**Supplementary material**

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| --- | --- | --- |
| **Taxonomy** | **W** | ***p*-value** |
| Firmicutes | 0 | < 0.01 |
| Bacteroidetes | 321 | < 0.01 |
| Spirochaetes | 292 | < 0.01 |
| Proteobacteria | 288 | < 0.01 |
| Euryarchaeota | 315.5 | < 0.01 |

Table. 3a. The results of Wilcox test between the CG and WG groups in Phylum level top5.

Table 3b. The results of Wilcox test between the CG and WG groups in Genus level.

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| --- | --- | --- |
| **Taxonomy** | **W** | ***p*-value** |
| Clostridium | 37 | < 0.01 |
| Treponema | 292.5 | < 0.01 |
| 57-N15 | 265 | < 0.01 |
| Ruminococcus | 248 | < 0.01 |
| Roseburia | 15 | < 0.01 |
| Bacteroides | 234 | <0.05 |
| Oscillospira | 68 | <0.01 |
| Anaerostipes | 1 | <0.01 |
| Enterococcus | 65 | <0.01 |
| Dorea | 32.5 | <0.01 |
| Paludibacter | 303 | <0.01 |
| Blautia | 50 | <0.01 |
| Prevotella | 295 | <0.01 |
| Methanobrevibacter | 310.5 | <0.01 |
| Phascolarctobacterium | 317 | <0.01 |
| Paraprevotella | 312 | <0.01 |
| Bifidobacterium | 44.5 | <0.01 |
| Shewanella | 278 | <0.01 |
| Faecalibacterium | 53.5 | <0.01 |

Table 3c.The results of Wilcox test between the CG and WG groups in F/B ratio.

|  |  |  |
| --- | --- | --- |
| **F/B ratio** | **W** | ***p*-value** |
| CG vs WG | 1 | < 0.01 |