# **Supplemental Table 4.** Bacterial species whose abundance significantly increased or decreased (|fold change| ≥ 2 and FDR-adjusted p < 0.05) over 4 weeks in high-responders (HR, n = 9) and low-responders (LR, n = 10).

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **Phylum** | **Class** | **Order** | **Family** | **Genus** | **Species** | **week 4/baseline****HR (n=9)** | **week 4/baseline****LR (n=10)** |
| **Log 2 FC****mean ± SE** | **Adjusted *P*-value1** | **Log 2 FC****mean ± SE** | **Adjusted *P*-value1** |
| **Increased at week 4 (198 species in HR, 9 species in LR)** |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Hafniaceae | Hafnia | alvei | 30.00±2.40 | 4.73E-33 | decreased (see below) |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Hafniaceae | Hafnia | no data | 30.00±2.53 | 5.42E-30 | decreased (see below) |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Morganellaceae | Morganella | sp HMSC11D09 | 25.56±2.81 | 1.42E-17 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Hafniaceae | Edwardsiella | no data | 24.62±2.41 | 4.85E-22 | - | NS |
| Firmicutes | Bacilli | Bacillales | Planococcaceae | Tetzosporium | hominis | 23.33±2.97 | 4.32E-13 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Hafniaceae | Obesumbacterium | proteus | 23.02±2.35 | 2.16E-20 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Streptococcaceae | Streptococcus | equi | 20.62±2.98 | 2.55E-10 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | algidus | 14.66±2.08 | 1.29E-10 | 7.77±1.63 | 2.12E-04 |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Leuconostoc | gelidum | 14.10±1.82 | 7.95E-13 | 6.97±2.02 | 2.21E-02 |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | curvatus | 13.12±1.68 | 5.91E-13 | 5.91±1.82 | 3.05E-02 |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | braakii | 12.40±1.79 | 2.55E-10 | decreased (see below) |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Leuconostoc | kimchii | 11.27±2.10 | 2.57E-06 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Hafniaceae | Edwardsiella | tarda | 11.07±2.35 | 5.47E-05 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Morganellaceae | Morganella | morganii | 10.77±2.15 | 1.41E-05 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Leuconostoc | no data | 10.42±1.82 | 4.93E-07 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Pluralibacter | gergoviae | 10.25±1.91 | 2.57E-06 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Raoultella | ornithinolytica | 10.15±1.85 | 1.52E-06 | - | NS |
| Firmicutes | Bacilli | Bacillales | Paenibacillaceae | Paenibacillus | sp VT-16-81 | 10.02±2.45 | 5.41E-04 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Leuconostoc | mesenteroides | 10.02±1.59 | 1.57E-08 | - | NS |
| Firmicutes | Bacilli | Bacillales | Listeriaceae | Listeria | monocytogenes | 9.93±2.46 | 6.47E-04 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | fuchuensis | 9.85±1.73 | 5.49E-07 | 9.36±2.23 | 2.16E-03 |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Morganellaceae | Proteus | mirabilis | 9.68±2.20 | 1.74E-04 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | asburiae | 9.35±1.66 | 6.79E-07 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | sakei | 9.22±2.21 | 3.95E-04 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | cloacae complex Hoffmann cluster III | 9.21±2.04 | 1.05E-04 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | saniviri | 9.09±2.76 | 5.86E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | sanfranciscensis | 9.07±2.32 | 1.02E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Leuconostoc | fallax | 8.91±1.88 | 5.08E-05 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Leuconostoc | pseudomesenteroides | 8.86±2.13 | 4.07E-04 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Carnobacteriaceae | Carnobacterium | no data | 8.85±1.87 | 5.16E-05 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Leuconostoc | lactis | 8.84±1.93 | 8.82E-05 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | hormaechei | 8.79±1.73 | 1.01E-05 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Carnobacteriaceae | Carnobacterium | maltaromaticum | 8.76±1.90 | 7.94E-05 | decreased (see below) |
