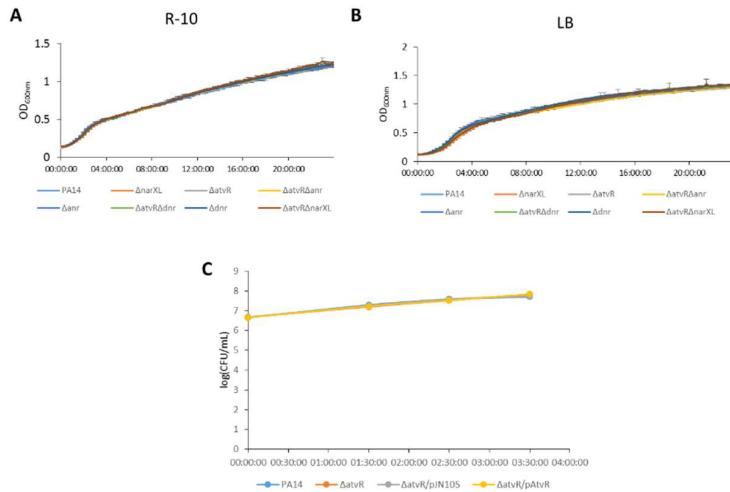


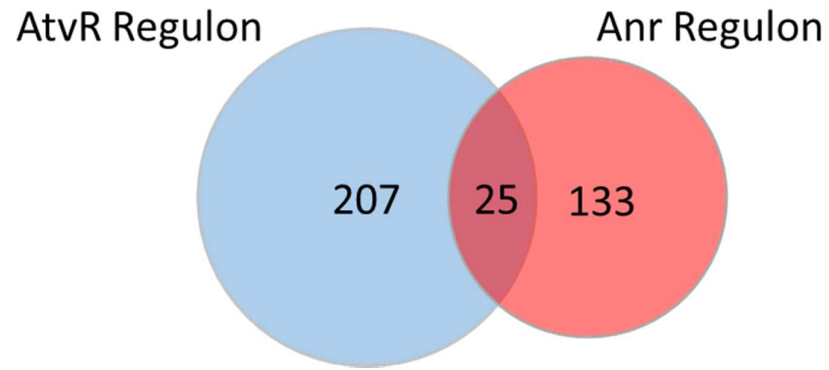
## **Supplemental Information**

### **The atypical response regulator AtvR is a new player in *Pseudomonas aeruginosa* response to hypoxia and virulence**

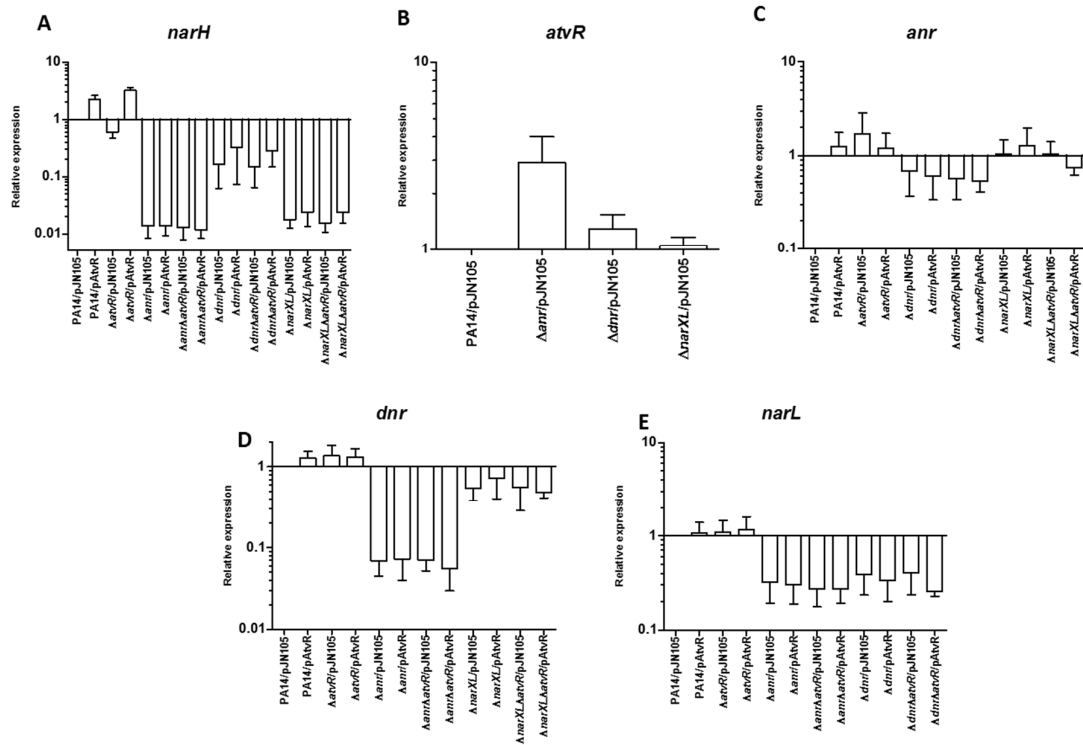
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**Figure S1. Growth curves for denitrification regulators mutants in different conditions.** Cultures were pre-incubated overnight in LB (A) or R-10 (B) media and adjusted to OD<sub>600</sub> = 0.1 in LB or R-10. 1 mL samples were applied in a 24-well plate and growth was monitored as OD<sub>600</sub>, at 15 minutes intervals, with SpectraMax Paradigm at 37°C with low orbital agitation. (C) Bacterial strains were pre-incubated to OD<sub>600</sub> = 2.0 in LB with gentamicin and arabinose when required. The cultures were diluted in R-10 to 5x 10<sup>6</sup> bacteria/mL. 200 μL of the bacterial suspensions were added to a 96-well plate and incubated for 4 hours and 30 minutes at 37°C at 5% CO<sub>2</sub>, the same condition used for *in vitro* virulence assays. At the indicated time points, each culture was serially diluted, plated, and the CFU were enumerated. All curves were performed in triplicates.



