**Supplemental Table 2. Log2-fold difference in sequence reads for OTUs according to CIN status**.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **OTUID** | **Base mean** | **Log2-fold change** | **lfcSE** | **padj\*** | **Taxonomy** |
| 2135939 | 241.983 | -4.683 | 0.407 | <0.001 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; Prevotellaceae; Prevotella; copri |
| 1560832 | 102.586 | -4.965 | 0.503 | <0.001 | Bacteria; Firmicutes; Clostridia; Clostridiales; Veillonellaceae; Megasphaera; unclassified |
| 2770113 | 422.037 | -2.591 | 0.354 | <0.001 | Bacteria; Firmicutes; Bacilli; Lactobacillales; Streptococcaceae; Streptococcus; unclassified |
| 1997821 | 21.729 | -3.542 | 0.540 | <0.001 | Bacteria; Firmicutes; Clostridia; Clostridiales; Veillonellaceae; Acidaminococcus; unclassified |
| 2735273 | 94.242 | -1.400 | 0.274 | <0.001 | Bacteria; Actinobacteria; Actinobacteria; Bifidobacteriales; Bifidobacteriaceae; Bifidobacterium; unclassified |
| 2382139 | 5.015 | -3.783 | 0.770 | <0.001 | Bacteria; Firmicutes; Erysipelotrichi; Erysipelotrichales; Erysipelotrichaceae; Catenibacterium; unclassified |
| 584478 | 8.684 | -2.272 | 0.465 | <0.001 | Bacteria; Firmicutes; Clostridia; Clostridiales; unclassified |
| 750717 | 12.373 | -1.978 | 0.428 | <0.001 | Bacteria; Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; Blautia; producta |
| 1392798 | 9430.121 | 1.997 | 0.432 | <0.001 | Bacteria; Firmicutes; Bacilli; Lactobacillales; Lactobacillaceae; Lactobacillus; unclassified |
| 837115 | 8.726 | -2.092 | 0.455 | <0.001 | Bacteria; Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; [Ruminococcus]; gunclassifiedvus |
| 2282794 | 8.695 | -2.322 | 0.508 | <0.001 | Bacteria; Actinobacteria; Coriobacteriia; Coriobacteriales; Coriobacteriaceae; Collinsella; aerofaciens |
| 881991 | 31.390 | 1.848 | 0.407 | <0.001 | Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomounclassifieddales; Pseudomounclassifieddaceae; Pseudomounclassifieds; unclassified |
| 2594041 | 3.317 | 3.238 | 0.761 | 0.001 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; [Odoribacteraceae]; Odoribacter; unclassified |
| 1355047 | 0.853 | 3.454 | 0.839 | 0.002 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; Bacteroidaceae; Bacteroides; unclassified |
| 722582 | 3.672 | -2.369 | 0.580 | 0.002 | Bacteria; Verrucomicrobia; Verrucomicrobiae; Verrucomicrobiales; Verrucomicrobiaceae; Akkermansia; muciniphila |
| 2672064 | 2.766 | -2.086 | 0.522 | 0.003 | Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae; SMB53; unclassified |
| 2146476 | 64.394 | 2.236 | 0.570 | 0.003 | Bacteria; Firmicutes; Clostridia; Clostridiales; [Tissierellaceae]; WAL\_1855D; unclassified |
| 1752006 | 448.252 | -1.878 | 0.482 | 0.004 | Bacteria; Firmicutes; Bacilli; Lactobacillales; Aerococcaceae; Aerococcus; unclassified |
| 1478306 | 0.956 | 3.003 | 0.777 | 0.004 | Bacteria; Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; Blautia; unclassified |
| 2345531 | 1.899 | -2.433 | 0.648 | 0.005 | Bacteria; Verrucomicrobia; Verrucomicrobiae; Verrucomicrobiales; Verrucomicrobiaceae; Akkermansia; muciniphila |
| 2139724 | 8.195 | -2.882 | 0.768 | 0.005 | Bacteria; Firmicutes; Bacilli; Lactobacillales; Carnobacteriaceae; Granulicatella; unclassified |
| 72450 | 1.916 | 3.020 | 0.806 | 0.005 | Bacteria; Proteobacteria; Epsilonproteobacteria; Campylobacterales; Helicobacteraceae; unclassified |
| 1785928 | 1.210 | 2.707 | 0.732 | 0.006 | Bacteria; Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; unclassified |
| 2561340 | 1.819 | 2.872 | 0.774 | 0.006 | Bacteria; Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; unclassified |
| 784413 | 68.299 | 1.251 | 0.343 | 0.007 | Bacteria; Firmicutes; Bacilli; Lactobacillales; Lactobacillaceae; Lactobacillus; reuteri |
| 1235116 | 1.102 | 2.569 | 0.711 | 0.007 | Bacteria; Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; unclassified |
| 999739 | 125.236 | -1.564 | 0.432 | 0.007 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; Prevotellaceae; Prevotella; melaninogenica |
| 951450 | 28.303 | 2.833 | 0.788 | 0.008 | Bacteria; Tenericutes; Mollicutes; Mycoplasmatales; Mycoplasmataceae; unclassified |
