

Supplementary data

Table S1. Oligonucleotides used to determine the genetic platforms of *bla*_{OXA-48-like} genes

Primer	Sequence	Source or reference
IS1999 Pre Rv	5'-ATCAAATTAGGGTGGGAAGCGCATC- 3'	This study
IS1999 Pre Fw	5'-ATCAGCGCCTTAGAGGCCAG -3'	This study
IS1999 Pre Ad	5'-GATAGAAACAGAAGCCACTGGAG-3'	This study
OXA-48 end	5'-GAAGTGGTTAGCGCGTATTTGTG-3'	This study
LysR beg	5'-GCAGCGGCATTCACCTTTAC-3'	This study

Table S2. Molecular epidemiology, characterization of antibiotic resistance genes and antibiotic susceptibility of 56 OXA-48-like-producing *K. pneumoniae* isolates

Isolate number	Year	MLST	PFGE	Source	Geographical area	Hospital	<i>bla</i> _{OXA-48-like}	<i>bla</i> _{OXA-48-like} plasmid type	Tn1999 variant	<i>bla</i> _{CTX-M-15}	<i>bla</i> _{CTX-M-15} plasmid type	Other <i>bla</i> genes (ESBL and pAmpC)	Antibiotic susceptibility ^a																
													AMP	AMC	PTZ	CFX	CAZ	CTX	FEP	AZT	IMI	MER	ERT	GEN	TOB	AK	CIP	T/S	FOS
2014081	2014	ST15	P01	Urine	Seville	H16	<i>bla</i> _{OXA-48}	Incl	ND	Yes	IncR	-	R	R	R	R	R	R	R	R	I	S	R	S	S	S	R	S	R
2014033	2014	ST15	P02	Urine	Seville	H16	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	S	S	R	I	R
2014034	2014	ST15	P02	Blood culture	Seville	H16	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	S	S	R	I	R
2014057	2014	ST15	P02	Urine	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	R	R	R	R
2014127	2014	ST15	P02	Surveillance study	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	I	R	R	S
2014128	2014	ST15	P02	Wound	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	S	R	R	R
2014129	2014	ST15	P02	Wound	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	I	R	R	S
2014180	2014	ST15	P02	Urine	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	No	-	-	R	R	R	R	R	R	R	R	S	I	R	S	R	S	R	R	S
2014185	2014	ST15	P02	Surveillance study	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	No	-	-	R	R	R	R	R	R	R	R	I	R	R	S	R	S	R	R	R
2014187	2014	ST15	P02	Blood culture	Seville	H16	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	S	S	R	S	S
2015014	2015	ST15	P02	Surveillance study	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	S	I	I	S	S	I	R	S	R	R	R	I	S
2015018	2015	ST15	P02	Wound	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	S	R	R	S
2015050	2015	ST15	P02	Wound	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	S	R	R	S
2014028	2014	ST15	P03	Urine	Seville	H16	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	I	R	S	R
2014058	2014	ST15	P03	Urine	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	R	R	R	S	R	I	R	R	R
2014145	2014	ST15	P03	Sputum	Malaga	H8	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	I	R	R	S
2014149	2014	ST15	P03	Urine	Malaga	H8	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	S	S	S	S	S	S	R	S	S	S	R	S	S
2014181	2014	ST15	P03	Wound	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	1	No	-	-	R	R	R	R	R	R	R	R	S	S	R	S	R	S	R	R	R
2015130	2015	ST15	P03	Urine	Granada	H14	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	S	R	R	R