**Figure S2. AtvR and Anr regulons share few transcriptional units.** Our RNAseq data of AtvR-regulated transcriptional units (blue) was compared to the Anr transcriptome (red) described by Trunk et al., 2009 . 89% of the AtvR-induced genes are unique, not under Anr control.



**Figure S3. AtvR is not part of the known denitrification regulatory cascade and is repressed by Anr under low O<sub>2</sub> levels.** The wild-type and the mutant strains harboring either pJN105 or pAtvR were grown in LB with 50mM nitrate and 0.2% arabinose under aerobic conditions until OD600 = 2. At this time point, cell cultures were transferred to a candle jar for four hours, RNA was extracted and qRT-PCR performed for the genes indicated at each graph. Relative expression levels were normalized for each gene in PA14/pJN105. These data were used to draw the heat map in Figure 7. \*, p<0.05; \*\*, p<0.01; \*\*\*, p<0.001

**Table S1. Strains and Plasmids used in this study**

<b>Strains</b>	<b>Description</b>	<b>Reference</b>
<b><i>P. aeruginosa</i></b>		
PA14	Wild-type <i>P. aeruginosa</i> UCBPP-PA14	(2)
PA14/pJN105	PA14 harboring pJN105 plasmid	This Work
PA14/pAtvR	PA14 harboring pAtvR plasmid	This Work
$\Delta atvR$	PA14 with deletion in <i>atvR</i>	This Work
$\Delta atvR$ /pJN105	$\Delta atvR$ harboring pJN105 plasmid	This Work
$\Delta atvR$ /pAtvR	$\Delta atvR$ harboring pAtvR plasmid	This Work
$\Delta anr$	PA14 with deletion in <i>anr</i>	This Work
$\Delta anr$ /pJN105	$\Delta anr$ harboring pJN105 plasmid	This Work
$\Delta anr$ /pAtvR	$\Delta anr$ harboring pAtvR plasmid	This Work
$\Delta dnr$	PA14 with deletion in <i>anr</i>	This Work
$\Delta dnr$ /pJN105	$\Delta dnr$ harboring pJN105 plasmid	This Work
$\Delta dnr$ /pAtvR	$\Delta dnr$ harboring pAtvR plasmid	This Work
$\Delta narXL$	PA14 with deletion in <i>anr</i>	This Work
$\Delta narXL$ /pJN105	$\Delta narXL$ harboring pJN105 plasmid	This Work
$\Delta narXL$ /pAtvR	$\Delta narXL$ harboring pAtvR plasmid	This Work
<b><i>E. coli</i></b>		
DH5 $\alpha$	<i>supE44 lacU169</i> (80 <i>lacZ</i> M15) <i>hsdR17 recA1 endA11 gyrA96 thi-1 relA1</i>	Invitrogen
S17-1	<i>prothirecA hsdR</i> ( <i>r<sup>-</sup> m<sup>+</sup></i> ) <i>Tp<sup>r</sup> Sm<sup>r</sup> Km<sup>s</sup> [<math>\Lambda</math> RP4-2-Tc::Um-Km::Tn7]</i>	(3)
<b>Macrophage</b>		
J774.A1	Monocyte/Macrophage cell line	(4)
<b>Plasmid</b>		
pGEM-T easy	Cloning vector; Ap <sup>r</sup>	Promega
pNPTS138	Replicon ColE1,oriT, <i>npt</i> (Km <sup>r</sup> ), <i>sacB</i>	(5)

pEX18Ap	ApR; oriT+sacB+, gene replacement vector with MCS from pUC18	(6)
pJN105	araC-pBAD cloned in pBBR1 MCS-5; GmR	(7)
pAtvR	<i>atvR</i> coding region cloned in pJN105	This work
pGHK101	873 bp upstream of <i>atvR</i> coding region cloned in pGEM-T Easy	This work
pGHK002	793 bp downstream of <i>atvR</i> coding region cloned in pGEM-T Easy	This work
pGHK003	873 bp upstream and 793 downstream of <i>atvR</i> coding region cloned in pNPTS138	This work
pGHK006	1000 bp upstream and 1000 downstream of <i>anr</i> coding region cloned in pEX18Ap	This work

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**Table S3. Upregulated genes in PA14/patvR x PA14/pJN105**

