

Supplementary Material

Supplementary 1- The acquired antimicrobial resistance genes identified in eight *P. aeruginosa* isolates.

Genetic background	Class	Frequency in eight isolates	Predicted phenotype
ant(2'')-Ia	Aminoglycoside	4(1,4,18 and 56 isolates)	gentamicin, tobramycin
aph(3')-IIb	Aminoglycoside	8	unknown aminoglycoside
aph(6)-Id	Aminoglycoside	4(1(n=2),4,18(n=2)and 56 isolates)	Streptomycin
aph(3'')-Ib	Aminoglycoside	4(1(n=4),4,18 and 56 isolates)	
aph(3')-VIb	Aminoglycoside	4(1,4,18 and 56 isolates)	gentamicin, amikacin, kanamycin, neomycin, paromomycin, ribostamycin, butirosin
aph(3')-VIa	Aminoglycoside	1(56 isolate)	ribostamycin, neomycin, kanamycin, gentamicin, amikacin, butirosin, paromomycin
blaOXA-2	beta-lactam	1(1 isolate)	amoxicillin, amoxicillin+clavulanic acid, ampicillin, ampicillin+clavulanic acid, ceftazidime, piperacillin
blaOXA-50	beta-lactam	2(1 and 58 isolates)	amoxicillin, ampicillin
blaPAO	beta-lactam	8(1(n=2),4(n=3),7,18(n=3),40,54	amoxicillin, ampicillin,

		, 56(n=2),58)	cefepime, ceftazidime
blaPER-1	beta-lactam	3(1,4 and 18 isolater)	amoxicillin, amoxicillin+clavulanic acid, ampicillin, ampicillin+clavulanic acid, cefepime, cefotaxime, ceftaxitin, ceftazidime, piperacillin, piperacillin+tazobactam , aztreonam, ticarcillin, ticarcillin+clavulanic acid
fosA	Fosfomycin	8	Fosfomycin
catB7	Amphenicol	8	Chloramphenicol
catA3	Amphenicol	1(7 isolate)	
sul1	folate pathway antagonist	5(1,4,7,18 and 56 isolates)	Sulfamethoxazole
aph(3')-IIb	Aminoglycosid e	2(4 and 18 isolates)	gentamicin, kanamycin, neomycin, paromomycin, ribostamycin, butiromycin
aph(3')-VI	Aminoglycosid e	2(4 and 18 isolates)	Amikacin
aadA2b	Aminocyclitol	2(4 and 18 isolates)	streptomycin, spectinomycin
aadA6	Aminocyclitol	2(4 and 18 isolates)	
blaOXA-488	beta-lactam	2(4 and 18 isolates)	unknown beta-lactam

blaOXA-392	beta-lactam	2(4 and 18 isolates)	
blaOXA-494	beta-lactam	2(7 and 40 isolates)	
blaOXA-4	beta-lactam	1(58 isolate)	
blaVIM-4	beta-lactam	2(4 and 18 isolates)	amoxicillin, amoxicillin+clavulanic acid, ampicillin, ampicillin+clavulanic acid, cefepime, cefixime, cefotaxime, cefoxitin, ceftazidime, ertapenem, imipenem, meropenem, piperacillin, piperacillin+tazobactam
crpP	Quinolone	5(4,18,40,54and 58 isolates)	Ciprofloxacin
qnrD1	Quinolone	1(7 isolate)	
aac(2')-Ia	Aminoglycosid e	1(7 isolate)	gentamicin, tobramycin, dibekacin, netilmicin
blaOXA-396	beta-lactam	3(7,40 and 56 isolates)	amoxicillin, ampicillin, meropenem
blaOXA-395	beta-lactam	1(54 isolate)	
blaCMY-16	beta-lactam	1(7 isolate)	amoxicillin, amoxicillin+clavulanic acid, ampicillin, ampicillin+clavulanic

			acid, cefotaxime, cefoxitin, ceftazidime, piperacillin, piperacillin+tazobactam, ticarcillin, ticarcillin+clavulanic acid
tet(B)	Tetracycline	1(7 isolate)	tetracycline, doxycycline, minocycline
rmtF	Aminoglycoside	1(56 isolate)	gentamicin', tobramycin, amikacin
aac(6')Ib-cr	Aminoglycoside	1(56 isolate)	tobramycin, amikacin, dibekacin, netilmicin, sisomicin, fluoroquinolone, ciprofloxacin
aac(6')-Ib- Hangzhou	Aminoglycoside	2(56 and 58 isolates)	tobramycin, amikacin
blaKPC-2	beta-lactam	1(56 isolate)	amoxicillin, amoxicillin+clavulanic acid, ampicillin, ampicillin+clavulanic acid, cefepime, cefotaxime, cefoxitin, ceftazidime, ertapenem, imipenem, meropenem, piperacillin, piperacillin+tazobactam, aztreonam, ticarcillin, ticarcillin+clavulanic acid
blaGES-9	beta-lactam	1(56 isolate)	amoxicillin, amoxicillin+clavulanic acid, ampicillin,

