

Supplementary Material



microorganisms

Article

M-Batches to Simulate Luminal and Mucosal Human Gut Microbial Ecosystems: A Case Study of the Effects of Coffee and Green Tea

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Supplementary Table S1. Target bacteria population measured by qPCR, protocols and annealing temperatures validated.

Target	Tann ^a (°C)	[nM] ^b	Validated Protocol	References (Sequences)
Total bacteria	61.5	500		[1]
Cluster XIVa	61.5	500		[2]
Cluster IV	61.5	500		[3]
<i>Roseburia</i> spp.	61.5	500		[4]
<i>Bacteroides-Prevotella</i> spp.	54.0	500		[5]
<i>Bifidobacterium</i> spp.	54.0	500		[6]
Lactobacilli	58.0	300		[7]
<i>Veillonella</i> spp.	58.0	500		[4,8]
<i>Akkermansia muciniphila</i>	54.0	500		[9]
<i>Faecalibacterium prausnitzii</i>	54.0	500		
<i>Phascolarctobacterium faecium</i>	58.0	150		
<i>Coprococcus</i> spp.	63.0	800		[10]

^a Tann: Temperature of annealing, ^b Concentration of primer oligosaccharides (forward and reverse) expressed in nM.

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Supplementary Table S2. Phylogenetic analysis using 16S rRNA sequencing for the Inoculum A (pool of feces) used to perform the green tea M-batches experiment

Kingdom	Phylum	Class	Order	Family	Genus	OTUs Pool of feces
Bacteria	Actinomycetota	Actinomycetes	Bifidobacteriales	Bifidobacteriaceae	<i>Bifidobacterium</i>	8
Bacteria	Actinomycetota	Coriobacteriia	Coriobacteriales	Coriobacteriales_fa	<i>Coriobacteriales_fa_ge</i>	2
Bacteria	Actinomycetota	Coriobacteriia	Coriobacteriales	Coriobacteriales_fa	<i>Coriobacteriales_ge_ge</i>	1
Bacteria	Actinomycetota	Coriobacteriia	Eggerthellales	Eggerthellaceae	<i>Eggerthella</i>	1
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Coprobacillaceae	<i>Catenibacterium</i>	8
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Coprobacillaceae	<i>Erysipelatoclostridiaceae_ge</i>	6
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Coprobacillaceae	<i>Thomasclavelia</i>	1
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Coprobacillaceae	<i>Erysipelotrichaceae_UCG-003</i>	3
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Erysipelotrichaceae	<i>Erysipelotrichaceae_ge</i>	7
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Erysipelotrichaceae	<i>Holdemanella</i>	44
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Erysipelotrichaceae	<i>Holdemania</i>	2
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Erysipelotrichaceae	<i>Merdibacter</i>	2
Bacteria	Bacillota	Bacilli	Lactobacillales	Enterococcaceae	<i>Enterococcus</i>	1
Bacteria	Bacillota	Bacilli	Lactobacillales	Lactobacillaceae	<i>Pediococcus</i>	1
Bacteria	Bacillota	Bacilli	Lactobacillales	Streptococcaceae	<i>Lactococcus</i>	2
Bacteria	Bacillota	Bacilli	Lactobacillales	Streptococcaceae	<i>Streptococcus</i>	12
Bacteria	Bacillota	Bacilli	RF39	RF39_fa	RF39_ge	8
Bacteria	Bacillota	Clostridia	Eubacteriales	Christensenellaceae	<i>Christensenellaceae_ge</i>	9
Bacteria	Bacillota	Clostridia	Eubacteriales	Christensenellaceae	<i>Christensenellaceae_R-7_group</i>	118
Bacteria	Bacillota	Clostridia	Clostridia_or	Clostridia_fa	<i>Clostridia_ge</i>	23
Bacteria	Bacillota	Clostridia	Clostridia_UCG-014	Clostridia_UCG-014_fa	<i>Clostridia_UCG-014_ge</i>	55
Bacteria	Bacillota	Clostridia	Clostridia_vadinBB60_group	Clostridia_vadinBB60_group_fa	<i>Clostridia_vadinBB60_group_ge</i>	37
Bacteria	Bacillota	Clostridia	Eubacteriales	Clostridiaceae	<i>Clostridium_sensu_stricto_1</i>	7
Bacteria	Bacillota	Clostridia	Eubacteriales	Defluviitaleaceae	<i>Defluviitaleaceae_UCG-011</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Agathobacter</i>	112
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Anaerostipes</i>	8
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Blautia</i>	84
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	CAG-56	5
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Coprococcus</i>	544

Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Cuneatibacter</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Dorea</i>	90
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Fusicatenibacter</i>	48
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnoclostridium</i>	92
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospira</i>	119
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_FCS020_group</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_ge</i>	935
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_ND3007_group</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_NK4A136_group</i>	368
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_NK4B4_group</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_UCG-001</i>	13
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_UCG-004</i>	53
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_UCG-010</i>	3
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Marvinbryantia</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Roseburia</i>	48
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Sellimonas</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospirales_ge</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Monoglobus</i>	38
Bacteria	Bacillota	Clostridia	Eubacteriales	Clostridiaceae	<i>Butyricicoccaceae_ge</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Clostridiaceae	<i>Butyricicoccus</i>	29
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Acetanaerobacterium</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Colidextribacter</i>	22
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Flavonifractor</i>	10
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Intestinimonas</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	NK4A214_group	89
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Oscillibacter</i>	22
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Oscillospira</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Oscillospiraceae_ge</i>	30
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Pseudoflavonifractor</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	UCG-002	269
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	UCG-003	48
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	UCG-005	149
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	V9D2013_group	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospirales_fa	<i>Oscillospirales_ge</i>	177
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Anaerofilum</i>	2

Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	CAG-352	4
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Candidatus_Soleaferrea</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	DTU089	4
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Faecalibacterium</i>	838
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Fournierella</i>	14
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Negativibacillus</i>	4
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Phoceia</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Ruminococcaceae_ge</i>	162
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Ruminococcus</i>	321
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Subdoligranulum</i>	599
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	UBA1819	10
Bacteria	Bacillota	Clostridia	Eubacteriales	UCG-010	UCG-010_ge	83
Bacteria	Bacillota	Clostridia	Peptostreptococcales	Anaerovoracaceae	<i>Anaerovoracaceae_Family_XIII_AD3011_group</i>	13
Bacteria	Bacillota	Clostridia	Peptostreptococcales	Anaerovoracaceae	<i>Anaerovoracaceae_Family_XIII_UCG-001</i>	11
Bacteria	Bacillota	Clostridia	Peptostreptococcales	Anaerovoracaceae	<i>Anaerovoracaceae_ge</i>	5
Bacteria	Bacillota	Tissierellia	Tissierellales	Peptoniphilaceae	<i>Peptoniphilus</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Peptostreptococcaceae	<i>Intestinibacter</i>	5
Bacteria	Bacillota	Clostridia	Eubacteriales	Peptostreptococcaceae	<i>Romboutsia</i>	10
Bacteria	Bacillota	Clostridia	Eubacteriales	Peptostreptococcaceae	<i>Terrisporobacter</i>	2
Bacteria	Bacillota	Negativicutes	Acidaminococcales	Acidaminococcaceae	<i>Phascolarctobacterium</i>	125
Bacteria	Bacillota	Negativicutes	Selenomonadales	Selenomonadaceae	<i>Megamonas</i>	1
Bacteria	Bacillota	Negativicutes	Selenomonadales	Selenomonadaceae	<i>Mitsuokella</i>	3
Bacteria	Bacillota	Negativicutes	Veillonellales	Veillonellaceae	<i>Dialister</i>	311
Bacteria	Bacillota	Negativicutes	Veillonellales	Veillonellaceae	<i>Megasphaera</i>	16
Bacteria	Bacillota	Negativicutes	Veillonellales	Veillonellaceae	<i>Veillonella</i>	2
Bacteria	Bacillota	Negativicutes	Veillonellales	Veillonellaceae	<i>Veillonellaceae_ge</i>	4
Bacteria	Bacteria_ph	Bacteria_cl	Bacteria_or	Bacteria_fa	<i>Bacteria_ge</i>	7
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Bacteroidaceae	<i>Bacteroides</i>	753
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Bacteroidales_fa	<i>Bacteroidales_ge</i>	42
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Barnesiellaceae	<i>Barnesiella</i>	109
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Barnesiellaceae	<i>Copro bacter</i>	4
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Odoribacteraceae	<i>Butyricimonas</i>	25
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Odoribacteraceae	<i>Odoribacter</i>	48

Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Muribaculaceae	CAG-873	3
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Prevotellaceae	<i>Paraprevotella</i>	14
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Prevotellaceae	<i>Prevotella</i>	1
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Prevotellaceae	<i>Prevotella_7</i>	3
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Prevotellaceae	<i>Prevotella_9</i>	1850
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Prevotellaceae	<i>Prevotellaceae_ge</i>	1
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Prevotellaceae	<i>Prevotellaceae_NK3B31_group</i>	38
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Rikenellaceae	<i>Alistipes</i>	227
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Rikenellaceae	<i>Rikenellaceae_RC9_gut_group</i>	82
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Tannerellaceae	<i>Parabacteroides</i>	151
Bacteria	Campylobacterota	Epsilonproteobacteria	Campylobacterales	Helicobacteraceae	<i>Helicobacter</i>	2
Bacteria	Cyanobacteriota /Melainacteria	Candidatus Melainabacteria	Candidatus Gastranaerophilales	Candidatus Gastranaerophilaceae	<i>Gastranaerophilales_ge</i>	1
Bacteria	Lentisphaerota	Lentisphaeria	Victivallales	vadinBE97	<i>vadinBE97_ge</i>	4
Bacteria	Lentisphaerota	Lentisphaeria	Victivallales	Victivallaceae	<i>Victivallaceae_ge</i>	2
Bacteria	Lentisphaerota	Lentisphaeria	Victivallales	Victivallaceae	<i>Victivallis</i>	26
Bacteria	Mycoplasmata	Mollicutes	Acholeplasmatales	Acholeplasmataceae	<i>Anaeroplasmata</i>	16
Bacteria	Mycoplasmata	Candidatus Izimaplasma	Candidatus Izemoplasmatales	Candidatus Izemoplasmataceae	<i>Candidatus Izemoplasmata</i>	1
Bacteria	Pseudomonadota	Alphaproteobacteria	Rhodospirillales	Rhodospirillales_fa	<i>Rhodospirillales_fa_ge</i>	49
Bacteria	Pseudomonadota	Betaproteobacteria	Burkholderiales	Burkholderiales_fa	<i>Burkholderiales_ge</i>	2
Bacteria	Pseudomonadota	Betaproteobacteria	Burkholderiales	Oxalobacteraceae	<i>Oxalobacter</i>	6
Bacteria	Pseudomonadota	Betaproteobacteria	Burkholderiales	Sutterellaceae	<i>Parasutterella</i>	45
Bacteria	Pseudomonadota	Betaproteobacteria	Burkholderiales	Sutterellaceae	<i>Sutterella</i>	27
Bacteria	Pseudomonadota	Gammaproteobacteria	Enterobacteriales	Enterobacteriaceae	<i>Escherichia-Shigella</i>	4
Bacteria	Pseudomonadota	Gammaproteobacteria	Pasteurellales	Pasteurellaceae	<i>Haemophilus</i>	2
Bacteria	Pseudomonadota	Gammaproteobacteria	Pasteurellales	Pasteurellaceae	<i>Pasteurellaceae_ge</i>	1
Bacteria	Saccharimonadota	Saccharimonadia	Saccharimonadales	Saccharimonadaceae	<i>Saccharimonadaceae_ge</i>	1
Bacteria	Thermodesulfobacteriota	Desulfovibrionia	Desulfovibrionales	Desulfovibrionaceae	<i>Bilophila</i>	9
Bacteria	Thermodesulfobacteriota	Desulfovibrionia	Desulfovibrionales	Desulfovibrionaceae	<i>Desulfovibrio</i>	8
Bacteria	Thermodesulfobacteriota	Desulfovibrionia	Desulfovibrionales	Desulfovibrionaceae	<i>Mailhella</i>	2
Bacteria	Verrucomicrobiota	Opitutae	Puniceicoccales	Coralimargaritaceae	<i>Coralimargarita</i>	2
Bacteria	Verrucomicrobiota	Verrucomicrobiae	Verrucomicrobiales	Akkermansiaceae	<i>Akkermansia</i>	94

Supplementary Table S3. Phylogenetic analysis using 16S rRNA sequencing for the Inoculum B (individual donor) used to perform coffee M-batches experiment

