

Additional file 9 Microbial taxa fold-changes (V2/V1 and V3/V1) in the moderate subgroup.

| Taxa | | Moderate subgroup (n=25) | | | | | | | |
|------------------------------|----------------------------------|--------------------------|--------------|-------|--------------|---------------|--------------|-------|--------------|
| | | Placebo (n=13) | | | | EpiCor (n=12) | | | |
| | | V2/V1 | | V3/V1 | | V2/V1 | | V3/V1 | |
| | | FC | p-val. | FC | p-val. | FC | p-val. | FC | p-val. |
| Phylum Actinobacteria | | | | | | | | | |
| Bifidobacteriaceae | - | 1.13 | 0.672 | 0.84 | 0.561 | 0.71 | 0.213 | 0.90 | 0.825 |
| | <i>Bifidobacterium</i> | 1.13 | 0.443 | 0.84 | 0.310 | 0.71 | 0.053 | 0.90 | 0.683 |
| Coriobacteriaceae | - | 1.60 | 0.743 | 2.11 | 0.377 | 0.82 | 0.583 | 1.26 | 0.326 |
| | <i>Asaccharobacter</i> | 0.45 | 1.000 | 17.36 | 0.748 | 1.42 | 0.937 | 2.22 | 0.585 |
| | <i>Collinsella</i> | 1.90 | 0.752 | 1.67 | 0.855 | 0.74 | 0.734 | 0.61 | 0.503 |
| | Coriobacteriaceae_uncl. | 1.30 | 0.986 | 2.71 | 0.642 | 0.99 | 1.000 | 2.95 | 0.001 |
| | <i>Eggerthella</i> | 1.00 | 1.000 | 1.00 | 1.000 | 0.53 | 0.983 | 0.52 | 0.983 |
| | <i>Enterorhabdus</i> | 1.36 | 0.992 | 0.35 | 0.973 | 0.43 | 0.994 | 0.66 | 0.998 |
| | <i>Slackia</i> | 2.08 | 0.995 | 1.69 | 0.998 | 0.62 | 0.799 | 0.17 | 0.370 |
| Propionibacteriaceae | - | 1.00 | 1.000 | 1.00 | 1.000 | 9.67 | 0.994 | 0.33 | 1.000 |
| | <i>Propionibacterium</i> | 1.00 | 1.000 | 1.00 | 1.000 | 9.67 | 0.988 | 0.33 | 1.000 |
| Phylum Bacteroidetes | | | | | | | | | |
| Bacteroidaceae | - | 1.50 | 0.011 | 1.73 | 0.000 | 0.88 | 0.218 | 0.97 | 0.886 |
| | <i>Bacteroides</i> | 1.50 | 0.000 | 1.73 | 0.000 | 0.88 | 0.055 | 0.97 | 0.785 |
| Bacteroidetes_uncl. | - | 1.25 | 0.991 | 1.69 | 0.936 | 1.04 | 0.997 | 0.56 | 0.694 |
| Bacteroidales_uncl. | - | 2.51 | 0.966 | 1.80 | 0.990 | 1.19 | 1.000 | 2.01 | 0.991 |
| Porphyromonadaceae | - | 0.54 | 0.000 | 0.53 | 0.000 | 0.93 | 0.928 | 1.13 | 0.790 |
| | <i>Barnesiella</i> | 0.48 | 0.051 | 0.51 | 0.065 | 1.45 | 0.840 | 1.71 | 0.652 |
| | <i>Butyricimonas</i> | 0.93 | 1.000 | 1.34 | 0.999 | 0.58 | 0.915 | 1.07 | 0.998 |
| | <i>Odoribacter</i> | 0.96 | 1.000 | 0.78 | 0.998 | 0.80 | 0.997 | 0.51 | 0.979 |
| | Porphyromonadaceae_uncl. | 0.85 | 0.803 | 0.74 | 0.499 | 1.13 | 0.951 | 1.06 | 0.988 |
| | <i>Parabacteroides</i> | 0.29 | 0.004 | 0.34 | 0.008 | 0.60 | 0.654 | 1.02 | 0.999 |
