

**Supplemental Table 1.** Fecal microbiota composition at genus level in the fresh and stored samples

Phylum	Class	Order	Family	Genus	Fresh	DESS.1wk	DESS.2wk	DESS.3wk	DESS.3wk.F	Gua.3wk.F	p values	q values
Actinobacteria	Actinobacteria	Bifidobacteriales	<i>Bifidobacteriaceae</i>	<i>Bifidobacterium</i>	7.11 ± 2.30	7.35 ± 2.35	8.69 ± 2.61	5.10 ± 1.82	4.81 ± 1.67	8.76 ± 5.25	0.28	2.53
Actinobacteria	Actinobacteria	Actinomycetales	<i>Micrococcaceae</i>	<i>Rothia</i>	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.01 ± 0.02	0.00 ± 0.00	0.35	2.52
Actinobacteria	Actinobacteria	Bifidobacteriales	<i>Bifidobacteriaceae</i>	<i>Scardovia</i>	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.44	1.93
Actinobacteria	Actinobacteria	Actinomycetales	<i>Corynebacteriaceae</i>	<i>Corynebacterium</i>	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.46	1.95
Actinobacteria	Actinobacteria	Actinomycetales	<i>Propionibacteriaceae</i>	<i>Propionibacterium</i>	0.05 ± 0.04	0.03 ± 0.01	0.03 ± 0.01	0.03 ± 0.03	0.02 ± 0.02	0.04 ± 0.03	0.75	1.43
Actinobacteria	Actinobacteria	Actinomycetales	<i>Actinomycetaceae</i>	<i>Actinomyces</i>	0.02 ± 0.01	0.02 ± 0.02	0.03 ± 0.01	0.02 ± 0.02	0.01 ± 0.02	0.02 ± 0.01	0.85	1.45
Actinobacteria	Coriobacteriia	Coriobacteriales	<i>Coriobacteriaceae</i>	Unclassified	0.01 ± 0.01	0.03 ± 0.05	0.02 ± 0.04	0.02 ± 0.04	0.02 ± 0.04	0.00 ± 0.01	0.94	1.31
Actinobacteria	Coriobacteriia	Coriobacteriales	<i>Coriobacteriaceae</i>	<i>Eggerthella</i>	0.11 ± 0.10	0.09 ± 0.06	0.08 ± 0.09	0.09 ± 0.11	0.10 ± 0.08	0.06 ± 0.03	0.97	1.22
Actinobacteria	Coriobacteriia	Coriobacteriales	<i>Coriobacteriaceae</i>	<i>Collinsella</i>	0.62 ± 0.69	0.80 ± 0.73	0.87 ± 0.92	0.93 ± 1.17	0.59 ± 0.56	0.68 ± 0.94	0.99	1.11
Bacteroidetes	Bacteroidia	Bacteroidales	<i>Bacteroidaceae</i>	<i>Bacteroides</i>	24.17 ± 4.60	33.28 ± 3.38	36.38 ± 2.84	34.06 ± 5.01	35.77 ± 5.38	33.65 ± 4.34	0.01	0.24
Bacteroidetes	Bacteroidia	Bacteroidales	S24-7	Unclassified	0.47 ± 0.27	0.54 ± 0.26	0.19 ± 0.11	0.36 ± 0.30	0.26 ± 0.07	0.33 ± 0.09	0.19	2.44
Bacteroidetes	Bacteroidia	Bacteroidales	[ <i>Paraprevotellaceae</i> ]	[ <i>Prevotella</i> ]	0.08 ± 0.05	0.09 ± 0.04	0.04 ± 0.03	0.05 ± 0.05	0.05 ± 0.03	0.04 ± 0.02	0.35	2.35
Bacteroidetes	Bacteroidia	Bacteroidales	Unclassified	Unclassified	0.01 ± 0.01	0.00 ± 0.00	0.01 ± 0.01	0.00 ± 0.00	0.01 ± 0.00	0.01 ± 0.01	0.73	1.53
Bacteroidetes	Bacteroidia	Bacteroidales	<i>Porphyromonadaceae</i>	<i>Porphyromonas</i>	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.01	0.82	1.42
Bacteroidetes	Bacteroidia	Bacteroidales	[ <i>Barnesiellaceae</i> ]	Unclassified	0.19 ± 0.38	0.12 ± 0.23	0.12 ± 0.24	0.17 ± 0.33	0.20 ± 0.41	0.38 ± 0.75	0.96	1.26
Bacteroidetes	Bacteroidia	Bacteroidales	<i>Porphyromonadaceae</i>	<i>Parabacteroides</i>	1.17 ± 1.16	1.90 ± 1.92	1.72 ± 1.67	1.92 ± 1.92	1.71 ± 1.77	2.53 ± 3.13	0.96	1.25
