

Supplementary Information

Gut³Gel: A High Throughput Mucus Model for Culturing Human Intestinal Microbiota

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Table S1: Pairwise permutational multivariate analysis of variance (PERMANOVA) of beta-diversity across culturing platforms, based on a weighted UniFrac distance matrix.

Comparison	adjusted p-value	Donor
BHI Anaerobic vs BHI Aerobic (*)	0.002	Donor 1
Donor vs BHI Aerobic (*)	0.006	Donor 1
Donor vs BHI Anaerobic (*)	0.006	Donor 1
Gut3Gel vs BHI Aerobic (*)	0.002	Donor 1
Gut3Gel vs BHI Anaerobic (*)	0.002	Donor 1
Gut3Gel vs Donor (*)	0.006	Donor 1
BHI Anaerobic vs BHI Aerobic (*)	0.002	Donor 2
Donor vs BHI Aerobic (*)	0.007	Donor 2
Donor vs BHI Anaerobic (*)	0.005	Donor 2
Gut3Gel vs BHI Aerobic (*)	0.002	Donor 2
Gut3Gel vs BHI Anaerobic (*)	0.002	Donor 2
Gut3Gel vs Donor	0.101	Donor 2
BHI Anaerobic vs BHI Aerobic	0.485	Donor 3
Donor vs BHI Aerobic (*)	0.017	Donor 3
Donor vs BHI Anaerobic (*)	0.015	Donor 3
Gut3Gel vs BHI Aerobic (*)	0.003	Donor 3
Gut3Gel vs BHI Anaerobic (*)	0.003	Donor 3
Gut3Gel vs Donor (*)	0.004	Donor 3
BHI Anaerobic vs BHI Aerobic (*)	0.002	Donor 4
Donor vs BHI Aerobic (*)	0.006	Donor 4
Donor vs BHI Anaerobic (*)	0.006	Donor 4
Gut3Gel vs BHI Aerobic (*)	0.002	Donor 4
Gut3Gel vs BHI Anaerobic (*)	0.002	Donor 4
Gut3Gel vs Donor (*)	0.006	Donor 4
BHI Anaerobic vs BHI Aerobic (*)	0.002	Donor 5
Donor vs BHI Aerobic (*)	0.007	Donor 5
Donor vs BHI Anaerobic (*)	0.005	Donor 5
Gut3Gel vs BHI Aerobic (*)	0.002	Donor 5
Gut3Gel vs BHI Anaerobic (*)	0.002	Donor 5
Gut3Gel vs Donor (*)	0.007	Donor 5

