

**Table S16.** Phenotypes of strains in the *Pseudomonas fluorescens* group and putative genes conferring these phenotypes<sup>a</sup>

Phenotype tested <sup>b</sup>	Sub-clade 1						Sub-clade 2						Sub-clade 3						Controls <sup>k</sup>			
	Pf-5		30-84		O6		Pf0-1		Q8r1-96		Q2-87		SBW25		A506		SS101		BG33R		Positive	Negative
	Locus tag <sup>c</sup>	pheno-type	Locus tag	pheno-type	Locus tag	pheno-type	Locus tag	pheno-type	Locus tag	pheno-type	Locus tag	pheno-type	Locus tag	pheno-type	Locus tag	pheno-type	Locus tag	pheno-type	Locus tag	pheno-type		
Fluorescence <sup>d</sup>	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+		
Arginine	(****)	+	(****)	+	(****)	+	(****)	+	(****)	+	(****)	+	(****)	+	(****)	+	(****)	+	(****)	+	<i>P. aeruginosa</i> PAO1	<i>P. syringae</i> B728a
Growth at 41°C	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	<i>P. aeruginosa</i> PAO1	<i>P. syringae</i> B728a
Oxidase	(****)	+	(****)	+	(****)	+	(****)	+	(****)	+	(****)	+	(****)	+	(****)	+	(****)	+	(****)	+	<i>P. aeruginosa</i> PAO1	<i>P. syringae</i> B728a
Tobacco HR	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	<i>P. syringae</i> B728a	water
Gelatinase	3210	+	3127	+	3385	+	2678	+ <sup>e</sup>	2858	+	2793	+	3146	+	2617	+	2560	+	2907	+	9446 (chloro)	12633 (Pp Bv A)
Lipase	3202, 3205	+	3119, 3120	+	3377, 3378	+	2686, 2685	+	2864	+	2787	+	3141	-	2625, 2165	+	2567, 2054	+	2900, 2964	+	9446 (chloro), 13985 (aureo)	17467 (bv II)
Phenylacetic acid	3128-3140	+	2806-2790	+	3038-3022	+	-----	-	-----	-	-----	-	-----	-	-----	-	-----	-	-----	-	<i>P. putida</i> KT2440	<i>P. aeruginosa</i> PAO1
Sodium Benzoate	3855	+	3864	+	4156	+	2965	+	2191	+	-----	-	-----	-	-----	-	2539	+	-----	-	<i>P. aeruginosa</i> PAO1	<i>P. syringae</i> B728a
Trehalose	4933-4934	+	4726-4727	+	4974-4975	+	-----	-	0992-0991	+	-----	-	5039-5040	+	4346-4347	+	4429-4430	+	4537-4538	v	9446 (chloro)	
Levan sucrose	-----	-	4797	+	5048	+	-----	-	Frame-shift <sup>f</sup>	-	4863	+	2294	+	2166	+	2055	+	-----	-	<i>P. syringae</i> B728a	<i>P. aeruginosa</i> PAO1
L-arabinose	-----	-	4536-4538	+	4778-4780	+	4139-4141	+	4099-4101	+	1542-1544	+	2372-2374	+	2250-2252	+	4066-4068	+	4169-4171	+	17467 (bv II)	9446 (chloro)

Nitrate reduction <sup>g</sup>	-----	-	-----	-	3625-3632	+	-----	-	3192-3199	+	3067-3074	+	-----	-	-----	-	-----	-	-----	-	17467 (bv II), 9446 (chloro), 13985 (aureo)	12633 (Pp Bv A)
D-serine <sup>h</sup>	-----	-	2230-2231	+	2461-2462	+	-----	-	-----	-	-----	-	-----	-	-----	-	-----	-	-----	-		
Denitrification <sup>g</sup>	-----	-	-----	-	-----	-	-----	-	2673-2678	+	2414-2419	+	-----	-	-----	-	-----	-	-----	-	17467 (bv II), 17513 (bv IV)	9446 (chloro), 13985 (aureo)
Ethanol <sup>i</sup>	2216	+	-----	-	-----	-	-----	-	2690	+	2431	+	-----	-	-----	-	-----	-	-----	-	17467 (bv II)	17513 (bv IV), 13525 (bv I)
Sorbitol	-----	-	-----	-	-----	-	-----	-	2706	+	2446	+	2474	+	3106	+	3114	+	2431	+	17513 (bv IV)	9446 (chloro)
Mannitol <sup>h</sup>	3074	+	2850	+	3103	+	2636	+	3133	+	2521	+	2741	+	2955	+	2412	+	3020	+		
<i>myo</i> -Inositol	2591	+	2391	+	2611	+	-----	-	3405	+	2121	+	2580	+	3030	+	2928	+	2500	+	<i>P. syringae</i> B728a	<i>P. aeruginosa</i> PAO1
D-xylose	-----	-	-----	-	-----	-	2303	v	2626	+	2544	+	2301	+	2232	+	2124	+	2336	+	13525 (bv I)	13985 (aureo)
L-tryptophan	0752-0753, 0762	+	0744-0745, 0752	+	0749-0750, 0757	+	-----	-	-----	-	-----	-	5198-5199, 5188	+	4491-4492, 4480	+	4556-4557, 4545	+	4661-4662, 4650	+	17470 (Pp Bv B)	12633 (Pp Bv A)
Adonitol	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	(****)	-	(****)	+	(****)	+	(****)	+	(****)	+	13525 (bv I), 17559 (bv III)	17467 (bv II)
Biovar or species assigned <sup>d</sup>	<i>P. protegens</i> or Biovar V-4		<i>P. chlororaphis</i> subsp. <i>aureofaciens</i>		<i>P. chlororaphis</i> subsp. <i>aureofaciens</i>		Biovar V-2		<i>P. brassicacearum</i> or Biovar II/IV		Biovar II/IV		Biovar I		Biovar I		Biovar I		Biovar V-6			