PA14 locus	PAO1 locus	gene	logF C	FDR	Operon
PA14_00820	PA0070	tagQ1	1,07	1,37E-02	<b>PA14_00820</b> ;PA14_00830;PA14_00850;PA14_00860;PA14_00875;PA14_00890;PA14_00900;PA14_00910
PA14_01030	PA0085	hcp1	1,08	1,04E-02	
PA14_01170	PA0096		1,22	3,53E-02	PA14_01160; <b>PA14_01170</b> ;PA14_01180;PA14_01190;PA14_01200;PA14_01220;PA14_01230
PA14_01490	PA0122	rahU	1,07	4,83E-03	
PA14_02200	PA0175	cheR2	1,57	5,58E-04	PA14_02180;PA14_02190; <b>PA14_02200</b> ;PA14_02220;PA14_02230;PA14_02250;PA14_02260
PA14_02220	PA0176	aer2	1,76	4,65E-06	PA14_02180;PA14_02190; <b>PA14_02200</b> ;PA14_02220;PA14_02230;PA14_02250;PA14_02260
PA14_02230	PA0177	cheW	1,67	2,42E-05	PA14_02180;PA14_02190; <b>PA14_02200</b> ;PA14_02220;PA14_02230;PA14_02250;PA14_02260
PA14_02250	PA0178	cheA	1,66	6,67E-06	PA14_02180;PA14_02190; <b>PA14_02200</b> ;PA14_02220;PA14_02230;PA14_02250;PA14_02260
PA14_02260	PA0179		1,43	1,62E-04	PA14_02180;PA14_02190; <b>PA14_02200</b> ;PA14_02220;PA14_02230;PA14_02250;PA14_02260
PA14_03510	PA0270		1,30	3,63E-03	PA14_03490; <b>PA14_03510</b> ;PA14_03520
PA14_04650	PA0355	pfpl	1,07	1,31E-02	
PA14_05820	PA0446		1,54	1,81E-04	
PA14_05840	PA0447	gcdH	1,54	7,31E-04	
PA14_06000	PA0459	clpC	1,73	7,87E-04	
PA14_06650	PA0509	nirN	2,54	9,36E-13	<b>PA14_06650</b> ;PA14_06660;PA14_06670;PA14_06680;PA14_06690;PA14_06700;PA14_06710;PA14_06720;PA14_06730;PA14_06740;PA14_06750
PA14_06660	PA0510	nirE	3,25	3,31E-18	<b>PA14_06650</b> ;PA14_06660;PA14_06670;PA14_06680;PA14_06690;PA14_06700;PA14_06710;PA14_06720;PA14_06730;PA14_06740;PA14_06750
PA14_06670	PA0511	nirJ	2,85	1,77E-17	<b>PA14_06650</b> ;PA14_06660;PA14_06670;PA14_06680;PA14_06690;PA14_06700;PA14_06710;PA14_06720;PA14_06730;PA14_06740;PA14_06750
PA14_06680	PA0512	nirH	2,55	6,84E-13	<b>PA14_06650</b> ;PA14_06660;PA14_06670;PA14_06680;PA14_06690;PA14_06700;PA14_06710;PA14_06720;PA14_06730;PA14_06740;PA14_06750
PA14_06690	PA0513	nirG	2,34	1,20E-10	<b>PA14_06650</b> ;PA14_06660;PA14_06670;PA14_06680;PA14_06690;PA14_06700;PA14_06710;PA14_06720;PA14_06730;PA14_06740;PA14_06750
PA14_06700	PA0514	nirL	2,17	7,12E-10	<b>PA14_06650</b> ;PA14_06660;PA14_06670;PA14_06680;PA14_06690;PA14_06700;PA14_06710;PA14_06720;PA14_06730;PA14_06740;PA14_06750
PA14_06710	PA0515	nirD	1,93	1,70E-08	<b>PA14_06650</b> ;PA14_06660;PA14_06670;PA14_06680;PA14_06690;PA14_06700;PA14_06710;PA14_06720;PA14_06730;PA14_06740;PA14_06750
PA14_06720	PA0516	nirF	1,69	5,17E-07	<b>PA14_06650</b> ;PA14_06660;PA14_06670;PA14_06680;PA14_06690;PA14_06700;PA14_06710;PA14_06720;PA14_06730;PA14_06740;PA14_06750
PA14_06730	PA0517	nirC	1,98	6,73E-08	<b>PA14_06650</b> ;PA14_06660;PA14_06670;PA14_06680;PA14_06690;PA14_06700;PA14_06710;PA14_06720;PA14_06730;PA14_06740;PA14_06750
PA14_06740	PA0518	nirM	2,19	2,06E-09	<b>PA14_06650</b> ;PA14_06660;PA14_06670;PA14_06680;PA14_06690;PA14_06700;PA14_06710;PA14_06720;PA14_06730;PA14_06740;PA14_06750
PA14_06750	PA0519	nirS	1,69	1,62E-04	<b>PA14_06650</b> ;PA14_06660;PA14_06670;PA14_06680;PA14_06690;PA14_06700;PA14_06710;PA14_06720;PA14_06730;PA14_06740;PA14_06750
PA14_06770	PA0520	nirQ	1,50	1,50E-05	PA14_06770;PA14_06790;PA14_06800
PA14_06790	PA0521	nirO	1,27	1,04E-02	PA14_06770;PA14_06790;PA14_06800
PA14_06810	PA0523	norC	2,61	6,17E-05	PA14_06810;PA14_06830;PA14_06840
PA14_06830	PA0524	norB	2,90	7,34E-06	PA14_06810;PA14_06830;PA14_06840
PA14_06860	PA0526		1,32	3,59E-02	PA14_06860;PA14_06870
PA14_07430	PA0572		1,10	1,11E-02	

