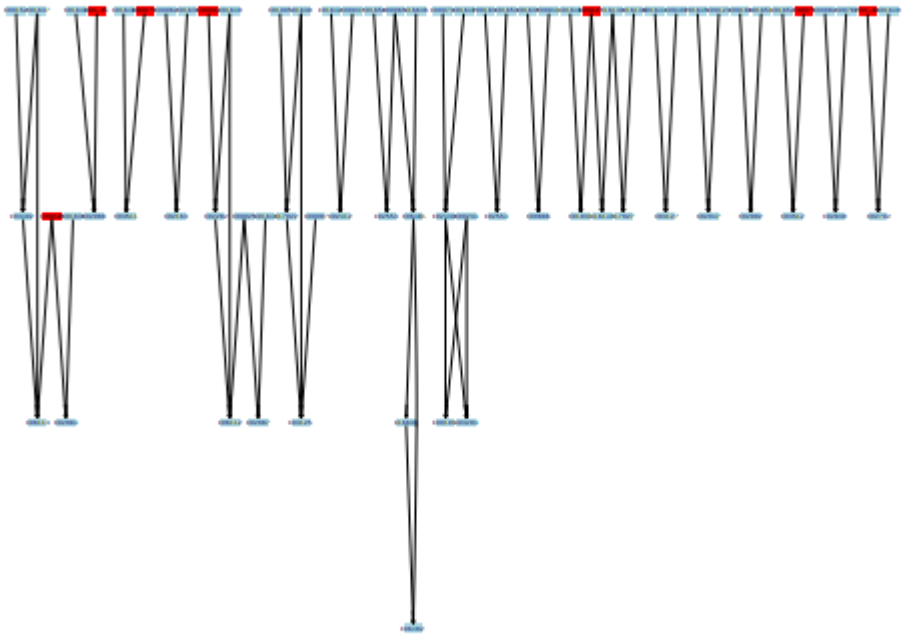

Figure S1, the pathways of Aminoacyl-tRNA biosynthesis

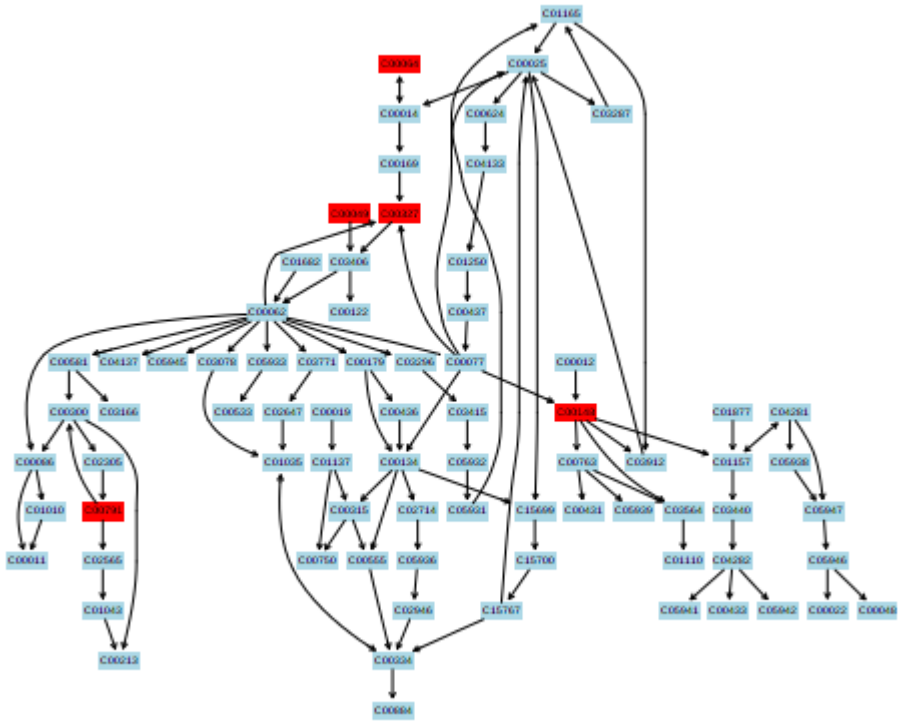

Figure S2, the pathways of Arginine and proline metabolism

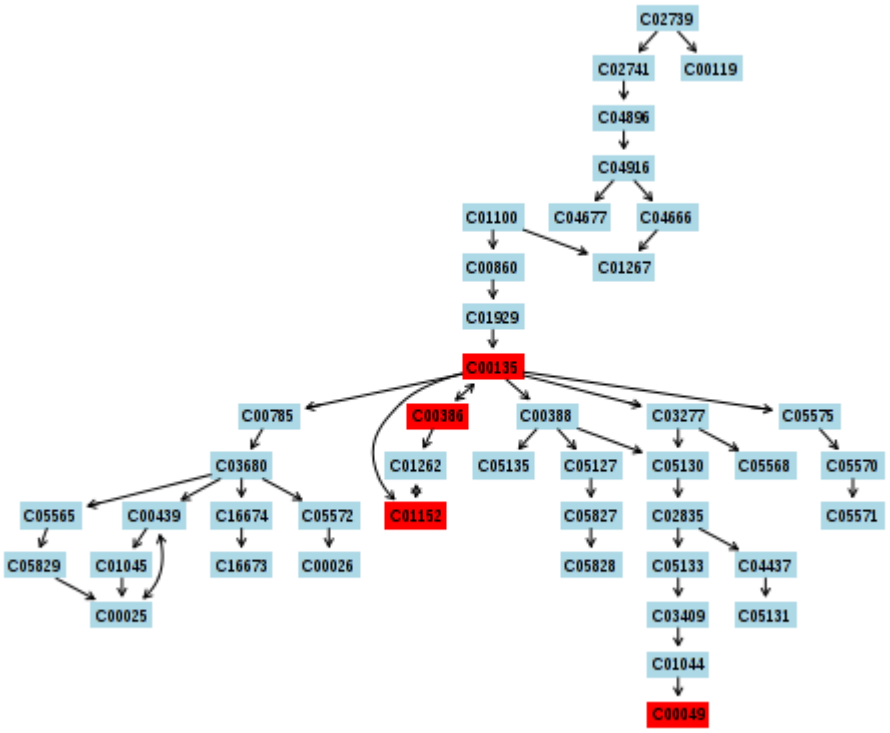

Figure S3, the pathways of Histidine metabolism

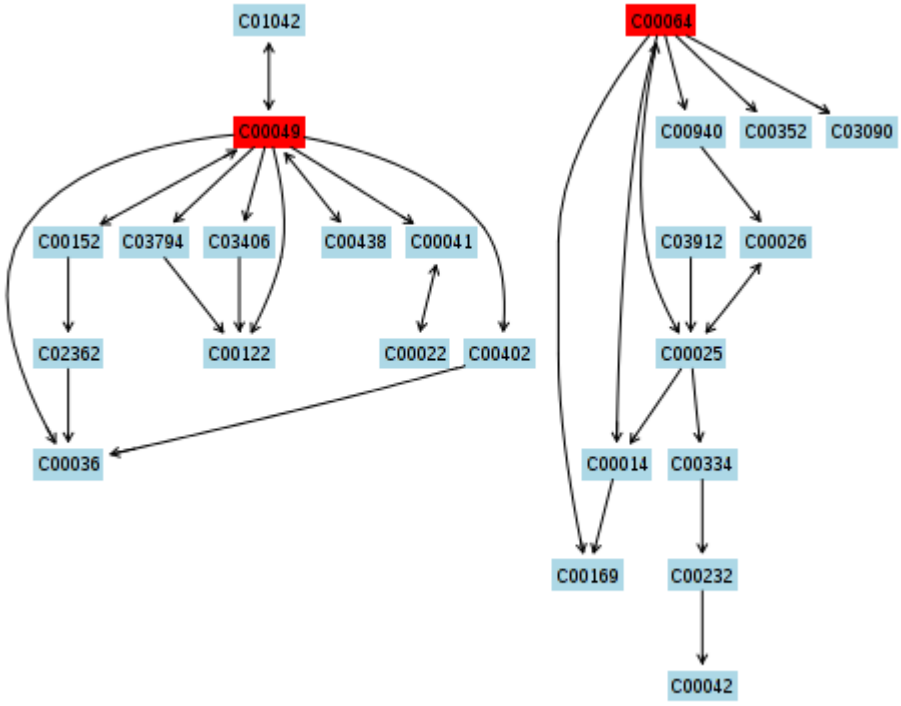

Figure S4, the pathways of Alanine, aspartate and glutamate metabolism

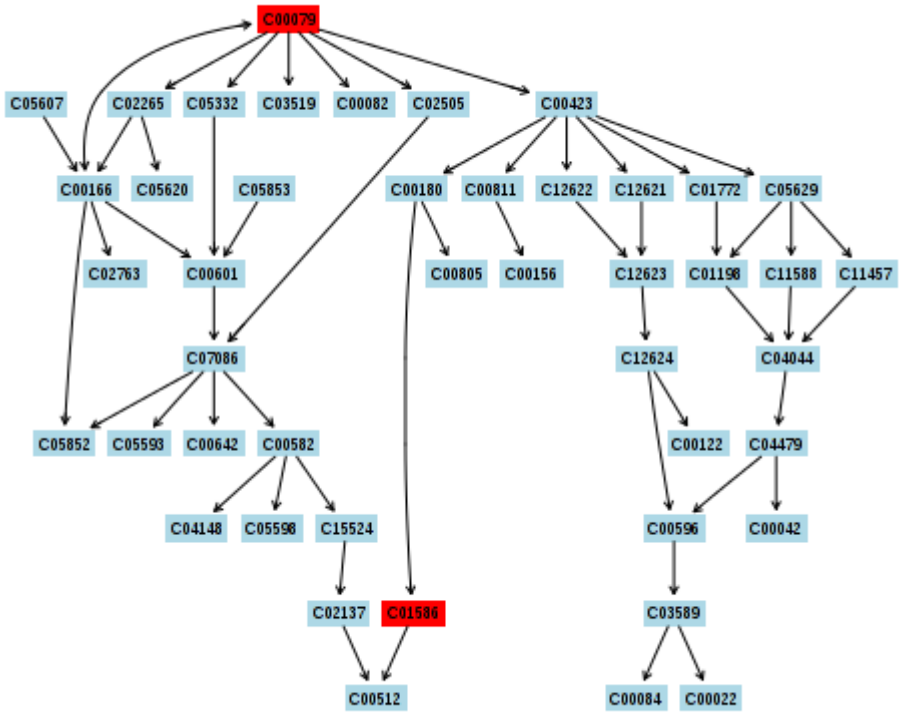

Figure S5, the pathways of Phenylalanine metabolism;

Table S1 Results from Pathway Analysis with MetPA from urine

