Supporting Information

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Table S1. Identification of bacterial species isolated from bamboo and white-oak leaf infusions

Isolate*	No. of bases used to establish identity	Accession number in GenBank	Species corresponding to closest relative (% sequence identity)	Phylogenetic affiliation
B1	714	EU341308	*Bacillus thuringiensis* (99)	Firmicutes
B2	617	EU341309	*Enterobacter asburiae* (98)	Gammaproteobacteria
B3	760	EU341310	*Enterobacter cancerogenus* (98)	Gammaproteobacteria
B4	758	EU341311	*Pseudomonas fulva* (99)	Gammaproteobacteria
B5	763	EU341312	*Lactococcus lactis* (99)	Firmicutes
B6	743	EU341313	*Enterobacter gergoviae* (97)	Gammaproteobacteria
B7	770	EU341314	*Enterobacter ludwigii* (97)	Gammaproteobacteria
B8	783	EU341315	*Klebsiella oxytoca* (98)	Gammaproteobacteria
B9	770	EU341316	*Klebsiella granulomatis* (98)	Gammaproteobacteria
B10	716	EU341319	*Pseudomonas plecoglossicida* (99)	Gammaproteobacteria
B11	770	EU341318	*Rhizobium huautlense* (97)	Alphaproteobacteria
B12	604	EU341319	*Shigella dysenteriae* (76)	Gammaproteobacteria
B13	764	EU341320	*Citrobacter freundii* (97)	Gammaproteobacteria
B14	511	EU341321	*Brevundimonas vesicularis* (98)	Alphaproteobacteria
WO1	483	EF685171	*Porphyrobacter* sp. (97)	Alphaproteobacteria
WO2	400	EF685175	*Pseudomonas lanceolata* (98)	Betaproteobacteria
WO3	464	EU489484	*Variovorax koreensis* (97)	Betaproteobacteria
WO4	490	EF685166	*Agrobacterium tumefaciens* (99)	Alphaproteobacteria
WO5	328	EF685177	*Rhizobium huautlense* (96)	Alphaproteobacteria
WO6	480	EU489485	*Enterobacter asburiae* (98)	Gammaproteobacteria
WO7	525	EF685176	*Acidiphilium rubrum* (89)	Alphaproteobacteria
WO8	356	EF685167	*Acidovorax avenae* (90)	Betaproteobacteria
WO9	480	EF685170	*Pseudomonas lanceolata* (97)	Betaproteobacteria
WO10	585	EF685164	*Variovorax koreensis* (90)	Betaproteobacteria
WO11	360	EU489486	*Klebsiella granulomatis* (99)	Gammaproteobacteria
WO12	529	EF685178	*Pseudomonas syringae* (98)	Gammaproteobacteria
WO13	400	EF685175	*Curvibacter gracilis* (97)	Betaproteobacteria
WO14	521	EF685173	*Caulobacter fusiformis* (97)	Alphaproteobacteria
WO15	391	EF685174	*Sphingomonas aromaticivorans* (97)	Alphaproteobacteria
WO16	511	EF685172	*Brevundimonas vesicularis* (98)	Alphaproteobacteria
WO17	490	EF685179	*Azorhizobium caulinodans* (98)	Alphaproteobacteria
WO18	434	EF685168	*Bacillus thuringiensis* (99)	Firmicutes

*Isolates coded B are from bamboo leaf infusions, and isolates coded WO are from white oak leaf infusions.

Table S2. Carboxylic acids and methyl esters identified from a bioactive 1-min (1 ml) HPLC fraction of a methanol extract of lyophilized bacterial cells and quantified from the crude methanol extract

Compound	Amount (±SEM) extrapolated to 0.05-ml equivalents of the culture medium (10^6 cells per ml), ng*	Ratio (% of total) of eight compounds	Ratio (% of total) of three bioactive compounds
Nonanoic acid	0.027 (0.013)	0.78	15.94
Decanoic acid	0.013 (0.006)	0.38	
Dodecanoic acid	0.111 (0.076)	3.20	
Tetradecanoic acid	0.142 (0.021)	4.08	83.01
Tetradecanoic acid, methyl ester	0.002 (0.001)	0.05	1.05
Hexadecanoic acid	2.640 (0.756)	75.77	
Hexadecanoic acid, methyl ester	0.024 (0.010)	0.68	
Octadecanoic acid	0.524 (0.412)	15.05	

Amount (in nanograms) corrected per 0.05-ml equivalents of the bacterial culture (10^6 cells per ml), which were highly stimulatory in binary choice oviposition assays (81.6 ± 6.7% of the eggs placed in the extract-treated cup; $n = 17$ assays with single gravid females, $P < 0.0001$).

*For chemical analysis, 0.6 ml of lyophilized bacterial cells (equivalent to 60 ml of 10^9 cells per ml) was extracted in 30 ml of methanol and processed for GC-MS analysis. $n = 4$.

