

Article

Coffee Pulp, a By-Product of Coffee Production, Modulates Gut Microbiota and Improves Metabolic Syndrome in High-Carbohydrate, High-Fat Diet-Fed Rats

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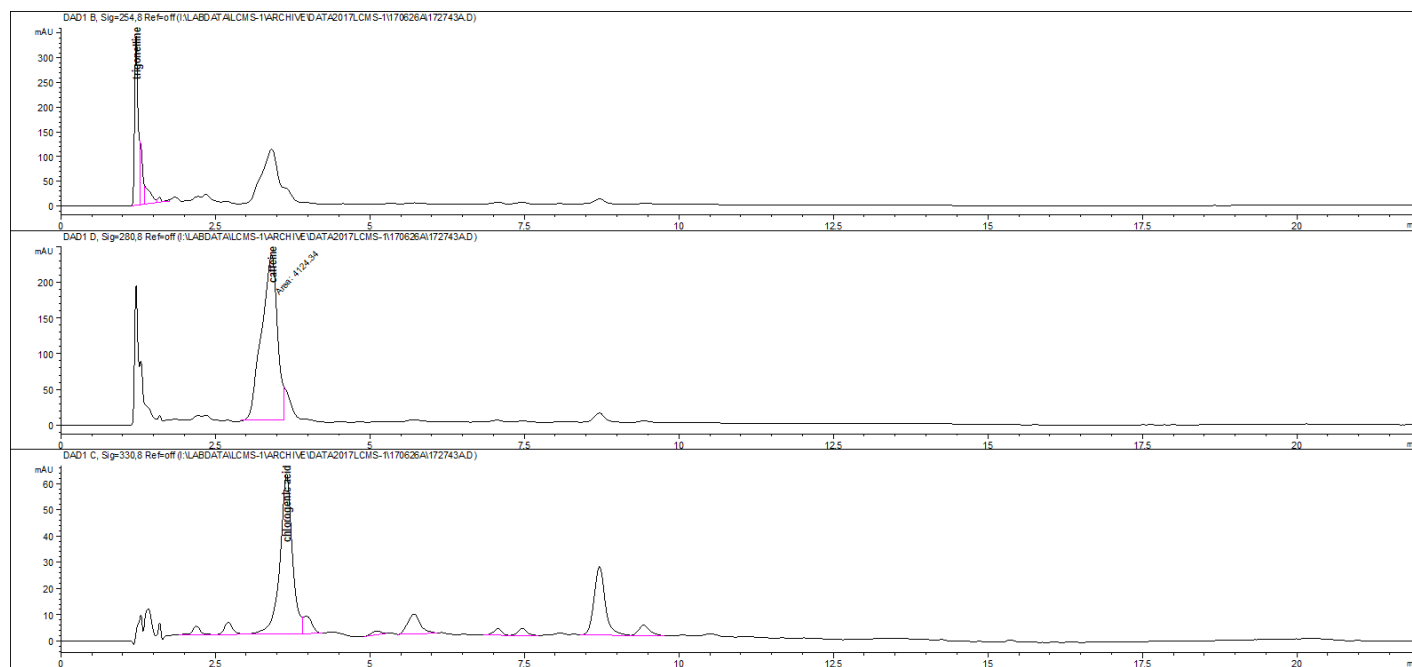


Figure S1. HPLC-UV chromatogram top to bottom – 254nm for trigonelline, 280nm for caffeine, 330nm for chlorogenic acid and phenolic acids.

