**Supplementary Table 1**

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| --- | --- | --- | --- | --- | --- |
| **Taxa** | **Relative Abundance** | | **Dispersion** | | **Adjusted *P*\*** |
| **Estimate** | **Standard Error** | **Estimate** | **Standard Error** |
| *Enterobacteriaceae Escherichia/Shigella* | 0.8665 | 0.1393 | 1.0708 | 0.1822 | 5.858932e-08 |
| *Ruminococcaceae Faecalibacterium* | -0.3530 | 0.1384 | -0.6171 | 0.1437 | 3.291458e-03 |
| *Lachnospiraceae Anaerobutyricum* | -0.2048 | 0.2093 | -1.3224 | 0.4271 | 2.911827e-03 |
| *Leptotrichiaceae Leptotrichia* | -0.7689 | 0.1808 | -1.2094 | 0.2417 | 1.084621e-04 |
| *Peptostreptococcaceae Peptostreptococcus* | -0.7798 | 0.1864 | -1.4481 | 0.3332 | 5.214709e-04 |
| *Lactobacillaceae Lactobacillus* | 0.9561 | 0.2158 | 1.029 | 0.242 | 5.214709e-04 |
| *Bifidobacteriaceae Bifidobacterium* | 2.0319 | 0.3753 | 1.7358 | 0.2671 | 5.287411e-09 |
| *Corynebacteriaceae Corynebacterium* | -0.9033 | 0.2790 | -2.589 | 1.123 | 4.538779e-02 |
| *Selenomonadaceae Selenomonas* | -1.0693 | 0.2304 | -1.7063 | 0.3715 | 3.108504e-04 |
| *Lachnospiraceae Catonella* | -0.8186 | 0.2520 | -0.9324 | 0.2798 | 3.458544e-02 |
| *Listeriaceae Listeria* | 1.3053 | 0.2986 | 1.8802 | 0.5122 | 9.633405e-04 |
| *Spirochaetaceae Treponema* | -4.292 | 2.301 | -1.7888 | 0.3379 | 3.264706e-05 |
| *Lachnospiraceae*  *Lachnospiraceae\_unclassified* | -1.0973 | 0.3358 | -1.9044 | 0.6545 | 4.538779e-02 |

\*Adjusted for FDR