



Prevalence of Uncultivated Oral Taxa in Distinct Oral Niches

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Abstract

Objectives: Of the 688 taxa currently in the Human Oral Microbiome Database (HOMD), 65% have been cultivated and 244 taxa (35%) are as-yet-uncultivated phylotypes. The goal of this study was to determine the prevalence of uncultivated taxa in various oral niches.

Methods: Ten adults who had not taken antibiotics within the past 3 months were sampled at 9 oral sites each: supragingival, subgingival (4 deepest sites), cheek, palate, tongue, tonsils (throat sampled for two subjects without tonsils). Soft tissue sites were sampled using nylon brushes, hard tissue sites with scalers. DNA was purified from the clinical samples, PCR amplified using 16S rRNA V3V4 primers, purified, and sequenced using an Illumina Miseq instrument. The 16S rRNA reads were parsed, and BLASTN analyzed using HOMD RefSeq Version 13.2.

Results: A total of 5,586,237 sequences (V3-V4 assembled overlapped paired reads) matched HOMD reference sequences at >98.5% BLASTN identity. The reads were identified to 481 HOMD taxa: 317 cultivated and 164 uncultivated phylotypes. The number of uncultivated taxa per sample ranged from 15-68 with a mean of 40.6. The total number of oral taxa/subject-site ranged from 91-251 with a mean of 182. The mean number of uncultivated taxa/individual sample at oral sites was as follows: cheek 45.9, palate 38.4, tongue 29.0, tonsils 46.3, throat 45.0, supragingival 39.8 and subgingival 39.6. Uncultivated taxa identified included 22 from the rare phyla: Chloroflexi, 1; Synergistetes genus Fretibacterium, 4; GNO2, 3; SR1, 3; and TM7, 11 taxa.

Conclusion: In screening just 10 subjects, we identified subject-sites with 164/244 (67%) of the uncultivated taxa currently in HOMD. The majority of these uncultivated taxa are thought to be uncultivable using standard cultivation methods; however, this study shows they are readily available for study and attempted cultivation.

Introduction

Of the 688 taxa currently in the Human Oral Microbiome Database (HOMD), 344 are named cultivated taxa (50%), 100 are unnamed cultivated taxa (15%) and 244 as yet unnamed and uncultivated taxa (35%). Important for any effort to cultivate the previously uncultivated taxa is determining how many are commonly present in oral samples (and likely difficult to culture) and how many are rare (and probably uncultivated simply because of their rarity). It is also important to determine in which oral niche the uncultivated taxa most commonly reside. Finally, efforts to cultivate previously uncultivated taxa would benefit from establishing a set of subjects surveyed for site presence of particular uncultivated taxa who can be repeatedly sampled over the next five years. Therefore, ten Forsyth staff were recruited and nine oral sites examined by deep Illumina 16s rRNA sequencing.

Methods

Ten adult Forsyth staff who likely would be available for repeated sampling over the next five years were recruited. The only exclusion criteria was use of antibiotics within the past 3 months. Because some of the uncultivated taxa sought had been initially detected in subjects with periodontitis, halitosis or other oral diseases, subjects with at signs of oral disease were intentionally included. The subjects were sampled at 9 oral sites each: supragingival, subgingival (4 deepest sites), cheek, palate, tongue, tonsils (throat sampled for two subjects without tonsils). Soft tissue sites were sampled using nylon brushes, hard tissue sites with scalers. DNA was purified from the clinical samples, PCR amplified using 16S rRNA V3V4 primers, purified, and sequenced using an Illumina Miseq instrument. The 16S rRNA reads were parsed, and BLASTN analyzed using HOMD RefSeq Version 13.2.

Conclusions

In screening just 10 subjects, we identified subject-sites with 164/244 (67%) of the uncultivated phylotypes currently in HOMD. The majority of these uncultivated taxa may well be cultivable using coculture or other innovative methods. This study shows bacteria from uncultivated oral taxa are readily available for study and attempted

References

Dewhirst FE, Chen T, Izard J, Paster BJ, Tanner ACR, Yu W-H, Lakshmanan A, Wade WG. 2010. The human oral microbiome. J. Bacteriol. 192:5002-5017.

Human Microbiome Project Consortium. 2012. Structure, function and diversity of the healthy human microbiome. Nature. 486:207-14.

Segata N, Haake SK, Mannon P, Lemon KP, Waldron L, Gevers D, Huttenhower C, Izard J. 2012. Composition of the adult digestive tract bacterial microbiome based on seven mouth surfaces, tonsils, throat and stool samples. Genome Biol. 13:R42

Results

A total of 5,586,237 sequences, assembled from overlapped V3-V4 paired reads, matched HOMD reference sequences at >98.5% BLASTN identity. A total of 481 HOMD taxa were identified, 317 cultivated and 164 uncultivated. The number of uncultivated taxa per site sampled ranged from 15-68 with a mean of 40.6. The total number of taxa per site ranged from 91-251 with a mean of 182. The mean number of uncultivated taxa per individual sample at different oral niches was: cheek 45.9, palate 38.4, tongue 29.0, tonsils 46.3, throat 45.0, supragingival 39.8 and subgingival 39.6. Uncultivated taxa identified included 22 from the rare phyla: Chloroflexi (1); Synergistetes genus *Fretibacterium* (4); GNO2 (3); SR1 (3); and TM7 (11) taxa.

In Fig.1 below are collectors curves for the total and uncultivated number of taxa identified as a function of the number of sites examined. The nine sites in the first two subjects show the greatest increase in taxa seen, the remaining eight subjects producing a less dramatic increase in taxa detected.