			ampicillin+clavulanic acid, cefotaxime, cefoxitin, ceftazidime, piperacillin, aztreonam, ticarcillin
blaNDM-1	beta-lactam	1(56 isolate)	amoxicillin, amoxicillin+clavulanic acid, ampicillin, ampicillin+clavulanic acid, cefepime, cefixime, cefotaxime, cefoxitin, ceftazidime, ertapenem, imipenem, meropenem, piperacillin, piperacillin+tazobactam, temocillin, ceftazidime+avibactam
ARR-2	Rifamycin	1(56 isolate)	Rifampicin
tet(G)	Tetracycline	2(56 and 58 isolates)	tetracycline, doxycycline
dfrA1	folate pathway antagonist	1(56 isolate)	Trimethoprim
blaOXA-1	beta-lactam	1(58 isolate)	amoxicillin, amoxicillin+clavulanic acid, ampicillin, ampicillin+clavulanic acid, cefepime, piperacillin, piperacillin+tazobactam
qacEΔ	quaternary ammonium compound	5(4,7,18,56 and 58 isolates)	benzylkonium chloride', 'ethidium bromide', 'chlorhexidine',

species	gyrA, gyrB, inhA, fabI, Iso-tRNA, kasA, MurA, rho, rpoB, rpoC, S10p, S12p								
Antibiotic target replacement protein	FabG, fabV, HtdX	+ (3)	+ (3)	+ (3)	+ (3)	+ (3)	+ (3)	+ (3)	+ (3)
Efflux pump conferring antibiotic resistance	EmrAB-OMF, EmrAB-TolC, MacA, MacB, MdtABC-OMF, MdtABC-TolC, MexAB-OprM, MexCD-OprJ, MexCD-OprJ system, MexEF-OprN, MexEF-OprN system, MexHI-OpmD, MexHI-OpmD system, MexJK-OprM/OpmH, MexPQ-OpmE, MexPQ-OpmE system, MexVW-OprM, MexXY-OMP, TolC/OpmH, TriABC-OpmH, AcrAB-TolC, AcrZ, SugE, Tet(B), FloR family, Tet(G),	+ (22)	+ (22)	+ (26)	+ (22)	+ (22)	+ (22)	+ (24)	+ (24)
Gene conferring resistance via absence	gidB	+ (1)	+ (1)	+ (1)	+ (1)	+ (1)	+ (1)	+ (1)	+ (1)
Protein altering cell wall charge conferring antibiotic resistance	GdpD, PgsA	+ (2)	+ (2)	+ (2)	+ (2)	+ (2)	+ (2)	+ (2)	+ (2)
Protein	OccD1/OprD,	+	+	+	+	+	+	+	+

		flgG, flgH, flgI, flgJ, flgK, flgL, flgM, flgN, flhA, flhB, flhF, fliA, fliC, fliD, fliE, fliF, fliG, fliH, fliI, fliJ, fliK, fliL, fliM, fliN, fliO, fliP, fliQ, fliR, fliS, flit, motA, motB, motC, motD, motY								
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		algG, algI, algJ, algK, algL, algX								
	Alginate regulation	algP/algR3, algQ, algR, algU, algW, algZ, mucA, mucB, mucC, mucD, mucE, mucP	+	+	+	+	+	+	+	+
			(12)	(12)	(12)	(12)	(12)	(12)	(12)	(12)
Biosurfactant	Rhamnolipid biosynthesis	rhIA, rhIB, rhIC	+	+	+	+	+	+	+	+
			(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
Enzyme	Hemolytic phospholipase C	plcH	+	+	+	+	+	+	+	+
			(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	Non-hemolytic phospholipase C	plcN	+	+	+	+	+	+	+	+
			(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	Phospholipase C	plcB	+	+	+	+	+	+	+	+
			(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	Phospholipase D	pldA	+	+	+	+	+	+	+	-
			(1)	(1)	(1)	(1)	(1)	(1)	(1)	-
Iron uptake	Pyochelin receptor	fptA	+	+	+	+	+	+	-	-
			(1)	(1)	(1)	(1)	(1)	(1)	-	-
	Pyochelin	pchA, pchB, pchC, pchD, pchE, pchF, pchG, pchH, pchI, pchR	+	+	+	+	+	+	+	+
			(10)	(10)	(10)	(10)	(10)	(10)	(10)	(10)
	Pyoverdine receptors	fpvA	+	+	+	+	+	+	+	+
			(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	Pyoverdine	pvdA, pvdD, pvdE,	+	+	+	+	+	+	+	+
			(15)	(15)	(16)	(15)	(16)	(15)	(16)	(15)

