

Allele	Variant	Antibiotic Class	Gene Bank Accession	Product Annotation
aac(2')-Ia	aac(2')-Ia_1	Aminoglycoside resistance	L06156	aminoglycoside 2'-N-acetyltransferase
aac(3)-Ia	aac(3)-Ia_1	Aminoglycoside resistance	X15852	unnamed protein product; aacC1 product acetyltransferase (AA 1-177)"
aac(3)-Ib	aac(3)-Ib_1	Aminoglycoside resistance	L06157	aminoglycoside 3'-N-acetyltransferase
aac(3)-Ic	aac(3)-Ic_1	Aminoglycoside resistance	AJ511268	aminoglycoside acetyltransferase
aac(3)-Id	aac(3)-Id_1	Aminoglycoside resistance	AB114632	aminoglycoside acetyltransferase
aac(3)-IIa	aac(3)-IIa_1	Aminoglycoside resistance	X51534	unnamed protein product; AAC(3)-II (AA 1-286)
aac(3)-IId	aac(3)-IId_1	Aminoglycoside resistance	EU022314	aminoglycoside-(3)-N-acetyl-transferase
aac(6')-33	aac(6')-33_1	Aminoglycoside resistance	GQ337064	aminoglycoside acetyltransferase
aac(6')-aph(2'')	aac(6')-aph(2'')_1	Aminoglycoside resistance	M13771	AAC(6')-APH(2'') bifunctional resistance protein
aac(6')-Ib	aac(6')-Ib_1	Aminoglycoside resistance	M21682	aminoglycoside 6'-N-acetyltransferase
aac(6')Ib-cr	aac(6')Ib-cr_1	Fluoroquinolone and aminoglycoside resistance	DQ303918	fluroquinolone acetylating aminoglycoside acetyltransferase
aac(6')-Ic	aac(6')-Ic_1	Aminoglycoside resistance	M94066	aminoglycoside acetyltransferase
aac(6')-If	aac(6')-If_1	Aminoglycoside resistance	X55353	AG-6'-acetyltransferase
aac(6')-IIa	aac(6')-IIa_1	Aminoglycoside resistance	M29695	6'-N-acetyltransferase
aac(6')-IIc	aac(6')-IIc_1	Aminoglycoside resistance	AF162771	aminoglycoside 6'-N-acetyltransferase
aadA1	aadA1_4	Aminoglycoside resistance	M95287	aminoglycoside (3' ') adenylyltransferase
aadA1	aadA1_5	Aminoglycoside resistance	JQ480156	aminoglycoside-adenyltransferase
aadA11	aadA11_1	Aminoglycoside resistance	AY144590	aminoglycoside adenylyltransferase
aadA2	aadA2_2	Aminoglycoside resistance	JQ364967	aminoglycosides adenylyltransferase

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aadA5	aadA5_1	Aminoglycoside resistance	AF137361	streptomycin and spectinomycin resistance aminoglycoside adenylyltransferase
aadA6	aadA6_1	Aminoglycoside resistance	AF140629	aminoglycoside adenylyltransferase AADA6
aadA7	aadA7_1	Aminoglycoside resistance	AF224733	aminoglycoside adenylyltransferase
aadB	aadB_1	Aminoglycoside resistance	JN119852	aminoglycoside-2''-adenylyltransferase"
aadD	aadD_1	Aminoglycoside resistance	AF181950	kanamycin resistance protein
ACT-15	ACT-15_1	Beta-lactam resistance:AmpC-type	JX440356	AmpC beta-lactamase ACT-15
ACT-16	ACT-16_1	Beta-lactam resistance:AmpC-type	AB737978	beta lactamase ACT-16
ACT-5	ACT-5_1	Beta-lactam resistance:AmpC-type	FJ237369	beta-lactamase ACT-5
ACT-7	ACT-7_1	Beta-lactam resistance:AmpC-type	FJ237368	beta-lactamase EBC-1464
ADC-25	ADC-25_1	Beta-lactam resistance	EF016355	AmpC cephalosporinase
aph(3')-Ia	aph(3')-Ia_1	Aminoglycoside resistance	V00359	
aph(3')-Ic	aph(3')-Ic_1	Aminoglycoside resistance	X62115	neomycin phosphotransferase
aph(3')-IIb	aph(3')-IIb_1	Aminoglycoside resistance	X90856	aminoglycoside phosphotransferase (3')IIps
aph(3')-III	aph(3')-III_1	Aminoglycoside resistance	M26832	kanamycin resistance protein
aph(3')-VIa	aph(3')-VIa_1	Aminoglycoside resistance	X07753	
aph(3')-XV	aph(3')-XV_1	Aminoglycoside resistance	Y18050	aminoglycoside phosphotransferase
aph(4)-Ia	aph(4)-Ia_1	Aminoglycoside resistance	V01499	unnamed protein product; aph(4)
armA	armA_1	Aminoglycoside resistance	AY220558	16S rRNA methylase
ARR-3	ARR-3_4	Rifampicin resistance	FM207631	rifampicin ADP-ribosylatin transferase

