

Community structure of gut bacteria of *Dendroctonus armandi* (Coleoptera: Curculionidae: Scolytinae) larvae
during overwintering stage

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Supplementary Table S1

The number of operational taxonomic units (OTUs) of Actinobacteria in each month from October 2015 to January 2016 of *Dendroctonus armandi* larvae.

Phylum	Class	Order	Family	Oct. 2015 (OTUs)	Nov. 2015 (OTUs)	Dec. 2015 (OTUs)	Jan. 2016 (OTUs)
Actinobacteria	Actinobacteria	Actinomycetales	Corynebacteriaceae	33	11,704	79	81
			Intrasporangiaceae	13	3,454	669	11
			Geodermatophilaceae	16	210	1,661	37
			Nocardiaceae	2	1,154	297	56
			Micromonosporaceae	622	479	119	2
			Microbacteriaceae	3	240	11	0
			Nocardioidaceae	0	310	43	1
			Gordoniaceae	4	87	118	2
			Mycobacteriaceae	7	96	14	1
			Micrococcaceae	0	95	62	4
			Streptomycetaceae	0	4	64	0
			Propionibacteriaceae	3	42	9	1
			Dietziaceae	0	18	28	4
			Nitriliruptoria	Euzebyales	Euzebyaceae	3	518
Thermoleophilia	Solirubrobacterales	Patulibacteraceae	0	39	68	0	
Total shared reads			706	18,450	3,368	203	

Supplementary Table S2

The number of operational taxonomic units (OTUs) of Proteobacteria in each month from October 2015 to January 2016 of *Dendroctonus armandi* larvae.

Phylum	Class	Order	Family	Oct. 2015 (OTUs)	Nov. 2015 (OTUs)	Dec. 2015 (OTUs)	Jan. 2016 (OTUs)
Proteobacteria	α - proteobacteria	Rhizobiales	Rhizobiaceae	276	4,294	1,290	86
			Methylobacteriaceae	5	1,089	846	20
			Bradyrhizobiaceae	1	44	0	0
		Rhodobacterales	Rhodobacteraceae	7	42	1,803	12
		Sphingomonadales	Sphingomonadaceae	77	98	1,430	9
		Rhodospirillales	Acetobacteraceae	337	567	182	1
		Caulobacterales	Caulobacteraceae	1	4	46	4
		Rickettsiales	Mitochondria	1	22	23	0
	β - proteobacteria	Neisseriales	Neisseriaceae	3	691	4	64
			Comamonadaceae	0	467	149	10
		Burkholderiales	Burkholderiaceae	0	40	75	5
			Oxalobacteraceae	0	42	1	1
			Alcaligenaceae	0	4	37	1
		Rhodocyclales	Rhodocyclaceae	1	101	96	1
	δ - proteobacteria	Desulfovibrionales	Desulfovibrionaceae	0	23	223	0
	γ - proteobacteria	Alteromonadales	Alteromonadaceae	6	450	386	75
			UNCLASSIFIED	23,470	134,696	129,727	234,741
		Pseudomonadales	Pseudomonadaceae	94	194	7,783	47
			Moraxellaceae	26	1,418	442	62
		Xanthomonadales	Xanthomonadaceae	32	1,008	8,316	110
Sinobacteraceae			1	13	27	1	
Enterobacteriales			Enterobacteriaceae	102	2,300	5,733	216
Legionellales		Coxiellaceae	3	45	377	28	
Vibrionales		Vibrionaceae	0	53	1	0	
Total shared reads				24,443	147,705	158,997	235,494

Supplementary Table S3

The number of operational taxonomic units (OTUs) of Bacteroidetes, Firmicutes, Acidobacteria, Tenericutes and Deinococcus-Thermus in each month from October 2015 to January 2016 of *Dendroctonus armandi* larvae.

