

Table S1

Raw data of total 16s rRNA sequences per sample, absolute counts (number of 16s rRNA sequences assigned to each taxonomic rank per sample) and taxa-specific abundance. Abundance is expressed as a fraction of total (# of taxa-specific sequences/ total # 16s rRNA sequences in sample). Relative abundance (percent) is equivalent to 100 x fraction of total listed below.

Experimental Group										
Gender	Male	Male	Female	Female	Female	Female	Female	Female	Male	Male
Original Mouse Designation	B	C	F	G	K	M	O	A	D	F
Round	3	3	3	3	3	3	3	4	4	4
Mouse Designation #	Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10

Pre-Exposure										
TOTAL NUMBER of 16s rRNA READS	Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10
	122061	122058	150227	26952	379576	42262	287127	52615	36185	73438

PHYLUM	Absolute Counts (# taxa specific 16s rRNA sequences)									
	Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10
Actinobacteria	24	16	49	3	96	11	29	14	22	37
Bacteroidetes	54098	52092	80221	12448	146464	22635	133113	41763	22457	47266
Cyanobacteria	1934	6946	3957	510	11449	866	4591	179	52	206
Deferribacteres	857	976	5373	149	10980	213	7398	5	14	97
Firmicutes	45960	36886	37931	9253	152874	14407	102596	4259	9354	19775
Proteobacteria	1035	2030	4691	391	2614	526	1958	719	194	268
TM7	2272	3017	3439	560	5470	467	3326	301	74	402
Tenericutes	1719	500	2741	113	1873	201	348	32	60	182

Abundance (Fraction of total) = # taxa-specific 16s rRNA/ total # 16s rRNA

Actinobacteria	0.0002	0.0001	0.0003	0.0001	0.0003	0.0003	0.0001	0.0003	0.0006	0.0005
Bacteroidetes	0.4432	0.4268	0.534	0.4619	0.3859	0.5356	0.4636	0.7937	0.6206	0.6436
Cyanobacteria	0.0158	0.0569	0.0263	0.0189	0.0302	0.0205	0.016	0.0034	0.0014	0.0028
Deferribacteres	0.007	0.008	0.0358	0.0055	0.0289	0.005	0.0258	0.0001	0.0004	0.0013
Firmicutes	0.3765	0.3022	0.2525	0.3433	0.4027	0.3409	0.3573	0.0809	0.2585	0.2693
Proteobacteria	0.0085	0.0166	0.0312	0.0145	0.0069	0.0124	0.0068	0.0137	0.0054	0.0036
TM7	0.0186	0.0247	0.0229	0.0208	0.0144	0.0111	0.0116	0.0057	0.002	0.0055
Tenericutes	0.0141	0.0041	0.0182	0.0042	0.0049	0.0048	0.0012	0.0006	0.0017	0.0025

ORDER

Absolute Counts

	Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10
Bacteroidales	54097	52089	80220	12448	146464	22635	133111	41763	22457	47266
Clostridiales	45125	36471	36248	9119	150888	14038	101627	3407	9219	19599

Abundance

Bacteroidales	0.4432	0.4268	0.534	0.4619	0.3859	0.5356	0.4636	0.7937	0.6206	0.6436
Clostridiales	0.3697	0.2988	0.2413	0.3383	0.3975	0.3322	0.3539	0.0648	0.2548	0.2669

FAMILY

Absolute Counts

	Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10
Bacteroidaceae	5763	5303	7492	2133	19226	3858	14514	923	374	1459
Lachnospiraceae	4261	2618	2034	640	14762	1281	8748	312	623	1156
Lactobacillaceae	435	171	863	77	1204	200	694	89	91	79
Porphyromonadaceae	1359	1382	1459	417	3665	848	4024	554	296	693
Prevotellaceae	3311	4151	3971	674	8726	957	13199	806	232	578
Rikenellaceae	9844	6273	10415	1729	20464	4014	25151	779	840	3120
Ruminococcaceae	14749	9615	8045	2414	47639	4359	37441	1334	3078	6352

