

**Table S1.** Antibiotic susceptibility profiles of *K. pneumoniae* KKBO-1 and BO-FR-1. Assignments in the S or R categories for each antibiotic is reported near to MIC values. NC means not categorizable for the absence of clinical breakpoints.

Antibiotic	MIC (mg/l)	
	KKBO-1	BO-FR-1
Piperacillin/Tazobactam <sup>a</sup>	>128/4 (R)	>128/4 (R)
Amoxicillin/Clavulanate <sup>b</sup>	>64/2 (R)	>64/2 (R)
Cefepime	>16 (R)	>16 (R)
Ceftriaxone	>4 (R)	>4 (R)
Ceftazidime	>64 (R)	>64 (R)
Ceftazidime/Avibactam <sup>c</sup>	2/4 (S)	2/4 (S)
Ceftolozane/Tazobactam <sup>a</sup>	>64/4 (R)	>64/4 (R)
Ertapenem	>2 (R)	>2 (R)
Meropenem <sup>1</sup>	16 (R)	16 (R)
Tigecycline	0.5 (NC)	0.5 (NC)
Nitrofurantoin	>64 (NC)	>64 (NC)
Fosfomycin <sup>2</sup>	8 (S)	8 (S)
Trimethoprim/Sulfamethoxazole <sup>d</sup>	>8/152 (R)	>8/152 (R)
Amikacin	>16 (R)	>16 (R)
Gentamicin	≤1 (S)	≤1 (S)
Ciprofloxacin	>1 (R)	>1 (R)
Levofloxacin	>8 (R)	>8 (R)
Colistin	1 (S)	1 (S)

<sup>a</sup> Tazobactam at fixed concentration of 4 mg/l

<sup>b</sup> Clavulanate at fixed concentration of 2 mg/l

<sup>c</sup> Avibactam at fixed concentration of 4 mg/l

<sup>d</sup> Trimethoprim/sulfamethoxazole at 1:19 proportion

<sup>1</sup> Breakpoints for indications other than meningitis have been applied

<sup>2</sup> Breakpoints for intravenous administration have been applied

**Table S2.** Host specificity of phages belonging to the *Drulisvirus* genus reported by the International Committee on Taxonomy of Viruses (last accessed on 18/02/2021).

Host (Genus)	Phage Name	Reported Host- Specificity	Reference
<i>Escherichia</i>	Minorna	-	[32]
<i>Klebsiella</i>	AltoGao	-	[33]
<i>Klebsiella</i>	φBO1E	CPS <sub>KKBO-1</sub>	[10]
<i>Klebsiella</i>	F19	-	-
<i>Klebsiella</i>	K244	-	-
<i>Klebsiella</i>	Kp2	-	-
<i>Klebsiella</i>	KP34	-	[34]
<i>Klebsiella</i>	KP-Rio/2015	-	[35]
<i>Klebsiella</i>	KpS2	-	[36]
<i>Klebsiella</i>	KpV41	CPS <sub>K1</sub>	[28]
<i>Klebsiella</i>	KpV48	broad	[28]
<i>Klebsiella</i>	KpV71	CPS <sub>K1</sub>	[28]
<i>Klebsiella</i>	KpV74	CPS <sub>K2</sub>	[28]
<i>Klebsiella</i>	KpV475	CPS <sub>K1</sub>	[28]
<i>Klebsiella</i>	KPV811	-	[37]
<i>Klebsiella</i>	myPSH1235	broad	[29]
<i>Klebsiella</i>	SU503	-	[38]
<i>Klebsiella</i>	SU552A	-	[38]
<i>Shigella</i>	SFN6B	-	-
<i>Klebsiella</i>	πVLC1-4 <sup>1</sup>	CPS <sub>K22</sub>	[30]
<i>Klebsiella</i>	vB_KpnP_IME337 <sup>1</sup>	CPS <sub>KN2</sub>	[31]

<sup>1</sup>Not yet included in the ICTV list.