

**Additional File 15: Supplementary Table S3: Supplementary Table 3: Species Level Differential Abundance Testing.** Species Level Differential Abundance Testing for the Top 20 upregulated (top) and downregulated (bottom) for Crohn's Disease (CD) versus normal with Operational Taxonomic Unit (OTU) outputs along with the significance values for each of the top 20 genus-species levels.

| OTU       | log2FoldChange | Adjusted P-Value | Genus                          | Species                          |
|-----------|----------------|------------------|--------------------------------|----------------------------------|
| otu583041 | 23.858         | 3.97E-25         | g__Blautia                     | s__Blautia_hansenii              |
| otu449365 | 25.701         | 8.06E-16         | g__Chloroplast                 | s__Punica_granatum               |
| otu322337 | 22.398         | 2.33E-13         | g__Clostridium_sensu_stricto_1 | s__Clostridium_perfringens       |
| otu335922 | 24.316         | 2.49E-13         | g__Ruminococcus                | s__Clostridiaceae_bacterium      |
| otu253552 | 23.299         | 2.78E-12         | g__Lachnoclostridium           | s__bacterium_NLAE-zl-H31         |
| otu113756 | 27.923         | 3.31E-12         | g__Megamonas                   | s__Megamonas_funiformis          |
| otu445760 | 23.846         | 4.61E-12         | g__Dorea                       | s__Dorea_formicigenerans         |
| otu846127 | 24.979         | 5.52E-11         | g__Parabacteroides             | s__Parabacteroides_johnsonii     |
| otu316853 | 27.503         | 6.72E-11         | g__Parabacteroides             | s__Parabacteroides_johnsonii     |
| otu110587 | 26.531         | 1.34E-10         | g__Dialister                   | s__Dialister_micraerophilus      |
| otu191757 | 23.986         | 2.50E-10         | g__Tyzzerella                  | s__Tyzzerella_sp.                |
| otu789812 | 27.611         | 5.03E-10         | g__Escherichia-Shigella        | s__Escherichia_sp.               |
| otu185316 | 25.377         | 4.99E-09         | g__Bacteroides                 | s__Bacteroides_ovatus            |
| otu358741 | 28.528         | 5.91E-09         | g__Clostridium_sensu_stricto_1 | s__Clostridium_butyricum         |
| otu447833 | 21.790         | 6.09E-09         | g__Enterococcus                | s__Enterococcus_durans           |
| otu443743 | 21.397         | 7.59E-09         | g__Dialister                   | s__Dialister_invisus             |
| otu494919 | 24.149         | 8.12E-09         | g__Porphyromonas               | s__Porphyromonas_asaccharolytica |
| otu525261 | 23.183         | 1.83E-08         | g__Streptococcus               | s__Streptococcus_lutetiensis     |
| otu111341 | 20.411         | 2.60E-08         | g__Dialister                   | s__Dialister_propionificiens     |
| otu70276  | 23.320         | 2.63E-08         | g__Clostridioides              | s__Clostridioides_difficile      |

| OTU       | log2FoldChange | Adjusted P-Value | Genus             | Species                      |
|-----------|----------------|------------------|-------------------|------------------------------|
| otu553352 | -9.600         | 2.09E-06         | g__Lactobacillus  | s__Lactobacillus_gasseri     |
| otu578653 | -9.151         | 2.17E-04         | g__Lactobacillus  | s__Lactobacillus_acidophilus |
| otu294573 | -28.994        | 2.93E-04         | g__Prevotella     | s__Trichuris_trichiura       |
| otu188128 | -4.873         | 3.62E-04         | g__Anaerostipes   | s__Anaerostipes_hadrus       |
| otu864573 | -9.584         | 4.88E-04         | g__Lactobacillus  | s__Lactobacillus_gasseri     |
| otu326482 | -27.532        | 6.63E-04         | g__Prevotella     | s__Prevotella_copri          |
| otu364584 | -27.287        | 7.44E-04         | g__Prevotella     | s__Prevotella_stercorea      |
| otu228081 | -27.209        | 7.73E-04         | g__Prevotella     | s__Trichuris_trichiura       |
| otu313977 | -27.103        | 8.11E-04         | g__Collinsella    | s__Collinsella_aerofaciens   |
| otu213700 | -26.938        | 8.68E-04         | g__Bacteroides    | s__Bacteroides_vulgatus      |
| otu446847 | -26.486        | 1.08E-03         | g__Bacteroides    | s__Bacteroides_stercoris     |
| otu180903 | -26.214        | 1.25E-03         | g__Dorea          | s__Dorea_formicigenerans     |
| otu124251 | -10.693        | 2.35E-03         | g__Chloroplast    | s__Punica_granatum           |
| otu456393 | -9.926         | 2.58E-03         | g__Lactobacillus  | s__Lactobacillus_acidophilus |
| otu388266 | -24.376        | 2.72E-03         | g__Bacteroides    | s__Bacteroides_ovatus        |
| otu438800 | -16.207        | 1.25E-02         | g__Prevotella     | s__Prevotellaceae_bacterium  |
| otu378363 | -20.574        | 1.34E-02         | g__Bacteroides    | s__Bacteroides_ovatus        |
| otu869840 | -19.578        | 2.12E-02         | g__Alloprevotella | s__Prevotellaceae_bacterium  |