| Firmicutes | Bacilli | Bacillales | Listeriaceae | Listeria | no data | 8.73±2.18 | 7.06E-04 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Hafniaceae | Hafnia | sp CBA7124 | 8.67±2.97 | 1.59E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Leuconostoc | citreum | 8.66±1.58 | 1.41E-06 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Morganellaceae | Morganella | no data | 8.66±2.97 | 1.60E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | oligofermentans | 8.53±2.14 | 7.43E-04 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp 6D12 DIV0197 | 8.50±2.18 | 1.02E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Raoultella | planticola | 8.38±1.60 | 4.93E-06 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | paralimentarius | 8.32±2.34 | 2.88E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | brevis | 8.31±1.66 | 1.43E-05 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Carnobacteriaceae | Carnobacterium | divergens | 8.16±1.88 | 2.20E-04 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | massiliensis | 8.14±1.48 | 1.41E-06 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | coryniformis | 8.11±1.77 | 8.84E-05 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | sp BIDMC107 | 8.01±2.27 | 3.04E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Pseudomonadales | Pseudomonadaceae | Pseudomonas | sp Ep R1 | 7.95±2.64 | 1.31E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | sp MGH 7 | 7.84±2.97 | 2.96E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | amalonaticus | 7.68±1.78 | 2.42E-04 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | silagincola | 7.65±2.97 | 3.42E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | satsumensis | 7.63±2.56 | 1.42E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | rodentium | 7.61±1.97 | 1.19E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | no data | bacterium ENNIH1 | 7.60±2.24 | 4.73E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Franconibacter | helveticus | 7.57±1.54 | 2.13E-05 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Weissella | cibaria | 7.56±2.11 | 2.59E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Raoultella | no data | 7.45±1.98 | 1.62E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Weissella | hellenica | 7.44±2.05 | 2.38E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | sp S-77 | 7.44±1.29 | 4.25E-07 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Escherichia | sp KTE96 | 7.40±1.68 | 1.74E-04 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Tetragenococcus | halophilus | 7.37±1.99 | 1.89E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Escherichia | sp KTE172 | 7.36±2.06 | 2.76E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Erwiniaceae | Pantoea | sesami | 7.36±2.19 | 4.96E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Vibrionales | Vibrionaceae | Vibrio | no data | 7.34±2.63 | 2.15E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | siliginis | 7.33±1.83 | 7.11E-04 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Cronobacter | dublinensis | 7.33±1.61 | 1.00E-04 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | freundii complex sp CFNIH3 | 7.32±2.08 | 3.04E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | werkmanii | 7.32±1.56 | 5.73E-05 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Yersiniaceae | Yersinia | intermedia | 7.27±2.97 | 4.63E-02 | - | NS |
| Actinobacteria | Actinobacteria | Micrococcales | Micrococcaceae | Arthrobacter | sp GMC3 | 7.22±1.90 | 1.52E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Escherichia | no data | 7.21±1.97 | 2.04E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Pediococcus | inopinatus | 7.21±2.24 | 7.43E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Escherichia | sp 3 2 53FAA | 7.20±2.03 | 2.86E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | backii | 7.13±2.01 | 2.86E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Weissella | jogaejeotgali | 7.12±1.89 | 1.58E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Erwiniaceae | Erwinia | teleogrylli | 7.11±1.85 | 1.21E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | sp MGH 23 | 7.08±2.28 | 1.02E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Cronobacter | sakazakii | 7.07±1.36 | 5.62E-06 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | no data | 7.06±1.58 | 1.22E-04 