600 500 **g** 400 300 200 Total taxa Uncultivated taxa 100 0 20 40 60 80 100

Fig. 1. Collectors curve for taxa vs. sites sampled.

In Table 1. below are the top 50 as-ye-uncultivated taxa found in this study, with total reads, and the percentage of those reads in each of the 7 niches sampled. The niche with the highest percentage of reads is highlighted in yellow. Notice that most taxa appear to occur preferentially in a specific oral niche. Knowing which oral niche to sample will significantly facilitate attempts to cultivate uncultivated taxa.

Number of sites

HOT_313 Prevotella sp. HOT_417 Leptotrichia sp. HOT_177 Actinomyces sp. HOT_346 TM7 [G-1] sp. HOT_221 Leptotrichia sp. HOT_221 Leptotrichia sp. HOT_392 Leptotrichia sp. HOT_392 Leptotrichia sp. HOT_172 Actinomyces sp. HOT_172 Actinomyces sp. HOT_219 Leptotrichia sp. HOT_353 TM7 [G-1] sp. HOT_353 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_511 Bacteroidetes [G-5] sp. HOT_180 Prevotella sp. HOT_190 Prevotella sp. HOT_191 Lachnospiraceae [G-3] sp. HOT_192 Fretibacterium sp. HOT_035 Haemophilus sp. HOT_035 Haemophilus sp. HOT_322 Bergeyella sp. HOT_334 TM7 [G-1] sp. HOT_345 Previbacterium sp. HOT_246 Alloprevotella sp. HOT_247 TM7 [G-1] sp. HOT_248 Haemophilus sp. HOT_249 Leptotrichia sp. HOT_240 Alloprevotella sp. HOT_241 Treponema sp. HOT_242 Leptotrichia sp. HOT_243 Leptotrichia sp. HOT_244 Alloprevotella sp. HOT_256 Prevotella sp. HOT_902 Capnocytophaga sp. HOT_904 Campylobacter sp. HOT_278 Porphyromonas sp. HOT_278 Porphyromonas sp. HOT_279 Peptostreptococcaceae [XI][G-2] sp. HOT_270 Prevotella sp. HOT_271 Treponema sp. HOT_272 Porphyromonas sp. HOT_273 Treponema sp. HOT_274 Porphyromonas sp. HOT_275 Fusobacterium sp. HOT_276 Prevotella sp. HOT_277 HOT_18 Porphyromonas sp. HOT_278 Porphyromonas sp. HOT_279 Peptostreptococcaceae [XI][G-4] sp. HOT_270 Peptostreptococcaceae [XI][G-2] sp. HOT_271 Peptostreptococcaceae [XI][G-2] sp. HOT_273 Treponema sp. HOT_274 Leptotrichia sp. HOT_275 Fusobacterium sp. HOT_276 Peptostreptococcaceae [XI][G-2] sp. HOT_277 Treponema sp. HOT_278 Peptostreptococcaceae [XI][G-2] sp. HOT_279 Peptostreptococcaceae [XII][G-1] sp.	Reads 47539 30612 24681 21110 16256	1.7 1.6	Pal 2.7	Tng	Ton	Thr	Sup	Carlo
HOT_417 Actinomyces sp. HOT_346 TM7 [G-1] sp. HOT_097 Moryella sp. HOT_221 Leptotrichia sp. HOT_233 Fusobacterium sp. HOT_392 Leptotrichia sp. HOT_172 Actinomyces sp. HOT_172 Actinomyces sp. HOT_173 Leptotrichia sp. HOT_215 Leptotrichia sp. HOT_215 Leptotrichia sp. HOT_353 TM7 [G-1] sp. HOT_354 TM7 [G-1] sp. HOT_355 TM7 [G-1] sp. HOT_316 Bacteroidetes [G-5] sp. HOT_301 Peptostreptococcaceae [XI][G-7] sp. HOT_302 Prevotella sp. HOT_437 TM7 [G-5] sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_302 Bergeyella sp. HOT_303 Alloprevotella sp. HOT_304 TM7 [G-1] sp. HOT_231 Treponema sp. HOT_231 Treponema sp. HOT_232 Leptotrichia sp. HOT_245 Fusobacterium sp. HOT_246 Leptotrichia sp. HOT_256 Fusobacterium sp. HOT_267 Fusobacterium sp. HOT_278 Porphyromonas sp. HOT_914 Alloprevotella sp. HOT_915 Clostridiales [F-2][G-1] sp. HOT_920 Capnocytophaga sp. HOT_934 TM7 [G-1] sp. HOT_934 TM7 [G-1] sp. HOT_934 Campylobacter sp. HOT_935 Peptostreptococcaceae [XI][G-4] sp. HOT_278 Porphyromonas sp. HOT_279 Peptostreptococcaceae [XI][G-4] sp. HOT_369 Peptostreptococcaceae [XI][G-2] sp. HOT_1091 Peptostreptococcaceae [XI][G-2] sp. HOT_1091 Peptostreptococcaceae [XII][G-1] sp. HOT_101 Peptostreptococcaceae [XIII][G-1] sp. HOT_1218 Leptotrichia sp. HOT_1218 Leptotrichia sp. HOT_1218 Leptotrichia sp. HOT_1219 Peptostreptococcaceae [XIII][G-1] sp.	30612 24681 21110 16256		つ フ					Sub