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blaZ	blaZ_34	Beta-lactam resistance	AP003139	beta-lactamase
blaZ	blaZ_35	Beta-lactam resistance	AJ302698	beta-lactamase
blaZ	blaZ_36	Beta-lactam resistance	AJ400722	beta-lactamase
catA1	catA1_1	Phenicol resistance	V00622	
catA3	catA3_1	Phenicol resistance	X07848	
catB2	catB2_1	Phenicol resistance	AF047479	chloramphenicol acetyltransferase
catB3	catB3_1	Phenicol resistance	AJ009818	Chloramphenicol acetyltransferase
catB7	catB7_1	Phenicol resistance	AF036933	chloramphenicol acetyltransferase
catB8	catB8_1	Phenicol resistance	AF227506	chloramphenicol acetyltransferase
cmlA1	cmlA1_1	Phenicol resistance	M64556	nonenzymatic chloramphenicol-resistance protein
cmlA1	cmlA1_2	Phenicol resistance	AB212941	chloramphenicol resistance
cmx	cmx_1	Phenicol resistance	U85507	chloramphenicol resistance protein
CMY-2	CMY-2_1	Beta-lactam resistance	X91840	extended spectrum beta-lactamase
CMY-4	CMY-4_1	Beta-lactam resistance	AF420597	cephamycinase
CMY-42	CMY-42_1	Beta-lactam resistance	HM146927	AmpC beta-lactamase
CMY-6	CMY-6_1	Beta-lactam resistance	AJ011293	beta-lactamase
CMY-76	CMY-76_1	Beta-lactam resistance	JQ733573	AmpC beta-lactamase CMY-76
CMY-79	CMY-79_1	Beta-lactam resistance	JQ733576	AmpC beta-lactamase CMY-79
CMY-80	CMY-80_1	Beta-lactam resistance	JQ733577	AmpC beta-lactamase CMY-80
CMY-84	CMY-84_1	Beta-lactam resistance	JQ733579	AmpC beta-lactamase CMY-84
CMY-94	CMY-94_1	Beta-lactam resistance	JX514368	CMY-like beta-lactamase