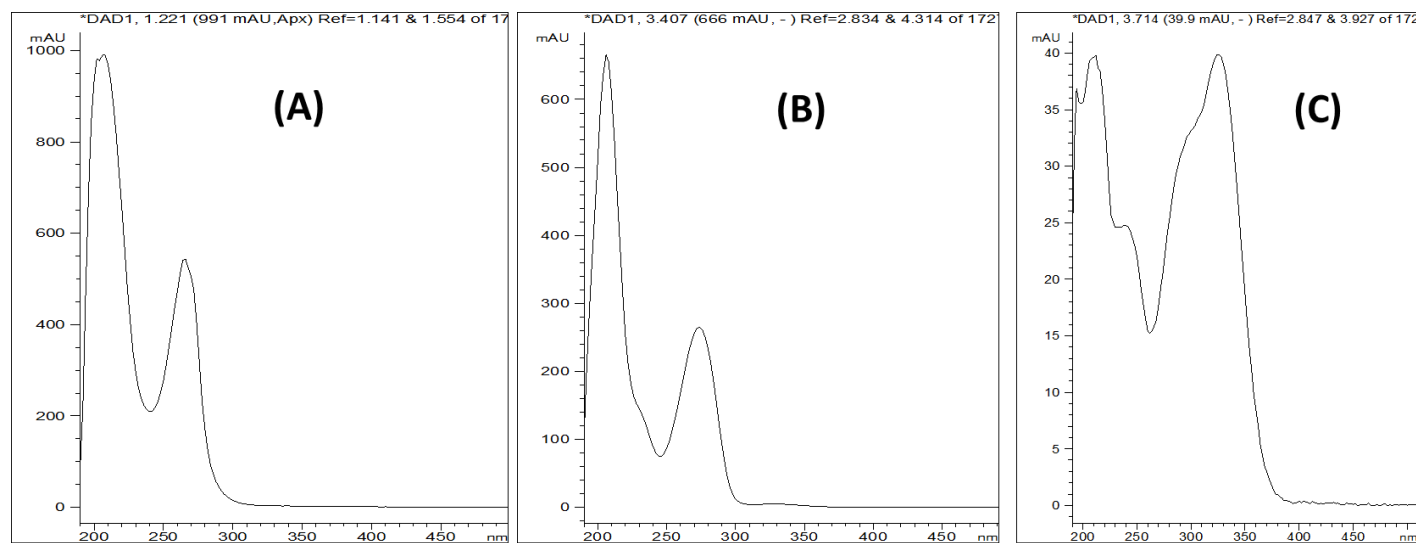


Figure S2. (A) Trigonelline UV-Vis spectra λ max ~266nm, (B) Caffeine UV-Vis spectra λ max ~274nm, (C) Chlorogenic acid UV-Vis spectra λ max ~325nm.

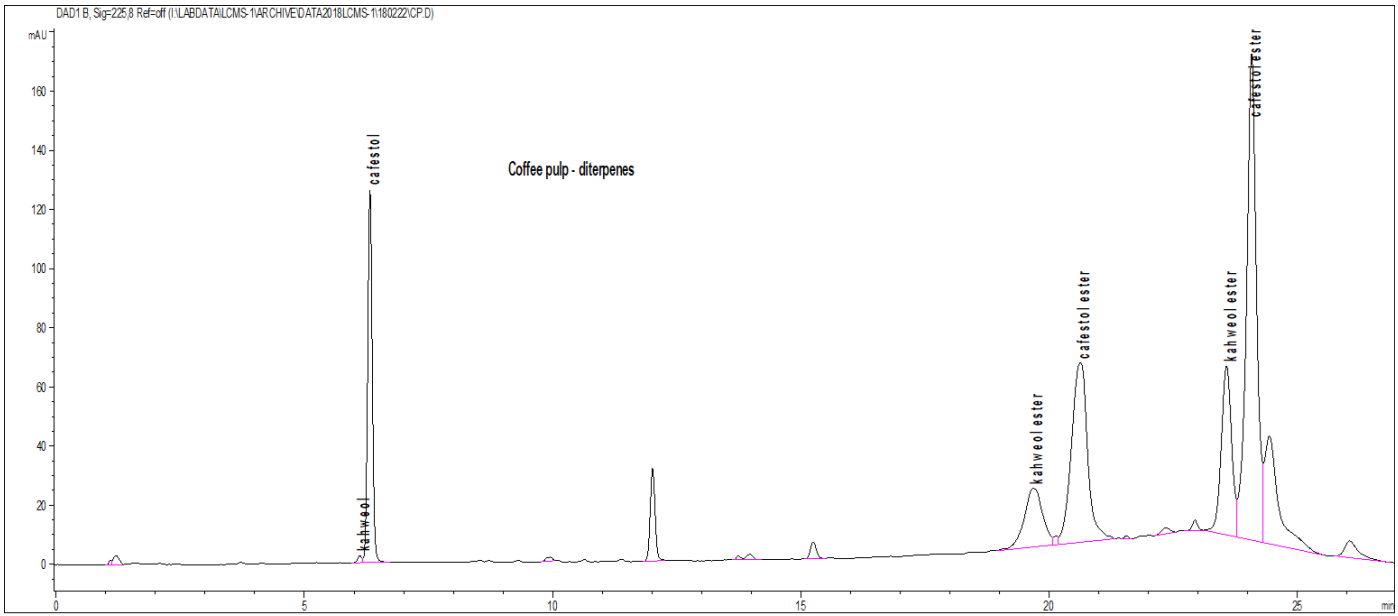


Figure S3. HPLC-UV chromatogram 225nm for diterpenes in coffee pulp [74,75].