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Pluralibacter | lignolyticus | 7.04±2.57 | 2.48E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Weissella | koreensis | 7.04±2.39 | 1.52E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | cloacae complex Hoffmann cluster IV | 7.03±1.65 | 2.96E-04 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Klebsiella | quasipneumoniae | 7.01±1.94 | 2.43E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Carnobacteriaceae | Carnobacterium | gallinarum | 7.01±1.69 | 4.55E-04 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | paraplantarum | 6.95±1.81 | 1.30E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | sp BIDMC92 | 6.91±2.56 | 2.63E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp HMSC073E09 | 6.88±2.54 | 2.63E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | freundii complex sp CFNIH2 | 6.88±1.67 | 4.73E-04 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | thailandicus | 6.87±1.63 | 3.59E-04 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | kefiranofaciens | 6.80±2.33 | 1.59E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Klebsiella | sp A-Nf5 | 6.77±1.56 | 2.16E-04 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | mori | 6.75±2.28 | 1.45E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | sp BIDMC 29 | 6.72±2.54 | 2.91E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Klebsiella | pneumoniae | 6.67±2.00 | 5.27E-03 | decreased (see below) |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Weissella | no data | 6.65±1.89 | 3.22E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Yersiniaceae | Serratia | marcescens | 6.60±2.14 | 1.07E-02 | decreased (see below) |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Yersiniaceae | Yersinia | no data | 6.59±1.77 | 1.82E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | casseliflavus | 6.57±1.79 | 1.97E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp HMSC035B04 | 6.53±1.85 | 3.04E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Escherichia | sp KTE11 | 6.51±1.93 | 4.96E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | avium | 6.49±2.53 | 3.56E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | gilvus | 6.48±1.60 | 6.14E-04 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | koseri | 6.48±1.74 | 1.82E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Kosakonia | sp S29 | 6.46±1.93 | 5.09E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | no data | 6.45±1.75 | 1.93E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Escherichia | sp KTE31 | 6.44±1.95 | 5.81E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp HMSC067C01 | 6.43±1.87 | 4.00E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Escherichia | fergusonii | 6.41±2.08 | 1.06E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Klebsiella | michiganensis | 6.40±1.77 | 2.43E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | sp MGH99 | 6.37±2.35 | 2.63E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Erwiniaceae | Erwinia | gerundensis | 6.37±1.37 | 6.35E-05 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp FDAARGOS 375 | 6.35±2.08 | 1.17E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Leuconostoc | garlicum | 6.34±2.14 | 1.45E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Pediococcus | acidilactici | 6.34±1.55 | 5.67E-04 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Lelliottia | amnigena | 6.30±1.68 | 1.62E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Klebsiella | sp MBT K-1 | 6.29±1.90 | 5.60E-03 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Peptostreptococcaceae | Terrisporobacter | glycolicus | 6.25±1.48 | 3.34E-04 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Hafniaceae | Edwardsiella | hoshinae | 6.22±2.39 | 3.28E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | pentosus | 6.19±2.32 | 2.83E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Clostridiaceae | Clostridium | sp CL-2 | 6.17±1.35 | 8.82E-05 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp HMSC063D12 | 6.14±2.07 | 1.45E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Yersiniaceae | Yersinia | frederiksenii | 6.12±2.52 | 4.79E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp 3C7 DIV0644 | 6.08±2.52 | 4.96E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Escherichia | sp KTE114 | 6.04±1.95 | 1.02E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | sp BIDMC108 | 6.03±1.80 | 5.05E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Morganellaceae | Proteus | sp HMSC10D02 | 6.03±2.22 | 2.59E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Leuconostocaceae | Weissella | paramesenteroides | 6.01±1.79 | 4.96E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp 5B7 DIV0075 | 5.97±2.23 | 2.77E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Escherichia | coli | 5.95±2.08 | 1.84E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Klebsiella | sp 2N3 | 5.94±2.43 | 4.63E-02 | - | NS |
| Proteobacteria | Betaproteobacteria | Burkholderiales | Alcaligenaceae | Achromobacter | sp ATCC35328 | 5.90±1.90 | 1.02E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | fermentum | 5.85±1.55 | 1.58E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Metakosakonia | massiliensis | 5.83±2.33 | 4.12E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Yokenella | regensburgei | 5.80±1.78 | 6.59E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Cronobacter | no data | 5.77±1.56 | 1.85E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Klebsiella | sp MS 92-3 | 5.74±2.12 | 2.63E-02 | - | NS |
| Actinobacteria | Actinobacteria | Micrococcales | Micrococcaceae | Arthrobacter | no data | 5.69±1.86 | 1.16E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Clostridiaceae | Clostridium | perfringens | 5.67±1.25 | 1.05E-04 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp HMSC058D07 | 5.52±1.95 | 1.98E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Cronobacter | malonaticus | 5.51±1.67 | 5.84E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | no data | bacterium strain FGI 57 | 5.50±1.69 | 6.59E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | canis | 5.50±1.88 | 1.59E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Erwiniaceae | Pantoea | ananatis | 5.47±1.65 | 5.49E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp 3G6 DIV0642 | 5.46±2.27 | 4.97E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | no data | 5.41±2.22 | 4.75E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Yersiniaceae | Serratia | no data | 5.36±1.49 | 2.55E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Escherichia | sp 1 1 43 | 5.34±1.90 | 2.06E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | sp R4-368 | 5.33±1.41 | 1.58E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp HMSC34G12 | 5.30±1.94 | 2.48E-02 | - | NS |
| Firmicutes | Erysipelotrichia | Erysipelotrichales | Erysipelotrichaceae | no data | bacterium 21 3 | 5.27±1.45 | 2.32E-03 | - | NS |
| Actinobacteria | Actinobacteria | Corynebacteriales | Nocardiaceae | Rhodococcus | opacus | 5.24±1.54 | 4.66E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Pseudescherichia | vulneris | 5.24±1.35 | 1.09E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Escherichia | albertii | 5.24±2.03 | 3.42E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Klebsiella | sp 4 1 44FAA | 5.18±1.86 | 2.18E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Klebsiella | aerogenes | 5.10±1.71 | 1.42E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Escherichia | sp KTE159 | 5.09±1.91 | 2.85E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp HMSC072H05 | 5.08±1.99 | 3.57E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | sp FDAARGOS 156 | 5.07±2.01 | 3.86E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Salmonella | no data | 5.06±1.52 | 5.45E-03 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp HMSC076E04 | 5.05±1.60 | 8.94E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Salmonella | bongori | 5.00±1.34 | 1.71E-03 | - | NS |
