Supplemental Information

Table S1: Summary of Average Corrected Total Swarm Luminescence (CTSL) on Tested Media

		Average CTSL				Calculated p-value*			
Strain	**Medium****	**3h**	**9h**	**15h**	**24h**	**3h**	**9h**	**15h**	**24h**
PAO1C/pCdrA::lux	LB	9067	41862	135222	418917	0.16	0.13	0.008	0.82
	TYE	12490	28543	192869	507427				
	M8	6452	67212	552057	756805				
	FAB	12590	34033	63832	228369				
PAO1CΔ*dipA*/pCdrA::lux	LB	262871	500773	1178935	3011960	0.00	0.00	0.00	0.03
	TYE	366306	370918	601051	712256				
	M8	42649	233460	2055623	8187870				
	FAB	40379	113304	177000	460211				

*Calculated by ANOVA, alpha=0.01

** LB = Difco LB Lennox; TYE = Tryptone/Yeast Extract/NaCl; M8 = M8/0.2% Glucose/0.5% casamino acids; FAB = FAB/12mM Glutamate

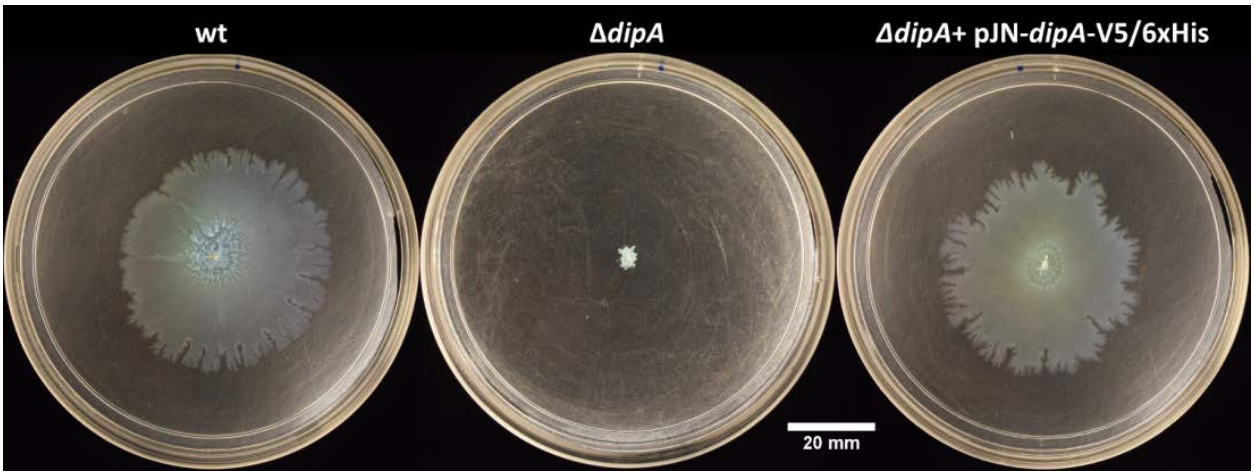

Figure S1: Restoration of swarm phenotype by complementation *in trans* of the Δ*dipA* mutant. Swarming for wt, *ΔdipA,* and *ΔdipA*+ pJN-*dipA*-V5/6xHis is shown when grown for 24 hours on FAB/Glutamate.

