

TABLE S1. Primers for the detection of the AbaR1 and AbaR3 associated genes

Gene or location	Primer pair	Sequence 5' - 3'	Amplicon (bp)	Annealing temperature	Reference
Beta-lactamase genes					
<i>bla</i> _{TEM-1}	TEM-1-F	gggaattctcgggaaatgtgcgcggaac	998	55	1
	TEM-1-R	gggatccgagtaaacctggctgacag			
Aminoglycoside resistance genes					
<i>aac(3)-Ia</i>	AAC3-IA1	gacataagcctgttcggtt	372	55	2
	AAC3-IA2	ctccgaactcacgaccga			
<i>aph(3')-Ia</i>	APH3-IA1	cgagcatcaaatgaaactgc	623	55	2
	APH3-IA2	gcgttgccaatgatgttacag			
<i>ant(3'')-Ia</i>	ANT3-IA1	tgattgctggttacggtagc	248	55	3
	ANT3-IA2	cgctatgttcttctctttg			
<i>ant(2'')-Ia</i>	ANT2-IA1	atctgccgctctggat	404	55	2
	ANT2-IA2	cgagcctgtaggact			
<i>strA</i>	STRA-F	aacaggaggcgcatgcct	400	50	This study
	STRA-R	cgccaaggctcagcagacc			
<i>aac(6)-Ib</i>	AAC6-IB1	tatgagtgctaaatcgat	395	55	4
	AAC6-IB2	cccgttctcgtagca			
Tetracycline resistance genes					
<i>tet(A)</i>	TETA2-F	gtaattctgagcactgtcgc	950	50	5
	TETA2-R	ctgcctggacaacattgctt			
<i>tetR</i>	TETR-F	cctgctggaacgctgcgtc	400	50	This study
	TETR-R	gaagccatgctggggagaat			
Chloramphenicol resistance genes					
<i>cmIA1</i>	CMLA-F	aggcgcaacggcttctgtt	595	50	This study
	CMLA-R	cgctacgcatcccgcgata			
<i>catA1</i>	CAT-F	gatgaacctgaatcgccagcg	398	48	This study
	CAT-R	tcacattctgcccgcctgat			
Sulphonamide resistance gene					
<i>sul1</i>	SUL1-F SUL1-R	tgtccgatcagatgcaccgtg gatgagccggtcggcagcg	300	55	This study
Trimethoprim resistance genes					
<i>dfra1</i>	DFRA1-F DFRA1-R	tggtctgttggtggagcga cctttgccagattggtaa	352	52	This study
Mercuric ion resistance genes					
<i>merA</i>	MERA-F MERA-R	cgtagctggtggtcagcac taagcccagtggaacgaacg	780	50	This study
	<i>merP</i>	MERP-F MERP-R			
<i>merR</i>		MERR-F MERR-R	gccgggtcaatgtggagac tagtcaccccgtgactcccc	400	50
	Arsenic resistance gene				
<i>arsB</i>	ARSB-F ARSB-R	gcaatcgctacagccagtgcc ggcattggggattgcgatagg	850	50	This study
Class 1 integron					
<i>int1</i>	INT1-F INT1-R	cagtggacataagcctgttc cccaggcatagactgta	160	55	6
	5'CS 3'CS	5CS 3CS			
Other AbaR-associated genes					
3' end of the ATPase gene	3ATP-F 3ATP-R	gcaacccgtaaaacgcgatga tgagctgaaagttcgccgga	400	52	This study
	5' end of the ATPase gene	5ATP-F 5ATP-R			
<i>uspA</i>		USPA-F USPA-R	tggaatgaccataagcccac ggggaacacggcactcagac	401	50
	<i>cadA</i>	CADA-F CADA-R	ctaggcgcctcgttcagga caatcaatgcgacgaatgca		
<i>tpnA</i> (Tn3)		TPNA-F TPNA-R	acgtcgggctaaatcgcg ttcactgagcgtcagacccc	358	50
	<i>resX</i>	RESX-F RESX-R	gcttgacatcgacgcgct catcaggccttggccgt		

TABLE S2. *Continued*

Gene or location	Primer pair	Sequence 5' - 3'	Amplicon (bp)	Annealing temperature	Reference
orf5 ^a	ORF5-F	ggagcctcgaacgttcgg	461	50	This study
	ORF5-R	tgaaggttgatcccagccg			
IS26	IS26-F	tccattcaggcgcataacgc	128	50	This study
	IS26-R	ggccgtacgctgtactgcaa			
J3 ^b	J3-F	attgccgagctgcactgtaa	300	55	This study
	J3-R	accattcaggcactcgtgcct			
J5 ^c	J5-F	ttgggaagcaatcaatagtc	310	55	This study
	J5-R	attggcctcacgcctgcct			

^a The gene encoding acetyltransferase related to puromycin acetyltransferases.

^b J3, junction between the 5 end of the island and the 3 end of the ATPase gene.

^c J5, junction between the 3 end of the island and the 5 end of the ATPase gene.