HOT_177 Actinomyces sp. HOT_346 TM7 [G-1] sp. HOT_097 Moryella sp. HOT_221 Leptotrichia sp. HOT_232 Leptotrichia sp. HOT_392 Leptotrichia sp. HOT_172 Actinomyces sp. HOT_172 Actinomyces sp. HOT_219 Leptotrichia sp. HOT_215 Leptotrichia sp. HOT_353 TM7 [G-1] sp. HOT_354 TM7 [G-1] sp. HOT_355 TM7 [G-1] sp. HOT_316 Bacteroidetes [G-5] sp. HOT_081 Peptostreptococcaceae [XI][G-7] sp. HOT_300 Prevotella sp. HOT_437 TM7 [G-5] sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_425 Fretibacterium sp. HOT_308 Alloprevotella sp. HOT_308 Alloprevotella sp. HOT_231 Treponema sp. HOT_231 Treponema sp. HOT_232 Leptotrichia sp. HOT_234 Leptotrichia sp. HOT_246 Leptotrichia sp. HOT_256 Fusobacterium sp. HOT_267 Fusobacterium sp. HOT_278 Porphyromonas sp. HOT_914 Alloprevotella sp. HOT_905 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_936 Prevotella sp. HOT_937 TM7 [G-1] sp. HOT_938 Perpotella sp. HOT_948 Prevotella sp. HOT_959 Capnocytophaga sp. HOT_970 Capnocytophaga sp. HOT_971 Tm7 [G-1] sp. HOT_272 Porphyromonas sp. HOT_273 Treponema sp. HOT_360 Prevotella sp. HOT_374 TM7 [G-1] sp. HOT_375 Prevotella sp. HOT_375 Prevotella sp. HOT_380 Peptostreptococcaceae [XI][G-4] sp. HOT_391 Prevotella sp.	24681 21110 16256	1.6		5.8	49.2	40.2	0.1	0.3
HOT_346 TM7 [G-1] sp. HOT_097 Moryella sp. HOT_221 Leptotrichia sp. HOT_332 Leptotrichia sp. HOT_172 Actinomyces sp. HOT_219 Leptotrichia sp. HOT_353 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_314 Bacteroidetes [G-5] sp. HOT_315 Peptostreptococcaceae [XI][G-7] sp. HOT_300 Prevotella sp. HOT_301 Eacthonia sp. HOT_437 TM7 [G-5] sp. HOT_437 TM7 [G-5] sp. HOT_308 Haemophilus sp. HOT_329 Bergeyella sp. HOT_330 Richoral sp. HOT_321 Treponema sp. HOT_322 Hottrichia sp. HOT_333 Haemophilus sp. HOT_345 Haemophilus sp. HOT_346 Alloprevotella sp. HOT_231 Treponema sp. HOT_231 Treponema sp. HOT_246 Leptotrichia sp. HOT_256 Fusobacterium sp. HOT_276 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_915 Clostridiales [F-2][G-1] sp. HOT_916 Peptostreptococcaceae [XI][G-4] sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_349 Peptostreptococcaceae [XI][G-4] sp. HOT_340 Peptostreptococcaceae [XI][G-2] sp. HOT_340 Peptostreptococcaceae [XI][G-2] sp. HOT_341 Peptostreptococcaceae [XI][G-2] sp. HOT_341 Peptostreptococcaceae [XI][G-2] sp. HOT_341 Peptostreptococcaceae [XII][G-1] sp. HOT_341 Peptostreptococcaceae [XIII][G-1] sp. HOT_342 Peptostreptococcaceae [XIII][G-1] sp. HOT_343 Peptostreptococcaceae [XIII][G-1] sp.	21110 16256		2.9	9.4	14.9	67.8	2.4	0.9
HOT_097 Moryella sp. HOT_221 Leptotrichia sp. HOT_392 Leptotrichia sp. HOT_172 Actinomyces sp. HOT_219 Leptotrichia sp. HOT_353 TM7 [G-1] sp. HOT_354 TM7 [G-1] sp. HOT_210 Leptotrichia sp. HOT_355 TM7 [G-1] sp. HOT_356 Prevotella sp. HOT_360 Prevotella sp. HOT_370 Prevotella sp. HOT_380 Prevotella sp. HOT_381 TM7 [G-5] sp. HOT_382 Prevotella sp. HOT_383 TM7 [G-5] sp. HOT_384 Prevotella sp. HOT_385 Prevotella sp. HOT_386 Prevotella sp. HOT_387 Prevotella sp. HOT_388 Prevotella sp. HOT_398 Prevotella sp. HOT_399 Prevotella sp. HOT_390 Prevotella sp. HOT_391 Prevotella sp. HOT_392 Prevotella sp. HOT_393 Prevotella sp. HOT_394 Prevotella sp. HOT_295 Prevotella sp. HOT_463 Prevotella sp. HOT_463 Prevotella sp. HOT_904 Capnocytophaga sp. HOT_914 Alloprevotella sp. HOT_915 Prevotella sp. HOT_389 Prevotella sp. HOT_391 Prevotella sp. HOT_392 Prevotella sp. HOT_393 Prevotella sp. HOT_394 TM7 [G-1] sp. HOT_395 Prevotella sp. HOT_397 TM7 [G-1] sp. HOT_398 Prevotella sp. HOT_399 Prevotella sp. HOT_390 Prevotella sp. HOT_391 Prevotella sp. HOT_393 Prevotella sp. HOT_394 Prevotella sp. HOT_395 Prevotella sp. HOT_397 Prevotella sp. HOT_398 Prevotella sp. HOT_399 Prevotella sp. HOT_399 Prevotella sp. HOT_390 Prevotella sp. HOT_310 Prevotella sp. HOT_310 Prevotella sp. HOT_311 Preponema sp. HOT_312 Prevotella sp. HOT_313 Prevotella sp. HOT_314 Prevotella sp. HOT_315 Prevotella sp. HOT_316 Pretibacterium sp. HOT_317 Prevotella sp. HOT_318 Prevotella sp. HOT_319 Prevotella sp. HOT_310 Prevotella sp. HOT_310 Prevotella sp. HOT_311 Prevotella sp. HOT_311 Prevotella sp. HOT_312 Prevotella sp. HOT_313 Prevotella sp. HOT_314 Prevotella sp. HOT_315 Prevotella sp. HOT_316 Prevotella sp. HOT_317 Prevotella sp. HOT_318 Prevotella sp. HOT_319 Prevotella sp. HOT_310 Prevotella sp. HOT_311 Prevotella sp. HOT_311 Prevotella sp. HOT_311 Prevotella sp.	16256	26.0	3.9	0.3	0.3	2.6	29.6	37.3