PA14_07660	PA0587	yeaH	1,17	8,46E-03	PA14_07650;PA14_07660;PA14_07680
PA14_07680	PA0588	yeaG	1,40	1,52E-03	PA14_07650;PA14_07660;PA14_07680
PA14_09150	PA4236	katA	1,22	8,40E-03	
PA14_09400	PA4217	phzS	1,89	4,95E-06	
PA14_09410	PA4216	phzG1	2,84	2,68E-12	PA14_09410;PA14_09420;PA14_09440;PA14_09450;PA14_09460
PA14_09420	PA4215	phzF1	2,24	7,07E-07	PA14_09410;PA14_09420;PA14_09440;PA14_09450;PA14_09460
PA14_09440	PA4214	phzE1	2,56	1,94E-10	PA14_09410;PA14_09420;PA14_09440;PA14_09450;PA14_09460
PA14_09450	PA4213	phzD1	2,67	1,05E-08	PA14_09410;PA14_09420;PA14_09440;PA14_09450;PA14_09460
PA14_09460	PA4212	phzC1	3,19	1,74E-12	PA14_09410;PA14_09420;PA14_09440;PA14_09450;PA14_09460
PA14_09470	PA4211	phzB1	3,31	2,10E-14	
PA14_09480	PA4210	phzA1	2,61	2,85E-07	
PA14_09490	PA4209	phzM	1,43	3,19E-04	
PA14_09500	PA4208	opmD	1,27	2,91E-03	PA14_09500;PA14_09520;PA14_09530;PA14_09540
PA14_10360	PA4141		1,01	1,74E-02	
PA14_10470	PA4136	sur/bcr	1,29	3,02E-02	
PA14_10490	PA4134		2,96	2,43E-13	PA14_10490;PA14_10500
PA14_10500	PA4133	cytN/cc oN/fixN	3,61	2,76E-12	PA14_10490;PA14_10500
PA14_10530	PA4132		2,99	1,75E-11	
PA14_10540	PA4131		3,54	3,59E-09	
PA14_10550	PA4130		2,48	2,39E-07	PA14_10550;PA14_10560
PA14_10560	PA4129		2,54	1,52E-10	PA14_10550;PA14_10560
PA14_10570	PA4128	hpcH	2,18	5,17E-07	PA14_10570;PA14_10590;PA14_10600
PA14_10590	PA4127	hpcG	1,37	9,43E-04	PA14_10570;PA14_10590;PA14_10600
PA14_11790	PA4023	eutP	1,01	2,66E-02	PA14_11760;PA14_11770;PA14_11790
PA14_11810	PA4022	hdhA	2,05	2,44E-08	
PA14_13030	PA3930	cioA	1,07	7,56E-03	PA14_13030;PA14_13040;PA14_13050
PA14_13130	PA3923		1,05	3,01E-02	PA14_13130;PA14_13140
PA14_13140	PA3922		1,40	2,57E-03	PA14_13130;PA14_13140
PA14_13260	PA3915	moaB1	3,35	1,15E-21	PA14_13260;PA14_13280
PA14_13280	PA3914	moeA1	3,37	2,34E-20	PA14_13260;PA14_13280
PA14_13320	PA3911	yhbT	1,29	4,86E-04	PA14_13290;PA14_13300;PA14_13320
PA14_13750	PA3877	narK1	1,86	1,71E-04	PA14_13750;PA14_13770;PA14_13780;PA14_13800;PA14_13810;PA14_13830;PA14_13840;PA14_13850
PA14_13770	PA3876	narK2	2,44	7,78E-11	PA14_13750;PA14_13770;PA14_13780;PA14_13800;PA14_13810;PA14_13830;PA14_13840;PA14_13850
PA14_13780	PA3875	narG	3,35	9,51E-13	PA14_13750;PA14_13770;PA14_13780;PA14_13800;PA14_13810;PA14_13830;PA14_13840;PA14_13850
PA14_13800	PA3874	narH	3,42	3,54E-09	PA14_13750;PA14_13770;PA14_13780;PA14_13800;PA14_13810;PA14_13830;PA14_13840;PA14_13850



PA14_13810	PA3873	narJ	3,18	6,77E-08	PA14_13750;PA14_13770;PA14_13780;PA14_13800;PA14_13810;PA14_13830;PA14_13840;PA14_13850
PA14_13830	PA3872	narI	3,27	7,62E-10	PA14_13750;PA14_13770;PA14_13780;PA14_13800;PA14_13810;PA14_13830;PA14_13840;PA14_13850
PA14_13840	PA3871		2,12	7,34E-06	PA14_13750;PA14_13770;PA14_13780;PA14_13800;PA14_13810;PA14_13830;PA14_13840;PA14_13850
PA14_13850	PA3870	moaA	1,44	2,08E-02	PA14_13750;PA14_13770;PA14_13780;PA14_13800;PA14_13810;PA14_13830;PA14_13840;PA14_13850
PA14_15070	PA3790	oprC	1,02	1,43E-02	PA14_15070;PA14_15080
PA14_16250	PA3724	lasB	1,15	2,67E-03	
PA14_16370	PA3712		1,03	1,06E-02	
PA14_16630	PA3692	lptF	1,16	2,17E-03	PA14_16630;PA14_16640
PA14_16640	PA3691		1,26	5,20E-04	PA14_16630;PA14_16640
PA14_17480	PA3622	rpoS	1,32	1,52E-03	
PA14_18120	PA3570	mmsA	1,40	8,83E-03	PA14_18120;PA14_18140
PA14_18140	PA3569	mmsB	1,44	2,37E-02	PA14_18120;PA14_18140
PA14_19100	PA3479	rhlA	1,38	1,62E-04	
PA14_20190	PA3393	nosD	2,01	2,08E-02	PA14_20150;PA14_20170;PA14_20180;PA14_20190;PA14_20200;PA14_20230
PA14_20200	PA3392	nosZ	2,91	1,26E-03	PA14_20150;PA14_20170;PA14_20180;PA14_20190;PA14_20200;PA14_20230
PA14_20920	PA3335		2,50	3,01E-11	
PA14_20940	PA3334		2,65	1,14E-10	PA14_20940;PA14_20950;PA14_20960;PA14_20970;PA14_20980;PA14_21000;PA14_21010;PA14_21020
PA14_20950	PA3333	fabH2	2,59	3,17E-10	PA14_20940;PA14_20950;PA14_20960;PA14_20970;PA14_20980;PA14_21000;PA14_21010;PA14_21020
PA14_20960	PA3332		2,61	1,25E-10	PA14_20940;PA14_20950;PA14_20960;PA14_20970;PA14_20980;PA14_21000;PA14_21010;PA14_21020
PA14_20970	PA3331	cyp23	2,60	2,34E-10	PA14_20940;PA14_20950;PA14_20960;PA14_20970;PA14_20980;PA14_21000;PA14_21010;PA14_21020
PA14_20980	PA3330		2,96	1,52E-10	PA14_20940;PA14_20950;PA14_20960;PA14_20970;PA14_20980;PA14_21000;PA14_21010;PA14_21020
PA14_21000	PA3329		2,59	6,24E-10	PA14_20940;PA14_20950;PA14_20960;PA14_20970;PA14_20980;PA14_21000;PA14_21010;PA14_21020
PA14_21010	PA3328		2,51	1,13E-08	PA14_20940;PA14_20950;PA14_20960;PA14_20970;PA14_20980;PA14_21000;PA14_21010;PA14_21020
PA14_21020	PA3327		2,20	5,66E-07	PA14_20940;PA14_20950;PA14_20960;PA14_20970;PA14_20980;PA14_21000;PA14_21010;PA14_21020
PA14_21030	PA3326	clpP2	1,87	1,12E-06	
PA14_21220	PA3309	uspK	1,13	3,12E-03	
PA14_23000	PA3188	gltG	1,15	4,81E-03	PA14_22990;PA14_23000;PA14_23010;PA14_23030
PA14_23010	PA3187	gltK	1,00	1,66E-02	PA14_22990;PA14_23000;PA14_23010;PA14_23030
PA14_23030	PA3186	oprB	1,08	5,99E-03	PA14_22990;PA14_23000;PA14_23010;PA14_23030
PA14_24650	PA3049	rmf	1,19	2,53E-02	
PA14_24740	PA3042		1,49	1,61E-04	PA14_24740;PA14_24760;PA14_24770
PA14_24760	PA3041	yqjE	1,58	7,68E-06	PA14_24740;PA14_24760;PA14_24770
PA14_24770	PA3040	yqjD	1,40	9,44E-05	PA14_24740;PA14_24760;PA14_24770
PA14_24980	PA3022		1,16	2,30E-03	
PA14_26020	PA2939	pepB	1,18	5,51E-03	
PA14_26570	PA2899	atvR	8,16	6,62E-79	PA14_26570;PA14_26580