References

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TABLE S2. Primers used for PCR mapping of AbaR islands

Region	Primers	Sequence 5'-3'	Amplicon length (bp)	Amplicon analysis (RE ^a)	AbaR variant
3'ATPase-Tn6019	3ATP-F	gcaaccgtaaaacgcgatga	10788	RFLP (Accl, BsmAI)	AbaR3,10-19
	ARSB-R	ggcattggggattgcataggg			
Tn6019-Tn6018	ARSB-F	gcaatcgctacagccagtgcc	4209	RFLP (BglI, ClaI)	AbaR3,10-13, 15-19
	CADA-R	caatcaatgcgacgaatgcga			
Tn6018- <i>topA</i> sequence	CADA-F	ctaggcgcctcgtctcagga	3132	RFLP (Accl, BclI)	AbaR3,10,13,15-18
	TOPA-R	tccggttctgtggacacggt			
<i>topA</i> sequence-3CS	TOPA-F	cgatgcgctgtgtaggccgg	3669	RFLP (Accl, EcoRV)	AbaR3,10,13,15-18
	ORF5-R	tgaaggttggatcccagccg			
3CS-Tn1696	ORF5-F	ggagcctccgaacgttcgg	4309	RFLP (ApaI)	AbaR3,15,17,18
	MERA-R	taagcccagtggaacgaacg			
Tn1696-Tn1721	MERA-F	cgctcgtggtgtcagcac	3617	RFLP (HindIII)	AbaR3,15,17,18
	TETR-R	gaagccatgctggcggagaat			
Tn1721-ΔTn2760	TETR-F	cctgctcgaacgctgcgtc	6199	RFLP (ApaI, Accl)	AbaR3,15,17
	CAT-R	tcacattctgccgcctgat			
ΔTn2760-Tn3	CAT-F	gatgaacctgaatcgccagcg	1552	RFLP (BsmAI)	AbaR3,15,17
	TPNA-R	ttcactgagcgtcagacccc			
Tn3-ΔTn5393	TPNA-F	acgtcggggctaaatcgcg	5864	RFLP (HindII, EcoRV)	AbaR3
	IS26-R	ggccgtacgctgtactgcaa			
ΔTn5393	IS26-F	tccattcagggcgataacgc	3701	RFLP (EcoRI)	AbaR3,13
	TPNR-R	aagtatcgctgggacctg			
ΔTn5393-class 1 integron	TPNR-F	cgcaggtgctgaacgggac	5520	RFLP (Accl, Bfal)	AbaR3,13
	AAC3-IA2	ctccgaactcacgaccga			
class 1 integron	AAC3-IA2	ctccgaactcacgaccga	5065	RFLP (BglI)	AbaR3 ^b , 12,13,15-19
	ORF5-R	tgaaggttggatcccagccg			
3CS-Tn6018	ORF5-F	ggagcctccgaacgttcgg	3845	RFLP (HincII)	AbaR3,12-19
	CADA-R	caatcaatgcgacgaatgcga			
Tn6018-5'ATPase	CADA-F	ctaggcgcctcgtctcagga	6696	RFLP (HincII, Styl)	AbaR3,10-19
	5ATP-R	tgctcctgcagattgcccga			
3CS- <i>resX</i> sequence	ORF5-F	ggagcctccgaacgttcgg	1661	Sequencing	AbaR10
	RESX-R	catcagggccttgcccg			
<i>topA</i> sequence-Tn6020	TOPA-F	cgatgcgctgtgtaggccgg	1925	Sequencing	AbaR12
	IS26-F	tccattcagggcgataacgc			
3CS-ΔTn5393	ORF5-F	ggagcctccgaacgttcgg	1465	Sequencing	AbaR13
	IS26-R	ggccgtacgctgtactgcaa			
Tn6019-Tn6020	3ATP-F	gcaaccgtaaaacgcgatga	5957	Sequencing	AbaR14
	APH3-IA2	gcgttgccaatgatgttacag			
Tn3-Tn6020	TPNA-F	acgtcggggctaaatcgcg	3865	Sequencing	AbaR15
	IS26-F	tccattcagggcgataacgc			
3CS-Tn6020	ORF5-F	ggagcctccgaacgttcgg	12831	Sequencing	AbaR16
	IS26-F	tccattcagggcgataacgc			
Tn3-Tn6020	TPNA-F	acgtcggggctaaatcgcg	4344	Sequencing	AbaR17
	IS26-F	tccattcagggcgataacgc			
Tn1721-Tn6020	TETR-F	cctgctcgaacgctgcgtc	6084	Sequencing	AbaR18
	IS26-F	tccattcagggcgataacgc			
Tn6018-Tn6020	CADA-F	ctaggcgcctcgtctcagga	2192	Sequencing	AbaR19
	IS26-F	tccattcagggcgataacgc			

^a Restriction endonuclease (RE).

^b AbaR3 islands carrying a class 1 integron with *aacC1-orfP-ofrP-orfQ-aadA1*.