

Table 2. Efflux and Inactivating Genes Modified May 2009

Originally modified from AAC 1999 43:2823-30 with permission from ASM Journals

Resistance Profile	Protein	Genes	Genes	% homology		Plasmid	GenBank #
	name	included		DNA	aa	/transposon	
ATP-BINDING TRANSPORTERS							
Lincomycin	Car(A)	<i>car(A)</i>	<i>car(A)</i>			pOJ158,	M80346
Erythromycin & Streptogramin B	Msr(A)	<i>msr(A)</i>	<i>msr(A)</i>	98%-100%	98%-100%	pUL5054	X52085
			<i>msr(SA)</i>			pEP2104	
			<i>msr(SA')</i>			pMS97	AB013298
			<i>msr(B)</i>				M81802
	Msr(C)	<i>msr(C)</i>	<i>msr(C)</i>	96%	95%	chromosomal	AY004350, AF313494 AJ243209
	Msr(D) ^a	<i>msr(D)</i>	<i>mel</i>	98%-100%	98%-100%	Tn1207.2	AF227521 SA318993, AF274302
			<i>orf5</i>			Tn1207.1	AF227520
Lincomycin	Lsa(A)	<i>lsa</i>	<i>lsa(A)</i>			chromosomal	AY4225127
			<i>abc-23</i>				
	Lsa(B)	<i>orf3</i>	<i>lsa(B)</i>			pSCFS1	AJ579365
Oleandomycin	Ole(B)	<i>ole(B)</i>	<i>ole(B)</i>			pALOR26E	L36601
Oleandomycin	Ole(C)	<i>ole(C)</i>	<i>ole(C)</i>				L06249
Spiramycin	Srm(B)	<i>srm(B)</i>	<i>srm(B)</i>			pKC514	X63451
Tylosin	Tlr(C)	<i>tlc(C)</i>	<i>tlc(C)</i>				M57437
Streptogramin A	Vga(A)	<i>vga(A)</i>	<i>vga</i>			pIP524	M90056
Streptogramin A & Lincomycin	Vga(A) _{LC} ¹	<i>vga(A)_{LC}</i>	<i>vga</i>				DQ823382

Streptogramin A	Vga(B)	<i>vga(B)</i>	<i>vga(B)</i>			pIP1633	U82085
Streptogramin A	Vga(C)	<i>vga(C)</i>	<i>vga(C)</i>			pKKS825	FN377602

MAJOR FACILITATORS

Lincomycin	Lmr(A)	<i>lmr(A)</i>	<i>lmr(A)</i>			pLST21	X59926
Erythromycin	Mef(A)	<i>mef(A)</i>	<i>mef(A)</i>	90%-100%	91%-100%	p53-6	U70055
			<i>mef(A)</i>			Tn1207.1	AF227520
			<i>mef(A)</i>			Tn1207.2	AF227521
			<i>mef(A)</i>				AY064721, AY064722
			<i>mef(E)</i>			pAT15-5	U83667
			<i>mef(E)</i>			Chromosomal	AF274302, AF376746
Erythromycin			<i>mef(B)</i>			pP286	FJ196385

ESTERASES

Erythromycin	Ere(A)	<i>ere(A)</i>	<i>ere(A)</i>	92%-100%	92%-100%	pI1100, pAT63	M11277
						pLQ1723	AF099140
							AF326209
							AF512546_2
Erythromycin	Ere(B)	<i>ere(B)</i>	<i>ere(B)</i>	99%	99%	pIP1527	A15097
			<i>ere(B)</i>			pAT72	X03988

LYASES

Streptogramin B	Vgb(A)	<i>vgb(A)</i>	<i>vgb</i>			pIP524	M20129
Streptogramin B	Vgb(B)	<i>vgb(B)</i>	<i>vgb(B)</i>			pIP1714	AF015628

TRANSFERASES

Lincomycin	Lnu(A)	<i>lnu(A)</i>	<i>lin(A')</i> <i>lin(A)</i>			pIP856 pIP855	M14039
Lincomycin	Lnu(B)	<i>lnu(B)</i>	<i>lin(B)</i>			pVM25	AJ238249
Lincomycin	Lnu(C)	<i>lnu(C)</i>				MtnLNU	AY928180
Lincomycin	Lnu(D)	<i>lnu(D)</i>					EF452177
Lincomycin	Lnu(F)	<i>lnu(F)</i> <i>lnu(G)</i>					AJ561197, EU118119 DQ836009
Streptogramin A	Vat(A)	<i>vat(A)</i>	<i>vat</i>			pIP680	L07778
Streptogramin A	Vat(B)	<i>vat(B)</i>	<i>vat(B)</i>			pIP52	U19459
Streptogramin A	Vat C)	<i>vat(C)</i>	<i>vat(C)</i>			pIP1714	AF015628
Streptogramin A	Vat(D)	<i>vat(D)</i>	<i>sat(A)</i>			pAT15, pAT421	L12033, AF368302
Streptogramin A	Vat(E)	<i>vat(E)</i>	<i>sat(G)</i> <i>sat(G)</i> <i>vat(E)</i> <i>vat(E-3)</i> <i>vat(E-4)</i> <i>vat(E-5)</i> <i>vat(E-6)</i> <i>vat(E-7)</i> <i>vat(E-8)</i>	99%	98-100%		AF139725, AF229200 AF153312 NC_004566 AF242872 AY043211 AY043209 AY043210 AY043212 AY043213
Streptogramin A		Vat(F)	<i>vat(F)</i>				AF170730

PHOSPHORYLASES

Macrolides	Mph(A)	<i>mph(A)</i>	<i>mph(A)</i>	99%	93-99%	pTZ3519	D16251
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			<i>mph(K)</i>			pGE64	U36578
Macrolides	Mph(B)	<i>mph(B)</i>	<i>mph(B)</i>			pTZ3714, pTZ3723	D85892
Macrolides	Mph(C)	<i>mph(C)</i>	<i>mph(BM)</i>	100%	100%	pMS97	AB013298
			<i>mph(C)</i>			pSR1	AF167161
Macrolides	Mph(D)	<i>mph(D)</i>	<i>mph(D)</i> partial sequence				AB048591

Blue represents new or changes since last update

¹ Modification to name of this gene **because unlike other *vga(A)* genes the *vga(A)_{LC}* confers resistance to both Streptogramin A & Lincomycin**
Vga(C) AAC53:3589, 2009