PA14_26580	PA2898		1,24	1,55E-02	PA14_26570;PA14_26580
PA14_27730	PA2815	fadE	1,03	1,38E-02	
PA14_28050	PA2788		1,72	6,39E-07	
PA14_28060	PA2787	cpg2	1,74	9,72E-06	
PA14_28960	PA2721		1,68	4,02E-02	
PA14_29330	-		1,01	4,19E-02	
PA14_31510	PA2554		1,62	9,72E-06	PA14_31500;PA14_31510;PA14_31530;PA14_31540
PA14_31530	PA2553		1,85	1,11E-07	PA14_31500;PA14_31510;PA14_31530;PA14_31540
PA14_31540	PA2552	acdB	1,36	1,41E-03	PA14_31500;PA14_31510;PA14_31530;PA14_31540
PA14_33300	-		1,79	1,12E-07	PA14_33300;PA14_33310;PA14_33320;PA14_33330
PA14_33310	-		1,73	2,81E-06	PA14_33300;PA14_33310;PA14_33320;PA14_33330
PA14_33320	-		1,65	2,31E-04	PA14_33300;PA14_33310;PA14_33320;PA14_33330
PA14_33330	-		1,33	4,49E-03	PA14_33300;PA14_33310;PA14_33320;PA14_33330
PA14_33370	PA2422		1,94	3,61E-02	
PA14_33870	PA2381		1,47	2,17E-03	
PA14_34020	PA2368	hsiF3	5,92	1,69E-02	PA14_33940;PA14_33960;PA14_33970;PA14_33980;PA14_33990;PA14_34000;PA14_34010;PA14_34020;PA14_34030;PA14_34050;PA14_34070
PA14_34820	PA2304	ambC	2,02	7,55E-06	PA14_34810;PA14_34820;PA14_34830;PA14_34840;PA14_34850
PA14_34830	PA2303	ambD	1,27	2,45E-03	PA14_34810;PA14_34820;PA14_34830;PA14_34840;PA14_34850
PA14_34840	PA2302	ambE	1,57	1,04E-05	PA14_34810;PA14_34820;PA14_34830;PA14_34840;PA14_34850
PA14_35150	PA2275	yahK	1,36	1,62E-04	
PA14_35490	PA2250	lpdV	1,43	4,22E-05	PA14_35490;PA14_35500;PA14_35520;PA14_35530
PA14_35500	PA2249	bkdB	1,36	2,64E-04	PA14_35490;PA14_35500;PA14_35520;PA14_35530
PA14_35520	PA2248	bkdA2	1,31	9,47E-04	PA14_35490;PA14_35500;PA14_35520;PA14_35530
PA14_35530	PA2247	bkdA1	1,17	1,14E-02	PA14_35490;PA14_35500;PA14_35520;PA14_35530
PA14_35780	-		1,31	2,26E-04	PA14_35780;PA14_35790
PA14_35790	-		1,17	1,87E-03	PA14_35780;PA14_35790
PA14_36310	PA2195	hcnC	2,16	1,45E-06	PA14_36310;PA14_36320;PA14_36330
PA14_36320	PA2194	hcnB	1,67	6,79E-05	PA14_36310;PA14_36320;PA14_36330
PA14_36330	PA2193	hcnA	1,01	2,98E-02	PA14_36310;PA14_36320;PA14_36330
PA14_36560	PA2166		1,05	3,60E-02	
PA14_36580	PA2164		1,43	3,43E-02	PA14_36570;PA14_36580;PA14_36590;PA14_36605;PA14_36620;PA1436630
PA14_36650	PA2159		2,33	1,84E-02	PA14_36650;PA14_36660;PA14_36670;PA14_36680;PA14_36690;PA14_36700
PA14_36830	PA2145		1,43	4,12E-02	
PA14_37080	PA2126	cgrC	1,02	3,88E-02	
PA14_37090	PA2125		1,01	2,81E-02	PA14_37090;PA14_37100
PA14_37745	PA2069		1,79	8,05E-06	PA14_37745;PA14_37760;PA14_37770;PA14_37780