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CTX-M-124	CTX-M-124_1	Beta-lactam resistance	JQ429324	extended-spectrum beta-lactamase CTX-M-124
CTX-M-14	CTX-M-14_1	Beta-lactam resistance	AF252622	beta-lactamase CTX-M-14
CTX-M-15	CTX-M-15_23	Beta-lactam resistance	DQ302097	extended-spectrum beta-lactamase CTX-M-15
CTX-M-2	CTX-M-2_1	Beta-lactam resistance	EU622041	resistance to beta-lactams including extended-spectrum cephalosporins
CTX-M-55	CTX-M-55_2	Beta-lactam resistance	GQ456159	extended-spectrum beta-lactamase CTX-M-55
dfrA1	dfrA1_1	Trimethoprim resistance	X00926	dihydrofolate reductase (DHFR)
dfrA1	dfrA1_30	Trimethoprim resistance	JQ690541	dihydrofolate reductase type I
dfrA12	dfrA12_1	Trimethoprim resistance	AB571791	dihydrofolate reductase
dfrA14	dfrA14_1	Trimethoprim resistance	DQ388123	dihydrofolate reductase
dfrA15	dfrA15_1	Trimethoprim resistance	HM449019	dihydrofolate reductase
dfrA17	dfrA17_1	Trimethoprim resistance	FJ460238	dihydrofolate reductase; trimethoprim resistance
dfrA18	dfrA18_1	Trimethoprim resistance	AJ310778	dihydrofolate reductase
dfrA29	dfrA29_1	Trimethoprim resistance	AM237806	dihydrofolate reductase type VII
dfrA30	dfrA30_1	Trimethoprim resistance	AM997279	dihydrofolate reductase
dfrA3b	dfrA3b_1	Trimethoprim resistance	AY878717	dihydrofolate reductase type IIIb
dfrA5	dfrA5_1	Trimethoprim resistance	X12868	
dfrA8	dfrA8_1	Trimethoprim resistance	U10186	dihydrofolate reductase type VIII
dfrB1	dfrB1_2	Trimethoprim resistance	U36276	dihydrofolate reductase
dfrB5	dfrB5_1	Trimethoprim resistance	AY943084	dihydrofolate reductase
dfrG	dfrG_1	Trimethoprim resistance	AB205645	dihydrofolate reductase
DHA-1	DHA-1_1	Beta-lactam resistance:AmpC-type	Y16410	beta-lactamase class C

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ere(A)	ere(A)_2	Macrolide resistance	AF099140	erythromycin esterase
erm(42)	erm(42)_2	Macrolide resistance	AB601890	erythromycin resistance protein
erm(A)	erm(A)_1	Macrolide resistance	X03216	
erm(B)	erm(B)_1	Macrolide resistance	JN899585	rRNA methylase
fosA	fosA_10	Fosfomycin resistance	EU195449	putative fosfomycin-resistance protein
fosA	fosA_13	Fosfomycin resistance	EU487198	fosfomycin-resistance protein
fosA	fosA_14	Fosfomycin resistance	AB522970	fosfomycin resistance protein FosA3
fosA	fosA_3	Fosfomycin resistance	NZ_ACWO01000079	
fosA	fosA_7	Fosfomycin resistance	NZ_AFBO01000747	
GES-1	GES-1_1	Beta-lactam resistance	HQ170511	extended-spectrum beta-lactamase GES-7
IMP-1	IMP-1_1	Beta-lactam resistance	DQ522237	metallo-beta-lactamase IMP-1-like
IMP-14	IMP-14_1	Beta-lactam resistance	AY553332	metallo-beta-lactamase; carbapenemase IMP-14
IMP-4	IMP-4_1	Beta-lactam resistance	AF244145	carbapenem-hydrolysing beta-lactamase
KPC-2	KPC-2_1	Beta-lactam resistance	AY034847	carbapenemase
KPC-3	KPC-3_1	Beta-lactam resistance	HM769262	beta-lactamase KPC-3
KPC-4	KPC-4_1	Beta-lactam resistance	FJ473382	beta-lactamase KPC-4
KPC-5	KPC-5_1	Beta-lactam resistance	EU400222	beta-lactamase KPC-5
KPC-6	KPC-6_1	Beta-lactam resistance	EU555534	beta-lactamase KPC-6
LEN16	LEN16_1	Beta-lactam resistance	AY743416	LEN-type penicillinase
MAL-1	MAL-1_1	Beta-lactam resistance	AJ277209	beta-lactamase MAL-1
MAL-1	MAL-1_2	Beta-lactam resistance	AJ609506	class A beta-lactamase
mcr-1	mcr-1_1	Colistin resistance	KP347127	phosphoethanolamine transferase

