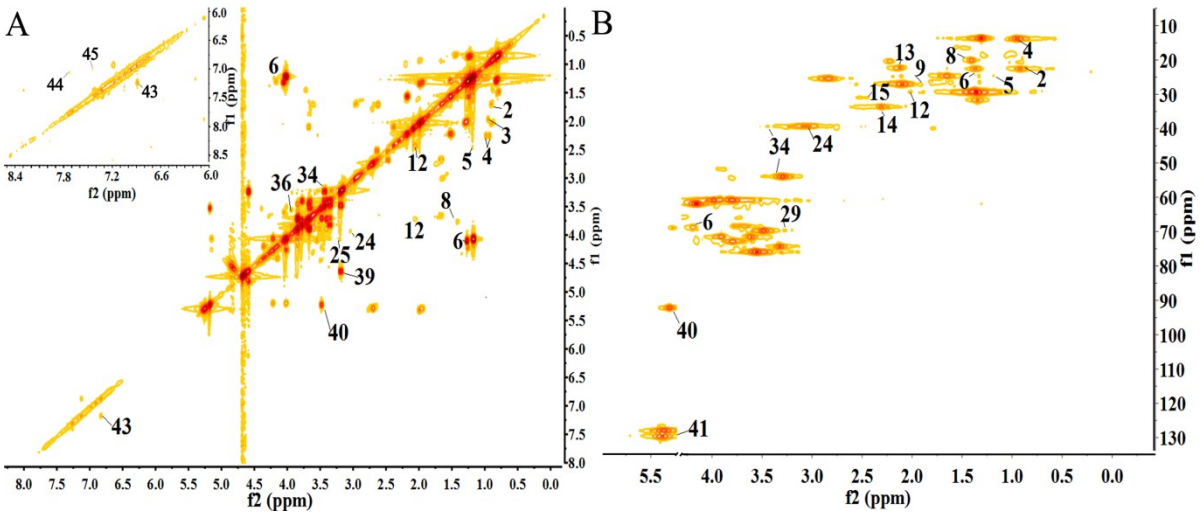

Fig. S1. (A) ^{1}H-^{1}H COSY spectrum of serum, (B) ^{1}H-^{13}C HSQC spectrum of serum.

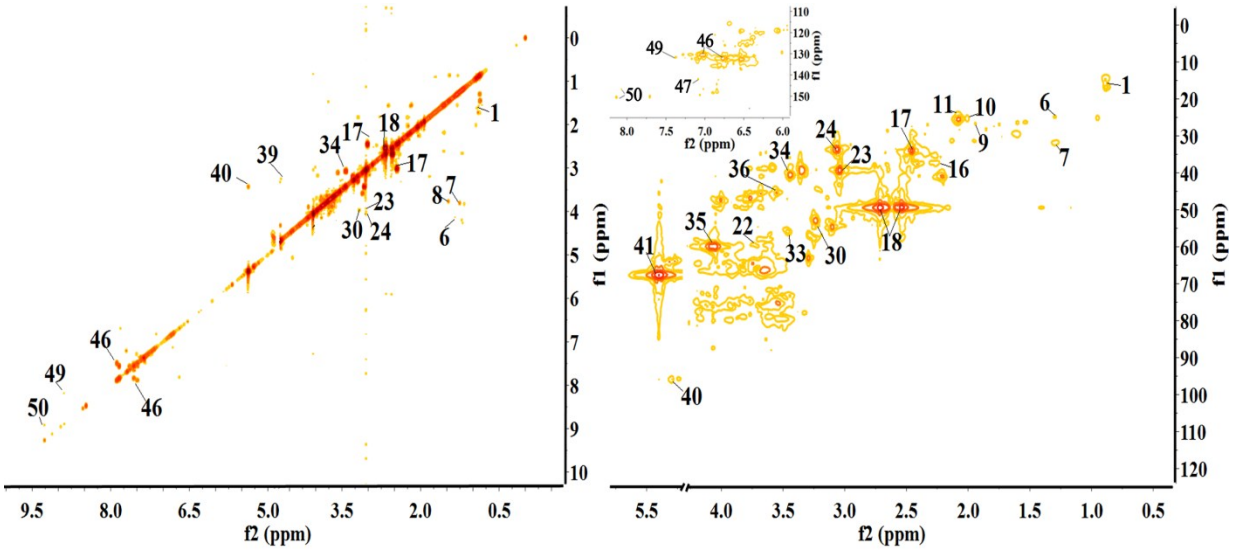

Fig. S2. (A) ^{1}H-^{1}H COSY spectrum of urine, (B) ^{1}H-^{13}C HSQC spectrum of urine.