2015261	2015	ST15	P03	Urine	Seville	H5	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	S	I	R	S	R	S	R	R	R	
2015254	2015	ST15	P04	Surveillance study	Cordoba	H6	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	S	R	R	S	
2014142	2014	ST15	P05	Bile	Malaga	H8	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	R	R	S	R	R	S	
2014143	2014	ST15	P05	Blood culture	Malaga	H8	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	R	R	S	R	R	S	
2014144	2014	ST15	P05	Surveillance study	Malaga	H8	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	I	R	R	R	R	R	S	S	R	R	R	S	R	R	S	
2014146	2014	ST15	P05	Urine	Malaga	H8	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	R	R	S	R	R	R	
2014150	2014	ST15	P05	Bile	Malaga	H8	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	R	R	S	R	R	S	
2015012	2015	ST15	P06	Urine	Seville	H16	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	K7:A-B-	-	R	R	R	S	S	S	I	S	S	S	R	S	R	S	R	R	S	
2014088	2014	ST15	P07	Blood culture	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	I	R	R	R	
2014090	2014	ST15	P07	Urine	Seville	H11	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	R	R	R	R	S	S	S	R	S	R
2014126	2014	ST11	P08	Urine	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	S	R	S	S	
2015067	2015	ST11	P08	Surveillance study	Malaga	H3	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	S	R	S	S	
2015083	2015	ST11	P09	Surveillance study	Malaga	H3	<i>bla</i> _{OXA-245}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	S	R	R	R	
2015013	2015	ST11	P10	Urine	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	S	R	S	S	
2015015	2015	ST11	P10	Blood culture	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	S	R	S	S	
2014086	2014	ST11	P11	Urine	Cadiz	H12	<i>bla</i> _{OXA-48}	No TF	2,4,5	Yes	K1:A-B	-	R	R	I	R	R	R	R	R	S	S	R	S	S	S	R	R	R	
2015259	2015	ST11	P11	Urine	Jaen	H4	<i>bla</i> _{OXA-48}	No TF	2,4,5	Yes	K1:A-B	-	R	R	R	R	R	R	R	R	S	I	R	R	R	S	R	R	R	
2015016	2015	ST1	P12	Surveillance study	Malaga	H13	<i>bla</i> _{OXA-245}	Incl	2,4,5	Yes	No TF	<i>bla</i> _{CMY-2}	R	R	R	R	R	R	R	R	S	S	R	R	R	S	R	I	S	
2015017	2015	ST1	P13	Surveillance study	Malaga	H13	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	<i>bla</i> _{CMY-2}	R	R	R	R	R	R	R	R	S	S	R	R	R	S	R	I	R	
2015262	2015	ST1	P14	Urine	Jaen	H1	<i>bla</i> _{OXA-245}	Incl	2,4,5	Yes	No TF	-	R	R	R	R	R	R	R	R	S	S	R	R	R	S	R	I	S	
2014063	2014	ST147	P15	Sputum	Cordoba	H9	<i>bla</i> _{OXA-181}	No TF	ND	Yes	No TF	-	R	R	R	R	R	R	R	R	S	R	R	R	R	R	R	S	R	
2014165	2014	ST392	P16	Surveillance study	Seville	H16	<i>bla</i> _{OXA-48}	IncM	1	No	-	-	R	R	R	R	S	R	I	S	I	I	R	S	R	R	R	R	S	

2014171	2014	ST392	P17	Urine	Seville	H16	<i>bla</i> _{OXA-48}	IncM	2,4,5	No	-	-	R	R	R	S	S	S	S	S	S	S	R	S	R	R	R	R	S
2015071	2015	ST392	P18	Blood culture	Seville	H15	<i>bla</i> _{OXA-48}	No TF	1	Yes	K7:A:-B-	-	R	R	R	R	R	R	R	R	I	I	R	R	R	S	R	R	S
2015116	2015	ST392	P18	Blood culture	Seville	H15	<i>bla</i> _{OXA-48}	No TF	1	Yes	K7:A:-B-	-	R	R	R	R	R	R	R	R	S	I	R	R	R	S	R	R	R
2014098	2014	ST17	P19	Surveillance study	Seville	H16	<i>bla</i> _{OXA-48}	Incl	2,4,5	No	-	-	R	R	R	R	S	R	I	S	R	R	R	S	S	S	S	S	R
2014102	2014	ST17	P19	Catheter tip	Seville	H16	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	K7:A:-B-	-	R	R	R	R	R	R	R	R	S	S	R	S	R	I	R	R	R
2015340	2015	ST225	P20	Urine	Jaen	H4	<i>bla</i> _{OXA-48}	Incl	2,4,5	No	-	<i>bla</i> _{SHV-27}	R	R	R	R	S	R	S	S	I	R	R	S	S	S	S	S	R
2015110	2015	ST251	P21	Ascitic fluid	Malaga	H3	<i>bla</i> _{OXA-245}	Incl	1	No	-	-	R	R	R	S	S	S	S	S	S	S	R	S	S	S	S	S	S
2015005	2015	ST307	P22	Urine	Seville	H10	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	K7:A:-B-	-	R	R	R	R	R	R	R	R	S	S	R	R	R	S	R	R	S
2015141	2015	ST391	P23	Surveillance study	Seville	H16	<i>bla</i> _{OXA-48}	Incl	2,4,5	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	R	S	S	S	R	S
2015136	2015	ST405	P24	Urine	Malaga	H3	<i>bla</i> _{OXA-245}	Incl	2,4,5	Yes	K7:A:-B-	-	R	R	R	R	R	R	R	R	I	S	R	S	R	S	R	R	S
2015108	2015	ST431	P03	Urine	Malaga	H3	<i>bla</i> _{OXA-48}	Incl	1	Yes	IncR	-	R	R	R	R	R	R	R	R	S	S	R	S	R	S	R	S	R
2014025	2014	ST753	P25	Wound	Cadiz	H2	<i>bla</i> _{OXA-48}	Incl	2,4,5	No	-	<i>bla</i> _{SHV-27}	R	R	R	R	R	R	R	R	S	S	R	S	I	S	S	R	S
2014139	2014	ST836	P26	Surveillance study	Almeria	H7	<i>bla</i> _{OXA-181}	No TF	1	Yes	IncR	-	R	R	R	R	R	R	R	R	I	I	R	R	R	I	R	R	R
2014148	2014	ST899	P27	Blood culture	Malaga	H8	<i>bla</i> _{OXA-48}	Incl	2,4,5	No	-	-	R	R	R	R	S	S	S	S	S	S	R	S	S	S	S	S	R
2015128	2015	ST974	P28	Urine	Seville	H5	<i>bla</i> _{OXA-48}	Incl	2,4,5	No	-	-	R	R	R	R	S	S	S	S	S	I	R	S	S	S	S	S	S