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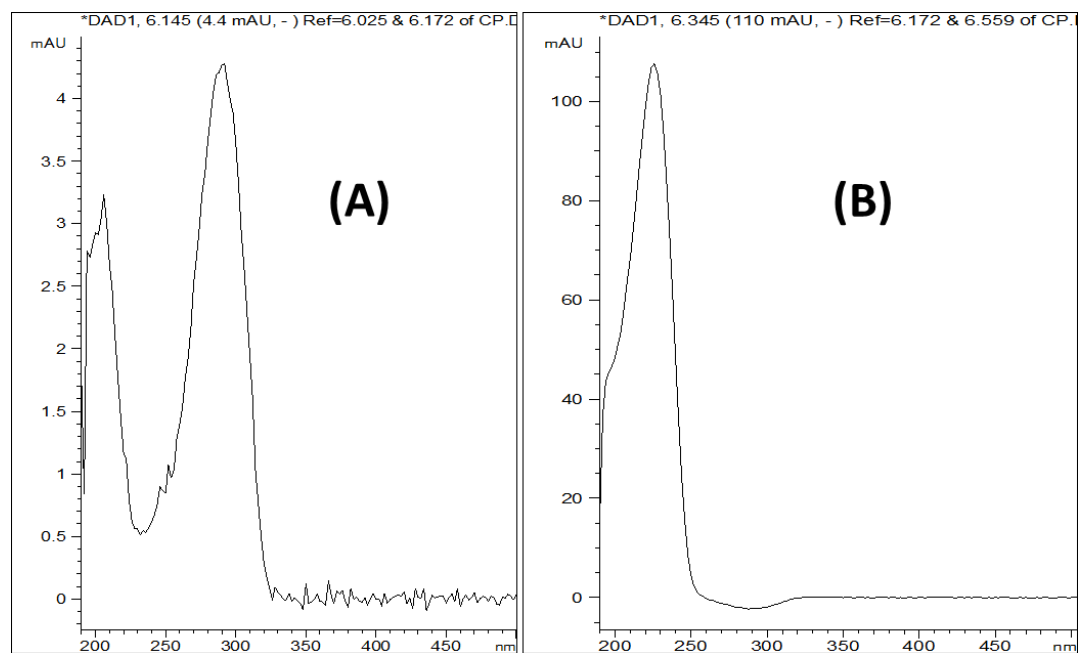


Figure S4. (A) Kahweol UV-Vis λ max ~290 nm, (B) Cafestol UV-Vis spectra λ max ~226 nm.

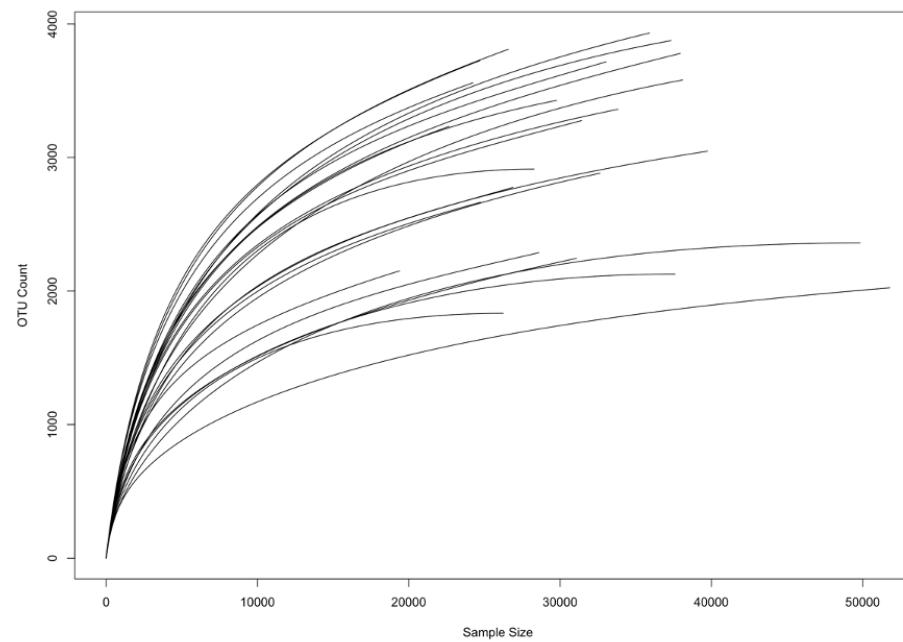


Figure S5. Rarefaction curves. 16S rRNA gene-based analysis was used to assess the bacterial communities from a total of 24 rat faecal pellets (6 rats per group). After quality filtering, there were a total of 772,429 sequences and these were clustered into 6,427 zOTUs. The calculated rarefaction curves based on rarefied and unrarefied data as well as Good's coverage of $85.8 \pm 25.5\%$ indicating that the majority of the bacterial community was recovered by the surveying effort.