| Prevotellaceae | - | 0.86 | 0.834 | 0.88 | 0.884 | 1.01 | 0.999 | 1.43 | 0.326 |
| | <i>Alloprevotella</i> | 0.73 | 0.989 | 0.55 | 0.970 | 1.12 | 1.000 | 1.06 | 1.000 |
| | <i>Hallella</i> | 1.00 | 1.000 | 1.00 | 1.000 | 1.00 | 1.000 | 1.00 | 1.000 |
| | <i>Paraprevotella</i> | 0.40 | 1.000 | 0.20 | 1.000 | 0.50 | 1.000 | 1.50 | 1.000 |
| | <i>Prevotella</i> | 0.86 | 0.802 | 0.94 | 0.961 | 0.96 | 0.990 | 1.63 | 0.128 |
| | Prevotellaceae_uncl. | 0.93 | 0.998 | 0.79 | 0.981 | 1.13 | 0.977 | 1.03 | 0.999 |
| Rikenellaceae | - | 0.91 | 0.972 | 1.37 | 0.598 | 1.11 | 0.869 | 1.22 | 0.554 |
| | <i>Alistipes</i> | 0.91 | 0.942 | 1.37 | 0.351 | 1.11 | 0.756 | 1.22 | 0.318 |
| Phylum Firmicutes | | | | | | | | | |
| Acidaminococcaceae | - | 1.06 | 0.989 | 1.46 | 0.600 | 0.72 | 0.336 | 0.99 | 0.998 |
| | <i>Acidaminococcus</i> | 0.00 | 1.000 | 0.00 | 1.000 | 0.40 | 0.812 | 1.96 | 0.598 |
| | Acidaminococcaceae_uncl. | 1.45 | 0.993 | 2.34 | 0.941 | 0.40 | 0.886 | 0.66 | 0.960 |
| | <i>Succinoclasticum</i> | 1.16 | 0.996 | 2.18 | 0.801 | 0.84 | 0.969 | 1.01 | 1.000 |
| | <i>Phascolarctobacterium</i> | 1.00 | 1.000 | 1.20 | 0.889 | 0.81 | 0.729 | 0.80 | 0.701 |
| Clostridiales_uncl. | - | 1.26 | 0.393 | 0.89 | 0.837 | 0.89 | 0.861 | 1.20 | 0.617 |
| Clostridiaceae | - | 0.99 | 1.000 | 0.45 | 0.988 | 0.96 | 1.000 | 3.76 | 0.870 |
| | <i>Clostridium_sensu_stricto</i> | 0.99 | 1.000 | 0.45 | 0.975 | 0.96 | 1.000 | 3.76 | 0.758 |
| Enterococcaceae | - | 2.11 | 0.999 | 4.38 | 0.993 | 0.64 | 0.999 | 0.17 | 0.997 |
| | <i>Enterococcus</i> | 2.11 | 0.998 | 4.38 | 0.984 | 0.64 | 0.999 | 0.17 | 0.994 |
| Erysipelotrichaceae | - | 0.88 | 0.988 | 0.68 | 0.921 | 1.54 | 0.513 | 1.09 | 0.981 |
| | <i>Catenibacterium</i> | 4.25 | 1.000 | 16.00 | 0.996 | 1.68 | 0.525 | 0.22 | 0.438 |
| | <i>Clostridium_XVIII</i> | 1.91 | 0.964 | 0.67 | 0.995 | 1.15 | 1.000 | 4.30 | 0.799 |
| | <i>Coprobacillus</i> | 0.72 | 1.000 | 0.48 | 0.999 | 1.48 | 1.000 | 0.48 | 1.000 |
| | Erysipelotrichaceae_uncl. | 0.66 | 0.892 | 0.47 | 0.760 | 1.19 | 0.984 | 2.02 | 0.627 |
| | <i>Turicibacter</i> | 0.66 | 1.000 | 4.68 | 0.977 | 2.37 | 0.961 | 0.89 | 1.000 |
| Firmicutes_uncl. | - | 0.78 | 0.506 | 0.86 | 0.755 | 0.76 | 0.239 | 1.04 | 0.954 |
| Lachnospiraceae | - | 1.06 | 0.096 | 1.09 | 0.009 | 0.93 | 0.006 | 0.94 | 0.011 |
| | <i>Anaerostipes</i> | 0.72 | 0.928 | 2.78 | 0.080 | 0.67 | 0.886 | 0.83 | 0.969 |
| | <i>Blautia</i> | 1.01 | 0.981 | 0.98 | 0.959 | 0.84 | 0.023 | 0.77 | 0.001 |