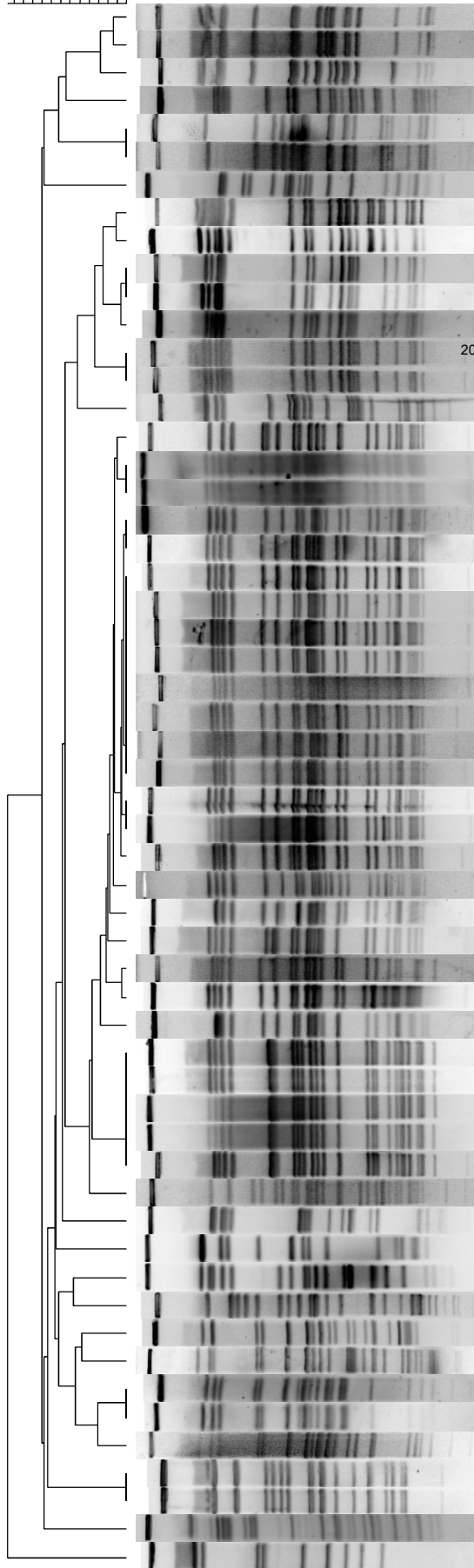
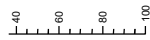
No TF: No transformants were obtained.

ND: Not determined.

^aAntimicrobial susceptibility according to EUCAST breakpoints: S: susceptible, I: intermediate, R: resistant. AMP: ampicillin, AMC: amoxicillin/clavulanic acid, PTZ: piperacillin/tazobactam, CFX: cefuroxime, CAZ: ceftazidime, CTX: cefotaxime, FEP: cefepime, AZT: aztreonam, IMI: imipenem, MER: meropenem, ERT: ertapenem, GEN: gentamicin, TOB: tobramycin, AK: amikacin, CIP: ciprofloxacin, T/S: trimethoprim/sulfamethoxazole, FOS: fosfomicin.

Figure S1. Dendrogram of XbaI-PFGE illustrating genetic relationships between OXA-48-like-producing *K. pneumoniae* in different geographical areas of Andalusia, Spain. The dendrogram was created with Fingerprinting 3.0 software (Bio-Rad, Hercules, CA), using the Dice coefficient with position tolerance settings: 1% optimization and 1.2% position tolerance.