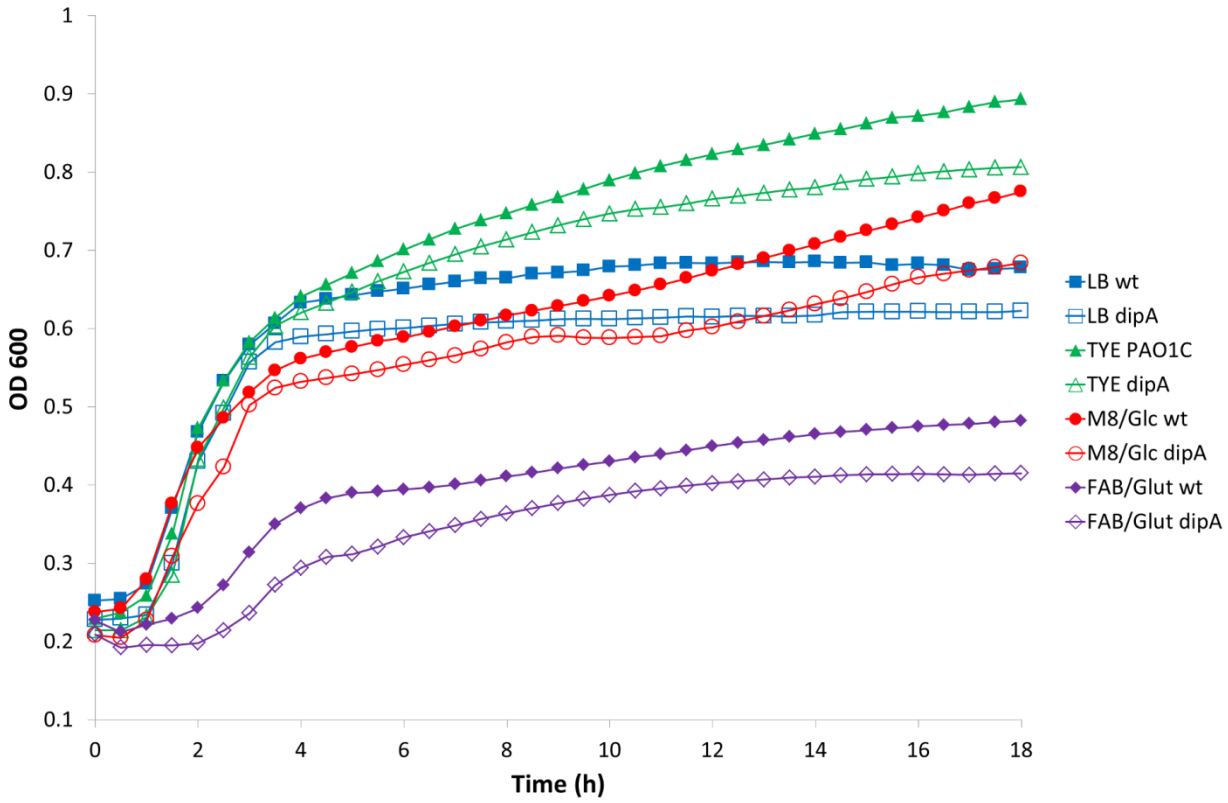

Figure S2: Planktonic growth curves of wt and *ΔdipA* on select nutrient conditions. Rich media and supplemented minimal media support approximately the same growth rates in each strain. Minimal media, as expected, supports much slower growth and less overall growth. OD 600 was measured with a BioTek Powerwave x340 microplate reader. All conditions were done in quadruplicate. LB = Difco LB Lennox; TYE = Tryptone/Yeast Extract/NaCl; M8/Glc = M8/0.2% Glucose/0.5% casamino acids; FAB = FAB/12mM Glutamate