Bacteroidetes	Bacteroidia	Bacteroidales	<i>Rikenellaceae</i>	Unclassified	0.28 ± 0.27	0.24 ± 0.22	0.27 ± 0.31	0.39 ± 0.50	0.44 ± 0.61	0.39 ± 0.40	0.97	1.22
Bacteroidetes	Bacteroidia	Bacteroidales	[ <i>Odoribacteraceae</i> ]	<i>Odoribacter</i>	0.16 ± 0.20	0.14 ± 0.19	0.18 ± 0.23	0.23 ± 0.29	0.21 ± 0.30	0.24 ± 0.38	0.99	1.07
Bacteroidetes	Bacteroidia	Bacteroidales	<i>Prevotellaceae</i>	<i>Prevotella</i>	1.91 ± 3.69	1.79 ± 3.49	1.19 ± 2.34	1.67 ± 3.27	2.25 ± 4.47	2.08 ± 4.10	1.00	1.01
Cyanobacteria	Chloroplast	Streptophyta	Unclassified	Unclassified	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.01 ± 0.01	0.00 ± 0.00	0.00 ± 0.01	0.41	2.07
Deferrribacteres	Deferrribacteres	Deferrribacterales	<i>Deferrribacteraceae</i>	<i>Mucispirillum</i>	0.07 ± 0.06	0.05 ± 0.04	0.03 ± 0.02	0.05 ± 0.03	0.04 ± 0.02	0.07 ± 0.03	0.62	1.68
Firmicutes	Clostridia	Clostridiales	[ <i>Tissierellaceae</i> ]	<i>Peptoniphilus</i>	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.01	0.01 ± 0.01	<0.01	0.07
Firmicutes	Clostridia	Clostridiales	<i>Lachnospiraceae</i>	Unclassified	6.91 ± 1.91	4.82 ± 1.28	3.71 ± 1.05	4.83 ± 0.89	5.03 ± 1.50	3.27 ± 0.75	0.01	0.26
Firmicutes	Bacilli	Bacillales	<i>Planococcaceae</i>	<i>Lysinibacillus</i>	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.09	1.84
Firmicutes	Bacilli	Lactobacillales	<i>Carnobacteriaceae</i>	<i>Granulicatella</i>	0.01 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	0.11	1.83
Firmicutes	Erysipelotrichi	Erysipelotrichales	<i>Erysipelotrichaceae</i>	<i>Coprobacillus</i>	0.07 ± 0.04	0.04 ± 0.03	0.03 ± 0.02	0.03 ± 0.02	0.05 ± 0.03	0.02 ± 0.02	0.22	2.42
Firmicutes	Bacilli	Lactobacillales	<i>Lactobacillaceae</i>	<i>Lactobacillus</i>	0.13 ± 0.05	0.14 ± 0.07	0.07 ± 0.04	0.07 ± 0.06	0.17 ± 0.14	0.16 ± 0.07	0.32	2.49
Firmicutes	Bacilli	Bacillales	[ <i>Exiguobacteraceae</i> ]	Unclassified	0.01 ± 0.01	0.00 ± 0.00	0.01 ± 0.01	0.00 ± 0.00	0.01 ± 0.00	0.00 ± 0.00	0.39	2.34
Firmicutes	Bacilli	Lactobacillales	<i>Streptococcaceae</i>	<i>Streptococcus</i>	1.29 ± 0.74	0.83 ± 0.45	0.69 ± 0.43	0.82 ± 0.51	0.68 ± 0.42	0.57 ± 0.29	0.40	2.25
Firmicutes	Clostridia	Clostridiales	<i>Lachnospiraceae</i>	<i>Blautia</i>	6.46 ± 3.34	3.97 ± 2.03	3.27 ± 1.58	3.73 ± 2.10	3.73 ± 2.18	3.75 ± 1.93	0.42	2.00
Firmicutes	Clostridia	Clostridiales	[ <i>Tissierellaceae</i> ]	<i>Anaerococcus</i>	0.00 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.01 ± 0.02	0.42	1.95
Firmicutes	Erysipelotrichi	Erysipelotrichales	<i>Erysipelotrichaceae</i>	Unclassified	1.00 ± 0.67	0.57 ± 0.37	0.56 ± 0.42	0.58 ± 0.53	0.50 ± 0.32	0.36 ± 0.24	0.49	1.97
Firmicutes	Clostridia	Clostridiales	<i>Lachnospiraceae</i>	<i>Oribacterium</i>	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.01	0.49	1.90
