|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| NO. | Biomarker names | Logarithm value | Groups | LDA value | P value |
| 1 | s\_Bacteroides\_stercoris | 4.53484 | NR | 4.070256 | 0.004284 |
| 2 | s\_Clostridiaceae\_bacterium\_DJF\_VR76 | 4.001247 | NR | 3.775326 | 2.43E-05 |
| 3 | g\_Christensenellaceae\_R\_7\_group | 4.046012 | NR | 3.747014 | 0.00047 |
| 4 | f\_Christensenellaceae | 4.046566 | NR | 3.746854 | 0.000691 |
| 5 | o\_Christensenellales | 4.046566 | NR | 3.746854 | 0.000691 |
| 6 | f\_Oscillospiraceae | 4.100568 | NR | 3.556092 | 0.010933 |
| 7 | c\_unidentified\_Actinobacteria | 3.949311 | NR | 3.519728 | 0.036191 |
| 8 | p\_Actinobacteria | 3.949311 | NR | 3.519728 | 0.036191 |
| 9 | o\_Bifidobacteriales | 3.885953 | NR | 3.516048 | 0.002744 |
| 10 | f\_Bifidobacteriaceae | 3.885953 | NR | 3.516048 | 0.002744 |
| 11 | g\_Bifidobacterium | 3.885553 | NR | 3.51603 | 0.00325 |
| 12 | f\_Rikenellaceae | 4.07556 | NR | 3.422201 | 0.014648 |
| 13 | g\_UCG\_002 | 3.783037 | NR | 3.323837 | 0.031816 |
| 14 | s\_Bacteroides\_coprophilus | 3.70003 | NR | 3.322183 | 0.002787 |
| 15 | g\_Eubacterium\_\_ruminantium\_group | 3.781983 | NR | 3.278201 | 9.81E-05 |
| 16 | p\_unidentified\_Bacteria | 3.83493 | NR | 3.251233 | 0.03182 |
| 17 | f\_Enterococcaceae | 3.494049 | NR | 3.156539 | 0.002303 |
| 18 | g\_Enterococcus | 3.494049 | NR | 3.156539 | 0.002303 |
| 19 | s\_Enterococcus\_faecium | 3.488237 | NR | 3.151367 | 0.00362 |
| 20 | o\_Acidaminococcales | 3.587993 | NR | 3.137861 | 0.021308 |
| 21 | f\_Acidaminococcaceae | 3.587993 | NR | 3.137861 | 0.021308 |
| 22 | s\_Bifidobacterium\_breve | 3.372768 | NR | 3.134822 | 0.000202 |
| 23 | s\_Lactobacillus\_aviarius | 3.378445 | NR | 3.122404 | 0.002682 |
| 24 | o\_Peptostreptococcales\_Tissierellales | 3.859827 | NR | 3.057708 | 0.022303 |
| 25 | s\_Bacteroides\_clarus | 3.679231 | NR | 3.045737 | 0.02279 |
| 26 | c\_Alphaproteobacteria | 3.259192 | NR | 3.005539 | 7.49E-05 |
| 27 | s\_Haemophilus\_parainfluenzae | 3.429571 | R | 3.034543 | 4.00E-05 |
| 28 | g\_Citrobacter | 3.498432 | R | 3.036008 | 0.003632 |
| 29 | g\_Haemophilus | 3.455492 | R | 3.04485 | 7.28E-05 |
| 30 | f\_Pasteurellaceae | 3.48395 | R | 3.06156 | 9.71E-05 |
| 31 | g\_Prevotella\_7 | 3.492339 | R | 3.207453 | 4.44E-06 |
| 32 | f\_unidentified\_Gastranaerophilales | 3.589983 | R | 3.339725 | 0.000941 |
| 33 | g\_unidentified\_Gastranaerophilales | 3.589983 | R | 3.339733 | 0.000941 |
| 34 | s\_Candidatus\_Melainabacteria\_bacterium\_MEL\_A1 | 3.589782 | R | 3.33996 | 6.35E-05 |
| 35 | s\_Bacteroides\_dorei | 3.849671 | R | 3.466355 | 0.000104 |
| 36 | o\_Clostridiales | 4.009739 | R | 3.687128 | 0.026697 |
| 37 | f\_Clostridiaceae | 4.009632 | R | 3.687364 | 0.025534 |
| 38 | g\_Clostridium\_sensu\_stricto\_1 | 4.007768 | R | 3.695353 | 0.01396 |
| 39 | k\_Bacteria | 5.99994 | R | 3.766994 | 0.009382 |

**Supplementary Table 2. Characteristics of differential microorganisms of LEfSe analysis (LDA > 3).**

R: responder; NR: non-responder