

Table S1. Sample characteristics and alpha-diversity measures for all samples subjected to 454 pyrosequencing and to Sanger sequencing of clone libraries.

#SampleID	Colony	Individual	Number of ants	Ant part	Method	Barcode	Preservation method
CSM1235 gut	CSM1235	1	1	gut	454	ACCGCACA	live material
CSM1235 head	CSM1235	1	1	head	454	ACCCCTTA	live material
CSM1235 leg	CSM1235	1	1	leg	454	N/A	live material
CSM1280 wk-1	CSM1280	1	1	entire worker	454	ACCTCTAA	Ethanol
CSM1280 crop-2	CSM1280	2	1	crop	454	ACGAATGA	Ethanol
CSM1280 head-2	CSM1280	2	1	head	454	ACCTTCCA	Ethanol
CSM1280 hindgut-2	CSM1280	2	1	hindgut	454	ACGCAAAA	Ethanol
CSM1280 midgut-2	CSM1280	2	1	midgut	454	ACGAGCTA	Ethanol
CSM1280 crop-3	CSM1280	3	1	crop	454	ACGCTAGA	Ethanol
CSM1280 head-3	CSM1280	3	1	head	454	ACGCCGCA	Ethanol
CSM1280 hindgut-3	CSM1280	3	1	hindgut	454	ACGGGCAA	Ethanol
CSM1280 midgut-3	CSM1280	3	1	midgut	454	ACGGAGTA	Ethanol
CSM1323 1-gut	CSM1323	1	1	gut	454	ACGAGCTA	live material
CSM1323 3-guts	CSM1323	2, 3, and 4	3	gut	454	ACCTCTAA	live material
CSM1323 1-head	CSM1323	1	1	head	454	ACCTTCCA	live material
CSM1323 3-heads	CSM1323	2, 3, and 4	3	head	454	ACCGGGGA	live material
CSM1323 1-leg	CSM1323	1	1	leg	454	ACGAATGA	live material
CSM1323 3-legs	CSM1323	2, 3, and 4	3	leg	454	ACCTAATA	live material
CSM1396 gut	CSM1396	1	1	gut	454	ACTAAGAA	live material
CSM1396 head	CSM1396	1	1	head	454	N/A	live material
CSM1396 leg	CSM1396	1	1	leg	454	ACGTGTTA	live material
CSM1235 gut	CSM1235	1	1	gut	cloning	N/A	live material
CSM1280 wk-1	CSM1280	1	1	entire worker	cloning	N/A	Ethanol
CSM1280 crop-2	CSM1280	2	1	crop	cloning	N/A	Ethanol
CSM1280 head-2	CSM1280	2	1	head	cloning	N/A	Ethanol
CSM1280 hindgut-2	CSM1280	2	1	hindgut	cloning	N/A	Ethanol
CSM1280 midgut-2	CSM1280	2	1	midgut	cloning	N/A	Ethanol
CSM1280 crop-3	CSM1280	3	1	crop	cloning	N/A	Ethanol
CSM1280 head-3	CSM1280	3	1	head	cloning	N/A	Ethanol
CSM1280 hindgut-3	CSM1280	3	1	hindgut	cloning	N/A	Ethanol
CSM1280 midgut-3	CSM1280	3	1	midgut	cloning	N/A	Ethanol
CSM1323 3-guts	CSM1323	2, 3, and 4	3	gut	cloning	N/A	live material
CSM1323 3-heads	CSM1323	2, 3, and 4	3	head	cloning	N/A	live material
CSM1323 3-legs	CSM1323	2, 3, and 4	3	leg	cloning	N/A	live material

Table S1. Continued.