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mecA	mecA_14	Beta-lactam resistance	AB505630	penicillin-binding protein 2'
mecA	mecA_15	Beta-lactam resistance	AB505628	penicillin-binding protein 2'
mecA	mecA_6	Beta-lactam resistance	FR821779	beta-lactam-inducible penicillin-binding protein
mph(A)	mph(A)_1	Macrolide resistance	D16251	macrolide 2'-phosphotransferase I
mph(C)	mph(C)_2	Macrolide resistance	AF167161	
mph(E)	mph(E)_3	Macrolide resistance	EU294228	macrolide 2'-phosphotransferase
msr(A)	msr(A)_3	Macrolide, Lincosamide and Streptogramin B resistance	M81802	21kDa product of the C-terminal of MsrB
msr(E)	msr(E)_4	Macrolide, Lincosamide and Streptogramin B resistance	EU294228	
NDM-1	NDM-1_1	Beta-lactam resistance	FN396876	metallo-beta-lactamase
NDM-5	NDM-5_1	Beta-lactam resistance	JN104597	NDM-5 metallo-beta-lactamase
NDM-6	NDM-6_1	Beta-lactam resistance	JN967644	NDM carbapenemase
NDM-7	NDM-7_1	Beta-lactam resistance	JX262694	NDM-7 metallo-beta-lactamase
NMC-A	NMC-A_1	Beta-lactam resistance	AJ536087	class A nonmetallocarbapenemase
OKP-B-2	OKP-B-2_1	Beta-lactam resistance	AM051151	OKP-B beta-lactamase
oqxA	oqxA_1	Quinolone resistance	EU370913	component of RND-type multidrug efflux pump that confers resistance to olaquinox
oqxB	oqxB_1	Quinolone resistance	EU370913	component of RND-type multidrug efflux pump that confers resistance to olaquinox
OXA-1	OXA-1_1	Beta-lactam resistance	J02967	OXA-1 beta-lactamase
OXA-10	OXA-10_2	Beta-lactam resistance	EU886981	Beta-lactamase

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OXA-100	OXA-100_1	Beta-lactam resistance	AM231720	blaOXA-100 class D beta-lactamase
OXA-181	OXA-181_1	Beta-lactam resistance	HM992946	carbapenemase OXA-181
OXA-2	OXA-2_1	Beta-lactam resistance	DQ310703	oxacillinase type 2
OXA-203	OXA-203_1	Beta-lactam resistance	HQ998857	beta-lactamase OXA-203
OXA-223	OXA-223_1	Beta-lactam resistance	JN248564	beta-lactamase OXA-223
OXA-23	OXA-23_1	Beta-lactam resistance	HQ700358	beta-lactamase OXA-23
OXA-232	OXA-232_1	Beta-lactam resistance	JX423831	class D beta-lactamase
OXA-237	OXA-237_1	Beta-lactam resistance	JQ820241	beta-lactamase OXA-237
OXA-24	OXA-24_1	Beta-lactam resistance	AJ239129	Beta-lactamase
OXA-4	OXA-4_1	Beta-lactam resistance	AY162283	beta-lactamase OXA-4
OXA-48	OXA-48_2	Beta-lactam resistance	AY236073	class D carbapenem-hydrolyzing beta-lactamase
OXA-50	OXA-50_1	Beta-lactam resistance	AY306135	oxacillinase
OXA-50	OXA-50_2	Beta-lactam resistance	AY306133	oxacillinase
OXA-50	OXA-50_3	Beta-lactam resistance	AY306130	oxacillinase
OXA-50	OXA-50_3	Beta-lactam resistance	AY306132	oxacillinase
OXA-56	OXA-56_1	Beta-lactam resistance	AY660529	restricted spectrum class D beta-lactamase
OXA-58	OXA-58_1	Beta-lactam resistance	AY665723	carbapenem-hydrolyzing oxacillinase
OXA-64	OXA-64_1	Beta-lactam resistance	AY750907	beta-lactamase OXA-64
OXA-65	OXA-65_1	Beta-lactam resistance	AY750908	beta-lactamase OXA-65
OXA-66	OXA-66_4	Beta-lactam resistance	FJ360530	OXA carbapenemase; class D oxacillinase
OXA-69	OXA-69_1	Beta-lactam resistance	HM564339	carbapenem-hydrolyzing oxacillinase OXA-69