S24-7	26211	26689	47732	5686	69609	9058	60993	36991	20230	40459
	Abundance									
Bacteroidaceae	0.0472	0.0434	0.0499	0.0791	0.0507	0.0913	0.0505	0.0175	0.0103	0.0199
Lachnospiraceae	0.0349	0.0214	0.0135	0.0237	0.0389	0.0303	0.0305	0.0059	0.0172	0.0157
Lactobacillaceae	0.0036	0.0014	0.0057	0.0029	0.0032	0.0047	0.0024	0.0017	0.0025	0.0011
Porphyromonadaceae	0.0111	0.0113	0.0097	0.0155	0.0097	0.0201	0.014	0.0105	0.0082	0.0094
Prevotellaceae	0.0271	0.034	0.0264	0.025	0.023	0.0226	0.046	0.0153	0.0064	0.0079
Rikenellaceae	0.0806	0.0514	0.0693	0.0642	0.0539	0.095	0.0876	0.0148	0.0232	0.0425
Ruminococcaceae	0.1208	0.0788	0.0536	0.0896	0.1255	0.1031	0.1304	0.0254	0.0851	0.0865
S24-7	0.2147	0.2187	0.3177	0.211	0.1834	0.2143	0.2124	0.7031	0.5591	0.5509

24h After Exposure

TOTAL NUMBER of 16s rRNA READS

Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10
119958	278121	12327	52208	16860	148439	30792	247117	116568	89834

PHYLUM

Absolute Counts

	Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10
Actinobacteria	20	51	4	6	1	14	2	72	17	20
Bacteroidetes	53641	137982	5771	24068	7238	78035	13189	170977	90736	68889
Cyanobacteria	9563	18266	634	1081	1339	1719	527	2253	452	568
Deferribacteres	995	793	25	1058	82	278	1653	723	333	142
Firmicutes	33804	41612	1924	15365	4721	25868	8956	63309	18037	15208
Proteobacteria	1095	2003	190	397	118	2364	312	444	378	181
TM7	2436	5645	905	1928	280	3200	477	2006	279	314

Tenericutes	2489	687	239	570	312	1613	18	181	43	99
Abundance										
Actinobacteria	0.0002	0.0002	0.0003	0.0001	0.0001	0.0001	0.0001	0.0003	0.0001	0.0002
Bacteroidetes	0.4472	0.4961	0.4682	0.461	0.4293	0.5257	0.4283	0.6919	0.7784	0.7668
Cyanobacteria	0.0797	0.0657	0.0514	0.0207	0.0794	0.0116	0.0171	0.0091	0.0039	0.0063
Deferribacteres	0.0083	0.0029	0.002	0.0203	0.0049	0.0019	0.0537	0.0029	0.0029	0.0016
Firmicutes	0.2818	0.1496	0.1561	0.2943	0.28	0.1743	0.2909	0.2562	0.1547	0.1693
Proteobacteria	0.0091	0.0072	0.0154	0.0076	0.007	0.0159	0.0101	0.0018	0.0032	0.002
TM7	0.0203	0.0203	0.0734	0.0369	0.0166	0.0216	0.0155	0.0081	0.0024	0.0035
Tenericutes	0.0207	0.0025	0.0194	0.0109	0.0185	0.0109	0.0006	0.0007	0.0004	0.0011

ORDER

Absolute Counts

	Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10
Bacteroidales	53641	137977	5771	24067	7238	78033	13187	170977	90735	68889
Clostridiales	33448	40502	1918	15316	4664	25610	8896	60181	17592	14984

Abundance

Bacteroidales	0.4472	0.4961	0.4682	0.461	0.4293	0.5257	0.4283	0.6919	0.7784	0.7668
Clostridiales	0.2788	0.1456	0.1556	0.2934	0.2766	0.1725	0.2889	0.2435	0.1509	0.1668

FAMILY

Absolute Counts

	Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10
Bacteroidaceae	6470	17884	754	2949	1001	9434	1410	6746	4054	4666
Lachnospiraceae	3136	2599	56	844	356	3194	746	9800	1606	1103
Lactobacillaceae	152	788	4	20	35	155	40	2649	185	86
Porphyromonadaceae	1565	4256	191	448	172	1780	340	11804	2299	2559
Prevotellaceae	5010	10349	384	1833	542	6526	1611	756	1794	2983
Rikenellaceae	7009	11627	503	2403	783	7066	1442	3960	4185	4720

Ruminococcaceae	11142	15274	851	5907	1527	9223	4429	21421	7255	5226
S24-7	24360	76301	2948	12581	3609	41475	6753	137795	76295	52486