<sup>a</sup> +, positive phenotype observed or substrate utilized as sole carbon source; -, negative phenotype observed or no growth on medium with substrate as sole carbon source; v, variable phenotype; -----, gene not present in genome; (\*\*\*\*), characterized genes for this phenotype were not identified (may or may not be present). Putative genes that were correlated with phenotypes through comparative genomics are shown, but their roles in conferring these functions were demonstrated only for fluorescence and gelatinase activity.

<sup>b</sup> Genes associated with the phenotypes are based on the characterized proteins referenced below. Gelatinase – Confirmed in this study; Lipase[1,2]; Phenylacetic acid[3]; Sodium Benzoate[4]; Trehalose[5]; Levan Sucrase[6]; L-arabinose (transporter only)[7]; Nitrate reduction[8]; D-serine[9]; Denitrification[8]; Ethanol[10]; Sorbitol[11]; Mannitol[12]; *myo*-Inositol[13]; D-xylose[14]; L-tryptophan[15]; Adonitol – None, based on unique genes and Pfam relations, unconfirmed.

<sup>c</sup> Locus tag: Pf-5, PFL\_; 30-84, Pchl3084\_; O6, PchlO6\_; Pf0-1, PF01\_; Q8r1-96, PflQ8\_; Q2-87, PflQ2\_; SBW25, PFLU; A506, PflA506\_; SS101, PflSS101\_; BG33R, PseBG33\_.

<sup>d</sup> Pyoverdine biosynthesis gene clusters present.

<sup>e</sup> Pf0-1 harboring plasmid pJEL5965 (having *gacA*<sup>+</sup> from strain Pf-5 cloned in plasmid pME6000) was positive for gelatinase whereas strain Pf0-1 was negative for gelatinase.

<sup>f</sup> Q8r1-96 did not produce levan from sucrose, which we attribute to a frameshift mutation in the levan sucrose gene in strain Q8r1-96.

<sup>g</sup> Strains O6, Q8r1-96, and Q2-87 reduce nitrate, as indicated by a purple color immediately after adding the nitrite test reagent (24 hours after inoculation of the medium). Strains Q8r1-96 and Q2-87 further reduce the nitrite, as no color is observed after adding the nitrite test reagent 48 hours after inoculation of the medium.

<sup>h</sup> Results based on Biolog Phenotype Microarray data; no controls are used.

<sup>i</sup> 100% Ethanol was used at both 0.1% and 1.0% v/v final concentrations; results were the same for both.

<sup>j</sup> Biovar assignments are consistent with the scheme of Stanier *et al.*, [16] and Barrett *et al.*, [17]. Species are assigned according to Peix *et al.*, [18], Ramette *et al.*, [19] and Achouak *et al.*, [20], based upon phenotypic tests described therein and phylogenetic analysis (see Figure S2).

<sup>k</sup> Type strains used as controls are designated by American Type Culture Collection (ATCC) number, followed by the name of the type strain. bv I = *Pseudomonas fluorescens* biovar I, bv II = *Pseudomonas fluorescens* biovar II, bv IV = *Pseudomonas fluorescens* biovar IV, chloro = *Pseudomonas chlororaphis* subsp. *chlororaphis*, aureo = *Pseudomonas chlororaphis* subsp. *aureofaciens*, Pp bv A = *Pseudomonas putida* biovar A, Pp bv B = *Pseudomonas putida* biovar B. No negative control was found for trehalose utilization.

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