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OXA-71	OXA-71_1	Beta-lactam resistance	AY859528	carbapenem-hydrolyzing oxacillinase OXA-71
OXA-72	OXA-72_1	Beta-lactam resistance	GU199039	class D beta-lactamase OXA-72
OXA-82	OXA-82_1	Beta-lactam resistance	GQ352402	beta-lactamase OXA-82 protein
OXA-9	OXA-9_2	Beta-lactam resistance	JF703130	oxacillinase-carbenicillinase
OXA-94	OXA-94_1	Beta-lactam resistance	DQ519088	beta-lactamase OXA-94
OXY-1-4	OXY-1-4_4	Beta-lactam resistance	AY077483	K1 beta-lactamase
OXY-1-7	OXY-1-7_7	Beta-lactam resistance	M27459	beta-lactamase
OXY-2-8	OXY-2-8_8	Beta-lactam resistance	AY055205	K1 beta-lactamase OXY-2
PAO	PAO_1	Beta-lactam resistance	AY083595	beta-lactamase precursor
PAO	PAO_2	Beta-lactam resistance	FJ666065	class C beta-lactamase PDC-1
PAO	PAO_3	Beta-lactam resistance	FJ666073	class C beta-lactamase PDC-10
PAO	PAO_4	Beta-lactam resistance	AY083592	beta-lactamase precursor
PER-7	PER-7_1	Beta-lactam resistance	HQ713678	extended spectrum beta-lactamase
QnrB13	QnrB13_1	Quinolone resistance	EU273755	quinolone resistance protein; pentapeptide repeat protein
QnrB2	QnrB2_1	Quinolone resistance	HM125698	fluoroquinolone resistance protein
QnrB34	QnrB34_1	Quinolone resistance	JN173056	quinolone resistance protein QnrB34
QnrB38	QnrB38_1	Quinolone resistance	JN173060	QnrB38
QnrB4	QnrB4_1	Quinolone resistance	DQ303921	contains pentapeptide repeat
QnrB5	QnrB5_1	Quinolone resistance	DQ303919	contains pentapeptide repeat
QnrB6	QnrB6_3	Quinolone resistance	EF523819	QnrB6
QnrB7	QnrB7_1	Quinolone resistance	EU043311	QnrB7

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QnrS1	QnrS1_1	Quinolone resistance	AB187515	Qnr
rmtB	rmtB_1	Aminoglycoside resistance	AB103506	16S rRNA methylase
rmtC	rmtC_1	Aminoglycoside resistance	AB194779	16S rRNA methylase
rmtf	rmtf_1	Aminoglycoside resistance	JQ808129	aminoglycoside 16s rRNA methyltransferase
rmtG	rmtG_1	Aminoglycoside resistance	KJ004567	16S rRNA methyltransferase
SFO-1	SFO-1_1	Beta-lactam resistance	AB003148	class A beta-lactamase SFO-1
SHV-1	SHV-1_11	Beta-lactam resistance	EF035565	extended spectrum beta lactamase
SHV-1	SHV-1_13	Beta-lactam resistance	AF462396	extended-spectrum beta-lactamase SHV-1
SHV-1	SHV-1_18	Beta-lactam resistance	FJ668818	beta-lactamase SHV-1
SHV-1	SHV-1_9	Beta-lactam resistance	HM751102	SHV-1 beta-lactamase
SHV-11	SHV-11_10	Beta-lactam resistance	EF035557	extended spectrum beta lactamase
SHV-11	SHV-11_15	Beta-lactam resistance	DQ219473	extended-spectrum beta-lactamase SHV-11
SHV-11	SHV-11_1	Beta-lactam resistance	AY528717	beta-lactamase
SHV-11	SHV-11_2	Beta-lactam resistance	HM751098	SHV-11 beta-lactamase
SHV-11	SHV-11_5	Beta-lactam resistance	GQ407117	beta-lactamase blaSHV-11
SHV-11	SHV-11_8	Beta-lactam resistance	GQ387358	beta-lactamase SHV-11
SHV-11	SHV-11_9	Beta-lactam resistance	FJ483937	beta-lactamase SHV-11
SHV-12	SHV-12_1	Beta-lactam resistance	AF462395	extended-spectrum beta-lactamase SHV-12
SHV-26	SHV-26_1	Beta-lactam resistance	AF227204	beta-lactamase
SHV-30	SHV-30_1	Beta-lactam resistance	AY661885	beta-lactamase SHV-30
SHV-5	SHV-5_6	Beta-lactam resistance	EF653399	beta-lactamase SHV-5
SHV-83	SHV-83_1	Beta-lactam resistance	AM176558	beta-lactamase