HOT_221 Leptotrichia sp. HOT_232 Leptotrichia sp. HOT_332 Leptotrichia sp. HOT_172 Actinomyces sp. HOT_215 Leptotrichia sp. HOT_353 TM7 [G-1] sp. HOT_354 TM7 [G-1] sp. HOT_355 TM7 [G-1] sp. HOT_356 TM7 [G-1] sp. HOT_361 Bacteroidetes [G-5] sp. HOT_370 Prevotella sp. HOT_370 Prevotella sp. HOT_371 Hormonyces sp. HOT_382 Hormonyces sp. HOT_383 TM7 [G-1] sp. HOT_384 TM7 [G-1] sp. HOT_385 TM7 [G-1] sp. HOT_386 Peptostreptococcaceae [XI][G-7] sp. HOT_386 Prevotella sp. HOT_487 TM7 [G-5] sp. HOT_482 Fretibacterium sp. HOT_384 Alloprevotella sp. HOT_384 Alloprevotella sp. HOT_385 Leptotrichia sp. HOT_386 Leptotrichia sp. HOT_281 Leptotrichia sp. HOT_282 Leptotrichia sp. HOT_283 Leptotrichia sp. HOT_294 Alloprevotella sp. HOT_463 Leptotrichia sp. HOT_905 Clostridiales [F-2][G-1] sp. HOT_907 Capnocytophaga sp. HOT_908 Prevotella sp. HOT_909 Capnocytophaga sp. HOT_387 TM7 [G-1] sp. HOT_389 Peptostreptococcaceae [XI][G-4] sp. HOT_380 Peptostreptococcaceae [XI][G-4] sp. HOT_380 Peptostreptococcaceae [XI][G-2] sp. HOT_391 Peptostreptococcaceae [XI][G-2] sp. HOT_391 Peptostreptococcaceae [XII][G-2] sp. HOT_391 Peptostreptococcaceae [XIII][G-1] sp. HOT_391 Peptostreptococcaceae [XIII][G-1] sp. HOT_391 Peptostreptococcaceae [XIII][G-1] sp.		46.4	0.3	0.0	0.2	0.3	43.8	8.9
HOT_203 Fusobacterium sp. HOT_392 Leptotrichia sp. HOT_172 Actinomyces sp. HOT_219 Leptotrichia sp. HOT_215 Leptotrichia sp. HOT_353 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_511 Bacteroidetes [G-5] sp. HOT_081 Peptostreptococcaceae [XI][G-7] sp. HOT_300 Prevotella sp. HOT_437 TM7 [G-5] sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_452 Fretibacterium sp. HOT_328 Bergeyella sp. HOT_329 Bergeyella sp. HOT_330 Alloprevotella sp. HOT_349 TM7 [G-1] sp. HOT_231 Treponema sp. HOT_232 Leptotrichia sp. HOT_234 Leptotrichia sp. HOT_245 Fusobacterium sp. HOT_25 Fusobacterium sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_902 Capnocytophaga sp. HOT_914 Alloprevotella sp. HOT_925 Prevotella sp. HOT_936 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_370 Treponema sp. HOT_380 Peptostreptococcaceae [XI][G-2] sp. HOT_391 Peptostreptococcaceae [XI][G-2] sp. HOT_310 Prevotella sp. HOT_310 Prevotella sp. HOT_311 Peptostreptococcaceae [XIII][G-1] sp. HOT_311 Peptostreptococcaceae [XIII][G-1] sp. HOT_313 Peptostreptococcaceae [XIII][G-1] sp.	40074	4.6	7.6	19.2	21.5	38.8	5.5	2.8
HOT_392 Leptotrichia sp. HOT_172 Actinomyces sp. HOT_219 Leptotrichia sp. HOT_353 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_312 Leptotrichia sp. HOT_351 Bacteroidetes [G-5] sp. HOT_300 Prevotella sp. HOT_437 TM7 [G-5] sp. HOT_437 TM7 [G-5] sp. HOT_438 TM7 [G-5] sp. HOT_300 Prevotella sp. HOT_437 TM7 [G-5] sp. HOT_438 TM7 [G-5] sp. HOT_439 Haemophilus sp. HOT_320 Bergeyella sp. HOT_321 Treponema sp. HOT_323 Leptotrichia sp. HOT_231 Treponema sp. HOT_232 Leptotrichia sp. HOT_233 Leptotrichia sp. HOT_245 Fusobacterium sp. HOT_25 Fusobacterium sp. HOT_26 Fusobacterium sp. HOT_27 Fusobacterium sp. HOT_91 Alloprevotella sp. HOT_91 Alloprevotella sp. HOT_92 Capnocytophaga sp. HOT_93 Prevotella sp. HOT_94 Alloprevotella sp. HOT_347 TM7 [G-1] sp. HOT_348 Perbostreptococcaceae [XI][G-4] sp. HOT_349 Peptostreptococcaceae [XI][G-2] sp. HOT_340 Prevotella sp. HOT_341 Prevotella sp. HOT_342 Prevotella sp. HOT_343 Prevotella sp. HOT_344 Peptostreptococcaceae [XI][G-2] sp. HOT_345 Prevotella sp. HOT_346 Prevotella sp. HOT_347 Treponema sp. HOT_348 Peptostreptococcaceae [XI][G-2] sp. HOT_349 Peptostreptococcaceae [XI][G-2] sp. HOT_350 Fretibacterium sp. HOT_310 Prevotella sp.	13974	1.7	24.9	43.2	21.7	6.5	0.5	1.6
HOT_172 Actinomyces sp. HOT_219 Leptotrichia sp. HOT_353 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_511 Bacteroidetes [G-5] sp. HOT_081 Peptostreptococcaceae [XI][G-7] sp. HOT_300 Prevotella sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_035 Haemophilus sp. HOT_322 Bergeyella sp. HOT_334 Alloprevotella sp. HOT_335 HoT_26 Alloprevotella sp. HOT_345 Pixor Sp. HOT_346 Alloprevotella sp. HOT_347 TM7 [G-1] sp. HOT_248 Fretibacterium sp. HOT_349 TM7 [G-1] sp. HOT_349 TM7 [G-1] sp. HOT_254 Leptotrichia sp. HOT_265 Fusobacterium sp. HOT_166 Pervotella sp. HOT_175 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_926 Capnocytophaga sp. HOT_927 Porphyromonas sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_278 Porphyromonas sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_279 Peptostreptococcaceae [XII][G-2] sp. HOT_901 Peptostreptococcaceae [XIII][G-2] sp. HOT_912 Leptotrichia sp. HOT_914 Leptotrichia sp. HOT_915 Peptostreptococcaceae [XIII][G-1] sp. HOT_168 Feptococcus sp. HOT_169 Peptostreptococcaceae [XIII][G-1] sp. HOT_160 Fretibacterium sp.	12874	36.3	2.7	1.2	2.1	17.4	19.5	20.9