#SampleID	Number of reads/clones (before quality control)	Number of bases (before quality control)	Number of reads after quality control	Number bases after quality control	Number of reads/clones (after quality control and chimera and singleton filtering)	total % discarded
454 sequencing						
CSM1235 gut	8033	2549707	4911	2062610	4649	42.13
CSM1235 head	512	235,448	462	212,686	448	12.50
CSM1235 leg	none retrieved	NA	NA	NA	NA	NA
CSM1280 wk-1	6,854	2,406,334	5,234	2,049,722	4,196	38.78
CSM1280 crop-2	7,375	3,032,333	6,599	2,721,198	6,539	11.34
CSM1280 head-2	4,671	1,626,298	3,502	1,384,410	2,960	36.63
CSM1280 hindgut-2	6,512	1,924,803	4,064	1,501,950	3,181	51.15
CSM1280 midgut-2	4,370	1,699,565	3,474	1,376,408	3,299	24.51
CSM1280 crop-3	6,783	2,381,168	5,164	2,031,988	4,435	34.62
CSM1280 head-3	1773	613972	1358	533149	1199	32.37
CSM1280 hindgut-3	5457	1852846	4142	1560182	2851	47.76
CSM1280 midgut-3	7,387	2,423,953	5,263	2,003,500	4,148	43.85
CSM1323 1-gut	11,678	4,371,577	8,684	3,718,000	8,165	30.08
CSM1323 3-guts	19,871	6,741,581	13,014	5,532,639	11,536	41.95
CSM1323 1-head	10,776	4,213,055	8,437	3,628,262	8,132	24.54
CSM1323 3-heads	14,543	6,062,003	14,186	5,349,267	11,807	18.81
CSM1323 1-leg	4,184	1,667,002	3,333	1,440,565	3,229	22.83
CSM1323 3-legs	12354	4943579	9932	4296272	9473	23.32
CSM1396 gut	10,492	2,732,274	5,015	2,009,130	4,551	56.62
CSM1396 head	none retrieved	NA	NA	NA	NA	NA
CSM1396 leg	1,054	474,511	913	425,419	858	18.60
<b>Total 454</b>	144,679	51,952,009	107,687	43,837,357	95,656	
cloning and Sanger sequencing						
CSM1235 gut	49	36,716			46	6.12
CSM1280 wk-1	105	84,162			103	1.90
CSM1280 crop-2	27	19,725			27	0.00
CSM1280 head-2	20	13,210			17	15.00
CSM1280 hindgut-2	31	23,450			25	19.35
CSM1280 midgut-2	64	50,699			64	0.00
CSM1280 crop-3	23	14,666			21	8.70
CSM1280 head-3	33	24,019			30	9.09
CSM1280 hindgut-3	36	24,579			33	8.33
CSM1280 midgut-3	19	12,728			18	5.26
CSM1323 3-guts	23	17,657			23	0.00
CSM1323 3-heads	36	29,256			36	0.00
CSM1323 3-legs	17	13,662			17	0.00
<b>Total cloning</b>	483	364,529			460	

Table S1. Continued.

