

1 **Supplementary Table 1.** OTU table collapsed to family level, showing number of curated sequences per family per sample.

2

Individual	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	425	426	427	0
Time (weeks)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Family	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Methanobacteriaceae	0	24	20	0	2	0	2	8	0	0	7	0	0	0	0	0	0	0	0	1	0	0	10	8	12	0	0
Actinomycetaceae	1	8	0	1	1	0	0	1	20	0	2	2	0	0	0	0	0	1	1	0	0	0	2	5	0	2	3
Bifidobacteriaceae	461	365	3	150	1031	2978	251	853	2	2463	1981	1771	339	1392	1020	533	46	2595	72	102	2266	354	1811	2978	1756	239	
Corynebacteriaceae	0	13	0	0	3	1	0	1	1	2	3	0	1	2	1	1	0	0	0	2	1	2	3	0	1	1	
Coriobacteriaceae	94	167	378	96	109	464	33	273	238	176	172	258	167	113	124	49	46	41	213	33	178	136	409	125	108	225	
Bacteroidaceae	535	894	1853	20744	8435	1052	22671	5259	1156	2570	1051	724	3517	1695	1905	702	4644	3785	320	2587	6859	2604	3087	1401	1355	1031	
Bacteroidales S24-7 group	2	11	0	0	0	0	0	6	0	0	3	3	120	0	2	0	2	0	152	0	0	132	13	36	0	1	
Porphyromonadaceae	74	38	128	2857	3616	488	18	854	59	338	515	224	206	134	124	476	3	147	10	284	403	286	0	235	284	264	
Prevotellaceae	810	6	0	3	0	200	0	110	0	0	1	8	23	18	67	0	5	6	11	0	0	25	0	0	69	7	
Rikenellaceae	61	147	663	540	976	355	805	1299	172	322	505	95	547	39	147	6	164	262	52	169	364	502	338	345	129	568	
Bacteroidales	0	0	0	5	0	0	0	0	0	0	0	0	37	0	0	0	0	0	0	0	0	0	0	0	0	0	
Flavobacteriaceae	0	0	0	0	0	0	0	14	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	
Gastranaerophilales	0	0	22	0	0	0	0	0	0	0	0	2	12	0	1	0	0	0	0	0	0	0	0	0	0	0	
Bacillales_Family XI	2	1	0	1	0	0	0	1	46	0	0	0	6	2	2	2	2	2	3	1	7	3	4	1	28	12	
Staphylococcaceae	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Enterococcaceae	0	0	0	316	0	1	0	1	0	0	1	0	0	25	2	1	0	2	0	1	911	2	2	0	2	261	
Lactobacillaceae	4	6	0	0	2	0	1	0	27	10	13	0	43	110	1	0	27	0	3	2	57	556	6917	375	103		
Leuconostocaceae	0	0	0	0	5	0	0	0	4	0	0	1	1	1	1	1	0	1	1	0	0	0	0	0	7	0	
Streptococcaceae	202	86	22	71	32	28	24	2	572	63	61	225	12	110	46	55	63	54	3	47	348	18	1760	8	82	328	
Caldicoprobacteraceae	0	0	2	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2	
Christensenellaceae	1478	1500	3023	280	344	563	1674	8228	36	130	1204	326	5138	2	883	2	152	9	380	8754	324	1654	359	780	388	1743	
Clostridiaceae 1	9	278	90	1932	859	346	14	4633	1	37	3226	5	7	7094	30	1745	268	3	4	37	187	1650	432	2	2265	6324	
Clostridiales vadinBB60 group	0	114	28	5	17	0	7	15	17	3	38	1	49	0	2	0	1	0	0	0	0	0	9	9	32	0	10
Deffluvitalesaceae	4	9	237	4	17	21	19	73	0	35	4	4	0	2	0	0	0	0	1	2	1	13	44	16	0	57	
Eubacteriaceae	0	35	11	10	0	11	0	178	2	3	0	3	0	1	0	1	0	1	5	0	7	1	0	0	0	2	
Clostridiales_Family XI	0	33	0	1	0	0	0	22	0	0	0	3	1	0	0	0	4	0	1	0	0	1	0	1	0	2	
Clostridiales_Family XIII	14	2050	136	69	54	131	100	294	271	105	785	59	215	3	37	0	87	962	51	66	49	410	277	108	384	80	
Lachnospiraceae	32549	51343	48935	15729	31931	61059	49446	35342	58008	39993	7623	55606	13767	51079	26829	17030	29376	16061	43952	33538	33930	23907	41697	31463	34619	27815	
Peptococcaceae	0	12	56	3	2	35	34	17	14	62	0	8	0	2	0	0	3	0	154	1	0	191	24	15	3	1	
Peptostreptococcaceae	414	2757	204	2068	6374	2654	582	2076	5	942	6784	708	341	7902	360	10636	8	101	7	8	4212	5582	97	190	752	7742	
Ruminococcaceae	14179	14449	12663	7958	21439	17686	29932	34509	5039	13501	8123	9477	13213	5676	14541	14079	8312	8373	8725	12064	15481	22738	13859	10578	11738	20243	
Thermoanaerobacteraceae	0	0	1	0	2	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	
