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Ceftazidime/Avibactam Resistance in Carbapenemase-Producing *Klebsiella pneumoniae*

Appendix

Appendix Table 1. Antimicrobial susceptibility of KP0714 and the corresponding mutants isolated from a man with CAZ/AVI-resistant *Klebsiella pneumoniae* infection, Shanxi Province, China, 2021

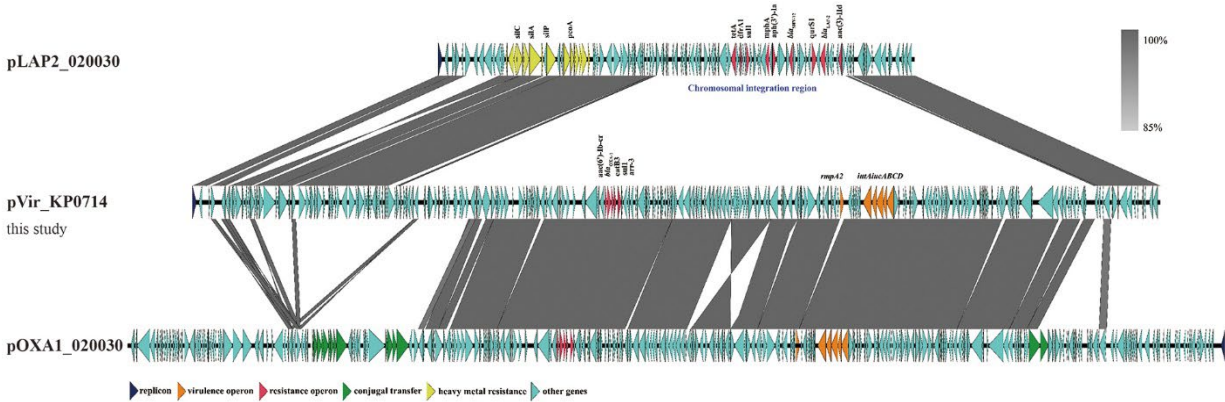
Strain	KPC variants	<i>bla</i> _{SHV-12} promoters		MIC (μg/mL)										
		P1	P2	CAZ/AVI	IMP	MEM	TZP	CAZ	FEP	ATM	AMK	LEV	TGC	POL
KP0714	KPC-2	+	+	32	≥64	≥64	≥128	≥64	≥64	≥64	≥64	≥8	1	0.5
KP0714 KPC S130A	KPC-2 S130A	+	+	32	0.5	2	≥128	≥64	≥64	≥64	≥64	≥8	1	0.5
KP0714 ΔP1	KPC-2	-	+	2	≥64	≥64	≥128	≥64	≥64	≥64	≥64	≥8	1	0.5
KP0714 ΔP2	KPC-2	+	-	1	≥64	≥64	≥128	≥64	≥64	≥64	≥64	≥8	1	0.5

*AMK, amikacin; ATM, aztreonam; CAZ, ceftazidime; FEP, cefepime; IMP, imipenem; LVX, levofloxacin; MEM, meropenem; POL, polymyxin B; TGC, tigecycline; TZP, piperacillin-tazobactam.

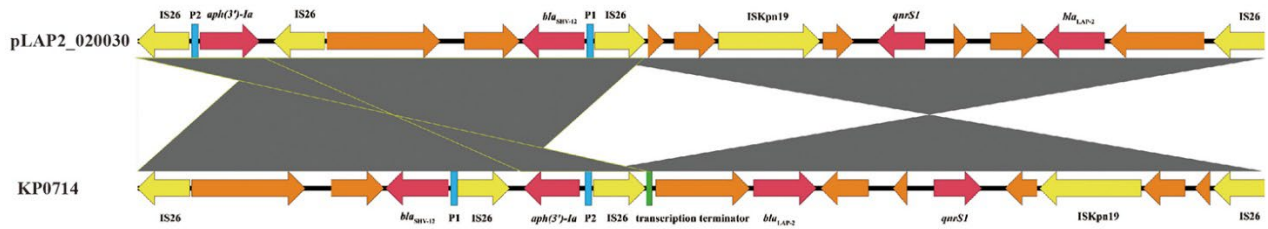
Appendix Table 2. Genomic characteristics of *Klebsiella pneumoniae* KP0714 isolated from a man with CAZ/AVI-resistant *Klebsiella pneumoniae* infection, Shanxi Province, China, 2021*