Phylum	Class	Order	Family	Oct. 2015 (OTUs)	Nov. 2015 (OTUs)	Dec. 2015 (OTUs)	Jan. 2016 (OTUs)		
Bacteroidetes	Flavobacteriia	Flavobacteriales	Weeksellaceae	5	131	512	29		
			Flavobacteriaceae	21	48	92	5		
	Saprospirae	Saprospirales	Chitinophagaceae	52	214	290	8		
	Sphingobacteriia	Sphingobacteriales	Sphingobacteriaceae	0	182	24	0		
Firmicutes	Bacilli	Bacillales	UNCLASSIFIED	175,226	3,672	9,279	1,451		
			Bacillaceae	52	12,259	1,502	105		
			Paenibacillaceae	5	452	1,268	6		
			Planococcaceae	4	367	429	16		
			Staphylococcaceae	2	71	15	0		
			Aerococcaceae	106	15,577	1,411	101		
			Enterococcaceae	10	111	41	6		
			Carnobacteriaceae	0	26	49	0		
			Streptococcaceae	0	43	60	1		
			Clostridiaceae	72	340	7,631	89		
			Clostridia	Clostridiales	UNCLASSIFIED	0	60	268	1
					Mogibacteriaceae	0	45	27	0
Acidobacteria	Acidobacteriia	Acidobacteriales	Acidobacteriaceae	6	422	904	23		
Tenericutes	Mollicutes	Entomoplasmatales	UNCLASSIFIED	122	8,319	1,996	54		
Deinococcus-Thermus	Deinococci	Thermales	Thermaceae	1	2	144	0		
Total shared reads				175,684	42,341	25,942	1,895		

Supplementary Table S4

Genera with significantly different abundances in each month from October 2015 to January 2016 of *Dendroctonus armandi* larvae of Proteobacteria.

Phylum	Genus	mean abundance				p value
		Oct. 2015	Nov. 2015	Dec. 2015	Jan. 2016	
	<i>Pseudomonas</i>	0.000463069	0.000698862	0.040858536	0.00018518	0.0308
	<i>Pseudoxanthomonas</i>	0.000149377	0.004068718	0.043311947	0.000248309	0.0251
	<i>Agrobacterium</i>	0.00136929	0.020372312	0.006399975	0.000315647	0.0314
	<i>Aquamonas</i>	0.0000996	0.006572177	0.022682186	0.000366151	0.0158
	<i>Anaerospira</i>	0.0000349	0.000201043	0.009512905	0.0000505	0.0106
	<i>Sphingosinicella</i>	0.000373443	0.0000574	0.007286369	0.0000168	0.0082
	<i>Erwinia</i>	0.0000299	0.001282843	0.005666589	0.000210432	0.0241
	<i>Methylobacterium</i>	0.0000199	0.004949476	0.004400312	0.0000842	0.0311
	<i>Marinobacter</i>	0.0000299	0.00207744	0.001888863	0.000265144	0.0225
	<i>Neisseria</i>	0.0000149	0.003307629	0.0000211	0.000269352	0.0120
	<i>Comamonas</i>	0.00000498	0.001498246	0.0000106	0.00000842	0.0106
	<i>Methyloversatilis</i>	0.00000498	0.000483459	0.000506511	0.00000421	0.0073
	<i>Acinetobacter</i>	0.00000996	0.000722796	0.0000739	0.0000210	0.0052
	<i>Rhizobium</i>	0	0.000181896	0.000406264	0.0000463	0.0067
	<i>Burkholderia</i>	0	0.000191469	0.000395712	0.0000210	0.0092
Proteobacteria	<i>Schlegelella</i>	0	0.000157962	0.000263808	0.00000842	0.0045
	<i>Novosphingobium</i>	0.00000996	0.000268057	0.000116075	0.0000210	0.0134
	<i>Enhydrobacter</i>	0	0.000220189	0.0000844	0.0000253	0.0026
	<i>Acetobacter</i>	0	0.00029199	0.0000317	0	0.0011
	<i>Candidatus. Hamiltonella</i>	0.00000498	0	0.000337674	0	0.0086
	<i>Sphingomonas</i>	0	0.000143602	0.000142456	0	0.0023
	<i>Cellvibrio</i>	0	0.0000766	0.000147732	0.0000505	0.0014
	<i>Stenotrophomonas</i>	0	0.000114881	0.000168837	0	0.0012
	<i>Brevundimonas</i>	0.00000498	0.0000191	0.000242703	0.0000168	0.0224
	<i>Photobacterium</i>	0	0.000253697	0.00000528	0	0.0168
	<i>Zea</i>	0.00000498	0.000105308	0.000121352	0	0.0264
	<i>Janthinobacterium</i>	0	0.000201043	0.00000528	0.00000421	0.0157
	<i>Tepidimonas</i>	0	0.000201043	0	0.00000421	0.0294
	<i>Steroidobacter</i>	0.00000498	0.0000622	0.000142456	0.00000421	0.0304
	<i>Achromobacter</i>	0	0.0000191	0.000195218	0.00000421	0.0185

Supplementary Table S5

Genera with significantly different abundances in each month from October 2015 to January 2016 of *Dendroctonus armandi* larvae of Actinobacteria, Firmicutes, Bacteroidetes, Acidobacteria, Tenericutes and Deinococcus-Thermus.