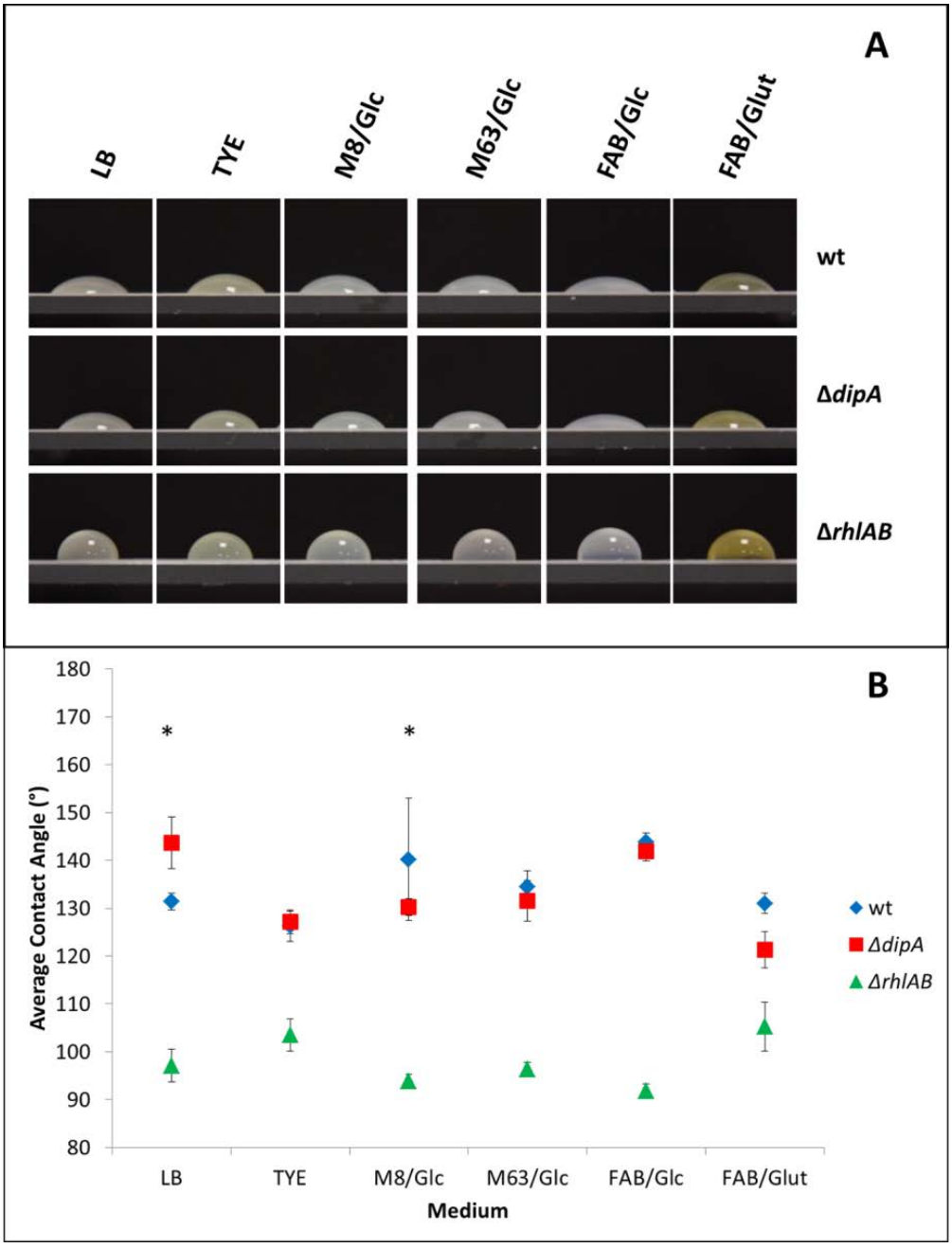

Figure S3: Drop collapse assays indicate no significant or consistent difference in surfactant production between the wt and the Δ*dipA* mutant. (A) Representative images of cell suspensions on various media. A Δ*rhlAB* deficient mutant is included for comparative purposes. Note that the Δ*rhlAB* mutant forms round droplets that do not collapse, while the wt and Δ*dipA* mutant droplets have flattened out. (B) Average contact angle, as measured with the Drop Collapse plug-in in ImageJ 1.47v, show that the Δ*rhlAB* mutant droplets contact the hydrophobic surface at nearly a right angle, while the wt and Δ*dipA* mutant have significantly higher contact angles. Conditions on which the Δ*dipA* mutant swarms (*) do not always correlate to a higher contact angle, indicating that swarming on these conditions is not simply due to difference in surfactant production. All drops were done in triplicate; error bars indicate standard deviation. 10µL of 48 hour broths were dropped on a glass slide covered in parafilm. LB = Difco LB Lennox; TYE = Tryptone/Yeast Extract/NaCl; M8/Glc = M8/0.2% Glucose/0.5% casamino acids; M63/Glc = M63/0.2% Glucose/0.5% casamino acids; FAB/Glc = FAB/12mM Glucose; FAB/Glut = FAB/12mM Glutamate