HOT_219 Leptotrichia sp. HOT_353 TM7 [G-1] sp. HOT_348 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_351 Bacteroidetes [G-5] sp. HOT_081 Peptostreptococcaceae [XI][G-7] sp. HOT_300 Prevotella sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_035 Haemophilus sp. HOT_322 Bergeyella sp. HOT_338 Alloprevotella sp. HOT_349 TM7 [G-1] sp. HOT_243 TM7 [G-1] sp. HOT_244 Leptotrichia sp. HOT_349 TM7 [G-1] sp. HOT_25 Fusobacterium sp. HOT_463 Leptotrichia sp. HOT_464 Leptotrichia sp. HOT_905 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_925 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_347 TM7 [G-1] sp. HOT_348 Porphyromonas sp. HOT_349 Peptostreptococcaceae [XI][G-4] sp. HOT_347 Treponema sp. HOT_347 Treponema sp. HOT_348 Peptococcus sp. HOT_349 Peptostreptococcaceae [XI][G-2] sp. HOT_340 Prevotella sp. HOT_341 Prevotella sp. HOT_342 Peptostreptococcaceae [XI][G-2] sp. HOT_343 Prevotella sp. HOT_344 Peptostreptococcaceae [XI][G-2] sp. HOT_345 Prevotella sp. HOT_346 Peptostreptococcaceae [XI][G-2] sp. HOT_347 Prevotella sp. HOT_348 Peptostreptococcaceae [XIII][G-1] sp. HOT_349 Peptostreptococcaceae [XIII][G-1] sp. HOT_340 Fretibacterium sp.	8190	17.7	2.1	0.7	7.8	1.5	27.4	42.7
HOT_215 Leptotrichia sp. HOT_353 TM7 [G-1] sp. HOT_348 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_212 Leptotrichia sp. HOT_511 Bacteroidetes [G-5] sp. HOT_081 Peptostreptococcaceae [XI][G-7] sp. HOT_300 Prevotella sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_452 Fretibacterium sp. HOT_322 Bergeyella sp. HOT_338 Alloprevotella sp. HOT_231 Treponema sp. HOT_231 Treponema sp. HOT_232 Leptotrichia sp. HOT_233 Leptotrichia sp. HOT_463 Leptotrichia sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_902 Capnocytophaga sp. HOT_914 Alloprevotella sp. HOT_925 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_347 TM7 [G-1] sp. HOT_348 Peptostreptococcaceae [XI][G-4] sp. HOT_278 Peptostreptococcaceae [XI][G-4] sp. HOT_349 Peptostreptococcaceae [XI][G-2] sp. HOT_340 Peptostreptococcaceae [XI][G-2] sp. HOT_341 Peptostreptococcaceae [XII][G-2] sp. HOT_342 Peptostreptococcaceae [XII][G-1] sp. HOT_343 Prevotella sp. HOT_344 Peptostreptococcaceae [XIII][G-1] sp. HOT_345 Peptostreptococcaceae [XIII][G-1] sp. HOT_346 Fretibacterium sp.	7753 6363	2.7 13.4	12.2 2.6	18.7 0.5	18.1 0.1	48.1 1.8	0.0	0.1 63.0
HOT_353 TM7 [G-1] sp. HOT_348 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_212 Leptotrichia sp. HOT_511 Bacteroidetes [G-5] sp. HOT_081 Peptostreptococcaceae [XI][G-7] sp. HOT_300 Prevotella sp. HOT_286 Tannerella sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_322 Bergeyella sp. HOT_323 Alloprevotella sp. HOT_334 TM7 [G-1] sp. HOT_231 Treponema sp. HOT_232 Leptotrichia sp. HOT_232 Leptotrichia sp. HOT_233 Leptotrichia sp. HOT_463 Leptotrichia sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_914 Alloprevotella sp. HOT_925 Prevotella sp. HOT_936 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_348 Porphyromonas sp. HOT_349 Peptostreptococcaceae [XI][G-4] sp. HOT_349 Peptostreptococcaceae [XI][G-2] sp. HOT_340 Prevotella sp. HOT_341 Peptostreptococcaceae [XI][G-2] sp. HOT_342 Prevotella sp. HOT_343 Prevotella sp. HOT_344 Peptostreptococcaceae [XI][G-2] sp. HOT_345 Peptostreptococcaceae [XI][G-2] sp. HOT_346 Fretibacterium sp. HOT_347 Peptostreptococcaceae [XII][G-1] sp.	5876	8.7	7.9	14.9	29.0	19.7	12.4	7.4
