

## *Supplementary Material*

### 1 **1 Supplementary Figures and Tables**

#### 2 1.1 **Table S1.** List of oligonucleotide primers used in amplification of virulence-associated genes and capsular serotyping detection.

<b>Gene/marker</b>	<b>Primer Sequence (5'---3')</b>	<b>T<sub>m</sub> (°C)</b>	<b>Amplicon size (bp)</b>	<b>Reference</b>
<i>magA</i>	F: GGTGCTCTTTACATCATTGC R: GCAATGGCCATTTGCGTTAG	58	1283	(1)
<i>iutA</i>	F: GTTGCGATTCTACCCGTTCC R: GCCCGGTGGTGTAATCTTC	57	248	this study
<i>fepA</i>	F: CCTGCCGATTGATTTCTCG R: CGTTACGATGGTGCTGTCAG	57	226	this study
<i>fyuA</i>	F: ATATGGCAAAAGCGCTCAGG R: GGGTTAATCATGTCCGCGTC	57	204	this study
<i>iroD</i>	F: GCATAGGCGGATACGAACAT R: CACAGGGCAATTGCTTACCT	58	556	this study
<i>iroN</i>	F: GGCTACTGATACTTGACTATTC R: CAGGATACAATAGCCCATAG	58	992	(2)
<i>kfuBC</i>	F: GAAGTGACGCTGTTTCTGGC R: TTTCGTGTGGCCAGTGACTC	58	797	(3)
<i>rmpA</i>	F: ACTGGGCTACCTCTGCTTCA R: CTTGCATGAGCCATCTTTCA	53	535	(4)
<i>wcaG</i>	F: GGTTGGKTCAGCAATCGTA	58	169	

	R: ACTATTCCGCCAACTTTTGC			(5)
<i>alls</i>	F: CCGAAACATTACGCACCTTT R: ATCACGAAGAGCCAGGTCAC	58	508	(3)
<i>ybtA</i>	F: ATGACGGAGTCACCGCAAAC R: TTACATCACGCGTTTAAAGG	55	960	(6)
<i>ureA</i>	F: GACAAGCTGTTGCTGTTTACC R: CGGGTTGTGAACGGTGAC	58	270	(7)
<i>uge</i>	F: GATCATCCGGTCTCCCTGTA R: TCTTCACGCCTTCCTTCACT	53	534	(8)
<i>wabG</i>	F: CGGACTGGCAGATCCATATC R: ACCATCGGCCATTTGATAGA	58	683	(9)
<i>entB</i>	F: ATTTCTCAACTTCTGGGGC R: AGCATCGGTGGCGGTGGTCA	56	371	(1)
<i>fimH</i>	F: TGCTGCTGGGCTGGTCGATG R: GGGAGGGTGACGGTGACATC	62	688	(1)
<i>mrkD</i>	F: CCACCAACTATTCCCTCGAA R: ATGGAACCCACATCGACATT	43	226	(4)
<i>iucA</i>	F: ATCCACCAGCAGGTTTTTCAC R: ATCCACCAGCAGGTTTTTCAC	60	591	this study
<i>rmpA2</i>	F: CGTATGAAGGCTCGATGGAT R: TGTGCACCATTTTTCATCAG	60	639	this study
<i>repA</i>	F: GATATCCCGAAGTTGCTCCA R: ACGTTAAGATCACCGGTTCG	60	545	this study
<i>sopB</i>	F: CCGAAGATGCTCTGGATGAT	60	560	

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	R: TGATGCGGAAGATTGTTTCA			this study
LV049	F: TGATGCGGAAGATTGTTTCA R: GATCCAGCTGAAGTCGGTGT	60	509	this study
LV206	F: TCCACAATCCTGCCTTTTTC R: GGCTCATCAGGGTCAGGTAA	60	557	this study
K1 (Capsular serotype)	F: GGTGCTCTTTACATCATTGC R: GCAATGGCCATTTGCGTTAG	54	1283	(4)
K2 (Capsular serotype)	F: GACCCGATATTCATACTTGACAGAG R: CCTGAAGTAAAATCGTAAATAGATGGC	58	641	(10)
K5 (Capsular serotype)	F: TGGTAGTGATGCTCGCGA R: CCTGAACCCACCCCAATC	58	280	(10)
K20 (Capsular serotype)	F: CGGTGCTACAGTGCATCATT R: GTTATACGATGCTCAGTCGC	58	741	(10)
K54 (Capsular serotype)	F: CATTAGCTCAGTGGTTGGCT R: GCTTGACAAACACCATAGCAG	58	881	(10)
K57 (Capsular serotype)	F: CTCAGGGCTAGAAGTGTCAT R: CTCAGGGCTAGAAGTGTCAT	58	1037	(10)

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25 1.2 **Table S2.** List of oligonucleotide primers used in amplification of resistance genes.