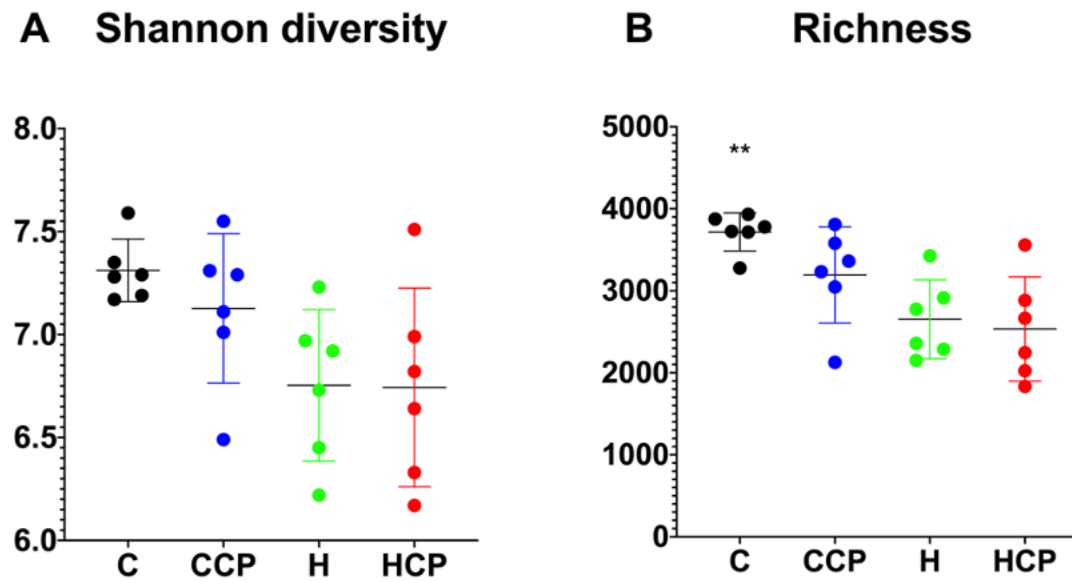


Figure S6. Shannon diversity (A) and richness (B) of faecal samples. ** vs CCP, H and HCP, $p < 0.05$.

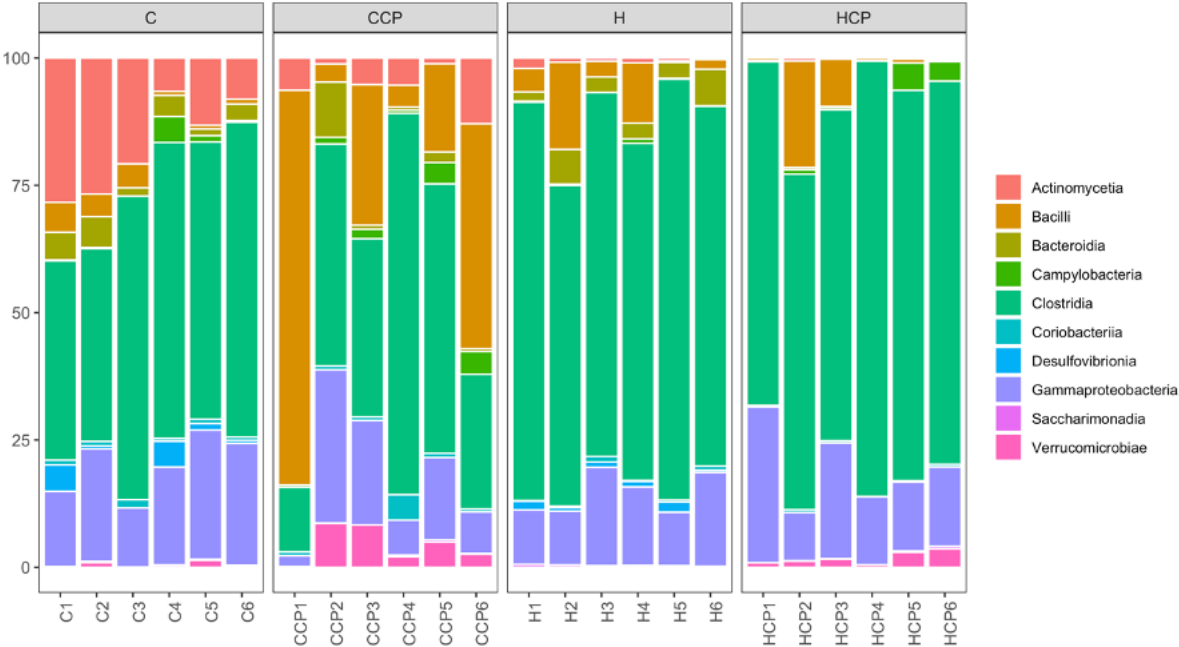


Figure S7. Taxonomic profiles of bacterial communities shown at the class level of all faecal samples.