Firmicutes	Clostridia	Clostridiales	<i>Roseburia</i>	3.26 ± 1.78	1.81 ± 0.65	1.75 ± 0.77	2.04 ± 1.01	2.38 ± 1.34	2.03 ± 1.53	0.56	1.71	
Firmicutes	Clostridia	Clostridiales	<i>Peptostreptococcaceae</i>	<i>Peptostreptococcus</i>	0.01 ± 0.01	0.00 ± 0.01	0.02 ± 0.03	0.00 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	0.59	1.76
Firmicutes	Clostridia	Clostridiales	[ <i>Tissierellaceae</i> ]	<i>Parvimonas</i>	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	0.01 ± 0.01	0.61	1.76
Firmicutes	Clostridia	Clostridiales	<i>Peptococcaceae</i>	Unclassified	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.62	1.73
Firmicutes	Bacilli	Lactobacillales	<i>Leuconostocaceae</i>	<i>Leuconostoc</i>	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.64	1.65
Firmicutes	Clostridia	Clostridiales	<i>Lachnospiraceae</i>	<i>Coprococcus</i>	4.05 ± 2.76	2.50 ± 1.82	2.03 ± 1.44	2.52 ± 1.78	1.98 ± 1.41	2.23 ± 2.10	0.68	1.63
Firmicutes	Clostridia	Clostridiales	<i>Ruminococcaceae</i>	<i>Clostridium</i>	0.01 ± 0.01	0.01 ± 0.01	0.01 ± 0.02	0.00 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	0.69	1.63
Firmicutes	Bacilli	Lactobacillales	<i>Leuconostocaceae</i>	<i>Weissella</i>	0.00 ± 0.00	0.00 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.72	1.61
Firmicutes	Clostridia	Clostridiales	[ <i>Tissierellaceae</i> ]	WAL_1855D	0.01 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.00	0.01 ± 0.00	0.72	1.56
Firmicutes	Clostridia	Clostridiales	<i>Christensenellaceae</i>	Unclassified	0.01 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.01	0.01 ± 0.01	0.01 ± 0.01	0.73	1.50
Firmicutes	Bacilli	Bacillales	<i>Staphylococcaceae</i>	<i>Staphylococcus</i>	0.01 ± 0.01	0.01 ± 0.00	0.00 ± 0.00	0.01 ± 0.01	0.00 ± 0.01	0.01 ± 0.01	0.74	1.46
Firmicutes	Clostridia	Clostridiales	<i>Ruminococcaceae</i>	<i>Anaerotruncus</i>	0.02 ± 0.02	0.02 ± 0.01	0.01 ± 0.01	0.03 ± 0.03	0.01 ± 0.01	0.02 ± 0.02	0.74	1.44
Firmicutes	Clostridia	Clostridiales	<i>Eubacteriaceae</i>	<i>Pseudoramibacter_Eubacterium</i>	0.01 ± 0.01	0.00 ± 0.00	0.00 ± 0.00	0.00 ± 0.01	0.00 ± 0.01	0.01 ± 0.01	0.85	1.43
Firmicutes	Clostridia	Clostridiales	<i>Lachnospiraceae</i>	<i>Dorea</i>	0.94 ± 0.56	0.78 ± 0.60	0.83 ± 0.65	0.67 ± 0.56	0.74 ± 0.52	0.44 ± 0.38	0.85	1.42
Firmicutes	Clostridia	Clostridiales	<i>Lachnospiraceae</i>	[ <i>Ruminococcus</i> ]	3.80 ± 2.76	2.80 ± 1.91	2.38 ± 1.79	2.86 ± 2.16	2.40 ± 1.77	2.08 ± 1.22	0.87	1.41
Firmicutes	Clostridia	Clostridiales	<i>Ruminococcaceae</i>	<i>Butyrivococcus</i>	0.77 ± 0.44	0.65 ± 0.40	0.78 ± 0.53	0.55 ± 0.31	0.59 ± 0.30	0.50 ± 0.27	0.88	1.39
Firmicutes	Clostridia	Clostridiales	<i>Clostridiaceae</i>	SMB53	0.12 ± 0.07	0.17 ± 0.14	0.15 ± 0.15	0.17 ± 0.12	0.09 ± 0.07	0.18 ± 0.16	0.89	1.36