PA14_38020	PA2048		1,22	2,16E-02	
PA14_38480	PA2012	gnyA	1,61	2,30E-06	PA14_38440;PA14_38460;PA14_38470;PA14_38480;PA14_38490
PA14_38490	PA2011	gnyL	1,50	2,11E-05	PA14_38440;PA14_38460;PA14_38470;PA14_38480;PA14_38490
PA14_38590	PA2003	bdhA	1,46	4,79E-04	
PA14_38610	PA2002	atoE	1,16	1,43E-02	
PA14_38630	PA2001	atoB	1,74	2,42E-06	
PA14_38640	PA2000	atoA	1,68	4,65E-06	PA14_38640;PA14_38660
PA14_38660	PA1999	atoD	1,73	1,21E-04	PA14_38640;PA14_38660
PA14_38840	PA1984	exaC	1,88	8,98E-07	PA14_38840;PA14_38850
PA14_39270	PA1951	fapF	1,03	1,31E-02	
PA14_39280	PA1950	rbsK	1,31	3,17E-04	PA14_39280;PA14_39300;PA14_39320;PA14_39330;PA14_39350
PA14_39560	PA1930		1,16	4,80E-02	
PA14_39700	-		1,64	1,68E-04	PA14_39690;PA14_39700;PA14_39710
PA14_39710	PA1919	nrdG	1,35	1,61E-03	PA14_39690;PA14_39700;PA14_39710
PA14_39880	PA4216	phzG2	1,99	3,12E-06	PA14_39880;PA14_39890;PA14_39910;PA14_39925;PA14_39945;PA14_39960
PA14_39890	PA4215	phzF2	2,24	7,07E-07	PA14_39880;PA14_39890;PA14_39910;PA14_39925;PA14_39945;PA14_39960
PA14_39910	PA4214	phzE2	2,43	1,22E-08	PA14_39880;PA14_39890;PA14_39910;PA14_39925;PA14_39945;PA14_39960
PA14_39925	PA4213	phzD2	2,70	2,50E-08	PA14_39880;PA14_39890;PA14_39910;PA14_39925;PA14_39945;PA14_39960
PA14_39945	PA4212	phzC2	2,44	4,00E-10	PA14_39880;PA14_39890;PA14_39910;PA14_39925;PA14_39945;PA14_39960
PA14_39960	PA4211	phzB2	2,72	7,51E-11	PA14_39880;PA14_39890;PA14_39910;PA14_39925;PA14_39945;PA14_39960
PA14_39970	PA4210	phzA2	1,83	1,67E-03	
PA14_40300	PA1870		1,15	5,00E-02	
PA14_42900	PA1669	icmF2	1,13	2,72E-03	PA14_42880;PA14_42890;PA14_42900;PA14_42910;PA14_42920;PA14_42940;PA14_42950;PA14_42960;PA14_42970;PA14_42980;PA14_42990
PA14_42910	PA1668	dotU2	1,45	7,57E-04	PA14_42880;PA14_42890;PA14_42900;PA14_42910;PA14_42920;PA14_42940;PA14_42950;PA14_42960;PA14_42970;PA14_42980;PA14_42990
PA14_42920	PA1667	hsiJ2	1,07	6,75E-03	PA14_42880;PA14_42890;PA14_42900;PA14_42910;PA14_42920;PA14_42940;PA14_42950;PA14_42960;PA14_42970;PA14_42980;PA14_42990
PA14_42940	PA1666	lip2.1	1,46	7,14E-04	PA14_42880;PA14_42890;PA14_42900;PA14_42910;PA14_42920;PA14_42940;PA14_42950;PA14_42960;PA14_42970;PA14_42980;PA14_42990
PA14_42950	PA1665	fha2	1,88	1,82E-05	PA14_42880;PA14_42890;PA14_42900;PA14_42910;PA14_42920;PA14_42940;PA14_42950;PA14_42960;PA14_42970;PA14_42980;PA14_42990
PA14_42970	PA1663	sfa2	1,24	1,46E-02	PA14_42880;PA14_42890;PA14_42900;PA14_42910;PA14_42920;PA14_42940;PA14_42950;PA14_42960;PA14_42970;PA14_42980;PA14_42990
PA14_42980	PA1662	clpV2	1,32	2,89E-04	PA14_42880;PA14_42890;PA14_42900;PA14_42910;PA14_42920;PA14_42940;PA14_42950;PA14_42960;PA14_42970;PA14_42980;PA14_42990
PA14_42990	PA1661	hsiH2	1,31	7,51E-04	PA14_42880;PA14_42890;PA14_42900;PA14_42910;PA14_42920;PA14_42940;PA14_42950;PA14_42960;PA14_42970;PA14_42980;PA14_42990
PA14_43000	PA1660	hsiG2	1,37	1,83E-04	
PA14_43020	PA1659		1,30	3,17E-03	PA14_43020;PA14_43030;PA14_43040;PA14_43050
PA14_43030	PA1658	hsiC2	1,58	4,80E-06	PA14_43020;PA14_43030;PA14_43040;PA14_43050
PA14_43040	PA1657	hsiB2	1,71	4,99E-07	PA14_43020;PA14_43030;PA14_43040;PA14_43050
PA14_44290	PA1656	hsiA2	1,04	1,03E-02	
PA14_44340	PA1557	ccoN2	1,16	2,39E-02	PA14_44340;PA14_44350