#SampleID	Rarefied to	Number of OTUs	Chao1	Chao1 upper bound	Chao1 lower bound	Shannon Index	Simpson's Index
454 sequencing							
CSM1235 gut	not rarefied	56.00	84.50	65.18	144.45	2.55	0.73
CSM1235 head	not rarefied	7	8.00	7.07	20.79	1.16	0.40
CSM1235 leg	not rarefied	NA	NA	NA	NA	NA	NA
CSM1280 wk-1	not rarefied	111	158.83	132.96	215.20	3.83	0.86
CSM1280 crop-2	not rarefied	20	25.25	21.00	47.61	0.24	0.05
CSM1280 head-2	not rarefied	95	110.95	101.22	135.93	3.17	0.70
CSM1280 hindgut-2	not rarefied	111	156.56	131.76	210.97	4.23	0.90
CSM1280 midgut-2	not rarefied	33	38.00	34.16	54.57	1.59	0.50
CSM1280 crop-3	not rarefied	111	180.00	143.03	259.62	3.08	0.71
CSM1280 head-3	not rarefied	46	77.667	56.40	142.45	2.27	0.62
CSM1280 hindgut-3	not rarefied	92	114.24	100.83	147.99	3.81	0.84
CSM1280 midgut-3	not rarefied	100	146.75	119.54	211.84	3.70	0.82
CSM1323 1-gut	not rarefied	96	107.50	100.21	127.42	1.73	0.43
CSM1323 3-guts	not rarefied	132	148.11	138.54	171.69	1.84	0.46
CSM1323 1-head	not rarefied	40	47.50	41.77	71.71	0.54	0.11
CSM1323 3-heads	not rarefied	46	53.50	47.77	77.71	0.50	0.10
CSM1323 1-leg	not rarefied	34	51.50	39.12	93.84	0.71	0.15
CSM1323 3-legs	not rarefied	43	44.875	43.29	54.99	0.58	0.12
CSM1396 gut	not rarefied	69	94.09	78.24	137.12	1.61	0.36
CSM1396 head	not rarefied	NA	NA	NA	NA	NA	NA
CSM1396 leg	not rarefied	8	8.00	8.00	8.00	0.33	0.08
cloning and Sanger sequencing							
CSM1235 gut	not rarefied	9	10.50	9.15	24.08	2.46	0.75
CSM1280 wk-1	not rarefied	17	17.33	17.02	22.96	3.64	0.90
CSM1280 crop-2	not rarefied	2	2.00	2.00	2.00	0.23	0.07
CSM1280 head-2	not rarefied	9	19.00	10.92	61.04	2.97	0.86
CSM1280 hindgut-2	not rarefied	13	16.00	13.50	30.95	3.48	0.90
CSM1280 midgut-2	not rarefied	4	5.00	4.08	17.27	0.77	0.27
CSM1280 crop-3	not rarefied	11	12.20	11.14	21.37	3.30	0.89
CSM1280 head-3	not rarefied	8	11.00	8.36	32.93	2.67	0.82
CSM1280 hindgut-3	not rarefied	16	38.50	21.23	112.77	3.63	0.90
CSM1280 midgut-3	not rarefied	9	9.50	9.04	15.21	2.97	0.85
CSM1323 3-guts	not rarefied	4	5.00	4.08	17.27	1.05	0.37
CSM1323 3-heads	not rarefied	2	2.00	2.00	2.00	0.18	0.05
CSM1323 3-legs	not rarefied	1	1.00	1.00	1.00	0.00	0.00

Table S1. Continued.

