Supplemental Materials

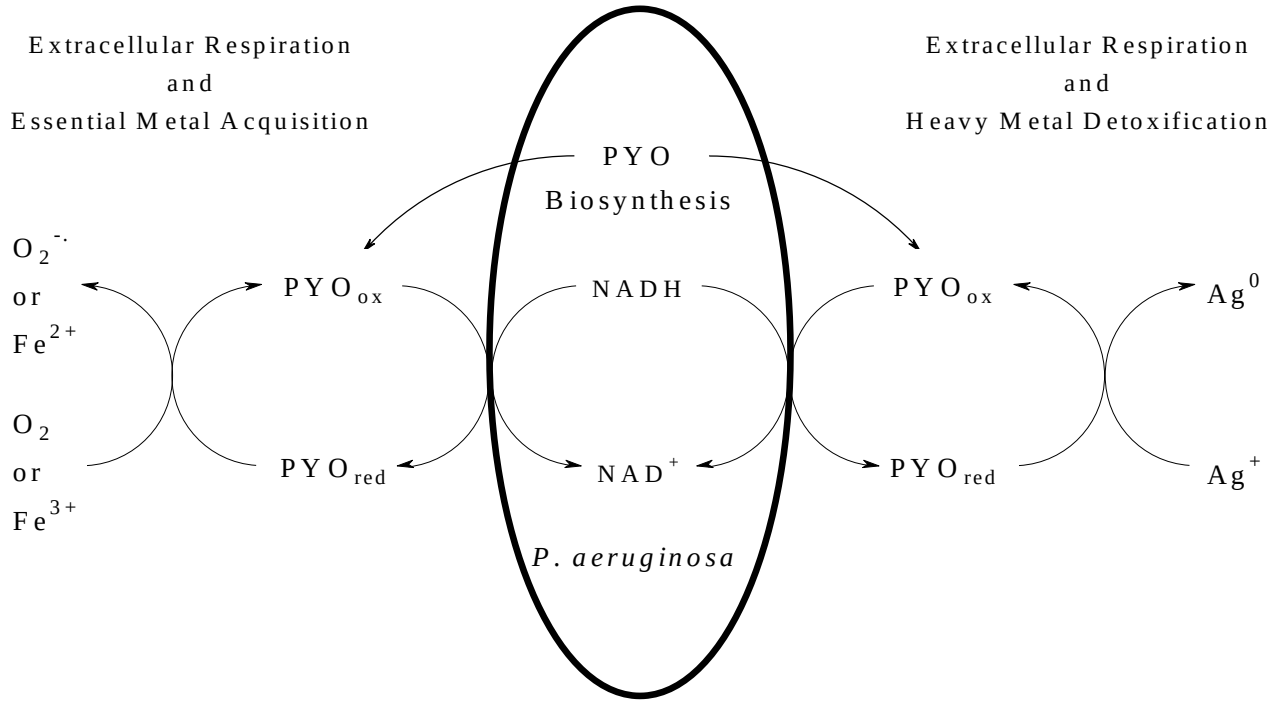

Figure S1. Schematic indicating redox cycles for pyocyanin. Pyocyanin serves several physiologic roles that provide *P. aeruginosa* with survival advantages. These include the maintenance of redox homeostasis via extracellular respiration and reduction of essential metal ions to ionic states that are bioavailable to the bacterium. Pyocyanin has antibiotic activity against other microorganisms due to the reduction of molecular oxygen to toxic reactive oxygen species. Pyocyanin allows survival in a high Ag^+ environment as it is able to reduce the cation to insoluble nontoxic Ag^0 before it can enter the bacterium. At present, it remains uncertain if pyocyanin is reduced directly by pseudomonal NADH or if the reduction is mediated by a membrane-bound accessory protein.

Isolate	Pyo	Am	AC	TC	PT	Cefaz	Cefox	Cefta	Ceftr	Cefep	Mer	Ami	Gen	Tob	Cip	Nor	Nit	Tri	TS
1	+	R	R	R	R	R	R	S	R	S	S	S	R	I	R	R	R	R	R
2	+	R	R	I	S	R	R	S	R	S	S	S	R	R	R	R	R	R	R
3	-	R	R	S	S	R	R	S	R	S	S	S	S	S	S	S	R	R	R
4	+	R	R	I	S	R	R	S	R	S	S	S	S	S	S	S	R	R	R
5	+	R	R	S	S	R	R	S	R	S	S	S	S	S	S	S	R	R	R
6	-	R	R	S	S	R	R	S	R	S	S	S	I	S	S	S	R	R	R
7	-	R	R	I	N	R	R	S	R	S	S	S	S	S	S	S	R	R	R
8	-	R	R	S	S	R	R	S	R	S	S	S	S	S	S	S	R	R	R
9	-	R	R	S	S	R	R	S	R	S	S	S	S	S	S	S	R	R	R
10	+	R	R	I	S	R	R	S	R	S	S	S	S	S	S	S	R	R	R
11	+	R	R	S	S	R	R	S	R	S	S	S	S	S	S	S	R	R	R
12	+	R	R	I	S	R	R	S	R	S	S	S	S	S	S	S	R	R	R