Erspilobtrichaceae	3074	6118	1580	2376	2148	8274	605	6452	2499	1884	1976	6296	1301	3184	2626	3961	3619	5320	6036	356	2010	3164	4081	653	5923	5342	
Acidaminococcaceae	0	9	0	128	187	0	0	12	137	66	0	220	213	136	0	0	221	4	2	1	4	0	263	79	102	5	
Veillonellaceae	2057	37	348	59	828	10	2521	721	2140	30	20	130	27	121	3	820	79	16	4	33	355	2567	17	252	460	120	
Fusobacteriaceae	0	0	0	1	0	0	0	2	0	0	2	0	0	0	0	1	0	0	0	2	0	0	0	0	0	1	
Lactotrichaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Victivallaceae	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
Victivallales_vadinBE37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	
Rhizobiaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Rhodospirillaceae	0	12	0	0	0	0	18	0	0	0	0	2	0	1	0	0	0	0	5	0	0	0	0	0	0	0	
Alkalinigenaceae	0	3	3	0	17	0	1	5	0	4	3	3	0	4	0	0	0	0	2	0	17	4	3	1	0	1	
Oxalobacteraceae	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	
Neisseriaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Desulfovibrionaceae	5	32	4	106	87	6	222	142	0	13	62	12	34	3	19	0	42	50	165	13	25	9	175	4	1	17	
Campylobacteraceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Aeromonadaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	
Cardiobacteriaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Enterobacteriaceae	3	15	4	235	33	0	1	3	1	9	15	0	51	13	0	1	0	0	0	1948	19	43	1	20	202	271	
Pasteurellaceae	82	2	0	5	8	0	409	0	0	2	0	0	0	0	1	189	1	2	0	7	96	18	1	0	212	100	
Moraxellaceae	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	
Pseudomonadaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Spirochaetaceae	0	0	0	0	0	0	2	0	0	0	0	0															

Individual	401	402	403	404	405	406	407	408	410	411	412	413	414	415	416	417	419	420	421	422	423	425	426	427	
Time (weeks)	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	
Family																									
Methanobacteriaceae	0	5	6	0	2	0	0	0	5	0	0	0	0	0	0	0	0	0	10	10	9	0	0	3	
Actinomycetaceae	0	0	0	3	3	1	0	0	0	0	1	0	1	3	0	0	1	2	3	0	3	2	2	3	
Bifidobacteriaceae	1685	155	2	876	680	1549	37	359	3054	2569	695	563	1458	1097	1403	329	227	17	1092	786	2682	279	571	1273	
Corynebacteriaceae	0	5	0	0	1	0	0	0	0	0	1	0	2	0	4	1	1	15	0	0	0	1	1	3	
Coriobacteriaceae	298	998	2073	1528	1469	619	82	794	319	572	362	406	62	361	62	730	291	332	469	277	586	392	1307	1047	
Bacteroidaceae	1546	575	692	627	10283	588	11887	7233	10009	3030	3561	3452	743	1656	237	2742	10396	3090	4148	2306	2387	1573	327	3639	
Bacteroidales S24-7 group	0	1	0	0	0	0	0	0	2	0	1	13	56	0	1	0	1	2411	912	0	18	32	0	23	
Porphyromonadaceae	694	67	157	134	3635	195	315	1339	1656	376	767	414	78	141	58	1	168	199	208	366	461	196	87	0	
Prevotellaceae	682	0	0	1	1	76	0	240	0	0	117	64	3	89	0	2	53	0	0	308	0	6	0	0	
Rikenellaceae	45	192	685	86	2202	198	670	3029	2062	1149	506	1178	31	172	5	191	273	472	1710	931	833	155	123	748	
Bacteroidales	0	0	1	0	0	0	0	0	0	0	0	54	0	0	0	0	0	0	0	0	0	0	0	0	
Flavobacteriaceae	0	0	0	0	0	0	0	19	0	0	0	41	0	0	0	1	0	0	0	0	0	0	0	0	
Gastranaerophilales	0	0	28	0	0	0	0	0	0	0	12	27	0	0	0	0	0	0	0	0	0	0	0	0	
Bacillales_Family XI	2	4	0	2	3	0	0	0	0	1	2	0	3	2	8	10	1	5	0	0	3	16	2	6	
Staphylococcaceae	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	
Enterococcaceae	1	0	0	367	0	0	0	0	0	44	0	1	0	3	1	0	0	0	64	0	0	153	2	1	
Lactobacillaceae	3	10	0	1	0	1	0	0	0	97	0	3	4	115	1	0	1	4	104	85	1182	216	385	205	
Leuconostocaceae	1	0	0	1	0	0	0	0	0	0	5	0	0	1	0	0	0	3	0	0	0	0	0	0	