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SME-3	SME-3_1	Beta-lactam resistance	AY584237	carbapenem-hydrolyzing beta-lactamase SME-3
spc	spc_1	Aminoglycoside resistance	X02588	
SPM-1	SPM-1_1	Beta-lactam resistance	AY341249	carbapenemase
strA	strA_1	Aminoglycoside resistance	M96392	
strA	strA_4	Aminoglycoside resistance	AF321551	aminoglycoside 3''-phosphotransferase
strB	strB_1	Aminoglycoside resistance	M96392	streptomycin phosphotransferase
sul1	sul1_11	Sulphonamide resistance	DQ914960	dihydropteroate synthase
sul1	sul1_2	Sulphonamide resistance	CP002151	dihydropteroate synthase protein Sul1
sul2	sul2_2	Sulphonamide resistance	GQ421466	dihydropteroate synthase
sul2	sul2_3	Sulphonamide resistance	HQ840942	sulfonamide-insensitive dihydropteroate synthetase
sul3	sul3_2	Sulphonamide resistance	AJ459418	dihydropteroate synthase
TEM-1A	TEM-1A_4	Beta-lactam resistance	HM749966	TEM-1 beta-lactamase
TEM-1B	TEM-1B_1	Beta-lactam resistance	JF910132	beta-lactamase
TEM-1D	TEM-1D_83	Beta-lactam resistance	AF188200	beta-lactamase variant TEM-1D
TEM-52B	TEM-52B_1	Beta-lactam resistance	AF027199	extended spectrum beta-lactamase
tet(A)	tet(A)_3	Tetracycline resistance	AY196695	tetracycline resistance efflux pump
tet(A)	tet(A)_4	Tetracycline resistance	AJ517790	tetracycline resistance protein
tet(B)	tet(B)_3	Tetracycline resistance	AP000342	tetracycline resistance protein
tet(B)	tet(B)_4	Tetracycline resistance	AF326777	tetracycline resistance protein TetA(B)
tet(C)	tet(C)_5	Tetracycline resistance	NC_003213	TetA(C) protein
tet(D)	tet(D)_1	Tetracycline resistance	AF467077	TetA(D); class D; efflux pump

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tet(G)	tet(G)_4	Tetracycline resistance	AF133140	tetracycline resistance protein
tet(J)	tet(J)_1	Tetracycline resistance	ACLE01000065	transporter, major facilitator family protein
tet(K)	tet(K)_4	Tetracycline resistance	U38428	tetracycline resistance protein
tet(M)	tet(M)_7	Tetracycline resistance	FN433596	tetracycline resistance protein
VEB-1	VEB-1_1	Beta-lactam resistance	HM370393	extended-spectrum beta-lactamase
VIM-1	VIM-1_1	Beta-lactam resistance	Y18050	beta-lactamase VIM-1
VIM-11	VIM-11_1	Beta-lactam resistance	AY605049	VIM-11
VIM-2	VIM-2_1	Beta-lactam resistance	AF302086	metallo-beta-lactamase
VIM-27	VIM-27_1	Beta-lactam resistance	HQ858608	metallo-beta-lactamase VIM-27
VIM-4	VIM-4_1	Beta-lactam resistance	EU581706	metallo-beta-lactamase