| Firmicutes | Bacilli | Bacillales | Bacillaceae | Bacillus | aryabhattai | 4.99±1.74 | 1.78E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | durans | 4.99±1.33 | 1.61E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Klebsiella | oxytoca | 4.98±1.70 | 1.59E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | sp MGH 55 | 4.93±2.01 | 4.56E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | freundii complex sp CFNIH9 | 4.89±2.00 | 4.63E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | gallinarum | 4.81±1.54 | 1.00E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | parabuchneri | 4.78±1.51 | 8.57E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Kluyvera | cryocrescens | 4.78±1.71 | 2.15E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | italicus | 4.78±1.37 | 3.44E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Kosakonia | cowanii | 4.62±1.54 | 1.33E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | cloacae | 4.61±1.80 | 3.56E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | portucalensis | 4.58±1.72 | 2.82E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp HMSC061C05 | 4.52±1.57 | 1.72E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Klebsiella | quasivariicola | 4.51±1.87 | 4.96E-02 | - | NS |
| Actinobacteria | Actinobacteria | Corynebacteriales | Corynebacteriaceae | Corynebacterium | striatum | 4.47±1.52 | 1.52E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Enterobacter | kobei | 4.45±1.64 | 2.59E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Streptococcaceae | Streptococcus | infantarius | 4.41±1.38 | 7.80E-03 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Shimwellia | blattae | 4.39±1.63 | 2.63E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | canintestini | 4.38±1.60 | 2.53E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Streptococcaceae | Lactococcus | piscium | 4.36±1.27 | 4.20E-03 | 3.83±1.20 | 3.66E-02 |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | dispar | 4.26±1.76 | 4.88E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Leclercia | no data | 4.16±1.56 | 2.82E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Trabulsiella | odontotermitis | 4.09±1.59 | 3.56E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Carnobacteriaceae | Carnobacterium | viridans | 4.00±1.38 | 1.70E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | plantarum | 3.90±1.51 | 3.35E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | sp 3G1 DIV0629 | 3.61±1.41 | 3.57E-02 | - | NS |
| Firmicutes | Bacilli | no data | no data | no data | no data | 3.56±1.20 | 1.45E-02 | - | NS |
| Firmicutes | Erysipelotrichia | Erysipelotrichales | Erysipelotrichaceae | Coprobacillus | sp 3 3 56FAA | 3.44±1.21 | 1.98E-02 | 2.90±0.89 | 2.97E-02 |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Dorea | massiliensis | 3.43±1.31 | 3.15E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Enterococcaceae | Enterococcus | malodoratus | 3.41±1.38 | 4.53E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Lactobacillaceae | Lactobacillus | salivarius | 3.20±1.14 | 2.06E-02 | - | NS |
| Firmicutes | Erysipelotrichia | Erysipelotrichales | Erysipelotrichaceae | Erysipelatoclostridium | innocuum | 3.09±1.10 | 2.09E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Clostridiaceae | Clostridium | paraputrificum | 2.92±1.02 | 1.83E-02 | - | NS |
| Proteobacteria | Gammaproteobacteria | Pseudomonadales | Pseudomonadaceae | Pseudomonas | no data | 2.75±0.98 | 2.06E-02 | - | NS |
| Proteobacteria | Betaproteobacteria | Burkholderiales | Oxalobacteraceae | Massilia | timonae | 2.68±0.99 | 2.63E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Streptococcaceae | Lactococcus | lactis | 2.65±0.99 | 2.71E-02 | - | NS |
| Firmicutes | Bacilli | Lactobacillales | Streptococcaceae | Streptococcus | suis | 2.57±0.76 | 4.96E-03 | - | NS |
| no data | no data | no data | no data | no data | no data | 2.50±0.73 | 4.00E-03 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Anaerostipes | caccae | - | NS | 7.94±2.16 | 1.14E-02 |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Anaerostipes | no data | - | NS | 7.24±1.84 | 4.93E-03 |
| Bacteroidetes | Bacteroidia | Bacteroidales | Bacteroidaceae | Bacteroides | stercoris | - | NS | 6.97±1.91 | 1.14E-02 |
| **Decreased at week 4 (29 species in HR, 11 species in LR)** |
| Bacteroidetes | Bacteroidia | Bacteroidales | Prevotellaceae | Prevotella | sp AGR2160 | -23.04±2.97 | 6.92E-13 | - | NS |
| Firmicutes | Bacilli | Bacillales | Paenibacillaceae | Paenibacillus | ginsengihumi | -7.83±2.13 | 1.97E-03 | - | NS |
| Bacteroidetes | Bacteroidia | Bacteroidales | Prevotellaceae | Prevotella | copri | -7.78±2.33 | 5.17E-03 | - | NS |
| Actinobacteria | Actinobacteria | Bifidobacteriales | Bifidobacteriaceae | Bifidobacterium | adolescentis | -7.37±2.66 | 2.31E-02 | - | NS |