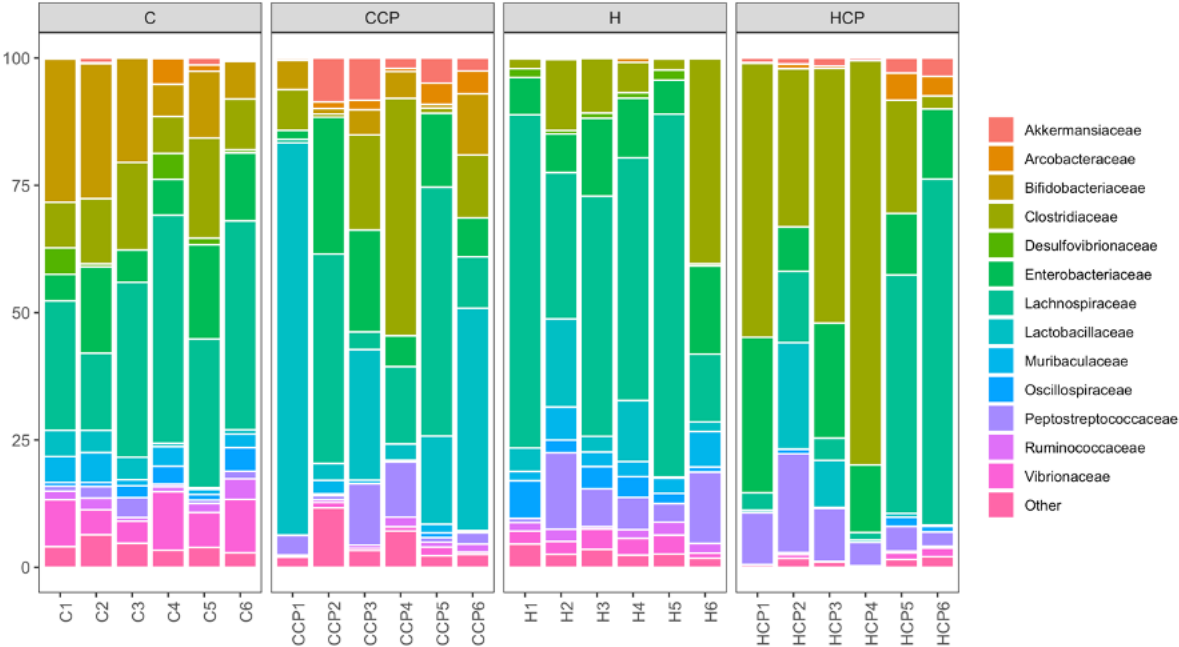


Figure S8. Taxonomic profiles of bacterial communities shown at the family level of all faecal samples.

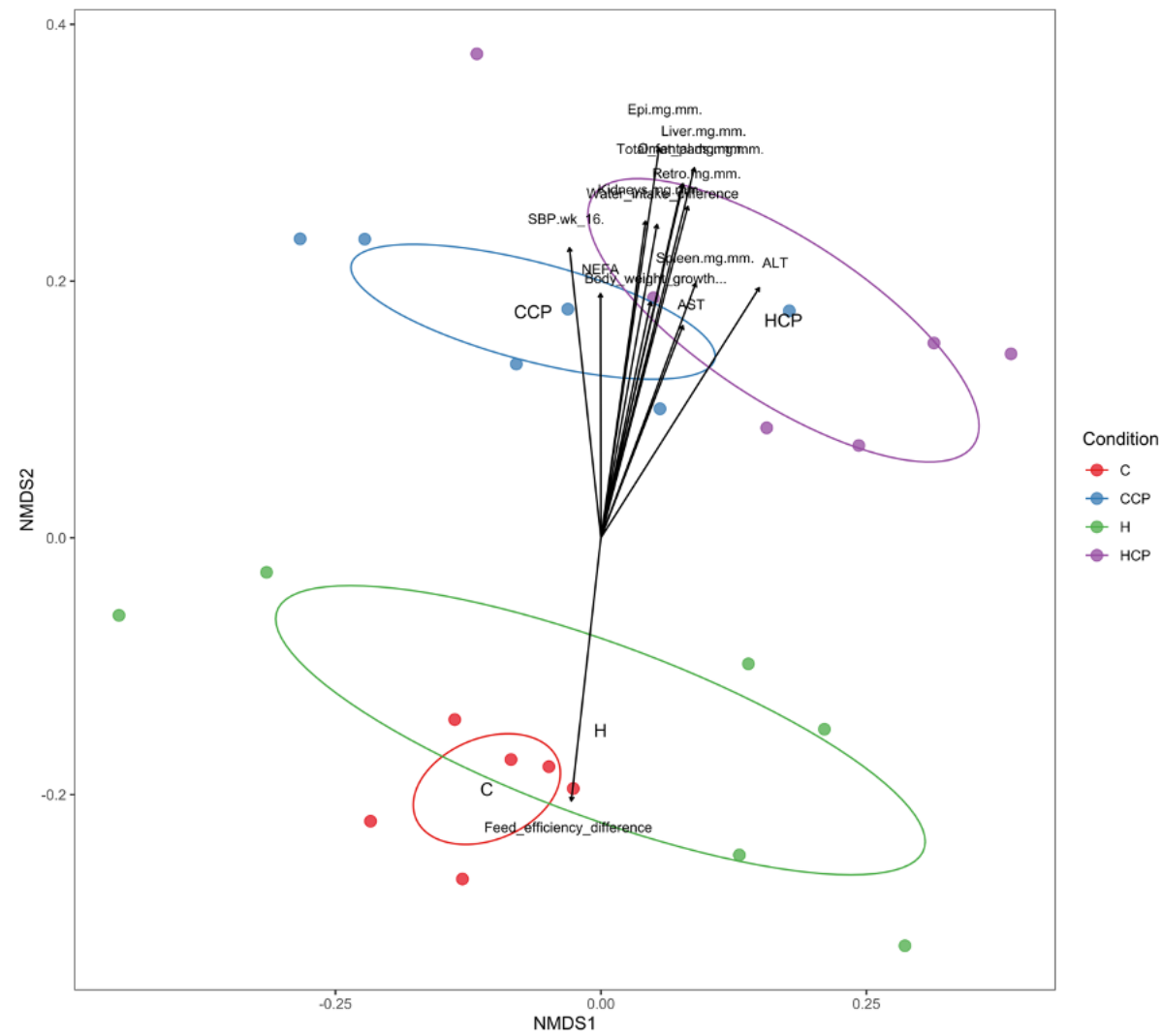


Figure S9. nMDS plot of physiological data from 23 physiological parameters measured from different feeding regimes.