Pathway Name	Total compond	Expected	Hits	Raw p	Holm p	FDR	impact	metabolites
Aminoacyl-tRNA biosynthesis	75	0.59202	7	8.04E-7	6.43E-5	6.43E-5	0.11268	Histidine, Phenylalanine, Glutamine, Aspartate, Lysine, Tryptophan, Proline
Arginine and proline metabolism	77	0.60781	5	2.41E-4	1.88E-2	6.17E-3	0.12873	Glutamine, Aspartate, Citrulline, Creatinine, Proline
Histidine metabolism	44	0.34732	4	3.09E-4	2.38E-2	6.17E-3	0.14828	Histidine, Carnosine, Methylhistidine, Aspartate
Alanine, aspartate and glutamate metabolism	24	0.18945	2	1.47E-2	1.0	0.147	0.47199	Aspartate, Glutamine
Phenylalanine metabolism	45	0.35521	2	4.78E-2	1.0	0.319	0.15056	Phenylalanine, Hippurate
Lysine degradation	47	0.371	1	0.313	1.0	1.0	0.14675	lysine
Tryptophan metabolism	79	0.6236	1	0.471	1.0	1.0	0.10853	tryptophan

Total is the total number of compounds in the pathway; the hits is the actually matched number from the user uploaded data; the raw p is the original p value calculated from the enrichment analysis; the impact is the pathway impact value calculated from pathway topology analysis.