	translocated effectors	exoY								
	P. aeruginosa TTSS	exsA, exsB, exsC, exsD, exsE, pcr1, pcr2, pcr3, pcr4, pcrD, pcrG, pcrH, pcrR, pcrV, popB, popD, popN, pscB, pscC, pscD, pscE, pscF, pscG, pscH, pscI, pscJ, pscK, pscL, pscN, pscO, pscP, pscQ, pscR, pscS, pscT, pscU	+	+	+	+	+	+	+	+
			(36)	(36)	(36)	(36)	(36)	(36)	(36)	(36)
Toxin	Exotoxin A (ETA)	toxA	+	+	+	+	+	+	+	+
			(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
	Hydrogen cyanide production	hcnA, hcnB, hcnC	+	+	+	+	+	+	+	+
			(3)	(3)	(3)	(3)	(3)	(3)	(3)	(3)
	Phytotoxin Phaseolotoxin	cysC1	-	-	+	-	-	-	-	-
					(1)					

Supplementary 4- The Mobile Genetic Element (MGE) in eight *P. aeruginosa* strains

Strain	NO. MGE	Plasmid	Tn	ICE	IS	ARGs Found on MGEs	Predicted phenotype
PA1	23				ISPa6	fosA	Fosfomycin
			Tn1213 (Com Tn)		ISPssp2	aph(3')-Vib	ribostamycin, butirosin, kanamycin, amikacin, gentamicin, neomycin, paromomycin
			Tn6196 (Uni Tn) Tn6082 (Uni Tn)			ant(2'')-Ia qacE qacL	gentamicin, tobramycin. benzylkonium chloride, cetylpyridinium chloride, chlorhexidine, ethidium bromide. benzylkonium chloride, cetylpyridinium chloride, chlorhexidine, ethidium bromide. Sulfamethoxazole.
						sul1 blaOXA-2	ceftazidime, piperacillin, ampicillin, amoxicillin+clavulanic acid, amoxicillin, ampicillin+clavulanic acid.
			Tn6205 (Uni Tn)		ISPsy20	aph(6'')-Id (n=2)	Streptomycin
		Tn1213 (Com Tn)			blaPER-1	ticarcillin+clavulanic acid, aztreonam, ceftazidime, piperacillin, cefotaxime, ampicillin, amoxicillin+clavulanic acid, amoxicillin, cefoxitin, ampicillin+clavulanic acid, ticarcillin, piperacillin+tazobactam, cefepime	

			Tn6061(n=3) (Uni Tn) Tn5501(Uni Tn) cn_2866_ISPa20 (Com Tn) cn_2115_ISPre1 (Com Tn)		ISPsy24(n=3) ISAs31 ISPa20(n=2) ISPa16 ISPre1 ISPen2		
PA4	34				ISPsy13	fosA	Fosfomycin
			Tn1213 (Com Tn)		ISPssp2(n=2)	aph(3')-VIb blaPER-1	amikacin, gentamicin, kanamycin, ribostamycin, butirosin, paromomycin, neomycin. ceftazidime, ampicillin, cefoxitin, amoxicillin+clavulanic acid, piperacillin, cefotaxime, piperacillin+tazobactam, aztreonam, cefepime, ticarcillin+clavulanic acid, ampicillin+clavulanic acid, ticarcillin, amoxicillin.
			Tn4656 (Uni Tn)			crpP	Ciprofloxacin
					ISPa119	blaOXA-392 ant(2'')-Ia aph(3')-VI aadA2b	unknown beta-lactam. tobramycin, gentamicin. Amikacin. spectinomycin, streptomycin.
			Tn6082 (Uni Tn)			aph(3'')-Ib aph(6)-Id	Streptomycin Streptomycin
					ISKpn4	blaVIM-4	ceftazidime, ampicillin, cefoxitin, imipenem, ertapenem, amoxicillin+clavulanic acid, piperacillin,