PA14_44350	PA1556	ccoO2	1,80	2,31E-04	<b>PA14_44340;PA14_44350</b>
PA14_44360	PA1555	ccoP2	1,89	1,25E-05	
PA14_46910	PA1342	aatJ	1,17	5,01E-03	
PA14_46930	PA1340	aatM	1,01	2,23E-02	PA14_46920; <b>PA14_46930</b> ;PA14_46950
PA14_46970	PA1337	ansB	1,88	1,45E-06	<b>PA14_46970</b> ;PA14_46980;PA14_46990
PA14_47120	PA1324		1,25	7,51E-04	<b>PA14_47120;PA14_47130</b>
PA14_47130	PA1323		1,01	1,08E-02	<b>PA14_47120;PA14_47130</b>
PA14_47850	PA1267		1,35	2,12E-02	PA14_47840; <b>PA14_47850</b>
PA14_48060	PA1249	aprA	2,19	9,42E-11	
PA14_48090	PA1248	aprF	1,32	2,35E-04	<b>PA14_48090;PA14_48100;PA14_48115</b> ;PA14_48140
PA14_48100	PA1247	aprE	1,12	1,06E-02	<b>PA14_48090;PA14_48100;PA14_48115</b> ;PA14_48140
PA14_48115	PA1246	aprD	1,18	4,07E-03	<b>PA14_48090;PA14_48100;PA14_48115</b> ;PA14_48140
PA14_48760	PA1202	ycaC	1,40	1,28E-03	
PA14_49210	PA1177	napE	1,45	9,96E-03	<b>PA14_49210;PA14_49220;PA14_49230;PA14_49250</b> ;PA14_49260;PA14_49270
PA14_49220	PA1176	napF	1,60	1,91E-04	<b>PA14_49210;PA14_49220;PA14_49230;PA14_49250</b> ;PA14_49260;PA14_49270
PA14_49230	PA1175	napD	1,35	2,84E-02	<b>PA14_49210;PA14_49220;PA14_49230;PA14_49250</b> ;PA14_49260;PA14_49270
PA14_49250	PA1174	napA	1,17	3,08E-03	<b>PA14_49210;PA14_49220;PA14_49230;PA14_49250</b> ;PA14_49260;PA14_49270
PA14_49850	PA1173		2,13	7,12E-10	
PA14_49860	PA1172		1,53	6,29E-04	
PA14_50880	PA1041		1,50	2,04E-04	
PA14_53040	PA0867	mliC	1,12	1,87E-03	
PA14_53740	PA0814		1,18	3,60E-02	<b>PA14_53740</b> ;PA14_53750
PA14_54540	PA0754		1,16	1,06E-02	PA14_54520; <b>PA14_54540</b> ;PA14_54550;PA14_54570;PA14_54580
PA14_54630	PA0746		1,57	2,90E-04	PA14_54620; <b>PA14_54630</b>
PA14_54640	PA0745		1,89	6,75E-08	<b>PA14_54640</b> ;PA14_54660
PA14_54660	PA0744		1,96	9,19E-09	
PA14_54670	PA0743		1,67	4,28E-06	
PA14_55110	PA0713		2,40	1,13E-05	
PA14_55790	PA4294		1,44	3,11E-02	PA14_55780; <b>PA14_55790</b>
PA14_56550	PA4349		1,08	4,80E-03	PA14_56510;PA14_56520;PA14_56530;PA14_56540; <b>PA14_56550</b>
PA14_56560	PA4350	olsB	1,12	2,05E-02	<b>PA14_56560</b> ;PA14_56570
PA14_58350	PA4496	dppA1	1,20	2,11E-03	<b>PA14_58350</b> ;PA14_58360
PA14_59770	-	rscB	1,01	1,51E-02	<b>PA14_59770</b> ;PA14_59780;PA14_59790;PA14_59800
PA14_60570	PA4578		1,02	9,17E-03	<b>PA14_60570</b> ;PA14_60580
PA14_60700	PA4587	ccpR	2,71	1,29E-11	
PA14_60750	PA4590	pra	1,08	5,66E-03	

PA14_60960	PA4607		1,70	2,02E-06	
PA14_62680	PA4738	yjbJ	1,23	1,43E-02	<b>PA14_62680;PA14_62690</b>
PA14_62690	PA4739		1,13	1,80E-02	
PA14_64360	PA4866		1,23	2,85E-02	PA14_64310;PA14_64320;PA14_64335;PA14_64350; <b>PA14_64360</b> ;PA14_64370;PA14_64390
PA14_68260	PA5167	dctP	1,24	1,06E-02	<b>PA14_68260;PA14_68280</b> ;PA14_68290
PA14_68280	PA5168	dctQ	1,21	4,60E-02	
PA14_68330	PA5171	arcA	1,20	2,44E-02	PA14_68300; <b>PA14_68330</b> ; <b>PA14_68340</b> ; <b>PA14_68350</b>
PA14_68340	PA5172	arcB	2,12	5,14E-09	PA14_68300; <b>PA14_68330</b> ; <b>PA14_68340</b> ; <b>PA14_68350</b>
PA14_68350	PA5173	arcC	2,44	1,02E-12	PA14_68300; <b>PA14_68330</b> ; <b>PA14_68340</b> ; <b>PA14_68350</b>
PA14_68940	PA5220		1,38	1,41E-04	PA14_68930; <b>PA14_68940</b>
PA14_70670	PA5353	glcF	2,19	1,50E-05	PA14_70650; <b>PA14_70670</b> ; <b>PA14_70680</b> ; <b>PA14_70690</b>
PA14_70680	PA5354	glcE	2,52	1,70E-06	PA14_70650; <b>PA14_70670</b> ; <b>PA14_70680</b> ; <b>PA14_70690</b>
PA14_70690	PA5355	glcD	2,27	5,66E-07	PA14_70650; <b>PA14_70670</b> ; <b>PA14_70680</b> ; <b>PA14_70690</b>
PA14_72520	PA5496	nrdJb	1,27	7,22E-03	<b>PA14_72520</b> ;PA14_72540