Kingdom	Phylum	Class	Order	Family	Genus	OTUs Single donor
Bacteria	Actinomycetota	Actinomycetes	Bifidobacteriales	Bifidobacteriaceae	<i>Bifidobacterium</i>	2
Bacteria	Actinomycetota	Coriobacteriia	Coriobacteriales	Coriobacteriaceae	<i>Collinsella</i>	9
Bacteria	Actinomycetota	Coriobacteriia	Coriobacteriales	Coriobacteriales Incertae Sedis	<i>Coriobacteriales_ge</i>	6
Bacteria	Actinomycetota	Coriobacteriia	Eggerthellales	Eggerthellaceae	<i>Adlercreutzia</i>	1
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Coprobacillaceae	<i>Catenibacterium</i>	4
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Coprobacillaceae	<i>Coprobacillus</i>	22
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Coprobacillaceae	<i>Thomasclavelia</i>	2
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Erysipelotrichaceae	<i>Erysipelotrichaceae_ge</i>	1
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Erysipelotrichaceae	<i>Holdemanella</i>	20
Bacteria	Bacillota	Erysipelotrichia	Erysipelotrichales	Erysipelotrichaceae	<i>Solobacterium</i>	1
Bacteria	Bacillota	Bacilli	Lactobacillales	Carnobacteriaceae	<i>Granulicatella</i>	1
Bacteria	Bacillota	Bacilli	Lactobacillales	Streptococcaceae	<i>Lactococcus</i>	1
Bacteria	Bacillota	Bacilli	Lactobacillales	Streptococcaceae	<i>Streptococcus</i>	42
Bacteria	Bacillota	Bacilli	RF39	RF39_fa	RF39_ge	11
Bacteria	Bacillota	Bacilli	Bacillales	Gemellaceae	<i>Gemella</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Christensenellaceae	<i>Christensenellaceae_ge</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Christensenellaceae	<i>Christensenellaceae_R-7_group</i>	265
Bacteria	Bacillota	Clostridia	Clostridia_or	Clostridia_fa	<i>Clostridia_ge</i>	13
Bacteria	Bacillota	Clostridia	Clostridia_UCG-014	Clostridia_UCG-014_fa	<i>Clostridia_UCG-014_ge</i>	136
Bacteria	Bacillota	Clostridia	Clostridia_vadinBB60_group	Clostridia_vadinBB60_group_fa	<i>Clostridia_vadinBB60_group_ge</i>	5
Bacteria	Bacillota	Clostridia	Eubacteriales	Eubacteriales_fa	<i>Eubacteriales_ge</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Defluviitaleaceae	<i>Defluviitaleaceae_UCG-011</i>	3
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Anaerostipes</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Blautia</i>	22
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Catenibacillus</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Coproccoccus</i>	199
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Dorea</i>	3

Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Eisenbergiella</i>	3
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Fusicatenibacter</i>	19
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	GCA-900066575	4
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	GCA-900066755	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnoclostridium</i>	85
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospira</i>	10
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_ge</i>	137
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_ND3007_group</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_NK4A136_group</i>	72
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_UCG-001</i>	6
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_UCG-002</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_UCG-004</i>	10
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_UCG-008</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Lachnospiraceae_UCG-010</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Marvinbryantia</i>	3
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	<i>Roseburia</i>	21
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospiraceae	UC5-1-2E3	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Lachnospirales_fa	<i>Lachnospirales_ge</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Monoglobus</i>	4
Bacteria	Bacillota	Clostridia	Eubacteriales	Clostridiaceae	<i>Butyricicoccus</i>	8
Bacteria	Bacillota	Clostridia	Eubacteriales	Butyricoccaceae	UCG-009	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Colidextribacter</i>	18
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Flavonifractor</i>	52
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Intestinimonas</i>	4
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	NK4A214_group	103
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Oscillibacter</i>	10
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Oscillospira</i>	3
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Oscillospiraceae_ge</i>	82
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	UCG-002	272
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	UCG-003	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	UCG-005	144
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	UCG-007	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Hydrogenoanaerobacterium</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospirales_fa	<i>Oscillospirales_ge</i>	97
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Anaerofilum</i>	3

Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Anaerotruncus</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Angelakisella</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	CAG-352	72
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	DTU089	3
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Faecalibacterium</i>	405
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Fournierella</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Negativibacillus</i>	3
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Phoceia</i>	2
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Ruminococcaceae_ge</i>	94
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Ruminococcus</i>	122
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	<i>Subdoligranulum</i>	384
Bacteria	Bacillota	Clostridia	Eubacteriales	Oscillospiraceae	UBA1819	30
Bacteria	Bacillota	Clostridia	Eubacteriales	UCG-010	UCG-010_ge	37
Bacteria	Bacillota	Clostridia	Eubacteriales	Peptococcaceae	<i>Peptococcaceae_ge</i>	3
Bacteria	Bacillota	Clostridia	Peptostreptococcales	Anaerovoracaceae	<i>Anaerovoracaceae_Family_XIII_AD3_011_group</i>	3
Bacteria	Bacillota	Clostridia	Peptostreptococcales	Anaerovoracaceae	<i>Anaerovoracaceae_Family_XIII_UCG-001</i>	3
Bacteria	Bacillota	Clostridia	Peptostreptococcales	Anaerovoracaceae	<i>Anaerovoracaceae_ge</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Peptostreptococcaceae	<i>Romboutsia</i>	1
Bacteria	Bacillota	Tissierellia	Tissierellales	Peptoniphilaceae	<i>Anaerococcus</i>	1
Bacteria	Bacillota	Tissierellia	Tissierellales	Peptoniphilaceae	<i>Ezakiella</i>	1
Bacteria	Bacillota	Clostridia	Eubacteriales	Eubacteriales_fa	<i>Fenollaria</i>	2
Bacteria	Bacillota	Tissierellia	Tissierellales	Peptoniphilaceae	<i>Peptoniphilus</i>	7
Bacteria	Bacillota	Bacillota_cl	Bacillota_or	Bacillota_fa	<i>Bacillota_ge</i>	4
Bacteria	Bacillota	Negativicutes	Acidaminococcales	Acidaminococcaceae	<i>Phascolarctobacterium</i>	42
Bacteria	Bacillota	Negativicutes	Veillonellales	Veillonellaceae	<i>Dialister</i>	2
Bacteria	Bacillota	Negativicutes	Veillonellales	Veillonellaceae	<i>Veillonella</i>	1
Bacteria	Bacteria_ph	Bacteria_cl	Bacteria_or	Bacteria_fa	<i>Bacteria_ge</i>	10
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Bacteroidaceae	<i>Bacteroides</i>	621
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Bacteroidales_fa	<i>Bacteroidales_ge</i>	8
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Barnesiellaceae	<i>Barnesiella</i>	2
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Barnesiellaceae	<i>Copro bacter</i>	9
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Odoribacteraceae	<i>Butyricimonas</i>	2
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Odoribacteraceae	<i>Odoribacter</i>	6

Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Porphyromonadaceae	<i>Sanguibacteroides</i>	1
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Porphyromonadaceae	<i>Porphyromonas</i>	7
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Prevotellaceae	<i>Paraprevotella</i>	10
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Prevotellaceae	<i>Prevotella</i>	16
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Prevotellaceae	<i>Prevotellaceae_ge</i>	2
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Prevotellaceae	<i>Prevotellaceae_NK3B31_group</i>	149
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Prevotellaceae	<i>Prevotellaceae_UCG-001</i>	18
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Rikenellaceae	<i>Alistipes</i>	128
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Rikenellaceae	<i>Rikenellaceae_RC9_gut_group</i>	24
Bacteria	Bacteroidota	Bacteroidia	Bacteroidales	Tannerellaceae	<i>Parabacteroides</i>	46
Bacteria	Bacteroidota	Bacteroidia	Bacteroidia_or	Bacteroidia_fa	<i>Bacteroidia_ge</i>	3
Bacteria	Cyanobacteriota /Melainacteria	Candidatus Melainabacteria	Candidatus Gastranaerophilales	Candidatus Gastranaerophilaceae	<i>Gastranaerophilales_ge</i>	2
Bacteria	Elusimicrobiota	Elusimicrobia	Elusimicrobiales	Elusimicrobiaceae	<i>Elusimicrobium</i>	2
Bacteria	Fusobacteriota	Fusobacteriia	Fusobacteriales	Fusobacteriaceae	<i>Fusobacterium</i>	1
Bacteria	Lentisphaerota	Lentisphaeria	Victivallales	Victivallaceae	<i>Victivallis</i>	1
Bacteria	Pseudomonadota	Betaproteobacteria	Burkholderiales	Oxalobacteraceae	<i>Oxalobacter</i>	1
Bacteria	Pseudomonadota	Betaproteobacteria	Burkholderiales	Sutterellaceae	<i>Parasutterella</i>	5
Bacteria	Pseudomonadota	Betaproteobacteria	Burkholderiales	Sutterellaceae	<i>Sutterella</i>	10
Bacteria	Pseudomonadota	Gammaproteobacteria	Enterobacterales	Enterobacterales_fa	<i>Enterobacterales_ge</i>	1
Bacteria	Pseudomonadota	Gammaproteobacteria	Enterobacterales	Enterobacteriaceae	<i>Escherichia-Shigella</i>	6
Bacteria	Pseudomonadota	Alphaproteobacteria	Hyphomicrobiales	Hyphomicrobiales_fa	<i>Enhydrobacter</i>	1
Bacteria	Thermodesulfobacteriota	Desulfovibrionia	Desulfovibrionales	Desulfovibrionaceae	<i>Bilophila</i>	4
Bacteria	Thermodesulfobacteriota	Desulfovibrionia	Desulfovibrionales	Desulfovibrionaceae	<i>Desulfovibrionaceae_ge</i>	33
Bacteria	Verrucomicrobiota	Verrucomicrobiae	Verrucomicrobiales	Akkermansiaceae	<i>Akkermansia</i>	5682

Supplementary Figure S1. Phylum level frequency analysis for the inocula used to perform the M-batch experiments