Table S1. Pyocyanin production and antibiotic sensitivity data for clinical isolates of *P. aeruginosa*. Sensitivity data were obtained using the Vitek 2™ system (BioMérieux). Key: Am = ampicillin, AC = amoxicillin/clavulanic acid, TC = ticarcillin/clavulanic acid, PT = piperacillin/tazobactam, Cefaz = cefazolin, cefox = cefoxitin, cefta = ceftazidime, Ceftr = ceftriaxone, Cefep = cefepime, Mer = meropenem, Am = amikacin, Gen = gentamicin, Tob = tobramycin, Cip = ciprofloxacin, Nor = norfloxacin, Nit = nitrofurantoin, Tri = trimethoprim, TS = trimethoprim/sulfamethoxazole.

Pyo = pyocyanin; + = pyocyanin positive; - = pyocyanin negative; R = resistant; S = sensitive; I = indeterminate; N = no data

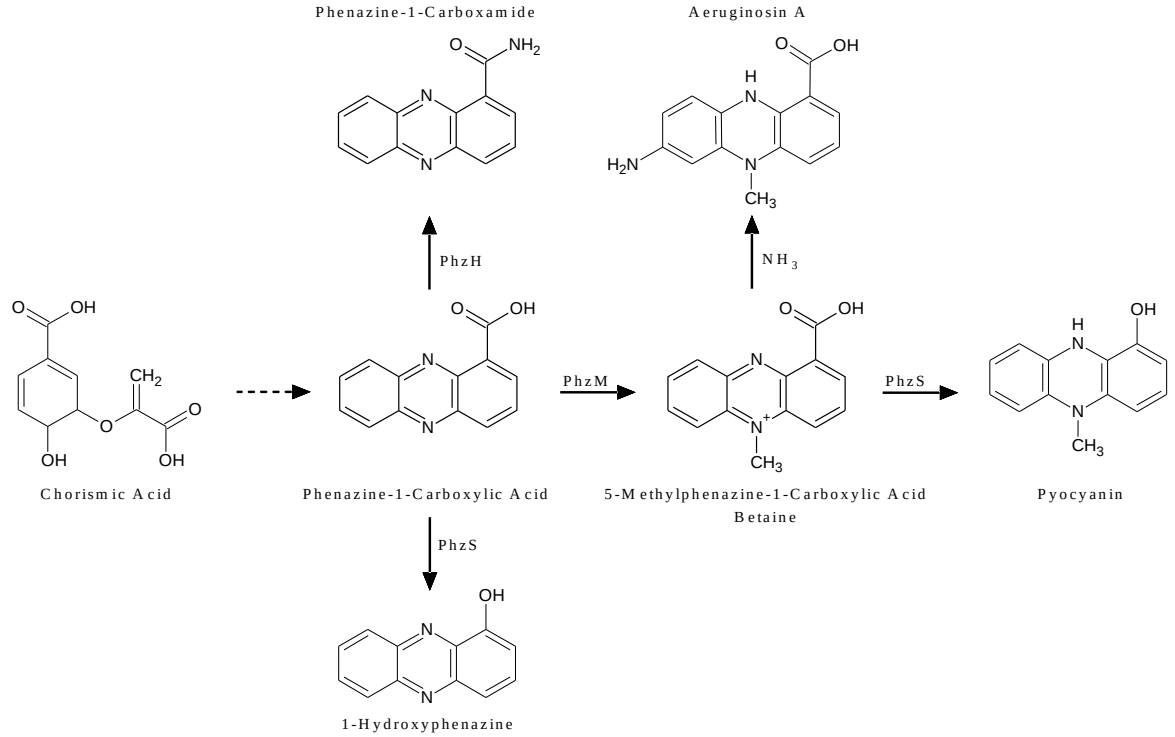

Figure. S2. Biosynthetic pathways for phenazine derivatives by *Pseudomonas spp*. Dashed arrow represents multiple enzymatic steps. PhzH is a glutamate-dependent amidotransferase while PhzM and PHzS have methyltransferase and hydroxylase activity, respectively. The figure is modified from supplementary references (1, 2).

References

1. **Byng SG, Eustice DC, Jensen RA.** 1979. Biosynthesis of phenazine pigments in mutant and wild-type cultures of *Pseudomonas aeruginosa*. J. Bacteriol. 138:846-852.
2. **Mavrodi DV, Bonsall RF, Delaney SM, Soule MJ, Phillips G, Thomashow LS.** 2001. Functional analysis of genes for biosynthesis of pyocyanin and phenazine-1-carboxamide from Pseudomonas aeruginosa PAO1. J. Bacteriol. **183:**6454-65.