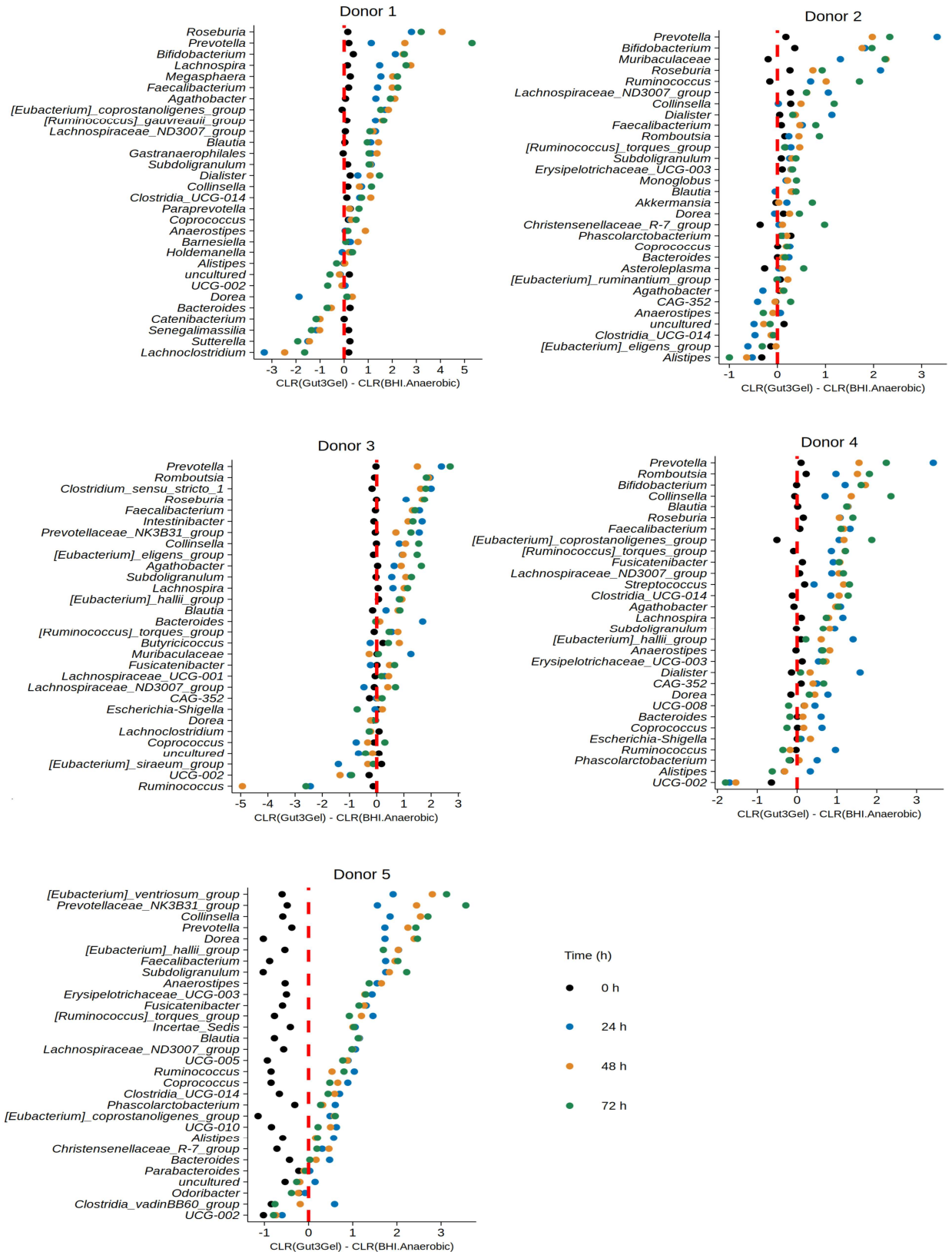
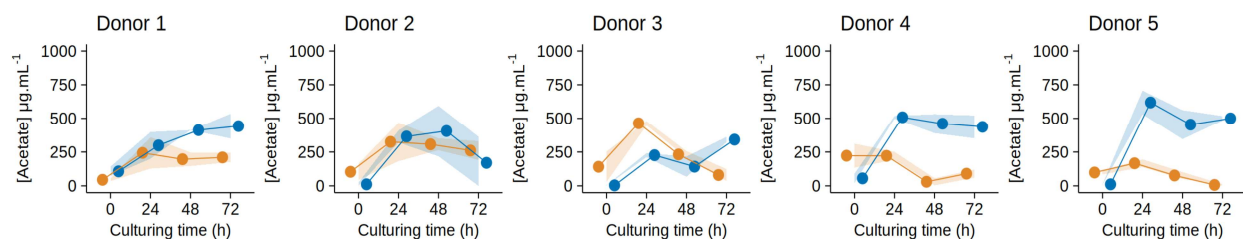
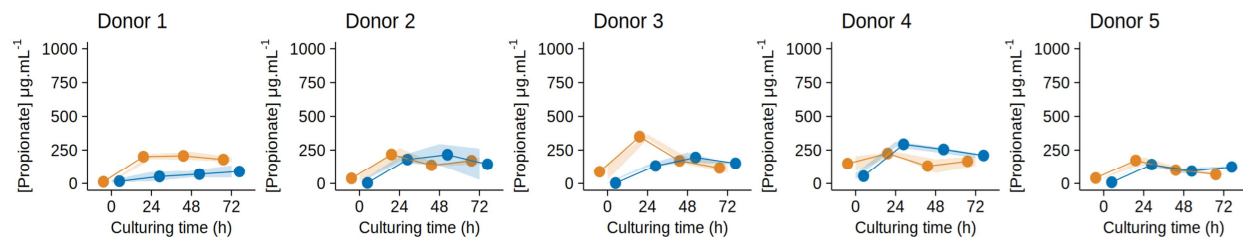


Figure S1: Dotplots displaying the difference between the clr transformed abundances of the Top 30 genera in donor samples in Gut³Gel and BHI anaerobic over the culturing period of 72 hours.

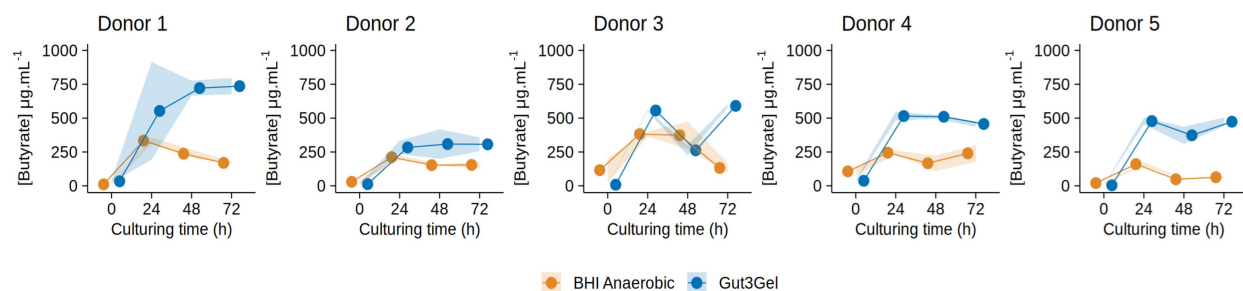
Acetate



Propionate



Butyrate



● BHI Anaerobic ● Gut3Gel

Figure S2: Levels of SCFAs (acetate, propionate and butyrate) produced by the intestinal microbiota inoculated in Gut³Gel, quantified using GC-MS. The data represents the average concentration of each SCFA produced by each donor intestinal microbiota cultured in either Gut³Gel (blue line) or BHI under anaerobic conditions (orange line). The shaded range corresponds to the standard deviation.