| 2580139 | 0.946 | 2.882 | 0.806 | 0.008 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; unclassified; unclassified; unclassified |
| 635915 | 3.564 | 2.887 | 0.808 | 0.008 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; [Odoribacteraceae]; Odoribacter; unclassified |
| 611710 | 3.608 | 2.773 | 0.782 | 0.008 | Bacteria; Tenericutes; Mollicutes; Mycoplasmatales; Mycoplasmataceae; Mycoplasma; unclassified |
| 2005521 | 1.246 | 2.945 | 0.835 | 0.009 | Bacteria; Firmicutes; Clostridia; Clostridiales; Ruminococcaceae; unclassified |
| 109347 | 8.766 | -1.621 | 0.466 | 0.009 | Bacteria; Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; [Ruminococcus]; unclassified |
| 2292732 | 8.443 | 1.851 | 0.532 | 0.009 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; Bacteroidaceae; Bacteroides; unclassified |
| 165322 | 15.340 | -1.830 | 0.523 | 0.009 | Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae; Clostridium; perfringens |
| 1703297 | 0.899 | 3.089 | 0.883 | 0.009 | Bacteria; Tenericutes; Mollicutes; RF39; unclassified |
| 2569044 | 16.239 | -2.579 | 0.742 | 0.009 | Bacteria; Firmicutes; Bacilli; Lactobacillales; Streptococcaceae; Streptococcus; agalactiae |
| 411120 | 18.358 | -1.139 | 0.330 | 0.009 | Bacteria; Firmicutes; Erysipelotrichi; Erysipelotrichales; Erysipelotrichaceae; Allobaculum; unclassified |
| 1325345 | 2.412 | 2.877 | 0.836 | 0.010 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; unclassified |
| 361676 | 1.489 | 2.690 | 0.784 | 0.010 | Bacteria; Proteobacteria; Betaproteobacteria; Burkholderiales; unclassified |
| 318167 | 9.117 | 2.683 | 0.789 | 0.011 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; Bacteroidaceae; Bacteroides; unclassified |
| 2662066 | 1.764 | 2.727 | 0.803 | 0.011 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; [Odoribacteraceae]; Butyricimounclassifieds; unclassified |
| 2706311 | 3.380 | 2.661 | 0.785 | 0.011 | Bacteria; Tenericutes; Mollicutes; Mycoplasmatales; Mycoplasmataceae; unclassified |
| 2223081 | 1.537 | 1.755 | 0.524 | 0.012 | Bacteria; Firmicutes; Bacilli; Lactobacillales; Leuconostocaceae; unclassified |
| 2697736 | 7.125 | 1.424 | 0.427 | 0.012 | Bacteria; Proteobacteria; Gammaproteobacteria; Pseudomounclassifieddales; Pseudomounclassifieddaceae; Pseudomounclassifieds; fragi |
| 2276903 | 9.126 | -1.951 | 0.588 | 0.013 | Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae; Sarciunclassified; unclassified |
| 529495 | 69.885 | -0.892 | 0.272 | 0.014 | Bacteria; Firmicutes; Clostridia; Clostridiales; Clostridiaceae; unclassified |
| 2062524 | 463.605 | 1.819 | 0.561 | 0.016 | Bacteria; Firmicutes; Clostridia; Clostridiales; Veillonellaceae; Megasphaera; unclassified |
| 983739 | 128.722 | 1.690 | 0.522 | 0.016 | Bacteria; Firmicutes; Clostridia; Clostridiales; Peptostreptococcaceae; Peptostreptococcus; aunclassifiederobius |
| 235800 | 28.224 | 1.241 | 0.385 | 0.017 | Bacteria; Actinobacteria; Actinobacteria; Actinomycetales; Micrococcaceae; Kocuria; unclassified |
| 2212837 | 2.259 | 2.381 | 0.778 | 0.028 | Bacteria; Firmicutes; Clostridia; Clostridiales; Lachnospiraceae; Coprococcus; unclassified |
| 96867 | 11.388 | -1.048 | 0.351 | 0.035 | Bacteria; Firmicutes; Clostridia; Clostridiales; Ruminococcaceae; unclassified |
| 1458659 | 4.756 | 2.346 | 0.787 | 0.035 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; Bacteroidaceae; Bacteroides; unclassified |
| 2600173 | 8.435 | 1.344 | 0.458 | 0.040 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; Bacteroidaceae; Bacteroides; unclassified |
| 1110463 | 1.371 | 2.613 | 0.895 | 0.042 | Bacteria; Bacteroidetes; Bacteroidia; Bacteroidales; unclassified |

Abbreviations: lfcSE, log2-fold change standard error; FDR false discovery rate.

Notes: Log2-fold change for CIN2+ vs. CIN1 status. Estimates obtained from negative-binomial regression as implemented in the R package DESeq2 (cite). All models were adjusted for age, BMI, race, education, parity, hormonal contraceptive use and smoking status. Results shown only for OTUs with FDR adjusted p-values <0.05.

\*Benjamini and Hochberg FDR corrected p-value.