HOT_348 TM7 [G-1] sp. HOT_352 TM7 [G-1] sp. HOT_212 Leptotrichia sp. HOT_511 Bacteroidetes [G-5] sp. HOT_081 Peptostreptococcaceae [XI][G-7] sp. HOT_300 Prevotella sp. HOT_286 Tannerella sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_452 Fretibacterium sp. HOT_035 Haemophilus sp. HOT_322 Bergeyella sp. HOT_308 Alloprevotella sp. HOT_349 TM7 [G-1] sp. HOT_231 Treponema sp. HOT_243 Leptotrichia sp. HOT_246 Leptotrichia sp. HOT_25 Fusobacterium sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_347 TM7 [G-1] sp. HOT_347 TM7 [G-1] sp. HOT_348 Pervotella sp. HOT_349 Prevotella sp. HOT_340 Prevotella sp. HOT_341 TM7 [G-1] sp. HOT_342 Prevotella sp. HOT_343 TM7 [G-1] sp. HOT_344 Peptostreptococcaceae [XI][G-4] sp. HOT_345 Peptostreptococcaceae [XI][G-2] sp. HOT_347 Prevotella sp. HOT_348 Peptostreptococcaceae [XI][G-2] sp. HOT_349 Peptostreptococcaceae [XI][G-2] sp. HOT_340 Fretibacterium sp. HOT_360 Fretibacterium sp.	5685	3.1	2.4	0.5	0.7	1.1	45.2	47.0
HOT_352 TM7 [G-1] sp. HOT_212 Leptotrichia sp. HOT_511 Bacteroidetes [G-5] sp. HOT_081 Peptostreptococcaceae [XI][G-7] sp. HOT_300 Prevotella sp. HOT_286 Tannerella sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_452 Fretibacterium sp. HOT_322 Bergeyella sp. HOT_338 Alloprevotella sp. HOT_339 Treponema sp. HOT_231 Treponema sp. HOT_243 Leptotrichia sp. HOT_246 Leptotrichia sp. HOT_25 Fusobacterium sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_914 Alloprevotella sp. HOT_925 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_347 TM7 [G-1] sp. HOT_347 TM7 [G-1] sp. HOT_348 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptostreptococcaceae [XI][G-2] sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_091 Peptostreptococcaceae [XI][G-1] sp. HOT_168 Fretibacterium sp. HOT_169 Fretibacterium sp.	5594	1.8	1.1	0.6	1.0	0.3	86.0	9.2
HOT_212 Leptotrichia sp. HOT_511 Bacteroidetes [G-5] sp. HOT_081 Peptostreptococcaceae [XI][G-7] sp. HOT_300 Prevotella sp. HOT_286 Tannerella sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_452 Fretibacterium sp. HOT_322 Bergeyella sp. HOT_338 Alloprevotella sp. HOT_339 Treponema sp. HOT_231 Treponema sp. HOT_231 Leptotrichia sp. HOT_2463 Leptotrichia sp. HOT_25 Fusobacterium sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_914 Alloprevotella sp. HOT_347 TM7 [G-1] sp. HOT_347 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_349 Peptostreptococcaceae [XI][G-4] sp. HOT_369 Peptostreptococcaceae [XI][G-2] sp. HOT_310 Prevotella sp. HOT_310 Prevotella sp. HOT_311 Prevotella sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp.	5506	2.6	7.6	9.7	28.8	48.3	2.2	0.7
HOT_511 Bacteroidetes [G-5] sp. HOT_081 Peptostreptococcaceae [XI][G-7] sp. HOT_300 Prevotella sp. HOT_286 Tannerella sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_452 Fretibacterium sp. HOT_035 Haemophilus sp. HOT_322 Bergeyella sp. HOT_308 Alloprevotella sp. HOT_349 TM7 [G-1] sp. HOT_243 Leptotrichia sp. HOT_245 Fusobacterium sp. HOT_25 Fusobacterium sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_914 Alloprevotella sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_347 TM7 [G-1] sp. HOT_348 Peptostreptococcaceae [XI][G-4] sp. HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_310 Prevotella sp. HOT_310 Prevotella sp. HOT_310 Prevotella sp. HOT_310 Fretibacterium sp. HOT_360 Fretibacterium sp.	5434	17.1	20.4	7.2	5.6	1.4	33.3	15.0
HOT_081 Peptostreptococcaceae [XI][G-7] sp. HOT_300 Prevotella sp. HOT_286 Tannerella sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_452 Fretibacterium sp. HOT_035 Haemophilus sp. HOT_322 Bergeyella sp. HOT_308 Alloprevotella sp. HOT_349 TM7 [G-1] sp. HOT_231 Treponema sp. HOT_245 Leptotrichia sp. HOT_246 Leptotrichia sp. HOT_463 Leptotrichia sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_347 TM7 [G-1] sp. HOT_347 TM7 [G-1] sp. HOT_348 Pervotella sp. HOT_349 Peptostreptococcaceae [XI][G-4] sp. HOT_340 Peptostreptococcaceae [XI][G-2] sp. HOT_341 Peptostreptococcaceae [XI][G-2] sp. HOT_342 Peptostreptococcaceae [XI][G-2] sp. HOT_343 Peptostreptococcaceae [XII][G-1] sp. HOT_344 Peptostreptococcaceae [XII][G-1] sp. HOT_345 Peptostreptococcaceae [XII][G-1] sp. HOT_360 Fretibacterium sp. HOT_360 Fretibacterium sp.	5426	2.6	0.1	0.2	18.5	0.0	0.7	77.8