Abundance

Bacteroidaceae	0.0539	0.0643	0.0612	0.0565	0.0594	0.0636	0.0458	0.0273	0.0348	0.0519
Lachnospiraceae	0.0261	0.0093	0.0045	0.0162	0.0211	0.0215	0.0242	0.0397	0.0138	0.0123
Lactobacillaceae	0.0013	0.0028	0.0003	0.0004	0.0021	0.001	0.0013	0.0107	0.0016	0.001
Porphyromonadaceae	0.013	0.0153	0.0155	0.0086	0.0102	0.012	0.011	0.0478	0.0197	0.0285
Prevotellaceae	0.0418	0.0372	0.0312	0.0351	0.0321	0.044	0.0523	0.0031	0.0154	0.0332
Rikenellaceae	0.0584	0.0418	0.0408	0.046	0.0464	0.0476	0.0468	0.016	0.0359	0.0525
Ruminococcaceae	0.0929	0.0549	0.069	0.1131	0.0906	0.0621	0.1438	0.0867	0.0622	0.0582
S24-7	0.2031	0.2743	0.2391	0.241	0.2141	0.2794	0.2193	0.5576	0.6545	0.5843

7d After Exposure

TOTAL NUMBER of 16s rRNA READS	Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10
	2835	53064	123600	25247	20648	86534	63303	22510	89368	30009

PHYLUM

Absolute Counts

	Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10
Actinobacteria	0	95	127	50	33	25	20	3	19	14
Bacteroidetes	1133	26795	69287	14013	10571	56493	36313	15756	74626	20293
Cyanobacteria	105	1740	2420	137	923	658	1254	335	244	484
Deferribacteres	122	468	203	73	37	180	435	5	25	5
Firmicutes	914	12741	20224	6404	4089	18031	9902	3656	9855	6263
Proteobacteria	49	1170	4918	829	694	1693	1936	91	360	142
TM7	57	826	2229	349	466	1555	1210	77	443	123
Tenericutes	8	314	745	62	134	169	1176	307	48	132

	Abundance									
Actinobacteria	0	0.0018	0.001	0.002	0.0016	0.0003	0.0003	0.0001	0.0002	0.0005
Bacteroidetes	0.3996	0.505	0.5606	0.555	0.512	0.6528	0.5736	0.7	0.835	0.6762
Cyanobacteria	0.037	0.0328	0.0196	0.0054	0.0447	0.0076	0.0198	0.0149	0.0027	0.0161
Deferribacteres	0.043	0.0088	0.0016	0.0029	0.0018	0.0021	0.0069	0.0002	0.0003	0.0002
Firmicutes	0.3224	0.2401	0.1636	0.2537	0.198	0.2084	0.1564	0.1624	0.1103	0.2087
Proteobacteria	0.0173	0.022	0.0398	0.0328	0.0336	0.0196	0.0306	0.004	0.004	0.0047
TM7	0.0201	0.0156	0.018	0.0138	0.0226	0.018	0.0191	0.0034	0.005	0.0041
Tenericutes	0.0028	0.0059	0.006	0.0025	0.0065	0.002	0.0186	0.0136	0.0005	0.0044

ORDER

	Absolute Counts									
	Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10
Bacteroidales	1133	26793	69286	14013	10571	56493	36313	15756	74626	20293
Clostridiales	899	11493	18373	5651	3861	17808	9636	3456	9256	6144
	Abundance									
Bacteroidales	0.3996	0.5049	0.5606	0.555	0.512	0.6528	0.5736	0.7	0.835	0.6762
Clostridiales	0.3171	0.2166	0.1486	0.2238	0.187	0.2058	0.1522	0.1535	0.1036	0.2047

FAMILY

	Absolute Counts									
	Mouse 01	Mouse 02	Mouse 03	Mouse 04	Mouse 05	Mouse 06	Mouse 07	Mouse 08	Mouse 09	Mouse 10
Bacteroidaceae	58	3945	5185	1008	1120	4670	3851	732	1960	1275
Lachnospiraceae	133	1177	991	558	149	662	525	324	466	403
Lactobacillaceae	3	430	801	310	72	66	100	102	407	32
Porphyromonadaceae	8	938	556	155	167	487	448	512	859	863
Prevotellaceae	71	1824	3333	431	349	5951	4687	1193	1618	1218
Rikenellaceae	75	2375	3210	491	679	3217	2122	513	2179	758
Ruminococcaceae	280	3189	9208	2204	1735	7893	4868	1490	2793	2952

S24-7	775	14195	49632	10626	7085	32573	20513	12128	66679	15815
	Abundance									
Bacteroidaceae	0.0205	0.0743	0.0419	0.0399	0.0542	0.054	0.0608	0.0325	0.0219	0.0425
Lachnospiraceae	0.0469	0.0222	0.008	0.0221	0.0072	0.0077	0.0083	0.0144	0.0052	0.0134
Lactobacillaceae	0.0011	0.0081	0.0065	0.0123	0.0035	0.0008	0.0016	0.0045	0.0046	0.0011
Porphyromonadaceae	0.0028	0.0177	0.0045	0.0061	0.0081	0.0056	0.0071	0.0227	0.0096	0.0288
Prevotellaceae	0.025	0.0344	0.027	0.0171	0.0169	0.0688	0.074	0.053	0.0181	0.0406
Rikenellaceae	0.0265	0.0448	0.026	0.0194	0.0329	0.0372	0.0335	0.0228	0.0244	0.0253
Ruminococcaceae	0.0988	0.0601	0.0745	0.0873	0.084	0.0912	0.0769	0.0662	0.0313	0.0984
S24-7	0.2734	0.2675	0.4016	0.4209	0.3431	0.3764	0.324	0.5388	0.7461	0.527