| | | | | | | | | | |
|-------------------------------|-------------------------------|------|--------------|------|--------------|------|--------------|------|--------------|
| | <i>Clostridium_XIVa_uncl.</i> | 1.40 | 0.889 | 0.84 | 0.981 | 0.92 | 0.948 | 1.14 | 0.853 |
| | <i>Clostridium_XIVb_uncl.</i> | 1.60 | 0.993 | 0.58 | 0.997 | 0.60 | 0.995 | 0.56 | 0.994 |
| | <i>Coprococcus</i> | 1.36 | 0.442 | 1.60 | 0.124 | 0.86 | 0.591 | 0.67 | 0.076 |
| | <i>Dorea</i> | 0.85 | 0.668 | 0.64 | 0.106 | 1.29 | 0.549 | 0.89 | 0.917 |
| | <i>Lachnospira</i> | 1.20 | 0.964 | 1.49 | 0.808 | 1.05 | 0.999 | 1.22 | 0.985 |
| | Lachnospiraceae_uncl. | 0.82 | 0.060 | 0.99 | 0.983 | 1.26 | 0.000 | 1.22 | 0.001 |
| | <i>Howardella</i> | 0.91 | 1.000 | 1.34 | 0.997 | 1.00 | 1.000 | 1.00 | 1.000 |
| | <i>Roseburia</i> | 1.56 | 0.000 | 1.36 | 0.004 | 0.70 | 0.002 | 0.80 | 0.053 |
| | <i>Ruminococcus</i> | 0.80 | 0.688 | 0.78 | 0.624 | 0.47 | 0.047 | 1.06 | 0.956 |
| Lactobacillaceae | - | 0.00 | 1.000 | 0.00 | 1.000 | 0.75 | 0.998 | 1.54 | 0.993 |
| | <i>Lactobacillus</i> | 0.00 | 1.000 | 0.00 | 1.000 | 0.75 | 0.997 | 1.54 | 0.986 |
| Peptostreptococcaceae | - | 1.20 | 0.987 | 1.13 | 0.994 | 1.50 | 0.452 | 0.73 | 0.789 |
| | <i>Clostridium_XI</i> | 1.20 | 0.972 | 1.13 | 0.988 | 1.50 | 0.217 | 0.73 | 0.625 |
| Ruminococcaceae | - | 0.92 | 0.048 | 0.89 | 0.007 | 1.15 | 0.000 | 0.95 | 0.256 |
| | <i>Butyricoccus</i> | 2.42 | 0.578 | 1.71 | 0.869 | 1.02 | 1.000 | 1.31 | 0.983 |
| | <i>Faecalibacterium</i> | 0.72 | 0.026 | 0.83 | 0.225 | 1.09 | 0.724 | 1.00 | 1.000 |
| | <i>Flavonifractor</i> | 1.02 | 1.000 | 1.02 | 1.000 | 0.73 | 0.968 | 0.49 | 0.889 |
| | <i>Gemmiger</i> | 1.33 | 0.731 | 0.96 | 0.994 | 1.28 | 0.676 | 1.43 | 0.414 |
| | <i>Clostridium_IV_uncl.</i> | 0.95 | 1.000 | 0.90 | 0.999 | 1.54 | 0.981 | 0.70 | 0.994 |
| | <i>Oscillibacter</i> | 0.95 | 1.000 | 3.03 | 0.667 | 2.41 | 0.246 | 1.74 | 0.656 |
| | Ruminococcaceae_uncl. | 0.92 | 0.181 | 0.80 | 0.000 | 1.06 | 0.204 | 0.88 | 0.002 |
| | <i>Ruminococcus</i> | 0.98 | 0.992 | 1.17 | 0.663 | 0.96 | 0.981 | 0.94 | 0.971 |
| Streptococcaceae | - | 0.57 | 0.887 | 0.77 | 0.964 | 0.82 | 0.976 | 0.78 | 0.963 |
| | <i>Lactococcus</i> | 1.53 | 1.000 | 2.11 | 1.000 | 0.77 | 1.000 | 1.35 | 0.999 |
| | <i>Streptococcus</i> | 0.56 | 0.770 | 0.74 | 0.914 | 0.83 | 0.960 | 0.74 | 0.910 |
| Veillonellaceae | - | 1.46 | 0.855 | 1.10 | 0.993 | 0.59 | 0.678 | 0.80 | 0.906 |
