

Supplementary Material

Genetic characterization of carbapenem-resistant *Klebsiella* spp. from municipal and slaughterhouse wastewater

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Table S1: Mobile genetic elements detected in carbapenem-resistant *Klebsiella* spp. isolates recovered from municipal WWTPs and their receiving water bodies as well as from process waters of poultry and pig slaughterhouses.

<i>Klebsiella</i> isolate ID	Plasmid replicons detected	Plasmid-associated AMR	IS without AMR determinants	IS-associated with AMR determinants
05/10-60	IncR	<i>aph(3'')-Ib-aph(6)-Id</i> (IncR)	IS6100, IS26	<i>sul2</i> (ISVsa3)
03/11-38	IncFII(Yp), Col440I, IncA/C, IncFIB(K)	n.d.	ISEcl1, ISSen4, IS30, ISEsa2, IS903, cn_4959_IS903, ISEc33, IS102	<i>bla</i> _{SHV-12} (ISAhy2)
05/10-83	IncFIB(K), IncFII(K), IncFIB(pKPHS1), Col440I	n.d.	IS903, Tn5403, ISEc31, IS102, ISEcl1, ISKpn1, IS5075	<i>bla</i> _{TEM-1B-<i>sul2-aph(6)-Id-aph(3'')</i>-Ib-<i>bla</i>_{CTX-M-15}} (ISEc9), <i>qnrB1-tet(A)</i> (Tn5403), <i>dfrA14</i> (IS6100)
05/11-32	IncR	<i>aph(3'')-Ib-aph(6)-Id</i> (IncR)	IS6100, IS26	<i>sul2</i> (ISVsa3)
05/11-43	IncFIB(K), Col440I, IncFIB(pKPHS1)	n.d.	ISKox1, ISKpn42, ISSty2, ISEc31, ISKpn1, ISEcl1, ISSen4, IS5075, ISKpn26	<i>bla</i> _{TEM-1B-<i>sul2-aph(6)-Id-aph(3'')</i>-Ib-<i>bla</i>_{CTX-M-15}} (ISEc9)
05/13-25	IncR	<i>aph(3'')-Ib-aph(6)-Id</i> (IncR)	IS6100, IS26	<i>sul2</i> (ISVsa3)
05/10-58	IncR	<i>aph(3'')-Ib-aph(6)-Id</i> (IncR)	IS6100, IS26	n.d.
05/11-29	IncFII(K), IncFIB(K), Col440II	n.d.	ISKpn14, cn_5267_ISKpn14, ICEEcoED1a-1, ISKpn33, ISKpn26, ISEc9, ISEcl1	n.d.
03/13-21	Col440I, IncFII(K))	<i>bla</i> _{CTX-M-15} (IncFII(K))	ISEc9, ISSen4, IS26	<i>dfrA14</i> (IS6100)
04/08-35	IncR, ColpVC, IncN	n.d.	ISKpn1	

01/07-41	IncX4, IncFIB(pKPHS1)	n.d.	ISEch12, IS26	<i>qnrS1-bla_{LAP-2}</i> (ISKpn19), <i>qacE-sul1-dfrA1</i> (IS6100)
05/10-21	IncFIB(K), IncFII(K), IncHI2A, IncHI2, Col440I	n.d.	ISKpn14, ISKpn34, ISKpn43, ISKpn28, ISEsa2, ISEsa1, Tn6196, ISKpn8, IS5075	n.d.
05/10-59	IncR, IncFIA(HI1)	n.d.	ICEEcoED1a-1, ISKpn26, ISKpn38, ISEsa2, ISEsa1, ISKpn1, IS5075, ISKpn28	<i>dfrA14</i> (IS6100), <i>bla_{CTX-M-15}</i> (ISEc9)
03/05-22	IncFIB(K), IncFII, IncFIA(HI1), IncHI1A, IncHI1B(R27), ColRNAI, IncFII	<i>sul2-aph(6)-Id-aph(3'')-Ib</i> (IncQ1)	IS629	<i>mph(A)</i> (IS6100), <i>floR</i> (ISVsa3), <i>tet(B)</i> (ISVsa5)
03/10-46	IncFIB(K)	n.d.	ISEam1	<i>qnrS1-aph(6)-Id-aph(3'')-Ib-sul2</i> (ISKpn19), <i>mph(A)-qacE-sul1-aadA2-dfrA12</i> (IS6100), <i>bla_{CTX-M-15}</i> (ISEc9)
05/11-30	IncR	n.d.	ISKpn26, IS6100, IS26	<i>sul2</i> (ISVsa3)
03/12-04Bki	IncHI2, IncHI2A, IncR	n.d.	IS6100, ISKpn21, ISEsa2, ISEsa1, ISKpn26, cn_9071_ISKpn21, Tn6196, ISKpn8, IS102, IS26	n.d.
03/11-12	Col440I, IncFIB(K), IncR, Col(IRGK), Col(IMGS31), IncFIB(pKPHS1)	n.d.	ISEc33, ISKpn21, ISPpu12, ISApu1, cn_3415_ISApu1, ISEc11, ISAs2, ISKpn8, IS903, ISAeme4, ISSpu2, ISKpn28	n.d.