Characteristic	Size (bp)	Replicon type	Antimicrobial resistance genes	Virulence genes
Chromosome	5,440,573	NA	<i>bla</i> _{SHV-12} , <i>bla</i> _{LAP-2} , <i>tet(A)</i> , <i>qnrS1</i> , <i>sul1</i> , <i>dfrA1</i> , <i>aph(3')-Ia</i> , <i>aac(3)-IId</i> , <i>mph(A)</i>	<i>mrkABCDHFHIJ</i> (fimbria type 3), <i>fimABCDEFGHIK</i> (fimbria type 1), <i>ybt 9-ICEKp3</i> (yersiniabactin siderophore)
pVir-KP0714	254,123	IncFIB(K)	<i>bla</i> _{OXA-1} , <i>aac(6')-Ib-cr</i> , <i>catB3</i> , <i>arr3</i> , <i>sul1</i>	<i>iucABCDiutA</i> (aerobactin), <i>rmpA2</i> (regulator of mucoid phenotype)
pKPC-KP0714	74,021	IncFII(pHN7A8)	<i>bla</i> _{KPC-2} , <i>bla</i> _{TEM-1} , <i>rmtB</i> , <i>fosA3</i>	NA
p3-KP0714	10,060	ColRNAI	NA	NA
p4-KP0714	5,596	NA	NA	NA

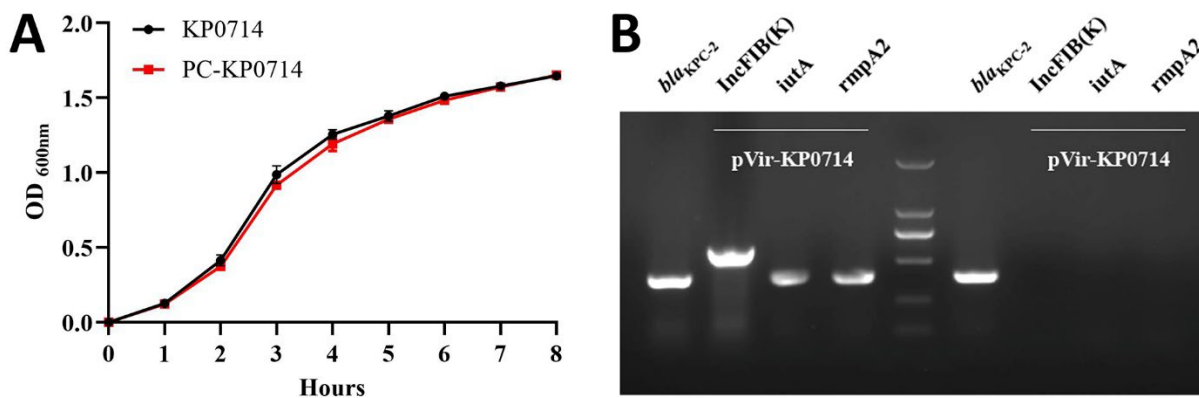
*NA, not applicable.



Appendix Figure 1. Linear alignment of plasmid pVir-KP0714 and virulence potential determination of *Klebsiella pneumoniae* KP0714. Sequence alignment of plasmid pVir-KP0714 with pLAP2_020030 (GenBank accession no. CP028792) and pOXA1_020030 (GenBank accession no. CP028791). Arrows indicate genes, and colors are based on their functional classification.



Appendix Figure 2. Overexpression of *bla*_{SHV-12} contributing to ceftazidime/avibactam resistance in KP0714. Linear alignment of the 15-kb chromosomal integration genetic context containing *bla*_{SHV-12} with pLAP2_020030.



Appendix Figure 3. Plasmid curing of pVir-KP0714 in *K. pneumoniae* KP0714. A) Growth curves of KP0714 and pVir-KP0714-curing mutant PC-KP0714. B) PCR screening to identify the plasmid-curing mutant.