<b>Gene</b>	<b>Primer Sequence (5'---3')</b>	<b>T<sub>m</sub> (°C)</b>	<b>Amplicon size (bp)</b>	<b>Reference</b>
<i>bla</i> <sub>CTX-M-1</sub> group	F: GGTAAAAAATCACTGCGTC R: TTGGTGACGATTTTAGCCGC	48	825-863	(1)
<i>bla</i> <sub>CTX-M-2</sub> group	F: ATGATGACTCAGAGCATTCG R: TGGGTTACGATTTTCGCCGC	50	827-865	(1)
<i>bla</i> <sub>CTX-M-8</sub> group	F: ATGGTACGACGAATGATATC R: TAATCATAACAGAAGTCGCAG	48	246	(2)
<i>bla</i> <sub>CTX-M-9</sub> group	F: ATGGTGACAAAGAGAGTGCA R: CCCTTCGGCGATGATTCTC	50	863-826	(1)
<i>bla</i> <sub>CTX-M-25</sub> group	F: ATGATGAGAAAAAGCGTAAG R: TTAATAACCGTCGGTGAC	50	869	(3)
<i>bla</i> <sub>CTX-M-65</sub>	F: GCAGTACAGCGACAATACCG R: TATCACCCACAGTCCACGAC	50	320	This study
<i>bla</i> <sub>SHV</sub>	F: AACGCTTTCCCATGATGAGC R: CGCCTCATTCAGTTCCGTTT	55	322	This study
<i>bla</i> <sub>TEM</sub>	F: GGAACCGGAGCTGAATGAA R: CAGTGCTGCAATGATACCGC	59	254	This study
<i>bla</i> <sub>VEB</sub>	F: ACGGTAATTTAACCAGATAGG R: ACCCGCCATTGCCTATGAGCC	46	970	(4)
<i>bla</i> <sub>CMY</sub>	F: TGGCCAGAACTGACAGGCAAA R: TTTCTCCTGAACGTGGCTGGC	60	462	(5)
<i>bla</i> <sub>DHA</sub>	F: AACTTTCACAGGTGTGCTGGGT R: CCGTACGCATACTGGCTTTGC	50	405	(6)

<i>bla<sub>NDM-1</sub></i>	F: TCTCGACATGCCGGGTTTCGG R: ACCGAGATTGCCGAGCGACTT	57	475	(7)
<i>bla<sub>KPC-2</sub></i>	F: CGCCAATTTGTTGCTGAAGG R: CATAGTCATTTGCCGTGCCA	55	341	This study
<i>bla<sub>OXA-23</sub></i>	F: AAGCCGCGCAAATACAGAAT R: ATCCATTGCCCAACCAGTCT	50	463	This study
<i>bla<sub>OXA-48</sub></i>	F: CGCATCTTGTGTCCAAGTG R: TCGAGCATCAGCATTTTGTC	52	1012	(8)
<i>bla<sub>SPM</sub></i>	F: CCTACAATCTAACGGCGACC R: TCGCCGTGTCCAGGTATAAC	55	649	(9)
<i>bla<sub>VIM</sub></i>	F: GGTCTCATTGTCCGTGATGGTGATGAG R: CTCGATGAGAGTCCTTCTAGAG	50	271	(10)
<i>bla<sub>GES</sub></i>	F: AGAATTGACTCAGGCACCGA R: TGTGTTGTCGCTCATCTCCT	59	864	This study
<i>qnrA</i>	F: ATTTCTCACGCCAGGATTTG R: GATCGGCAAAGGTTAGGTCA	48	627	(11)
<i>qnrB</i>	F: GATCGTGAAAGCCAGAAAGG R: ACGATGCCTGGTAGTTGTCC	45	469	(11)
<i>qnrC</i>	F: GGGTTGTACATTTATTGAATCG R: CACCTACCCATTTATTTTCA	50	307	(12)
<i>qnrD</i>	F: CGAGATCAATTTACGGGGAATA R: AAC AAG CTG AAG CGC CTG	50	533	(13)
<i>qnrS</i>	F: ACGACATTCGTCAACTGCAA R: TAAATTGGCACCCTGTAGGC	53	417	(14)
<i>qepA</i>	F: GAGATCATCATCACCAGCGC	58	573	This study