05/10-21B	IncHI2, IncHI2A, IncFIB(K), Col440I, IncFII(K)	n.d.	ISKpn14, ISCfr26, ISKpn43, ISKpn34, ISKpn28, ISEsa2, ISEsa1, Tn6196, ISKpn1, ISKpn8, IS5075	n.d.
05/13-23	IncHI1B	<i>tet(A)</i> (IncFIB(Mar))	ISKpn38, IS5075, IS26	<i>qnrS1-aph(6)-Id-aph(3")- Ib-sul2</i> (ISKpn19), <i>mph(A)</i> (IS6100), <i>bla</i> _{CTX- M-15} (ISEc9)
03/01-52	IncFIB(K), IncFII, ColRNAI, Col440II	n.d.	ISEch12, ISSty2,	<i>mchF</i> (GIE492)
05/10-69A	IncFIA(HI1), IncFIB(K), IncFII(K), Col440I,	n.d.	ISKpn14, ISPlge4, ISKpn14, ISEc33, ISEc31, ISKpn42, ISSen4, Tn5403, ISEc15, ISKpn21, IS5075, ISKpn26, IS903, IS102, ISKpn28	<i>bla</i> _{TEM-1B} (Tn2)
01/07-40	IncFIB(pKPHS1), IncX4, Col440I	n.d.	n.d.	<i>qnrS1-bla</i> _{LAP-2} (ISKpn19), <i>qacE-sul1-dfrA1</i> (IS6100)
03/06-23	IncFII, IncFIB(K), IncHI1A, IncHI1B(R27), IncFIA(HI1)	<i>sul2-aph(6)-Id-aph(3")-Ib</i> (IncQ1), <i>ccI</i> (ColRNAI)	IS629	<i>mph(A)</i> (IS6100), <i>floR</i> (ISVsa3), <i>tet(B)</i> (ISVsa5)
05/10-69B	IncFII(K), Col440I, IncFIA(HI1), IncFIB(K)	n.d.	ISKpn14, ISPlge4, ISEc33, ISEc31, ISKpn42, ISSen4, Tn5403, ISEc15, ISKpn21, IS102, IS5075, ISKpn26, ISKpn28	<i>bla</i> _{TEM-1B} (Tn2)
05/10-20A	Col440I, IncHI2, IncHI2A, IncFIB(K), IncFII(K)	n.d.	ISKpn14, ISCfr26, ISKpn43, ISKpn34,	n.d.

			ISKpn28, ISEsa2, ISEsa1, Tn6196, ISKpn8, IS5075	
05/10-71	IncFIB(K), Col440I, IncFII(K)	n.d.	ISKpn42, ISSen4, ISKpn14, ISPlge4, IS5075, ISEc33, ISEc31, Tn5403, ISKpn21, ISKpn26, ISKpn28	n.d.
05/13-31	n.d.	n.d.	n.d.	<i>dfrA14</i> (IS6100), <i>bla</i> _{CTX-M-15} (ISEc9)
05/10-20B	IncFIB(K), IncFII(K), Col440I, IncHI2, IncHI2A	n.d.	ISKpn14, ISCfr26, ISKpn43, ISKpn34, ISKpn28, ISEsa2, ISEsa1, Tn6196, ISKpn1, ISKpn8, IS5075	n.d.
03/11-28	IncFIB(K)	n.d.	ICEEcoED1a, IS903, ISEc15, IS102, ISEc11, IS5075	<i>dfrA14</i> (IS6100)

n.d., not detected; IS, insertion sequence; cn, composite transposon; Tn, transposon; ISE, insertion sequence element; ICE, Integrative Conjugative Element