Table S1. PERMANOVAs based on Bray-Curtis (BC) similarity measure for square-root transformed abundances of all rat faecal samples.

Source	df	Sums of Sqs	MeanSqs	Pseudo-F	<i>p</i>
Diet	1	1.002	1.00197	5.54027	0.0001
Treatment	2	0.9923	0.9923	5.3506	0.0001
Diet × treatment	2	0.4138	0.41377	2.2311	0.017
Res	20	3.7091	0.18546		
Total	23	6.1172			
PAIR-WISE TESTS					
Groups		<i>F.model</i>		<i>p</i>	
C, CCP		3.999212		0.024	
C, H		4.762622		0.012	
C, HCP		6.094594		0.018	
CCP, H		4.777236		0.03	
CCP, HCP		3.147970		0.066	
H, HCP		3.577782		0.108	

P-values were calculated using 9,999 permutations under a residual model ($p < 0.05$). C, corn starch diet-fed rats; CCP, corn starch diet-fed rats supplemented with coffee pulp; H, high-carbohydrate, high-fat diet-fed rats; HCP, high-carbohydrate, high-fat diet-fed rats supplemented with coffee pulp.

Table S2. Differential zOTU abundance between C and H rats.

zOTU_ID	H%	HCP%	Phylum	Class	Family	Genus	Species
Zotu5206	0.00	0.08	Actinobacteriota	Coriobacteriia	Eggerthellaceae	CAG-1427	CAG-1427 sp000435675
Zotu5890	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp001701195
Zotu5281	0.08	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp001701195
Zotu4405	0.05	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp001701195
Zotu5561	0.11	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4473	0.14	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5048	0.06	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4025	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5809	0.12	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4089	0.17	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4227	0.09	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5217	0.06	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5577	0.05	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4197	0.18	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu2681	0.11	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu3028	0.06	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4991	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6229	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6469	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6156	0.10	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu2423	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4819	0.07	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5215	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu2528	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5445	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5255	0.08	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5862	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4527	0.06	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6607	0.07	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu3584	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6093	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6638	0.07	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4859	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5152	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595

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Zotu6460	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
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Zotu5658	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5634	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
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Zotu5716	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5951	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu3894	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5743	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4941	0.07	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Vibrio parahaemolyticus
Zotu5804	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	UBA7173	UBA7173 sp004102805
Zotu4753	0.05	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	UBA7173	UBA7173 sp004102805
Zotu6105	0.05	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Vibrio	Vibrio parahaemolyticus
Zotu6700	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Vibrio	Vibrio parahaemolyticus
Zotu4475	0.05	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Vibrio	Vibrio parahaemolyticus
Zotu5865	0.03	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp003860215
Zotu3742	0.06	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp003860215
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Zotu3774	0.02	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp003860215
Zotu3238	0.02	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595
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Zotu6424	0.00	0.23	Firmicutes A	Clostridia	<i>Lachnospiraceae</i>	<i>Bacteroides</i> F	<i>Bacteroides_F pectinophilus</i>
Zotu4341	0.00	0.29	Firmicutes A	Clostridia	<i>Lachnospiraceae</i>	<i>Bacteroides</i> F	<i>Bacteroides_F pectinophilus</i>
Zotu6321	0.80	0.00	Firmicutes A	Clostridia	<i>Lachnospiraceae</i>	<i>Enterocloster</i>	<i>Acetatifactor</i> sp900066565
Zotu6659	0.01	0.00	Firmicutes A	Clostridia	<i>Lachnospiraceae</i>	<i>Kineothrix</i>	<i>Kineothrix alysoides</i>
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Zotu736	0.00	0.04	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1077	0.00	0.04	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu997	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu974	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1038	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1432	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu726	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1293	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii

Zotu1773	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu576	0.00	0.03	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu821	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu695	0.00	0.15	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1477	0.00	0.02	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu920	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu505	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1011	0.00	0.05	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu721	0.00	0.05	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu724	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu801	0.00	0.02	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1102	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1115	0.00	0.02	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1330	0.00	0.07	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1416	0.00	0.01	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1395	0.00	0.01	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1133	0.00	0.02	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1400	0.00	0.03	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu740	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu758	0.00	0.10	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1389	0.00	0.02	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1231	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1346	0.00	0.01	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu757	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu2262	0.00	0.01	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1160	0.00	0.01	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila

Table S3. Differential zOTU abundance between C and CCP rats.