HOT_300 Prevotella sp. HOT_286 Tannerella sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_452 Fretibacterium sp. HOT_035 Haemophilus sp. HOT_322 Bergeyella sp. HOT_308 Alloprevotella sp. HOT_349 TM7 [G-1] sp. HOT_231 Treponema sp. HOT_2463 Leptotrichia sp. HOT_25 Fusobacterium sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_902 Capnocytophaga sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_310 Prevotella sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_310 Prevotella sp. HOT_310 Prevotella sp. HOT_311 Peptostreptococcaceae [XII][G-1] sp. HOT_312 Peptostreptococcaceae [XIII][G-1] sp. HOT_313 Peptostreptococcaceae [XIII][G-1] sp.	5368	4.5	1.2	0.4	3.9	4.2	3.1	82.6
HOT_286 Tannerella sp. HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_452 Fretibacterium sp. HOT_035 Haemophilus sp. HOT_322 Bergeyella sp. HOT_308 Alloprevotella sp. HOT_231 Treponema sp. HOT_349 TM7 [G-1] sp. HOT_223 Leptotrichia sp. HOT_463 Leptotrichia sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_347 TM7 [G-1] sp. HOT_347 TM7 [G-1] sp. HOT_347 Porphyromonas sp. HOT_348 Peptostreptococcaceae [XI][G-4] sp. HOT_369 Peptostreptococcaceae [XI][G-2] sp. HOT_310 Prevotella sp. HOT_310 Prevotella sp. HOT_311 Peptostreptococcaceae [XI][G-2] sp. HOT_360 Fretibacterium sp. HOT_361 sp. HOT_361 Fretibacterium sp. HOT_362 Fretibacterium sp. HOT_363 Peptostreptococcaceae [XII][G-1] sp.	5144	7.0	0.3	0.1	1.2	1.5	50.4	39.6
HOT_437 TM7 [G-5] sp. HOT_100 Lachnospiraceae [G-3] sp. HOT_452 Fretibacterium sp. HOT_035 Haemophilus sp. HOT_322 Bergeyella sp. HOT_308 Alloprevotella sp. HOT_31 Treponema sp. HOT_349 TM7 [G-1] sp. HOT_223 Leptotrichia sp. HOT_463 Leptotrichia sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_347 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_045 Peptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_360 Fretibacterium sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	5058	6.2	1.3	0.4	0.8	2.9	77.0	11.3
HOT_100 Lachnospiraceae [G-3] sp. HOT_452 Fretibacterium sp. HOT_035 Haemophilus sp. HOT_322 Bergeyella sp. HOT_308 Alloprevotella sp. HOT_231 Treponema sp. HOT_2349 TM7 [G-1] sp. HOT_223 Leptotrichia sp. HOT_463 Leptotrichia sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_347 TM7 [G-1] sp. HOT_347 TM7 [G-1] sp. HOT_348 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_045 Peptococcus sp. HOT_168 Peptococcus sp. HOT_168 Peptococcus sp. HOT_169 Peptostreptococcaceae [XI][G-4] sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_169 Fretibacterium sp. HOT_130 Fretibacterium sp. HOT_131 Peptostreptococcaceae [XIII][G-1] sp.	5035	5.2	0.7	0.1	0.4	2.5	29.3	61.9
HOT_452 Fretibacterium sp. HOT_035 Haemophilus sp. HOT_322 Bergeyella sp. HOT_308 Alloprevotella sp. HOT_231 Treponema sp. HOT_349 TM7 [G-1] sp. HOT_223 Leptotrichia sp. HOT_463 Leptotrichia sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_045 Peptoscoccaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_168 Peptostreptococcaceae [XI][G-2] sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_169 Fretibacterium sp. HOT_160 Fretibacterium sp. HOT_160 Fretibacterium sp.	4783	11.1	3.3	3.7	0.7	5.5	31.4	44.2
HOT_035 Haemophilus sp. HOT_322 Bergeyella sp. HOT_338 Alloprevotella sp. HOT_231 Treponema sp. HOT_349 TM7 [G-1] sp. HOT_223 Leptotrichia sp. HOT_463 Leptotrichia sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_045 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_168 Peptococcus sp. HOT_169 Peptostreptococcaceae [XI][G-2] sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_091 Peptostreptococcaceae [XI][G-1] sp. HOT_169 Fretibacterium sp. HOT_111 Peptostreptococcaceae [XIII][G-1] sp.	4130	9.5	0.8	0.3	2.2	2.1	1.9	83.2
HOT_322 Bergeyella sp. HOT_338 Alloprevotella sp. HOT_231 Treponema sp. HOT_349 TM7 [G-1] sp. HOT_223 Leptotrichia sp. HOT_463 Leptotrichia sp. HOT_075 Fusobacterium sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_045 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_169 Peptostreptococcaceae [XI][G-2] sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_091 Peptostreptococcaceae [XI][G-1] sp. HOT_160 Fretibacterium sp. HOT_161 Peptostreptococcaceae [XIII][G-1] sp.	3774	21.2	44.6	0.3	24.5	2.1	0.0	7.2