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<i>oqxA</i>	R: ACCTTCCACGAGATCAAGCA F: CACTATCAAAACCTCGCCCG	58	396	This study
<i>gyrA</i>	R: CCCAGGATTCAACCCCTTCT F: CGCGTACTATACGCCATGAACGTA	55	441	(15)
<i>parC</i>	R: ACCGTTGATCACTTCGGTCAGG F: ATGTACGTGATCATGGACA	55	389	(16)
AAC (3')-Ia	R: ATTCGGTGTAACGCATGG F: ATGGGCATCATTCGCACATGTAGG	58	465	(17)
AAC (6')-Ib	R: TTAGGTGGCGGTACTIONTGGGTC F: TTGCGATGCTCTATGAGTGGCTA	57	482	(17)
<i>rmtB</i>	R: CTCGAATGCCTGGCGTGTTT F: CCCAAACAGACCGTAGAGGC	50	585	(18)
<i>rmtC</i>	R: CTCAAACCTCGGCGGGCAAGC F: TGGTGGGATCGATGGGAAAA	50	271	This study
<i>armA</i>	R: GCCAGCCTCCGTAAAGAATG F: AGGTTGTTTCCATTTCTGAG	50	591	(18)
ANT(3')-Ia	R: TCTCTTCATTCCCTTCTCC F: TTGCAGGTATCTTCGAGCCA	50	433	This study
<i>mcr-1</i>	R: TTGCCGACTACCTTGGTGAT F: GCTCGGTCAGTCCGTTTG	55	1586	(19)
	R: GAATGCGGTGCGGTCTTT			

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Isolates (*-hvKp)	MIC ( $\mu\text{g/mL}$ )												ST type	PFGE cluster
	Aminoglycosides		Beta-lactams				Carbapenems		Quinolones		Others			
	GEN	TOB	AMP	CEZ	CAZ	CTR	IMP	ETP	LVFX	CPFX	PLB	TGC		
Kp1*	0.5	0.5	>128	>128	>128	>64	64	>64	32	64	0.25	2	11	E
Kp2	32	0.5	>128	>128	>128	>64	16	>64	32	64	0.5	2	11	E
Kp3	>128	>128	>128	>128	>128	>64	32	>64	128	>64	1	2	11	E
Kp4	>128	>128	>128	>128	>128	>64	32	>64	64	>64	0.125	2	11	E
Kp5	>128	>128	>128	>128	>128	>64	32	>64	64	64	0.25	2	11	E
Kp6*	1	0.5	64	8	4	1	<0.25	>64	0.25	<0.25	0.5	2	375	B
Kp7	>128	>128	>128	>128	64	>64	32	>64	16	64	1	2	11	C
Kp8	>128	>128	>128	>128	>128	>64	16	>64	64	>64	2	2	11	E
Kp9	>128	>128	>128	>128	>128	>64	32	>64	64	64	1	2	11	E
Kp10	>128	>128	>128	>128	>128	64	8	>64	32	64	0.5	2	37	A
Kp11	>128	>128	>128	>128	>128	>64	32	>64	64	64	0.25	2	11	E
Kp12	>128	>128	>128	>128	>128	>64	32	>64	64	64	>64	1	11	E
Kp13	>128	>128	>128	>128	>128	>64	32	>64	64	64	0.5	2	11	E
Kp14	>128	>128	>128	>128	>128	>64	32	>64	64	>64	0.25	2	11	E
Kp15*	>128	>128	>128	>128	>128	>64	16	>64	64	64	0.25	1	11	E
Kp16	64	4	>128	>128	>128	>64	32	64	4	4	0.125	2	37	A
Kp17	>128	>128	>128	>128	>128	>128	64	128	64	128	0.5	2	11	E
Kp18*	>128	>128	>128	>128	>128	>128	64	128	64	128	1	2	11	E