							cefotaxime, piperacillin+tazobactam, cefixime, cefepime, ampicillin+clavulanic acid, meropenem, amoxicillin.
			Tn6061(n=4) (Uni Tn) Tn6162 (Uni Tn) Tn4656(n=2) (Uni Tn)	ICE(Tn4371)604 1	ISAs31 IS6100 ISPsy24(n=3) ISPre3 ISCfr1 ISPst3 ISPssy ISPa32(n=4) ISPa6 ISPa86 ISAs33 ISPa7 ISPa20		
PA7	39				ISEch5	aac(2')-Ia	netilmicin, dibekacin, tobramycin, gentamicin.
					ISPa22 ISPa32 ISPa6 ISPa1 ISPsy24 ISPa5	fosA	Fosfomycin
					ISEc9	blaCMY-16	amoxicillin+clavulanic acid, ticarcillin, amoxicillin, ceftazidime, ampicillin, ampicillin+clavulanic acid, cefotaxime, ticarcillin+clavulanic acid, piperacillin+tazobactam, ceftazidime, piperacillin.
		Col3M				qnrD1	Ciprofloxacin
					ISEc39	tet(B)	tetracycline, doxycycline, minocycline
					IS26	qacE	chlorhexidine, benzylkonium chloride, cetylpyridinium chloride, ethidium bromide. Sulfamethoxazole.

						sul1	
					ISVch4 ISEc39	catA3	Chloramphenicol
		Tn6061(n=3) (Uni Tn) cn_2637_ISAs3 1 (Com Tn)	ICE(Tn4371)604 1	ISEc39(n=2) ISPa37 ISAs31(n=2) ISEc46(n=2) ISVsa11 ISKpn20(n=5) ISPsy24 ISSf1 ISEc75(n=2) IS911 ISKpn2 ISSpi4 IS1007			
PA 18	34				ISPa119	ant(2'')- Ia aph(3')- VI blaOXA- 392 aadA2b	tobramycin, gentamicin Amikacin Unknown beta-lactam streptomycin, spectinomycin
		Tn1213 (Com Tn)		ISPssp2	aph(3')- VIb blaPER- 1	paromomycin, neomycin, butirosin, amikacin, ribostamycin, kanamycin, gentamicin. ampicillin+clavulanic acid, ticarcillin, amoxicillin, ticarcillin+clavulanic acid, piperacillin, aztreonam, piperacillin+tazobactam , amoxicillin+clavulanic acid, cefepime, cefotaxime, ampicillin.	
				ISKpn4	blaVIM- 4	piperacillin, ertapenem, piperacillin+tazobactam , amoxicillin+clavulanic	

							acid, cefepime, imipenem, ceftazidime, meropenem, cefotaxime, cefixime, ampicillin.
			Tn4656 (Uni Tn)			crpP	Ciprofloxacin
			Tn6205(Uni Tn) Tn6061(n=4) (Uni Tn)) Tn6196 (Uni Tn) Tn6082 (Uni Tn) Tn6162 (Uni Tn) Tn4656(2) (Uni Tn)	ICE(Tn4371)604 1	ISPa26 ISPre3, ISCfr1 ISPst3, ISPssy ISAs31 ISPsy24(n=3) ISPsy13 ISPa32(n=3) ISPa6, ISPa86 ISPa7, ISPa20 IS6100		
PA 40	5				ISPa32 ISPa6 ISPa1	fosA catB7	Fosfomycin Chloramphenicol
					ISPa22 ISPa37		
PA 54	4				ISPa86 ISPa6 ISPa1	fosA	Fosfomycin
					ISPsy29		
PA 56	21				ISPa6 ISPa1	fosA	Fosfomycin
			Tn6082 (Uni Tn)			aph(6)-Id aph(3'')-Ib	Streptomycin Streptomycin
					ISKpn4	ant(2'')-Ia	tobramycin, gentamicin
			Tn6061 (UniTn)			tet(G)	tetracycline, doxycycline
			Tn6061(n=3) (Uni Tn) Tn4661(n=2) (Uni Tn)	ICE(Tn4371)604 1	ISPa100 ISPsy24(n=3) IS1071 ISPa32(n=2)		

					ISAs31 ISPa1635 IS6100		
PA 58	28				ISPa1	fosA	Fosfomicin
			Tn6061(n=3) (Uni Tn) cn_5674_ISPsp 1 (Com Tn) Tn5501 (Uni Tn) Tn5563 (Uni Tn) cn_7413_ISPa2 2 (Com Tn) cn_2115_ISPre1 (Com Tn)		ISPsp1, ISPpu14 ISAs31, ISPpu33 ISPa18 ISPa1328 ISPsy13 IS6100 ISPa100 ISPa22(n=2) ISPsmel ISPa16 ISPre1 ISPa32(n=2) ISPst2 ISPen2 ISPsy24		