**Table S1 Filtered differential metabolites between AAA and AS group**.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Metabolites** | **Mean (AAA)** | **Mean (AS)** | **VIP** | ***P* value** | **Fold change** |
| Cysteine-S-sulfate | 0.023653623 | 0.013773101 | 2.507306179 | 0.001505304 | 1.717378158 |
| 2'-Deoxy-D-ribose | 0.048647224 | 0.02850044 | 1.312353424 | 0.037138237 | 1.706893785 |
| Mevalonic acid | 0.05614712 | 0.03317394 | 1.509211315 | 0.02811801 | 1.692506833 |
| 5-L-Glutamyl-L-alanine | 0.020786164 | 0.013030624 | 2.552326081 | 0.000539599 | 1.595177884 |
| 3-Methoxy-4-Hydroxyphenylglycol Sulfate | 2.386445331 | 1.501905802 | 1.796287377 | 0.041644734 | 1.588944745 |
| Glycochenodeoxycholate | 1.926162989 | 1.227385171 | 1.011057835 | 0.022221644 | 1.569322357 |
| Adynerin | 0.306442498 | 0.198812049 | 1.308753996 | 0.019174425 | 1.541367838 |
| Glycocholic acid | 0.150672794 | 0.099561347 | 1.378636127 | 0.044855704 | 1.513366372 |
| Pregnenolone sulfate | 0.399540307 | 0.265663656 | 1.078341607 | 0.009282942 | 1.503932881 |
| 3-Hexanone | 0.017941066 | 0.027025884 | 1.844348748 | 0.031515222 | 0.663847514 |
| 6k-PGF1alpha-d4 | 0.035699925 | 0.059449498 | 1.582561268 | 0.007377346 | 0.600508432 |
| Phenylacetylglycine | 0.008632612 | 0.014740293 | 2.068126879 | 0.003778366 | 0.58564723 |
| Nitrofurazone | 0.081237239 | 0.142958019 | 1.760518847 | 0.004432927 | 0.568259406 |
| L-Proline | 0.006398233 | 0.011616619 | 1.866744742 | 0.004311381 | 0.550782687 |
| D-Biotin | 0.064868692 | 0.118122462 | 2.844210033 | 0.004729056 | 0.549164748 |
| Synephrine | 0.026244314 | 0.051045653 | 1.635760063 | 0.002174843 | 0.514134156 |
| 3-Aminopropanesulphonic Acid | 0.260599817 | 0.86686307 | 1.305643751 | 0.044709201 | 0.30062397 |
| Salicylic acid | 1.463073618 | 12.00389524 | 1.62029256 | 0.029355686 | 0.121883238 |