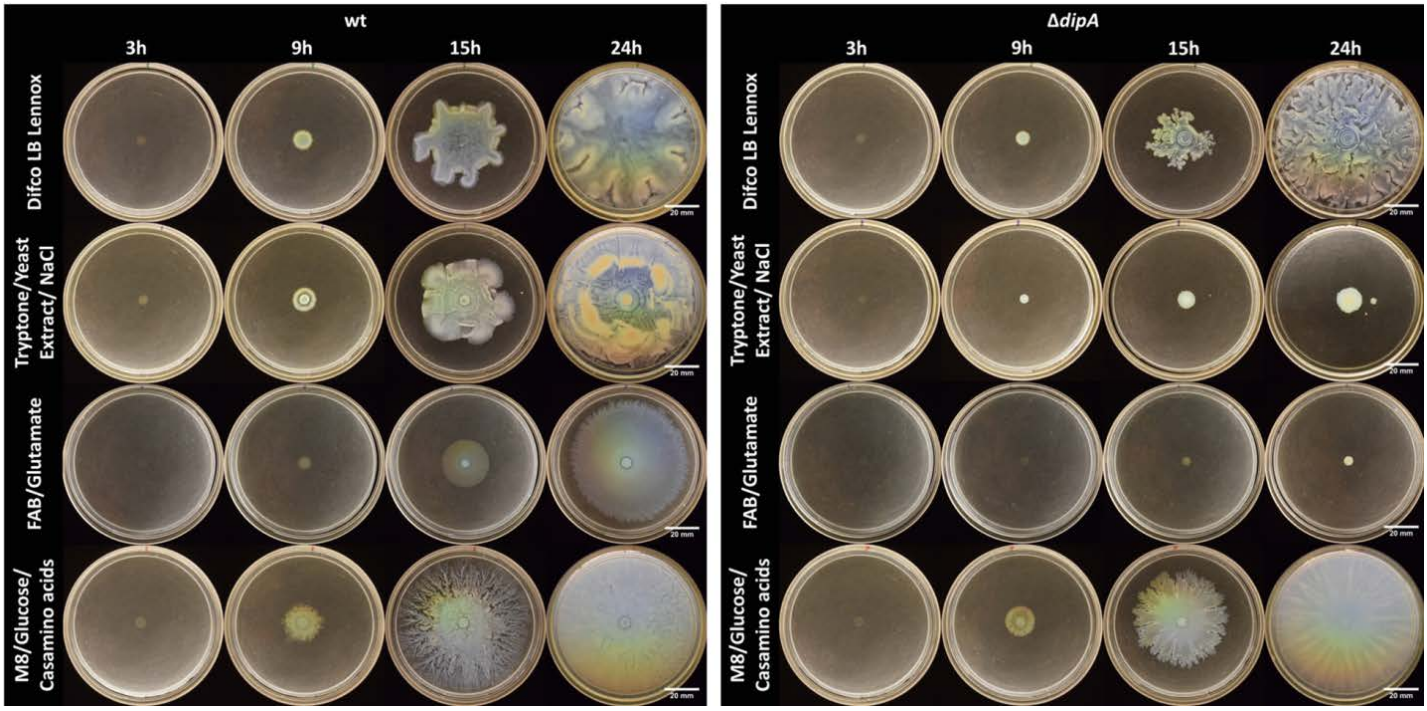

Figure S4: Representative DSLR images of swarm assays imaged for luminescence in Figure 10. Wt (left) was noticeably swarming by 9 hours for all media tested. Swarming was fastest on M8/Glucose/Casamino acids. Swarming was slowest on FAB/Glutmate. A Δ*dipA* mutant (right) swarmed on Difco LB Lennox and M8/Glucose/Casamino acids. This phenotype was clearly visible by 15 hours. The Δ*dipA* mutant consistently swarmed slower than its wt counterpart.