| Firmicutes | Bacilli | Bacillales | Paenibacillaceae | Brevibacillus | borstelensis | -7.24±2.29 | 8.70E-03 | - | NS |
| Bacteroidetes | Bacteroidia | Bacteroidales | Prevotellaceae | Prevotella | bivia | -6.48±2.25 | 1.75E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Blautia | wexlerae | -5.89±1.25 | 5.39E-05 | - | NS |
| Bacteroidetes | Bacteroidia | Bacteroidales | Prevotellaceae | Prevotella | sp Marseille-P4119 | -5.85±1.97 | 1.45E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Blautia | no data | -5.56±1.08 | 8.56E-06 | - | NS |
| Bacteroidetes | Bacteroidia | Bacteroidales | Bacteroidaceae | Bacteroides | plebeius | -5.41±1.79 | 1.27E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Blautia | sp Marseille-P2398 | -5.30±1.58 | 4.96E-03 | - | NS |
| Bacteroidetes | Bacteroidia | Bacteroidales | Prevotellaceae | Prevotella | stercorea | -5.26±1.66 | 8.57E-03 | - | NS |
| Bacteroidetes | Bacteroidia | Bacteroidales | Prevotellaceae | Prevotella | no data | -5.00±1.85 | 2.63E-02 | - | NS |
| Firmicutes | Bacilli | Bacillales | Bacillaceae | Bacillus | coagulans | -4.79±1.78 | 2.64E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Blautia | obeum | -4.50±1.12 | 7.06E-04 | - | NS |
| Firmicutes | Erysipelotrichia | Erysipelotrichales | Erysipelotrichaceae | Faecalitalea | sp Marseille-P3755 | -4.46±1.36 | 6.03E-03 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Roseburia | hominis | -4.23±1.57 | 2.63E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Merdimonas | faecis | -4.16±1.36 | 1.14E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Eubacteriaceae | Eubacterium | hallii | -3.53±1.16 | 1.22E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | no data | bacterium 28-4 | -3.41±1.28 | 2.86E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Faecalicatena | contorta | -3.40±1.36 | 4.17E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Dorea | sp 5-2 | -3.28±1.30 | 3.86E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Blautia | sp SF-50 | -3.13±1.10 | 1.90E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Ruminococcaceae | Acetivibrio | ethanolgignens | -3.06±1.16 | 2.97E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Ruminococcaceae | Ruminococcus | faecis | -2.77±1.01 | 2.48E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | no data | bacterium 1 4 56FAA | -2.77±1.13 | 4.60E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Lachnoclostridium | glycyrrhizinilyticum | -2.63±1.07 | 4.60E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Fusicatenibacter | saccharivorans | -2.43±0.92 | 3.02E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Lachnospiraceae | Dorea | no data | -2.13±0.82 | 3.22E-02 | - | NS |
| Firmicutes | Clostridia | Clostridiales | Clostridiaceae | Candidatus Arthromitus | sp SFB-turkey | - | NS | -24.18±2.74 | 5.42E-16 |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Hafniaceae | Edwardsiella | piscicida | - | NS | -22.77±2.96 | 3.48E-12 |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Hafniaceae | Hafnia | no data | increased (see above) | -9.81±2.96 | 2.92E-02 |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Yersiniaceae | Serratia | marcescens | increased (see above) | -8.88±1.81 | 1.51E-04 |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Hafniaceae | Hafnia | alvei | increased (see above) | -8.29±2.10 | 4.93E-03 |
| Firmicutes | Bacilli | Lactobacillales | Carnobacteriaceae | Carnobacterium | maltaromaticum | increased (see above) | -7.67±1.76 | 1.32E-03 |
| Firmicutes | Erysipelotrichia | Erysipelotrichales | Erysipelotrichaceae | Turicibacter | sp H121 | - | NS | -6.56±1.95 | 2.61E-02 |
| Firmicutes | Erysipelotrichia | Erysipelotrichales | Erysipelotrichaceae | Turicibacter | no data | - | NS | -5.81±1.69 | 2.21E-02 |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Klebsiella | pneumoniae | increased (see above) | -5.74±1.57 | 1.14E-02 |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Citrobacter | braakii | increased (see above) | -5.48±1.76 | 4.49E-02 |
| Proteobacteria | Gammaproteobacteria | Enterobacterales | Enterobacteriaceae | Shigella | no data | - | NS | -4.45±1.36 | 2.97E-02 |

FC: fold change, SE: standard error, NS: not significant

1 p values were adjusted with false discovery rate for multiple comparisons