#SampleID	Rarefied to	Number of OTUs	Chao1	Chao1 upper bound	Chao1 lower bound	Shannon Index	Simpson's Index
<b>Read number randomly rarefied to lowest read number in respective data set</b>							
Analysis 1: Within-colony analyzes - clony CSM1280							
CSM1280 wk-1	1000	63	125	87.38	220.68	3.42	3.84
CSM1280 crop-2	1000	7	7.5	7.03	15.26	0.82	0.21
CSM1280 head-2	1000	65	153	98.48	296.33	3.76	3.16
CSM1280 hindgut-2	1000	68	134	94.17	234.46	3.16	4.13
CSM1280 midgut-2	1000	19	26	20.34	55.54	1.45	1.64
CSM1280 crop-3	1000	58	90.5	70.26	144.17	3.23	3.03
CSM1280 head-3	1000	43	68.5	51.05	123.79	3.12	2.29
CSM1280 hindgut-3	1000	58	88	68.17	146.47	3.22	3.71
CSM1280 midgut-3	1000	56	81.67	65.03	128.93	2.96	3.60
Analysis 1: Within-colony analyzes - clony CSM1323							
CSM1323 1-gut	3000	89	120	101.94	163.28	2.47	2.03
CSM1323 3-guts	3000	88	132	106.22	194.23	2.4	2.24
CSM1323 1-head	3000	39	52	42.55	86.57	0.84	0.79
CSM1323 3-heads	3000	41	46	42.22	61.57	0.68	0.71
CSM1323 1-leg	3000	40	57.5	45.12	99.84	0.8	0.95
CSM1323 3-legs	3000	39	45.88	40.71	66.65	0.29	0.86
Analysis 2: Between methods analyzes - 454 vs. cloning							
CSM1235 gut	17	7	17	8.93	58.75	2.25	0.73
CSM1235 gut-clone	17	7	17	8.93	58.75	2.13	0.67
CSM1280 wk-1	17	8	13	8.78	40.14	2.53	0.77
CSM1280 wk-1-clone	17	10	11	10.11	18.97	3.22	0.89
CSM1280 crop-2	17	1	1	1.00	1.00	0.00	0.00
CSM1280 crop-2-clone	17	2	2	2.00	2.00	0.32	0.11
CSM1280 head-2	17	8	29	13.15	93.56	2.13	0.63
CSM1280 head-2-clone	17	9	19	10.92	61.04	2.97	0.86
CSM1280 hindgut-2	17	11	25	13.92	78.11	3.22	0.87
CSM1280 hind-2-clone	17	11	14	11.50	28.95	3.34	0.89
CSM1280 midgut-2	17	4	5	4.08	17.27	1.38	0.52
CSM1280 mid-2-clone	17	2	2	2.00	2.04	0.52	0.21
CSM1280 crop-3	17	7	17	8.93	58.75	2.21	0.71
CSM1280 crop-3-clone	17	11	16.25	12.00	38.61	3.26	0.88
CSM1280 head-3	17	7	10	7.39	30.00	2.28	0.72
CSM1280 head-3-clone	17	5	5	5.00	5.00	2.21	0.78
CSM1280 hindgut-3	17	11	29	14.98	92.31	3.06	0.83
CSM1280 hind-3-clone	17	11	39	18.46	116.04	3.25	0.88

Table S1. Continued.

#SampleID	Rarefied to	Number of OTUs	Chao1	Chao1 upper bound	Chao1 lower bound	Shannon Index	Simpson's Index
<b>Read number randomly rarefied to lowest read number in respective data set</b>							
Analysis 2: Continued							
CSM1280 midgut-3	17	10	12.5	10.37	26.98	3.18	0.88
CSM1280 mid-3-clone	17	9	9.5	9.04	15.21	3.03	0.87
CSM1323 3-guts	17	4	5	4.08	17.27	1.28	0.46
CSM1323 3-guts-clone	17	4	4.5	4.03	12.26	1.14	0.39
CSM1323 3-heads	17	3	3	3.00	3.00	0.83	0.30
CSM1323 3-heads-clone	17	1	1	1.00	1.00	0.00	0.00
CSMs1323 3-legs	17	1	1	1.00	1.00	0.00	0.00
CSM1323 3-legs-clone	17	1	1	1.00	1.00	0.00	0.00
Analysis 3: Between tissue analyses							
CSM1235 gut	400	22	31.33	23.94	66.97	2.56	0.74
CSM1235 head	400	6	6.00	6.00	6.00	1.12	0.39
CSM1280 wk-1	400	43	85.00	56.74	171.37	3.66	0.85
CSM1280 crop-2	400	8	11.33	8.50	30.07	0.22	0.04
CSM1280 head-2	400	39	73.00	49.10	153.42	3.10	0.72
CSM1280 hindgut-2	400	47	59.36	50.90	86.18	4.12	0.90
CSM1280 midgut-2	400	15	33.00	18.98	96.31	1.56	0.53
CSM1280 crop-3	400	40	78	52.24	158.02	2.88	0.70
CSM1280 head-3	400	33	54.86	39.98	101.44	1.84	0.43
CSM1280 hindgut-3	400	52	69.50	58.11	102.09	3.74	0.82
CSM1280 midgut-3	400	36	45.75	38.67	71.54	3.32	0.78
CSM1396 gut	400	29	35.88	30.71	56.65	1.85	0.44
CSM1396 leg	400	6	6.00	6.00	6.00	0.30	0.07