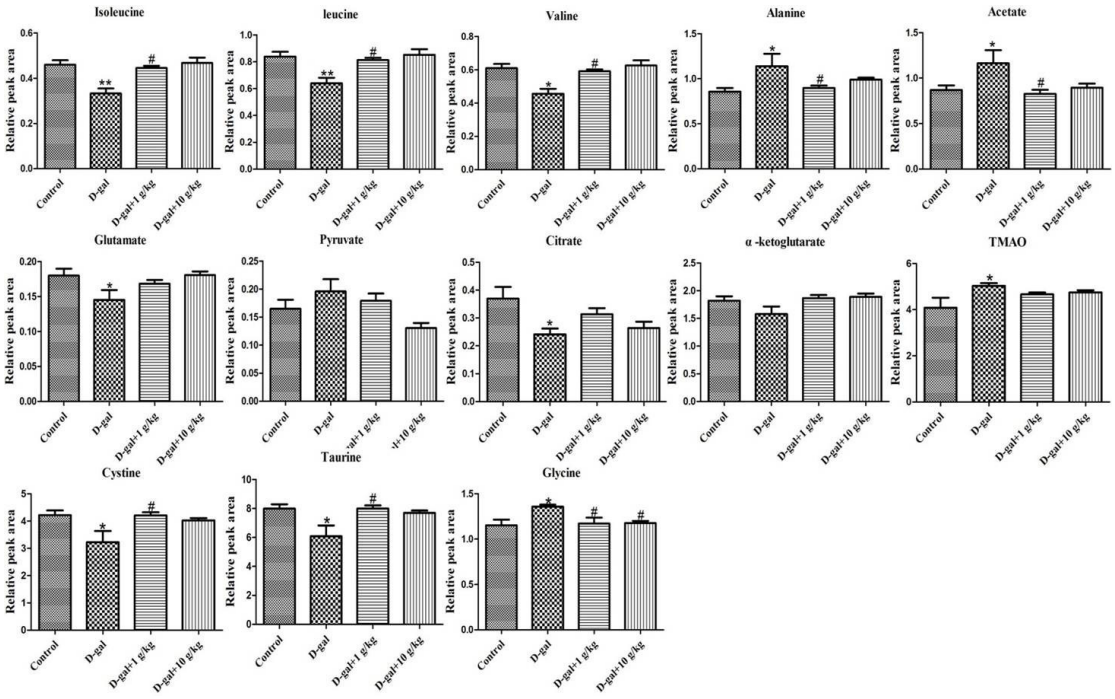

Fig.S3 The relative peak area of differential metabolites in serum of rats. **p*<0.05, ***p*<0.01 compared with the control. $^{\#}p$<0.05, $^{\#\#}p$<0.01 compared with the model.

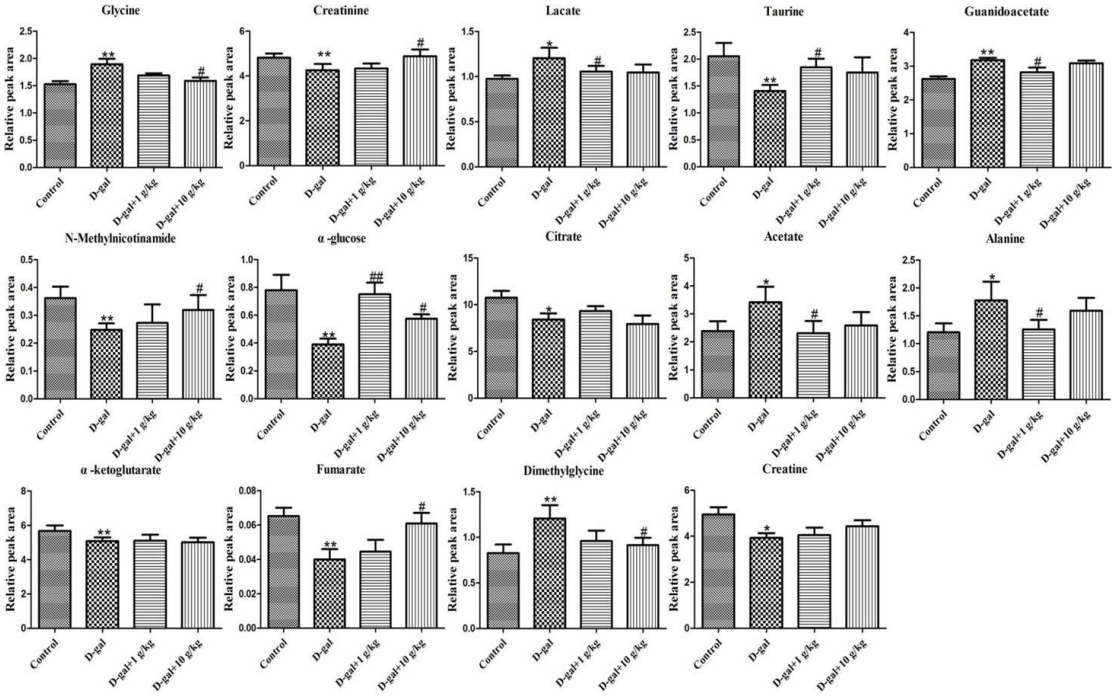

Fig.S4 The relative peak area of differential metabolites in urine of rats. *p<0.05, **p<0.01 compared with the control. $^{\#}p$<0.05, $^{\#\#}p$<0.01 compared with the model.