**Table S4. Downregulated genes in PA14/patvR x PA14/pJN105**

PA14 locus	PAO1 locus	gene	logFC	FDR	Operon
PA14_02130	PA0170		-1,04	2,39E-02	PA14_02130;PA14_02140;PA14_02150
PA14_02140	PA0171		-1,19	7,56E-03	PA14_02130;PA14_02140;PA14_02150
PA14_02150	PA0172		-1,04	1,29E-02	PA14_02130;PA14_02140;PA14_02150
PA14_03770	PA0288	speB1	-1,08	2,97E-02	PA14_03760;PA14_03770;PA14_03780
PA14_04050	PA0310		-1,07	1,38E-02	
PA14_04060	PA0311		-1,32	8,83E-03	
PA14_06170	PA0471	fiuR	-1,49	4,35E-04	PA14_06170;PA14_06180
PA14_06870	PA0527	dnr	-1,07	9,80E-03	PA14_06860;PA14_06870
PA14_07290	PA0560	ygjP	-1,09	8,81E-03	PA14_07290;PA14_07300
PA14_07550	PA0578		-1,13	9,17E-03	PA14_07550;PA14_07560
PA14_08390	PA0654	speD	-1,10	4,21E-02	
PA14_12180	PA3990		-1,11	2,44E-02	PA14_12180;PA14_12200;PA14_12210
PA14_12550	PA3967		-1,49	7,87E-04	
PA14_16350	PA3714		-1,09	2,05E-02	
PA14_17000	PA3661		-1,44	4,60E-02	
PA14_17610	PA3610	potD	-1,78	1,70E-06	PA14_17610;PA14_17620;PA14_17630;PA14_17640
PA14_17630	PA3608	potB	-1,47	2,12E-03	PA14_17610;PA14_17620;PA14_17630;PA14_17640
PA14_19470	PA3452	mqaA	-1,52	6,62E-04	
PA14_19720	PA3428		-2,03	4,03E-02	
PA14_20070	PA3403		-1,31	7,56E-03	
PA14_26400	PA2912		-1,18	8,00E-03	PA14_26360;PA14_26390;PA14_26400;PA14_26420
PA14_31160	PA4076		-2,35	3,70E-06	PA14_31160;PA14_31170
PA14_31170	PA4077		-2,93	8,55E-08	PA14_31160;PA14_31170
PA14_33520	PA2411		-1,81	1,61E-03	PA14_33500;PA14_33510;PA14_33520
PA14_33530	PA2410		-2,91	1,26E-17	PA14_33530;PA14_33540;PA14_33550;PA14_33560
PA14_33540	PA2409		-3,17	1,84E-17	PA14_33530;PA14_33540;PA14_33550;PA14_33560
PA14_33550	PA2408		-3,15	2,28E-14	PA14_33530;PA14_33540;PA14_33550;PA14_33560
PA14_33560	PA2407		-3,26	8,93E-16	PA14_33530;PA14_33540;PA14_33550;PA14_33560
PA14_33570	PA2406		-2,70	1,80E-12	PA14_33570;PA14_33580;PA14_33590;PA14_33600
PA14_33580	PA2405		-2,61	2,11E-09	PA14_33570;PA14_33580;PA14_33590;PA14_33600
PA14_33590	PA2404		-3,17	4,57E-11	PA14_33570;PA14_33580;PA14_33590;PA14_33600
PA14_33600	PA2403		-1,97	3,91E-08	PA14_33570;PA14_33580;PA14_33590;PA14_33600

PA14_33680	PA2398	fpvA	-2,95	1,67E-12	
PA14_33770	PA2389	pvdR	-1,19	8,54E-03	
PA14_33810	PA2386	pvdA	-1,49	2,46E-04	
PA14_33830	PA2384		-2,87	9,19E-09	<b>PA14_33830;PA14_33840</b>
PA14_34170	PA2358		-1,28	1,17E-02	
PA14_35440	PA2253	ansA	-1,23	3,74E-03	
PA14_35460	PA2252		-2,95	1,12E-11	
PA14_38320	PA2026		-1,28	9,62E-04	
PA14_42640	PA1691	pscT	-1,09	9,96E-03	PA14_42570;PA14_42580;PA14_42600;PA14_42610;PA14_42620;PA14_42630; <b>PA14_42640</b> ;PA14_42660
PA14_43380	PA1634	kdpB	-1,25	1,51E-02	PA14_43370; <b>PA14_43380;PA14_43400</b> ;PA14_43405
PA14_43400	PA1633	kdpA	-1,37	3,17E-03	PA14_43370; <b>PA14_43380;PA14_43400</b> ;PA14_43405
PA14_47150	PA1321	cyoE	-1,65	3,17E-03	<b>PA14_47150</b> ;PA14_47160; <b>PA14_47180</b> ;PA14_47190;PA14_47210
PA14_47180	PA1319	cyoC	-1,44	3,34E-04	<b>PA14_47150</b> ;PA14_47160; <b>PA14_47180</b> ;PA14_47190;PA14_47210
PA14_48400	PA1228		-1,29	3,77E-03	
PA14_48410	PA1227		-1,08	6,51E-03	
PA14_48830	PA1196		-1,75	7,26E-05	PA14_48810; <b>PA14_48830</b>
PA14_51680	PA0975		-1,06	6,71E-03	PA14_51670; <b>PA14_51680</b>
PA14_54850	-		-1,06	1,14E-02	
PA14_56840	PA4371		-1,13	1,74E-02	<b>PA14_56840</b> ;PA14_56850;PA14_56870
PA14_61850	PA4675	chtA	-1,04	1,91E-02	
PA14_62880	PA4753	yhbY	-1,09	3,72E-03	
PA14_63080	PA4770	lldP	-2,61	1,52E-07	
PA14_63090	PA4771	lldD	-2,63	4,05E-09	<b>PA14_63090;PA14_63100</b>
PA14_63100	PA4772		-2,76	3,63E-10	<b>PA14_63090;PA14_63100</b>
PA14_64610	PA4888		-1,27	5,53E-03	<b>PA14_64610;PA14_64620</b>
PA14_64620	PA4889		-1,65	8,00E-04	<b>PA14_64610;PA14_64620</b>
PA14_69250	PA5244	yohD	-1,21	2,67E-03	
PA14_71330	PA5403		-1,11	1,17E-02	PA14_71320; <b>PA14_71330</b> ;PA14_71340; <b>PA14_71350</b> ;PA14_71360;PA14_71370
PA14_71350	PA5405		-1,05	2,71E-02	PA14_71320; <b>PA14_71330</b> ;PA14_71340; <b>PA14_71350</b> ;PA14_71360;PA14_71370
PA14_71750	PA5437		-1,01	1,55E-02	
PA14_72350	PA5480		-1,11	1,52E-02	

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