Dice (Opt:1.00%) (Tol 1.2%-1.2%) (H>0.0% S>0.0%) [0.0%-100.0%]
PFGE EC 25922 **PFGE EC 25922**



Isolate	bla gene	Clone	PFGE	Province	Hospital
2015016	OXA-245+CTX-M-15+CMY-2	ST1	P12	Malaga	H13
2015017	OXA-48+CTX-M-15+CMY-2	ST1	P13	Malaga	H13
2015262	OXA-245+CTX-M-15	ST1	P14	Jaen	H1
2015005	OXA-48+CTX-M-15	ST307	P22	Seville	H10
2014098	OXA-48	ST17	P19	Seville	H16
2014102	OXA-48+CTX-M-15	ST17	P19	Seville	H16
2015136	OXA-245+CTX-M-15	ST405	P24	Malaga	H3
2014086	OXA-48+CTX-M-15	ST11	P11	Cadiz	H12
2015259	OXA-48+CTX-M-15	ST11	P11	Jaen	H4
2014126	OXA-48+CTX-M-15	ST11	P08	Malaga	H13
2015067	OXA-48+CTX-M-15	ST11	P08	Malaga	H3
2015083	OXA-245+CTX-M-15	ST11	P09	Malaga	H3
2015013	OXA-48+CTX-M-15	ST11	P10	Malaga	H13
2015015	OXA-48+CTX-M-15	ST11	P10	Malaga	H13
2015340	OXA-48+SHV-27	ST225	P20	Jaen	H4
2014081	OXA-48+CTX-M-15	ST15	P01	Seville	H16
2014033	OXA-48+CTX-M-15+SHV-28	ST15	P02	Seville	H16
2014034	OXA-48+CTX-M-15+SHV-28	ST15	P02	Seville	H16
2014180	OXA-48	ST15	P02	Malaga	H13
2014187	OXA-48+CTX-M-15	ST15	P02	Seville	H16
2014057	OXA-48+CTX-M-15	ST15	P02	Malaga	H13
2014127	OXA-48+CTX-M-15	ST15	P02	Malaga	H13
2014128	OXA-48+CTX-M-15	ST15	P02	Malaga	H13
2014129	OXA-48+CTX-M-15	ST15	P02	Malaga	H13
2014185	OXA-48	ST15	P02	Malaga	H13
2015014	OXA-48+CTX-M-15	ST15	P02	Malaga	H13
2015018	OXA-48+CTX-M-15	ST15	P02	Malaga	H13
2015050	OXA-48+CTX-M-15	ST15	P02	Malaga	H13
2014058	OXA-48+CTX-M-15+SHV-28	ST15	P03	Malaga	H13
2014145	OXA-48+CTX-M-15	ST15	P03	Malaga	H8
2014149	OXA-48+CTX-M-15	ST15	P03	Malaga	H8
2014181	OXA-48	ST15	P03	Malaga	H13
2015130	OXA-48+CTX-M-15+SHV-28	ST15	P03	Granada	H14
2015108	OXA-48+CTX-M-15	ST431	P03	Malaga	H3
2014028	OXA-48+CTX-M-15+SHV-28	ST15	P03	Seville	H16
2015261	OXA-48+CTX-M-15	ST15	P03	Seville	H5
2015254	OXA-48+CTX-M-15+SHV-28	ST15	P04	Cordoba	H6
2014142	OXA-48+CTX-M-15+SHV-28	ST15	P05	Malaga	H8
2014143	OXA-48+CTX-M-15	ST15	P05	Malaga	H8
2014144	OXA-48+CTX-M-15	ST15	P05	Malaga	H8
2014146	OXA-48+CTX-M-15	ST15	P05	Malaga	H8
2014150	OXA-48+CTX-M-15	ST15	P05	Malaga	H8
2015012	OXA-48+CTX-M-15+SHV-28	ST15	P06	Seville	H16
2015128	OXA-48	ST974	P28	Seville	H15
2014139	OXA-181+CTX-M-15	ST836	P26	Almeria	H7
2014025	OXA-48+SHV-27	ST753	P25	Cadiz	H2
2014148	OXA-48	ST899	P27	Malaga	H8
2014063	OXA-181+CTX-M-15	ST147	P15	Cordoba	H9
2014171	OXA-48	ST392	P17	Seville	H16
2015071	OXA-48+CTX-M-15	ST392	P18	Seville	H15
2015116	OXA-48+CTX-M-15	ST392	P18	Seville	H15
2014165	OXA-48	ST392	P16	Seville	H16
2014088	OXA-48+CTX-M-15+SHV-28	ST15	P07	Malaga	H13
2014090	OXA-48+CTX-M-15	ST15	P07	Seville	H11
2015141	OXA-48+CTX-M-15	ST391	P23	Seville	H16
2015110	OXA-245	ST251	P21	Malaga	H3