zOTU_ID	C %	CCP %	Phylum	Class	Family	Genus	Species
Zotu5347	0.01	0.00	Actinobacteriota	Actinomycetia	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium criceti
Zotu764	0.06	0.01	Actinobacteriota	Actinomycetia	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium globosum
Zotu2358	0.02	0.00	Actinobacteriota	Actinomycetia	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium globosum
Zotu488	0.08	0.01	Actinobacteriota	Actinomycetia	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium globosum
Zotu1253	0.04	0.00	Actinobacteriota	Actinomycetia	Bifidobacteriaceae	Bifidobacterium	Bifidobacterium globosum
Zotu5206	0.00	0.13	Actinobacteriota	Coriobacteriia	Eggerthellaceae	CAG-1427	CAG-1427 sp000435675
Zotu5037	0.26	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum intestinale
Zotu5281	0.11	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp001701195
Zotu4405	0.08	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp001701195
Zotu4819	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu2681	0.07	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6607	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4197	0.11	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu2676	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4089	0.10	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6095	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5809	0.05	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4060	0.01	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5255	0.05	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4473	0.09	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5561	0.06	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu3028	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5275	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	UBA7173	UBA7173 sp004102805
Zotu4753	0.08	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	UBA7173	UBA7173 sp004102805
Zotu5804	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	UBA7173	UBA7173 sp004102805
Zotu4475	0.08	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Vibrio	Vibrio parahaemolyticus
Zotu6700	0.01	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Vibrio	Vibrio parahaemolyticus
Zotu5502	0.06	0.00	Firmicutes A	Clostridia	Lachnospiraceae	1XD8-76	1XD8-76 sp003611955
Zotu4372	0.05	0.00	Firmicutes A	Clostridia	Lachnospiraceae	1XD8-76	1XD8-76 sp003611955
Zotu5712	0.55	0.01	Firmicutes A	Clostridia	Lachnospiraceae	Roseburia	Roseburia intestinalis
Zotu4829	0.03	0.00	Firmicutes A	Clostridia	UBA1381	CAG-41	CAG-41 sp900066215
Zotu3815	0.09	0.00	Firmicutes A	Clostridia	UBA1381	CAG-41	CAG-41 sp900066215
Zotu6673	0.02	0.00	Firmicutes A	Clostridia	UBA1381	CAG-41	CAG-41 sp900066215
Zotu5719	0.02	0.00	Firmicutes A	Clostridia	UBA1381	CAG-41	CAG-41 sp900066215
Zotu6477	0.03	0.00	Firmicutes A	Clostridia	UBA1381	CAG-41	CAG-41 sp900066215
Zotu4238	0.08	0.00	Firmicutes A	Clostridia	UBA1381	CAG-41	CAG-41 sp900066215
Zotu4536	0.09	0.00	Firmicutes A	Clostridia	UBA1381	CAG-41	CAG-41 sp900066215
Zotu4850	0.05	0.00	Firmicutes A	Clostridia	UBA1381	CAG-41	CAG-41 sp900066215
Zotu4676	0.03	0.00	Firmicutes A	Clostridia	UBA1381	CAG-41	CAG-41 sp900066215

Zotu4177	0.07	0.00	Firmicutes A	Clostridia	UBA1381	CAG-41	CAG-41 sp900066215
Zotu5450	0.01	0.00	Firmicutes A	Clostridia	Oscillospiraceae	CAG-83	CAG-83 sp000431575
Zotu6368	0.40	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu439	0.03	0.00	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Salmonella	Salmonella enterica
Zotu693	0.07	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Salmonella	Salmonella enterica
Zotu2590	0.01	0.00	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Salmonella	Salmonella enterica
Zotu1178	0.02	0.00	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Salmonella	Salmonella enterica
Zotu503	0.02	0.00	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Salmonella	Salmonella enterica
Zotu1538	0.01	0.00	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Salmonella	Salmonella enterica
Zotu521	0.04	0.00	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Salmonella	Salmonella enterica
Zotu800	0.03	0.00	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Salmonella	Salmonella enterica
Zotu446	0.03	0.00	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Salmonella	Salmonella enterica
Zotu438	0.02	0.00	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Salmonella	Salmonella enterica
Zotu581	0.03	0.00	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Salmonella	Salmonella enterica
Zotu3454	0.03	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu5267	0.02	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu3400	0.03	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu2297	0.04	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu3049	0.05	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu6568	0.02	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu3272	0.03	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu3646	0.01	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu6219	0.04	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu5169	0.25	0.01	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu3392	0.02	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu3803	0.01	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu2412	0.05	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu2947	0.02	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu3687	0.02	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu2594	0.06	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu2835	0.05	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu4806	0.02	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu2420	0.02	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu4966	0.05	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu2666	0.01	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu3351	0.01	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu2854	0.03	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu3370	0.02	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu4366	0.04	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu3675	0.05	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus
Zotu1922	0.02	0.00	Proteobacteria	Gammaproteobacteria	Vibrionaceae	Vibrio	Vibrio parahaemolyticus

[illegible]

Table S4. Differential zOTU abundance between H and HCP rats.

zOTU_ID	H%	HCP%	Phylum	Class	Family	Genus	Species
Zotu5206	0.00	0.08	Actinobacteriota	Coriobacteriia	Eggerthellaceae	CAG-1427	CAG-1427 sp000435675
Zotu5890	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp001701195
Zotu5281	0.08	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp001701195
Zotu4405	0.05	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp001701195
Zotu5561	0.11	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4473	0.14	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5048	0.06	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4025	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5809	0.12	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4089	0.17	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4227	0.09	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5217	0.06	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5577	0.05	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4197	0.18	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu2681	0.11	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu3028	0.06	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4991	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6229	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6469	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6156	0.10	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu2423	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4819	0.07	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5215	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu2528	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5445	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5255	0.08	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5862	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4527	0.06	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6607	0.07	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu3584	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6093	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6638	0.07	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595

