## A. Pathway Enrichment for Metabolomics ASCA PC 1 Valine, leucine, and isoleucine biosynthesis-Phenylalanine, tyrosine and tryptophan biosynthesis-Glutathione metabolism-Phenylalanine metabolism-Ascorbate and aldarate metabolism-One carbon pool by folate-Arginine and proline metabolism-Glycine, serine and threonine metabolism-Valine, leucine and isoleucine degradation-FDR ≥ 0.05 < 0.05 Pentose phosphate pathway-Porphyrin metabolism-Glyoxylate and dicarboxylate metabolism-Lipoic acid metabolism-Inositol phosphate metabolism-Tryptophan metabolism-Cysteine and methionine metabolism-Amino sugar and nucleotide sugar metabolism-Purine metabolism-

**Enrichment Ratio** 