Phylum	Genus	mean abundance				p value
		Oct. 2015	Nov. 2015	Dec. 2015	Jan. 2016	
Actinobacteria	<i>Corynebacterium</i>	0.000164315	0.056023857	0.000416816	0.000340899	0.0251
	<i>Knoellia</i>	0.0000647	0.016533356	0.003529747	0.0000463	0.0162
	<i>Blastococcus</i>	0.0000797	0.001005213	0.008763692	0.000155719	0.0145
	<i>Rhodococcus</i>	0.00000996	0.005523883	0.001567018	0.000235683	0.0206
	<i>Euzebya</i>	0.0000149	0.002479525	0.000664795	0.0000126	0.0113
	<i>Salinibacterium</i>	0.0000149	0.001148815	0.0000580	0	0.0195
	<i>Actinopolymorpha</i>	0	0.001120094	0	0	0.0023
	<i>Gordonia</i>	0.0000199	0.000416445	0.000622586	0.00000842	0.0244
	<i>Mycobacterium</i>	0.0000349	0.000459526	0.0000739	0.00000421	0.0178
	<i>Patulibacter</i>	0	0.000186682	0.000358778	0	0.0069
	<i>Micrococcus</i>	0	0.000296777	0.000200494	0.00000421	0.0112
	<i>Streptomyces</i>	0	0.0000191	0.000337674	0	0.0074
	<i>Propionibacterium</i>	0.0000149	0.000201043	0.0000475	0.00000421	0.0123
	<i>Pimelobacter</i>	0	0.000205829	0.0000580	0	0.0046
<i>Dietzia</i>	0	0.0000862	0.000147732	0.0000168	0.0227	
Firmicutes	<i>Alloiococcus</i>	0.000527799	0.074251715	0.007365511	0.000425072	0.0240
	<i>Anoxybacillus</i>	0.00025892	0.058565609	0.007787603	0.000441906	0.0155
	<i>Clostridium</i>	0.000358505	0.001627487	0.04026233	0.000374568	0.0197
	<i>Ammoniphilus</i>	0.0000249	0.002154027	0.004669396	0.0000253	0.0146
	<i>Solibacillus</i>	0.0000199	0.001756729	0.00226347	0.0000673	0.0246
	<i>Paenibacillus</i>	0	0.00000957	0.002020767	0	0.0153
	<i>Enterococcus</i>	0.0000498	0.000531327	0.000216322	0.0000253	0.0211
	<i>Staphylococcus</i>	0.00000996	0.000339858	0.0000791	0	0.0056
	<i>Aerococcus</i>	0	0.000311137	0.0000791	0	0.0161
	<i>Desemzia</i>	0	0.000124455	0.000258532	0	0.0043
	<i>Streptococcus</i>	0	0.0000814	0.000221598	0	0.0165
	<i>Bacillus</i>	0	0.000114881	0.00013718	0	0.0034
	<i>Lactococcus</i>	0	0.000124455	0.0000950	0.00000421	0.0374
Bacteroidetes	<i>Chryseobacterium</i>	0.0000249	0.000627061	0.002701391	0.00012205	0.0182
	<i>Sphingobacterium</i>	0	0.000871184	0.000126628	0	0.0079
	<i>Chitinophaga</i>	0.00000498	0.0000574	0.000949708	0.00000842	0.0162
	<i>Flavobacterium</i>	0.000104564	0.000229763	0.000485406	0.0000210	0.0214
Acidobacteria	<i>Edaphobacter</i>	0.0000249	0.001900331	0.004674672	0.0000800	0.0182
Tenericutes	UNCLASSIFIED	0.000607467	0.039820785	0.010531203	0.000227266	0.0157
Deinococcus-Thermus	<i>Meiothermus</i>	0.00000498	0.00000957	0.000759766	0	0.0072