HOT_308 Alloprevotella sp. HOT_231 Treponema sp. HOT_349 TM7 [G-1] sp. HOT_223 Leptotrichia sp. HOT_463 Leptotrichia sp. HOT_075 Fusobacterium sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_045 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_168 Peptostreptococcaceae [XI][G-2] sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	3115	21.7	16.1	6.2	5.6	1.9	23.7	24.8
HOT_231 Treponema sp. HOT_349 TM7 [G-1] sp. HOT_223 Leptotrichia sp. HOT_463 Leptotrichia sp. HOT_205 Fusobacterium sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_27 Treponema sp. HOT_310 Prevotella sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XII][G-1] sp.	2291	3.9	12.9	8.3	32.6	41.1	0.3	0.9
HOT_223 Leptotrichia sp. HOT_463 Leptotrichia sp. HOT_205 Fusobacterium sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_237 Treponema sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	2257	3.7	0.2	0.0	55.5	0.0	4.0	36.7
HOT_463 Leptotrichia sp. HOT_205 Fusobacterium sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_277 Treponema sp. HOT_310 Prevotella sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	2015	5.9	2.2	0.2	1.2	4.6	62.1	23.7
HOT_205 Fusobacterium sp. HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_237 Treponema sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	1925	6.7	0.7	0.0	1.1	0.9	7.9	82.6
HOT_075 Clostridiales [F-2][G-1] sp. HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_168 Peptococcus sp. HOT_37 Treponema sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	1756	8.7	4.1	9.2	18.2	29.3	24.1	6.3
HOT_914 Alloprevotella sp. HOT_902 Capnocytophaga sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_237 Treponema sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	1715	15.0	0.6	0.7	7.4	1.4	24.7	50.1
HOT_902 Capnocytophaga sp. HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_237 Treponema sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	1697	15.6	3.7	4.5	23.8	10.8	12.1	29.5
HOT_526 Prevotella sp. HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_237 Treponema sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	1677	8.8	33.6	18.7	24.9	12.9	0.4	0.7
HOT_347 TM7 [G-1] sp. HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_237 Treponema sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_13 Peptostreptococcaceae [XIII][G-1] sr.	1661	2.6	1.5	0.0	0.5	0.0	75.2	20.2
HOT_278 Porphyromonas sp. HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_237 Treponema sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	1603	4.6	1.5	1.2	0.5	4.2	9.1	78.9
HOT_044 Campylobacter sp. HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_237 Treponema sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	1548	7.1	1.6	0.7	1.6	0.0	28.4	60.6
HOT_369 Peptostreptococcaceae [XI][G-4] sp. HOT_168 Peptococcus sp. HOT_237 Treponema sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	1380	7.9	10.4	0.0	1.8	0.9	30.9	48.1
HOT_168 Peptococcus sp. HOT_237 Treponema sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sr.	1236	2.9	72.8	2.3	11.2	7.4	0.0	3.4
HOT_237 Treponema sp. HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	914	7.9	1.2	0.0	20.6	4.6	3.4	62.3
HOT_310 Prevotella sp. HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	852	6.8	8.2	11.5	45.3	4.7	8.2	15.1
HOT_091 Peptostreptococcaceae [XI][G-2] sp. HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sr.	851	2.5	0.4	0.0	9.4	0.0	2.5	85.2
HOT_218 Leptotrichia sp. HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sp.	820	4.7	18.6	14.6	38.5	15.0	3.7	4.9
HOT_360 Fretibacterium sp. HOT_113 Peptostreptococcaceae [XIII][G-1] sr	773	8.7	3.9	6.5	12.5	11.3	3.5	53.6
HOT_113 Peptostreptococcaceae [XIII][G-1] sp	750	0.6	17.4	26.2	55.1	0.0	0.1	0.5
	674	11.1	0.5	0.0	1.3	0.0	6.6	80.5
	659	17.9	2.9	1.2	28.6	10.3	3.5	35.7
HOT_910 Moryella sp.	645	10.6	1.4	0.0	7.0	1.4	52.2	27.5
HOT_500 Lachnospiraceae [G-8] sp.	595	20.5	5.9	1.7	1.2	26.4	5.0	39.3
HOT_900 Bergeyella sp.	594	0.9	0.2	0.0	0.3	0.0	89.4	9.2
HOT_132 Veillonellaceae [G-1] sp. HOT_134 Selenomonas sp.	583 571	25.0 7.2	0.5	0.0	1.2 2.2	4.8 0.0	7.2	61.3 80.4

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