



**Figure S1:** Heatmap correlation matrix of clinical variables vs metabolite ions  
 Metabolite ion abundances were creatinine normalized and natural log transformed.  
 Pearson correlations used for continuous clinical variables (e.g. age).  
 Point-biserial used for race (White vs. Non-white), sex, smoked >100 cigarettes.  
 Polyserial correlations used for urine albumin.