Streptococcaceae	141	281	22	283	11	20	34	1	42	100	31	9	72	149	38	64	5	167	76	18	66	278	248	1061	
Caldicoprobacteraceae	0	0	0	0	0	0	1	0	0	0	0	2	0	0	0	1	0	0	1	0	0	0	0	2	
Christensenellaceae	885	1061	3875	362	1120	269	1175	3239	126	2168	530	11756	2	190	1	11	311	4641	1144	1419	1036	520	918	203	
Clostridiaecae 1	78	738	3	15912	984	557	0	1127	383	2191	11	1078	404	39	1038	10	1	1423	268	395	10	5703	2195	8	
Clostridiales vadinBB60 group	0	54	23	6	28	3	2	30	8	3	1	428	0	0	0	0	0	3	61	11	8	0	3	3	
Deffluvitaceae	0	3	160	38	37	20	23	12	0	5	8	4	0	1	0	0	1	1	6	10	4	1	14	15	
Eubacteriaceae	0	11	6	0	3	0	9	1	1	1	0	4	0	0	0	13	7	2	0	1	1	2	5	2	
Clostridiales_Family XI	0	0	1	2	8	1	0	0	4	0	1	26	1	4	0	1	0	1	2	0	0	0	2	0	
Clostridiales_Family XIII	20	1396	113	130	45	70	67	128	53	1210	55	367	3	32	3	150	43	119	115	319	69	364	60	181	
Lachnospiraceae	42375	32326	61673	18550	28536	21556	32214	22686	22498	26429	65476	34713	48920	35800	32196	70198	39933	25639	21488	27421	32514	17388	30327	40753	
Peptococcaceae	1	2	47	13	3	2	20	22	17	41	1	6	0	1	0	0	90	1	17	230	18	0	0	5	
Peptostreptococcaceae	973	3435	17	8579	5794	3949	125	1300	899	7748	85	332	5060	1025	9914	662	69	5848	3884	2848	728	756	6918	206	
Ruminococcaceae	14965	12334	13504	7674	25016	10364	19856	25146	15446	21522	23256	21478	9948	19189	16874	12074	13851	10102	13427	23222	18577	6436	18558	17472	
Thermoanaerobacteraceae	0	0	0	0	4	0	4	1	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	
Erysipelotrichaceae	2629	8218	2770	10943	4376	7974	455	3988	1282	3649	5514	1492	1219	2619	8621	7554	3516	965	2248	3525	1038	2464	2715	1527	
Acidaminococcaceae	0	4	1	10	238	0	0	23	130	7	514	9	26	0	0	12	14	0	47	0	8	461	1	110	
Vailloniellaceae	853	13	299	56	511	2	1431	1231	5	36	282	9	402	9	705	186	7	211	31	3483	214	172	13	11	
Fusobacteriaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	1	0	0	0	0	0	8	
Leptotrichiaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	
Victivallaceae	0	1	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0	0	0	0	
Victivallales_vadinBE97	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	
Rhizobiaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Rhodospirillaceae	0	7	0	0	0	0	0	54	0	0	19	4	0	0	0	0	18	0	0	0	0	0	0	0	
Alcaligenaceae	0	0	1	0	10	0	0	8	3	47	22	6	0	3	3	1	1	12	5	1	0	1	7	0	
Oxalobacteraceae	0	0	2	0	0	0	0	0	0	1	0	1	0	0	0	0	3	0	1	0	3	0	0	0	
Neisseriaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Desulfotribionaceae	1	8	4	3	36	5	85	110	3	27	62	36	121	5	1	61	112	2	31	6	35	2	7	358	
Campylobacteraceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Aeromonadaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	
Cardiobacteriaceae	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	
Enterobacteriaceae	0	3	0	16	0	0	0	4	27	27	2	10	56	1	279	1	12	6360	97	61	3	14549	0	0	
Pasteurellaceae	12	1	1	0	0	0	82	15	1	165	0	0	2	9	122	14	0	99	3	23	1	370	3	0	
Moraxellaceae	0	1	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	
Pseudomonadaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Spirochaetaceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Anaeroplasmataceae	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	
Mollicutes_RF9_uncultured	2674	2	376	11	10	0	62	378	0	1	18	199	2	1	0	0	338	1	0	954	377	31	2	0	
Mollicutes_N81-n	0	0	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Opitutae vadinHA64	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	
Verrucomicrobiaceae	0	27	2	517	34	1	4	115	0	0	1	6084	1	6	1	2	380	140	654	0	111	20	14	1692	