Naïve Controls

Gender	Male	Male	Female
Original Mouse Designation	A	J	L
Round	3	3	3
Mouse Designation	Mouse A	Mouse J	Mouse L

**TOTAL NUMBER of
16s rRNA READS**

Day 0
67493 52704

24h
81365 55723 108921

7d
26640 83016 13417

PHYLUM

Phylum (L2)	Absolute Counts					
	Mouse J	Mouse L	Mouse A	Mouse J	Mouse L	Mouse A
Actinobacteria	24	12	36	10	22	35
Bacteroidetes	34487	27535	40234	27772	40047	14582
Cyanobacteria	420	493	2002	457	900	511
Deferribacteres	433	738	203	1224	10659	71
Firmicutes	29179	21219	31832	23914	50121	9583
Proteobacteria	1264	946	1692	1160	2465	545
TM7	1578	1622	5130	1032	4539	1291
Tenericutes	108	139	236	154	168	22

Abundance

Actinobacteria	0.0004	0.0002	0.0004	0.0002	0.0002	0.0013
Bacteroidetes	0.511	0.5224	0.4945	0.4984	0.3677	0.5474
Cyanobacteria	0.0062	0.0094	0.0246	0.0082	0.0083	0.0192
Deferribacteres	0.0064	0.014	0.0025	0.022	0.0979	0.0027
Firmicutes	0.4323	0.4026	0.3912	0.4292	0.4602	0.3597
Proteobacteria	0.0187	0.0179	0.0208	0.0208	0.0226	0.0205
TM7	0.0234	0.063	0.0185	0.0417	0.0402	0.0153
Tenericutes	0.0016	0.0029	0.0028	0.0015	0.0016	0.0022

ORDER

	Absolute Counts					
	Mouse J	Mouse L	Mouse A	Mouse J	Mouse L	Mouse A
Bacteroidales	34487	22535	40234	27772	40047	14582
Clostridiales	28393	25810	31224	23612	49349	9279

Abundance

Bacteroidales	0.510972	0.427577	0.494488	0.498394	0.3676701	0.547372
Clostridiales	0.420681	0.489716	0.383752	0.423739	0.4530715	0.348311

FAMILY	Absolute Counts									
	Mouse J	Mouse L		Mouse A	Mouse J	Mouse L		Mouse A	Mouse J	Mouse L
Bacteroidaceae	7012	2672		7488	3804	3292		2824	5051	1513
Lachnospiraceae	2072	741		930	1730	2311		366	2496	553
Lactobacillaceae	467	310		314	110	293		184	3885	152
Porphyromonadaceae	1440	715		1187	1053	721		420	1236	241
Prevotellaceae	2018	2599		4086	3125	8614		1369	1796	1014
Rikenellaceae	10002	5380		3761	8258	4888		2245	12939	1758
Ruminococcaceae	9302	9875		13781	7738	22867		3785	9022	1107
S24-7	14010	11043		23707	11511	22515		7714	18148	2947
	Abundance									
Bacteroidaceae	0.103892	0.050698		0.09203	0.068266	0.0302237		0.106006	0.060844	0.112767
Lachnospiraceae	0.030699	0.01406		0.01143	0.031046	0.0212172		0.013739	0.030066	0.041216
Lactobacillaceae	0.006919	0.005882		0.003859	0.001974	0.00269		0.006907	0.046798	0.011329
Porphyromonadaceae	0.021336	0.013566		0.014589	0.018897	0.0066195		0.015766	0.014889	0.017962
Prevotellaceae	0.029899	0.049313		0.050218	0.056081	0.0790848		0.051389	0.021634	0.075576
Rikenellaceae	0.148193	0.10208		0.046224	0.148197	0.0448766		0.084272	0.155862	0.131028
Ruminococcaceae	0.137822	0.187367		0.169373	0.138865	0.2099412		0.14208	0.108678	0.082507
S24-7	0.207577	0.209529		0.291366	0.206575	0.2067094		0.289565	0.218608	0.219647