**Table S6b The correlation statistics between KEGG pathways and host metabolic parameters**

| Variable1 | Variable2 | Correlation | P value | Support | Corrected_pvalue |
|---|---|---|---|---|---|
| Glycolysis_Gluconeogenesis | Fasting.insulin | 0.5783786 | 0.00384 | 23 | 0.0228 |
| Glycolysis_Gluconeogenesis | HOMA.IR | 0.5963727 | 0.002669 | 23 | 0.0191 |
| Glycolysis_Gluconeogenesis | Serum.LBP | 0.5315405 | 0.015868 | 20 | 0.051 |
| Glycolysis_Gluconeogenesis | Cholesterol | 0.5808429 | 0.005761 | 21 | 0.0278 |
| Glycolysis_Gluconeogenesis | eAT.TNF.a.mRNA | 0.5232202 | 0.003586 | 29 | 0.0224 |
| Glycolysis_Gluconeogenesis | Liver.weight | 0.5624527 | 0.001216 | 30 | 0.0131 |
| Carbohydrate_metabolism | Weight.gain | 0.5840169 | 0.000703 | 30 | 0.0131 |
| Carbohydrate_metabolism | Cholesterol | 0.6289606 | 0.002256 | 21 | 0.0188 |
| Carbohydrate_metabolism | eAT.TNF.a.mRNA | 0.5831843 | 0.000899 | 29 | 0.0131 |
| Carbohydrate_metabolism | eAT.MCP.1.mRNA | 0.5746806 | 0.001112 | 29 | 0.0131 |
| Carbohydrate_metabolism | eAT.adipocyte.size | 0.5172121 | 0.009647 | 24 | 0.0377 |
| Carbohydrate_metabolism | eAT.weight | 0.5995466 | 0.000463 | 30 | 0.0131 |
| Lysine_biosynthesis | Cholesterol | 0.6050326 | 0.003662 | 21 | 0.0224 |
| Lysine_biosynthesis | eAT.weight | 0.5610459 | 0.001258 | 30 | 0.0131 |
| Monobactam_biosynthesis | Cholesterol | 0.5821644 | 0.005625 | 21 | 0.0278 |
| Monobactam_biosynthesis | eAT.CD11c.mRNA | 0.5545742 | 0.001796 | 29 | 0.017 |
| Monobactam_biosynthesis | eAT.MCP.1.mRNA | 0.5860465 | 0.000836 | 29 | 0.0131 |
| Monobactam_biosynthesis | eAT.weight | 0.6322338 | 0.000178 | 30 | 0.0131 |
| Ribosome | Cholesterol | -0.555076 | 0.009003 | 21 | 0.036 |
| Oxidative_phosphorylation | Cholesterol | -0.538967 | 0.011699 | 21 | 0.0435 |
| RNA_polymerase | Weight.gain | -0.502421 | 0.004664 | 30 | 0.0259 |
| RNA_polymerase | eAT.weight | -0.510358 | 0.003958 | 30 | 0.0229 |
| Transcription_machinery | eAT.weight | -0.530069 | 0.002588 | 30 | 0.0191 |
| DNA_repair_and_recombination_proteins | Cholesterol | -0.520696 | 0.015516 | 21 | 0.051 |
| DNA_repair_and_recombination_proteins | eAT.weight | -0.501674 | 0.004736 | 30 | 0.0259 |
| Prokaryotic_Defense_System | eAT.TNF.a.mRNA | -0.534712 | 0.00589 | 25 | 0.0278 |
| Primary_bile_acid_biosynthesis | eAT.CD11c.mRNA | 0.5092775 | 0.001093 | 38 | 0.0131 |
| Primary_bile_acid_biosynthesis | eAT.MCP.1.mRNA | 0.5263872 | 0.000687 | 38 | 0.0131 |
| Cholesterol_metabolism | Cholesterol | 0.5199621 | 0.001153 | 36 | 0.0131 |
| Cholesterol_metabolism | eAT.TNF.a.mRNA | 0.5171818 | 0.000885 | 38 | 0.0131 |
| Cholesterol_metabolism | eAT.MCP.1.mRNA | 0.5211689 | 0.000794 | 38 | 0.0131 |
| Taurine_and_hypotaurine_metabolism | Cholesterol | 0.5328528 | 0.000821 | 36 | 0.0131 |
| Taurine_and_hypotaurine_metabolism | eAT.TNF.a.mRNA | 0.5371125 | 0.000507 | 38 | 0.0131 |
| Taurine_and_hypotaurine_metabolism | eAT.MCP.1.mRNA | 0.5356597 | 0.000529 | 38 | 0.0131 |