Table S3. Oviposition-stimulatory activity of a RP-HPLC fraction and its acidic and basic constituents

Fraction*	No. of assays†	Treatment, %	Control, %	SEM, %	Eggs per assay ± SEM	*t*	*P*‡
1-min HPLC fraction	21	66.8	33.2	8.0	75.9 ± 4.8	2.357	**0.0143**
Basified fraction	22	38.2	61.8	7.3	84.0 ± 4.7	−1.448	0.0811
Acidified fraction	23	74.3	25.7	7.7	78.4 ± 6.3	2.970	**0.0035**

*A 0.05-ml equivalent of culture was used in each bioassay.
†Twenty-four single female assays were conducted for each treatment. Assays in which a female oviposited <20 eggs in total in 72 h were discarded.
‡Based on paired *t* test of arcsin$\sqrt{x}$ transformed data, using a one-tailed test. Bold numbers indicate significant stimulation of oviposition.

Table S4. Egg-laying bioassays of *Ae. aegypti*, showing dose–response patterns to synthetic carboxylic acids and methyl esters identified from a 1-min (1 ml) HPLC fraction of a methanol extract of lyophilized bacterial cells

Tested compound	Dose, ng	*n* assays*	Treatment, %	Control, %	SEM, %	Eggs per assay	*t*	*P*†
Nonanoic acid	1	22	38.6	61.4	8.4	70.9 ± 4.0	−1.3612	0.0939
	10	22	58.3	41.7	7.7	74.3 ± 6.1	0.9928	0.1661
	100	20	69.1	30.9	7.3	80.0 ± 3.3	2.3936	**0.0136**
Decanoic acid	1	18	43.7	56.3	8.6	60.0 ± 5.6	−0.9281	0.1832
	10	19	52.2	47.9	9.5	61.3 ± 5.0	0.2907	0.3873
	100	13	45.8	54.2	11.3	67.0 ± 7.0	−0.6707	0.2576
Dodecanoic acid	1	22	47.0	53.1	8.8	67.3 ± 4.0	−0.1725	0.4324
	10	20	43.4	56.6	9.9	66.3 ± 3.1	−0.6563	0.2598
	100	20	47.6	52.4	8.8	63.8 ± 3.4	−0.4214	0.3389
	0.01 mg	26	52.2	47.8	7.9	66.5 ± 4.2	0.4157	0.3406
	0.1 mg	28	45.8	54.3	7.7	64.4 ± 2.9	−0.6835	0.2501
	1.0 mg	28	42.2	58.8	8.6	60.2 ± 2.8	−1.0455	0.1525
Tetradecanoic acid	1	24	45.4	54.6	8.2	79.6 ± 2.7	−0.5287	0.3010
	10	23	81.0	19.0	6.9	87.7 ± 5.1	4.6939	**0.0001**
	100	23	62.1	37.9	8.3	80.2 ± 5.2	1.3952	0.0884
Tetradecanoic acid, methyl ester	1	21	55.0	45.0	9.5	68.3 ± 5.4	0.5160	0.3058
	10	19	70.2	29.8	8.4	64.0 ± 7.1	2.1661	**0.0220**
	100	19	51.0	49.0	8.9	70.6 ± 6.0	−0.0185	0.4927
Hexadecanoic acid	1	21	53.4	46.6	8.9	63.7 ± 4.2	0.1818	0.4288
	10	17	43.2	56.8	8.0	63.5 ± 4.9	−0.9320	0.1826
	100	19	38.2	61.8	9.4	71.8 ± 4.8	−1.1175	0.1392
Hexadecanoic acid, methyl ester	1	19	34.7	65.4	8.3	51.0 ± 3.5	−1.8761	0.0385
	10	18	59.1	40.9	9.0	51.3 ± 3.0	0.7242	0.2394
	100	17	60.4	39.6	10.1	58.6 ± 3.8	0.9887	0.1688
Octadecanoic acid	1	19	55.1	44.9	9.0	71.3 ± 3.3	0.5397	0.2980
	10	20	46.4	53.7	9.7	69.0 ± 3.6	−0.4201	0.3395
	100	19	58.4	41.6	8.4	64.8 ± 4.8	0.9383	0.1802

*Twenty-four assays were conducted for each compound–dose combination with individual gravid females. Assays in which a female oviposited <20 eggs in total in 72 h were discarded; on average, 19.75 ± 0.48 of the 24 assays were included.

†Based on paired *t* test of arcsin$\sqrt{x}$ transformed data, using a one-tailed test. Bold numbers indicate significant stimulation of oviposition.

Table S5. Egg-laying bioassays of *Ae. aegypti*, showing dose–response patterns to tetradecanoic acid, using five females per assay in 24-h assays

Dose, ng	No. of assays	Treatment, %	Control, %	SEM, %	Eggs per assay	*t*	*P**
0.01	12	52.3	47.7	4.7	318.5 ± 14.4	0.469	0.3240
0.1	12	57.8	42.2	6.4	232.1 ± 22.3	1.239	0.1206
1.0	12	76.9	23.1	8.6	216.8 ± 19.4	5.935	**<0.0001**
10	12	57.9	42.1	6.8	196.4 ± 23.2	1.202	0.1274
100	12	38.7	61.3	8.4	260.4 ± 30.9	−1.254	0.1179

*Based on paired *t* test of arcsin$\sqrt{x}$ transformed data, using a one-tailed test. Bold numbers indicate significant stimulation of oviposition.