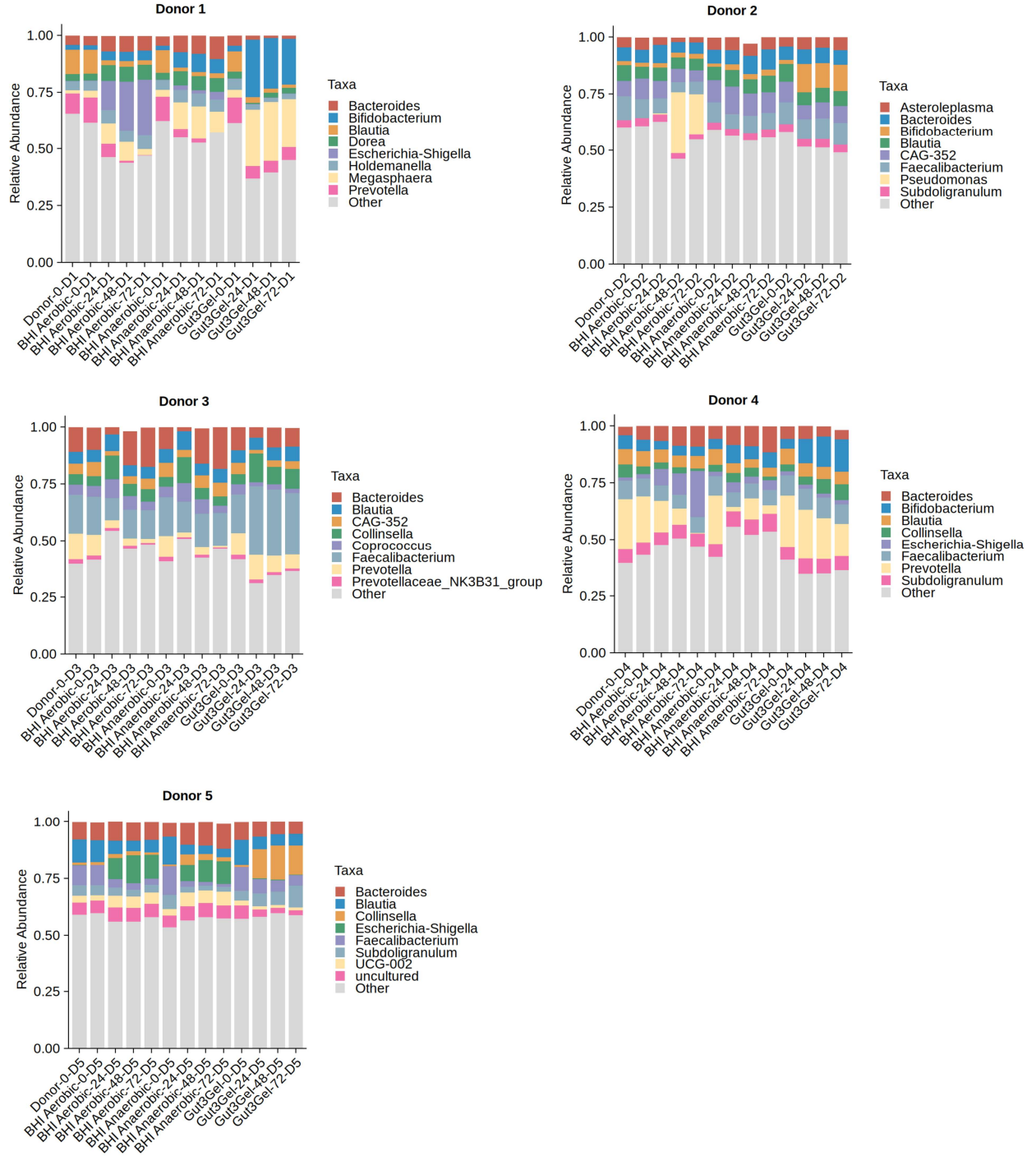


Figure S3: Taxonomic composition at the Genus level across donor samples. The relative abundances are shown for the microbial communities growth in Gut³Gel or BHI (aerobic or anaerobic conditions) cultivated for 24, 48, and 72 hours.