Firmicutes	Bacilli	Lactobacillales	<i>Streptococcaceae</i>	<i>Lactococcus</i>	0.03 ± 0.06	0.01 ± 0.01	0.02 ± 0.04	0.01 ± 0.01	0.02 ± 0.03	0.01 ± 0.02	0.91	1.36
Firmicutes	Clostridia	Clostridiales	<i>Lachnospiraceae</i>	<i>Clostridium</i>	0.40 ± 0.62	0.21 ± 0.30	0.18 ± 0.25	0.24 ± 0.32	0.31 ± 0.42	0.12 ± 0.14	0.92	1.34
Firmicutes	Bacilli	Bacillales	<i>Bacillaceae</i>	<i>Bacillus</i>	0.03 ± 0.06	0.02 ± 0.03	0.01 ± 0.02	0.02 ± 0.03	0.01 ± 0.02	0.03 ± 0.07	0.93	1.32
Firmicutes	Clostridia	Clostridiales	<i>Clostridiaceae</i>	<i>Clostridium</i>	1.03 ± 1.19	0.71 ± 0.73	0.59 ± 0.67	0.59 ± 0.64	0.50 ± 0.45	0.63 ± 0.76	0.94	1.29
Firmicutes	Clostridia	Clostridiales	<i>Ruminococcaceae</i>	<i>Faecalibacterium</i>	8.84 ± 3.31	10.09 ± 4.39	10.26 ± 4.89	11.02 ± 4.88	10.60 ± 4.19	8.54 ± 3.10	0.95	1.28
Firmicutes	Clostridia	Clostridiales	<i>Lachnospiraceae</i>	<i>Lachnospira</i>	0.99 ± 1.12	1.32 ± 1.50	1.24 ± 1.53	1.88 ± 2.19	1.94 ± 2.19	1.85 ± 2.37	0.97	1.23
Firmicutes	Clostridia	Clostridiales	<i>Veillonellaceae</i>	<i>Phascolarctobacterium</i>	0.29 ± 0.54	0.39 ± 0.77	0.47 ± 0.93	0.65 ± 1.29	0.61 ± 1.20	0.19 ± 0.37	0.98	1.20
Firmicutes	Clostridia	Clostridiales	<i>Ruminococcaceae</i>	Unclassified	1.73 ± 1.75	1.22 ± 1.08	1.34 ± 1.25	1.45 ± 1.34	1.31 ± 1.39	0.96 ± 0.84	0.98	1.19
Firmicutes	Erysipelotrichi	Erysipelotrichales	<i>Erysipelotrichaceae</i>	<i>Holdemania</i>	0.03 ± 0.03	0.02 ± 0.03	0.03 ± 0.04	0.03 ± 0.04	0.02 ± 0.03	0.02 ± 0.02	0.98	1.18
Firmicutes	Bacilli	Lactobacillales	<i>Enterococcaceae</i>	<i>Enterococcus</i>	0.05 ± 0.08	0.02 ± 0.04	0.04 ± 0.07	0.03 ± 0.04	0.04 ± 0.07	0.02 ± 0.03	0.98	1.16
Firmicutes	Bacilli	Gemellales	<i>Gemellaceae</i>	Unclassified	0.01 ± 0.01	0.01 ± 0.00	0.01 ± 0.01	0.01 ± 0.00	0.01 ± 0.01	0.01 ± 0.01	0.98	1.15
Firmicutes	Bacilli	Turicibacterales	<i>Turicibacteraceae</i>	<i>Turicibacter</i>	0.15 ± 0.17	0.25 ± 0.39	0.22 ± 0.29	0.20 ± 0.27	0.14 ± 0.21	0.27 ± 0.39	0.98	1.14
Firmicutes	Clostridia	Clostridiales	<i>Lachnospiraceae</i>	<i>Anaerostipes</i>	0.19 ± 0.20	0.14 ± 0.18	0.11 ± 0.12	0.16 ± 0.20	0.12 ± 0.14	0.19 ± 0.27	0.98	1.13
Firmicutes	Clostridia	Clostridiales	<i>Ruminococcaceae</i>	<i>Oscillospira</i>	1.24 ± 1.03	1.53 ± 1.96	1.60 ± 1.81	1.14 ± 1.09	1.51 ± 1.65	2.00 ± 2.09	0.98	1.12
Firmicutes	Clostridia	Clostridiales	[ <i>Mogibacteriaceae</i> ]	Unclassified	0.06 ± 0.08	0.04 ± 0.05	0.04 ± 0.07	0.04 ± 0.07	0.03 ± 0.05	0.04 ± 0.06	0.99	1.09
Firmicutes	Clostridia	Clostridiales	<i>Veillonellaceae</i>	<i>Megasphaera</i>	1.07 ± 2.04	0.83 ± 1.58	0.89 ± 1.75	0.91 ± 1.81	0.72 ± 1.40	0.38 ± 0.73	0.99	1.08
Firmicutes	Clostridia	Clostridiales	Unclassified	Unclassified	0.38 ± 0.24	0.32 ± 0.22	0.31 ± 0.26	0.39 ± 0.40	0.39 ± 0.24	0.37 ± 0.10	1.00	1.06
Firmicutes	Clostridia	Clostridiales	<i>Veillonellaceae</i>	<i>Dialister</i>	0.87 ± 1.03	0.63 ± 0.81	0.57 ± 0.77	0.67 ± 0.94	0.88 ±			