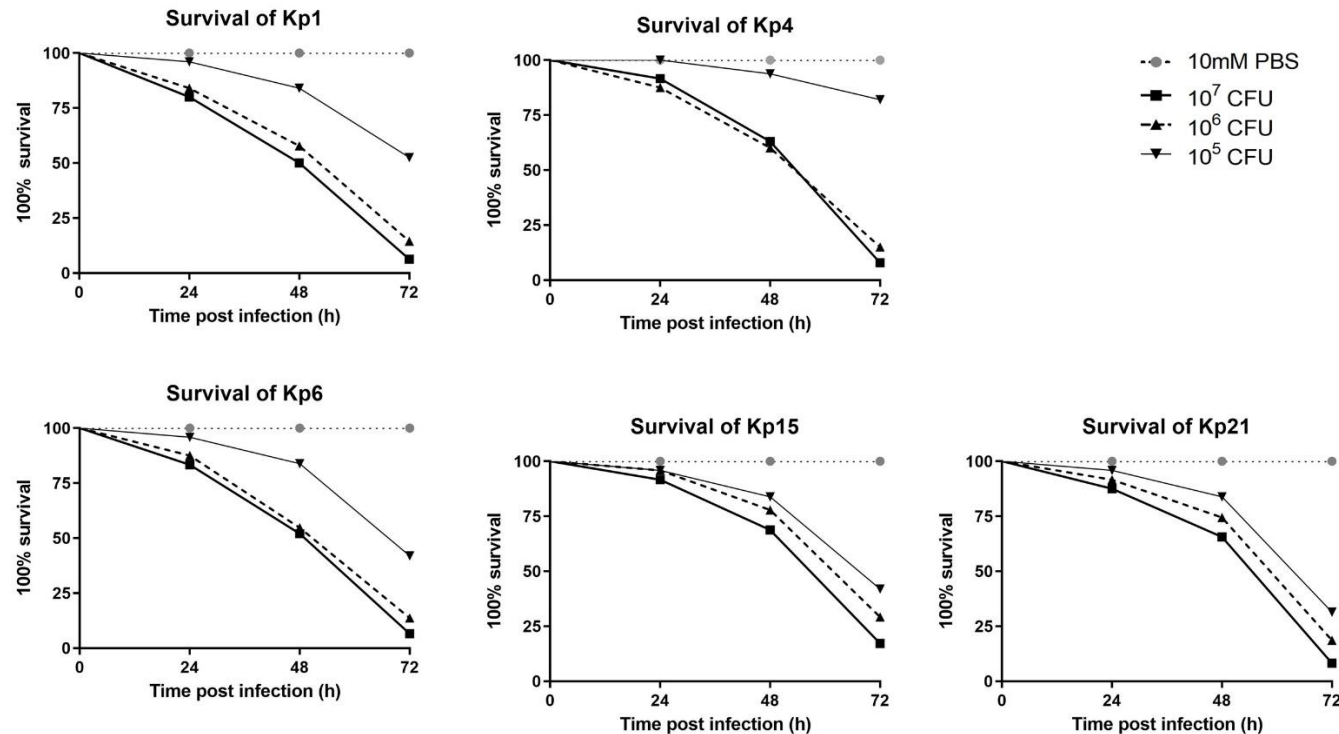
Kp19	>128	>128	>128	>128	>128	>64	64	64	64	64	0.125	2	11	D
Kp20	>128	>128	128	>128	>128	>64	64	>64	64	>64	0.25	2	11	D
Kp21	>128	>128	>128	>128	>128	>64	64	64	64	64	32	1	11	D
Kp22	2	>128	>128	>128	128	>64	128	>64	128	>64	<0.06	2	11	E
Kp23	0.5	>128	>128	>128	128	>64	128	>64	128	>64	0.25	8	11	E
Kp24	>128	>128	>128	>128	>128	>128	32	>128	64	128	1	1	11	D
Kp25	>128	>128	>128	>128	>128	>128	32	>128	64	128	0.25	1	11	D
Kp26	>128	>128	>128	>128	>128	>128	32	>128	128	128	0.25	1	11	D
Kp27	0.5	0.25	>128	>128	>128	>128	16	>128	128	16	1	2	11	E
Kp28	0.5	0.25	>128	>128	>128	64	16	128	64	32	1	2	11	E
Kp29	0.5	0.25	>128	>128	>128	>128	32	>128	128	32	1	2	11	E

74 GEN: Gentamicin, TOB: Tobramycin, AMP: Ampicillin, CEZ: Cefazolin, CAZ: Ceftazidime, CTRX: Ceftriaxone, IMP: Imipenem, ETP: Ertapenem, LVFX:

75 Levofloxacin, CPMX: Ciprofloxacin, PLB: Polymyxin B, TGC: Tigecycline

76 Asterisk: Hypermucoviscous *Klebsiella pneumoniae*

#### 1.4 Supplementary Figure S1.



**Supplement Figure S1. *K. pneumoniae* infection of *G. mellonella* larvae induces dose-dependent lethality.** The effect of varies colony-forming units (CFU) of each *K pneumoniae* strain on survival was observed in *G mellonella*. Larvae were injected with PBS or with 10<sup>5</sup> /10<sup>6</sup> /10<sup>7</sup> CFU of Kp1, Kp4, Kp6, Kp15 and Kp21. The survival was monitored over 72 h post-infection. Mortality of larvae infected with Kp1, Kp4, Kp6, Kp15 and Kp21 were dose-dependent.