| | <i>Dialister</i> | 1.60 | 0.724 | 1.03 | 0.999 | 0.55 | 0.661 | 0.75 | 0.879 |
| | <i>Megamonas</i> | 0.19 | 1.000 | 5.94 | 0.994 | 1.00 | 1.000 | 1.00 | 1.000 |
| | <i>Megasphaera</i> | 1.32 | 0.998 | 1.31 | 0.998 | 0.71 | 0.971 | 0.73 | 0.975 |
| | <i>Mitsuokella</i> | 1.02 | 1.000 | 0.46 | 0.999 | 0.43 | 0.999 | 2.63 | 0.994 |
| | <i>Veillonella</i> | 0.76 | 0.999 | 1.13 | 1.000 | 0.63 | 0.998 | 0.90 | 1.000 |
| Phylum Proteobacteria | | | | | | | | | |
| Alphaproteobacteria_uncl. | - | 1.00 | 1.000 | 1.00 | 1.000 | 0.45 | 0.990 | 0.20 | 0.978 |
| Desulfovibrionaceae | - | 1.16 | 0.993 | 1.02 | 1.000 | 0.45 | 0.991 | 1.06 | 1.000 |
| | <i>Desulfovibrio</i> | 1.13 | 0.991 | 0.94 | 0.998 | 0.48 | 0.991 | 0.81 | 0.999 |
| | Desulfovibrionaceae_uncl. | 1.46 | 0.999 | 1.97 | 0.996 | 0.38 | 0.998 | 1.65 | 0.998 |
| Enterobacteriaceae | - | 1.13 | 0.997 | 1.05 | 1.000 | 0.37 | 0.694 | 1.24 | 0.948 |
| | <i>Escherichia/Shigella</i> | 1.10 | 0.998 | 1.13 | 0.996 | 0.31 | 0.920 | 2.28 | 0.758 |
| | <i>Klebsiella</i> | 1.30 | 0.999 | 0.57 | 0.999 | 0.40 | 0.716 | 0.79 | 0.959 |
| Sutterellaceae | - | 0.68 | 1.000 | 0.41 | 0.999 | 6.46 | 0.149 | 0.79 | 0.997 |
| | <i>Parasutterella</i> | 0.00 | 1.000 | 0.00 | 1.000 | 0.56 | 1.000 | 0.36 | 0.999 |
| | <i>Sutterella</i> | 0.67 | 0.999 | 0.41 | 0.997 | 7.06 | 0.025 | 0.84 | 0.997 |
| Oxalobacteraceae | - | 1.00 | 1.000 | 1.00 | 1.000 | 2.51 | 0.965 | 2.58 | 0.961 |
| | Oxalobacteraceae_uncl. | 1.00 | 1.000 | 1.00 | 1.000 | 2.51 | 0.930 | 2.58 | 0.924 |
| Pasteurellaceae | - | 0.00 | 1.000 | 0.00 | 1.000 | 0.00 | 1.000 | 0.00 | 1.000 |
| | <i>Haemophilus</i> | 0.00 | 1.000 | 0.00 | 1.000 | 0.00 | 1.000 | 0.00 | 1.000 |
| Phylum Spirochaetae | | | | | | | | | |
| Brachyspiraceae | - | 1.04 | 1.000 | 0.75 | 0.997 | 0.86 | 0.999 | 0.76 | 0.998 |
| | <i>Brachyspira</i> | 1.04 | 1.000 | 0.75 | 0.995 | 0.86 | 0.999 | 0.76 | 0.996 |
| Spirochaetaceae | - | 2.50 | 1.000 | 2.33 | 1.000 | 0.66 | 1.000 | 0.18 | 0.997 |
| | <i>Treponema</i> | 2.50 | 1.000 | 2.33 | 1.000 | 0.66 | 0.999 | 0.18 | 0.994 |
| Phylum Verrucomicrobia | | | | | | | | | |
| Verrucomicrobiaceae | <i>Akkermansia</i> | 0.93 | 0.973 | 0.82 | 0.821 | 2.42 | 0.000 | 1.88 | 0.036 |

Legend: A two-way repeated measures ANOVA with Dunnett's multiple comparison's test against V1 was performed to test for significant changes over time within each group (p -values ≤ 0.05 and < 0.1 are depicted in bold text). FC, fold-change; V, visit.