**Supplemental Table 1. Taxa discriminating on CIN 2+ status.**

|  |  |  |  |
| --- | --- | --- | --- |
| **OTU/Taxa** | **Class level** | **LDA score** | ***P* value** |
| Lactobacillaceae | CIN 2+ | 4.64 | 0.04 |
| Lactobacillus | CIN 2+ | 4.64 | 0.04 |
| Lactobacillus; OTU\_1392798 | CIN 2+ | 4.34 | 0.00 |
| Lactobacillus; OTU\_1457139 | CIN 2+ | 3.46 | 0.03 |
| Bacteroidaceae | CIN 2+ | 3.15 | 0.03 |
| Bacteroides | CIN 2+ | 3.14 | 0.03 |
| Porphyromonadaceae | CIN 2+ | 2.89 | 0.04 |
| L. reuteri | CIN 2+ | 2.72 | 0.01 |
| Lactobacillus; OTU\_1304722 | CIN 2+ | 2.64 | 0.03 |
| Parabacteroides | CIN 2+ | 2.59 | 0.00 |
| SR1; OTU\_1644414 | CIN 2+ | 2.56 | 0.01 |
| Coxiellaceae | CIN 2+ | 2.55 | 0.04 |
| SR1 | CIN 2+ | 2.55 | 0.01 |
| Bacteroides; OTU\_318167 | CIN 2+ | 2.53 | 0.00 |
| Rickettsiella | CIN 2+ | 2.51 | 0.04 |
| P. pseudoalcaligenes | CIN 2+ | 2.46 | 0.03 |
| Fusobacterium; OTU\_710268 | CIN 2+ | 2.45 | 0.03 |
| P. pseudoalcaligenes; OTU\_2111470 | CIN 2+ | 2.44 | 0.03 |
| Bacteroides; OTU\_2292732 | CIN 2+ | 2.42 | 0.01 |
| Legionellales | CIN 2+ | 2.41 | 0.04 |
| RFN20 | CIN 2+ | 2.37 | 0.00 |
| RFN20; OTU\_1917058 | CIN 2+ | 2.36 | 0.00 |
| Bacteroides; OTU\_2600173 | CIN 2+ | 2.30 | 0.02 |
| Butyricimonas | CIN 2+ | 2.27 | 0.00 |
| Odoribacter; OTU\_635915 | CIN 2+ | 2.26 | 0.00 |
| Helicobacteraceae | CIN 2+ | 2.25 | 0.01 |
| Butyricimonas; OTU\_2662066 | CIN 2+ | 2.24 | 0.00 |
| Bacteroides; OTU\_1458659 | CIN 2+ | 2.22 | 0.00 |
| Odoribacter; OTU\_2594041 | CIN 2+ | 2.18 | 0.00 |
| Rickettsiella; OTU\_228183 | CIN 2+ | 2.17 | 0.04 |
| B. eggerthii | CIN 2+ | 2.15 | 0.01 |
| Mycoplasma; OTU\_611710 | CIN 2+ | 2.13 | 0.00 |
| Parabacteroides; OTU\_2070028 | CIN 2+ | 2.12 | 0.01 |
| Bacteroidales; OTU\_1325345 | CIN 2+ | 2.12 | 0.00 |
| Mycoplasmataceae; OTU\_2706311 | CIN 2+ | 2.10 | 0.00 |
| Parabacteroides; OTU\_1678183 | CIN 2+ | 2.08 | 0.00 |
| Lachnospiraceae; OTU\_189360 | CIN 2+ | 2.07 | 0.00 |
| Mycoplasmataceae; OTU\_228570 | CIN 2+ | 2.05 | 0.00 |
| Coprococcus; OTU\_2212837 | CIN 2+ | 2.02 | 0.00 |
| Eubacterium\_; OTU\_250013 | CIN 2+ | 2.00 | 0.00 |
| Clostridiales; OTU\_760513 | CIN 1 | 3.11 | 0.05 |
| Ruminococcaceae; OTU\_205352 | CIN 1 | 2.55 | 0.01 |
| Clostridiales; OTU\_1881959 | CIN 1 | 2.15 | 0.02 |
| Clostridiales; OTU\_592871 | CIN 1 | 2.11 | 0.01 |

Notes: Linear discriminant effect size analysis (LEfSe) used to identify discriminating taxa. Taxa included where LDA >2.0 and p < 0.05.