Zotu4859	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5152	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6493	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6097	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5484	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5534	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6489	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6460	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5572	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu6595	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5658	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5634	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5807	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5716	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5951	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu3894	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu5743	0.02	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Muribaculum sp002492595
Zotu4941	0.07	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Muribaculum	Vibrio parahaemolyticus
Zotu5804	0.04	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	UBA7173	UBA7173 sp004102805
Zotu4753	0.05	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	UBA7173	UBA7173 sp004102805
Zotu6105	0.05	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Vibrio	Vibrio parahaemolyticus
Zotu6700	0.03	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Vibrio	Vibrio parahaemolyticus
Zotu4475	0.05	0.00	Bacteroidota	Bacteroidia	Muribaculaceae	Vibrio	Vibrio parahaemolyticus
Zotu5865	0.03	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp003860215
Zotu3742	0.06	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp003860215
Zotu5370	0.02	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp003860215
Zotu3774	0.02	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp003860215
Zotu3238	0.02	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595
Zotu4155	0.05	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595
Zotu5342	0.01	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595
Zotu3812	0.04	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595
Zotu4998	0.02	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595
Zotu4009	0.03	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595
Zotu6629	0.02	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595

Zotu4327	0.02	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595
Zotu4782	0.03	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595
Zotu4439	0.05	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595
Zotu6265	0.02	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595
Zotu4964	0.01	0.00	Desulfobacterota	Desulfovibrionia	Desulfovibrionaceae	Desulfovibrio	Desulfovibrio sp900547595
Zotu5179	0.00	0.03	Firmicutes A	Clostridia	Clostridiaceae	Clostridium	Clostridium saudiense
Zotu6695	0.00	0.21	Firmicutes A	Clostridia	Lachnospiraceae	Bacteroides F	Bacteroides_F pectinophilus
Zotu5489	0.00	0.46	Firmicutes A	Clostridia	Lachnospiraceae	Bacteroides F	Bacteroides_F pectinophilus
Zotu5932	0.00	0.14	Firmicutes A	Clostridia	Lachnospiraceae	Bacteroides F	Bacteroides_F pectinophilus
Zotu6424	0.00	0.23	Firmicutes A	Clostridia	Lachnospiraceae	Bacteroides F	Bacteroides_F pectinophilus
Zotu4341	0.00	0.29	Firmicutes A	Clostridia	Lachnospiraceae	Bacteroides F	Bacteroides_F pectinophilus
Zotu6321	0.80	0.00	Firmicutes A	Clostridia	Lachnospiraceae	Enterocloster	Acetatifactor sp900066565
Zotu6659	0.01	0.00	Firmicutes A	Clostridia	Lachnospiraceae	Kineothrix	Kineothrix alysoides
Zotu1092	0.00	0.04	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Akkermansia muciniphila
Zotu1361	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Akkermansia muciniphila
Zotu682	0.00	0.03	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Akkermansia muciniphila
Zotu627	0.00	0.03	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu832	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu861	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu773	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu1665	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu595	0.00	0.08	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu1458	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu445	0.00	0.09	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu352	0.00	0.06	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu1176	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu1279	0.00	0.04	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu827	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu610	0.00	0.03	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu818	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu931	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu1470	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu1322	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu1822	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus

Zotu406	0.00	0.03	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter malonaticus
Zotu855	0.00	0.03	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1009	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu918	0.00	0.03	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu428	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1658	0.00	0.03	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu765	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu888	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1081	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu781	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu720	0.00	0.07	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu878	0.00	0.06	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1000	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1316	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1523	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu706	0.00	0.03	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1909	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1152	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1367	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1720	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu381	0.00	0.05	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu736	0.00	0.04	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1077	0.00	0.04	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu997	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu974	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1038	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1432	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu726	0.00	0.02	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1293	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu1773	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu576	0.00	0.03	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu821	0.00	0.01	Proteobacteria	Gammaproteobacteria	Enterobacteriaceae	Cronobacter	Cronobacter sakazakii
Zotu695	0.00	0.15	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1477	0.00	0.02	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila

Zotu920	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu505	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1011	0.00	0.05	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu721	0.00	0.05	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu724	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu801	0.00	0.02	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1102	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1115	0.00	0.02	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1330	0.00	0.07	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1416	0.00	0.01	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1395	0.00	0.01	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1133	0.00	0.02	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1400	0.00	0.03	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu740	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu758	0.00	0.10	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1389	0.00	0.02	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1231	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1346	0.00	0.01	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu757	0.00	0.04	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu2262	0.00	0.01	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
Zotu1160	0.00	0.01	Verrucomicrobiota	Verrucomicrobiae	Akkermansiaceae	Akkermansia	Akkermansia muciniphila
