

Table S1. Host range and efficiency of plating (EOP) of vB_KpnA_K3-ULINTkp1 and vB_KpnA_K3-ULINTkp2 and the characteristics of the *Klebsiella* (a) and *E. coli* UPEC (b) strains used.

(a)

N°	Identification of the strains of <i>Klebsiella</i>								Host range & EOP	
	Species	wzi allele	K	K_ locus	O_ locus	ST	CG/ SL	Strain	vB_KpnA_K3 -ULINTkp1	vB_KpnA_K3 -ULINTkp2
1	<i>K. pneumoniae</i>		1			23		SB4385	x	x
2	<i>K. pneumoniae</i>	wzi-14	14					QAMH 121231/0018	x	x
3	<i>K. pneumoniae</i>	wzi-27	27					SHIME 2.1	x	x
4	<i>K. pneumoniae</i>	wzi-84	28					QAMH 121014/0096	x	x
5	<i>K. pneumoniae</i>	wzi-85	30					ATCC 27736	x	NP
6	<i>K. pneumoniae</i>	wzi-37	37	KL50	O1v1	35	11	SB5908	x	x
7	<i>K. pneumoniae</i>	wzi-59	3	KL107	OL3/ OL3a	490	8	SB5904	0,0072	0,0455
8	<i>K. pneumoniae</i>	wzi-81	81					QAMH 130528/0682	x	0,0001
9	<i>K. pneumoniae</i>	wzi-101	24	KL107	OL2v1	2444	9	SB5906	x	x
10	<i>K. pneumoniae</i>	wzi-141		KL107	OL5	494	7	SB5902	x	x
11	<i>K. pneumoniae</i>	wzi-141		KL107	OL5	17	3	SB5890	x	0,0009
12	<i>K. pneumoniae</i>	wzi-141		KL107	OL5	17	15	SB6038	x	x
13	<i>K. pneumoniae</i>	wzi-149	62	KL107	OL2v1	2552	10	SB5907	x	x
14	<i>K. pneumoniae</i>	wzi-235		KL107	OL1v1	107	14	SB6037	x	x
15	<i>K. pneumoniae</i>	wzi-253		KL107	OL1v2	3137	1	SB5885	x	x
16	<i>K. pneumoniae</i>	wzi-368		KL107	OL3/ OL3a	1426	16	SB6043	x	x
17	<i>K. pneumoniae</i>	wzi-466		KL107	OL3/ OL3a	3138	4	SB5891	x	x
18	<i>K. pneumoniae</i>			KL35	OL1v1	305	12	SB6070	x	x
19	<i>K. pneumoniae</i>			KL107	OL3/ OL3a	3139	13	SB6036	x	x
20	<i>K. pneumoniae</i>							QAMH 110628/0752	x	x
21	<i>K. pneumoniae</i>							QAMH 080708/0488-2	x	x
22	<i>K. pneumoniae</i>							NCTC 13438	x	x
23	<i>K. pneumoniae</i>			KL5	OL1v1	29	18	SB6063	x	x
24	<i>K. pneumoniae</i>			KL106		258		SB4551	x	x
25	<i>K. oxytoca</i>							QAMH 110607/1254	x	x

26	<i>K. oxytoca</i>							QAMH 121209/0028	NP	0,0007
27	<i>K. oxytoca</i>							QAMH 121120/0608	x	x
28	<i>K. variicola</i>	wzi-170		KL5	OL3/ OL3a	2594	6	SB5901	x	x
29	<i>K. variicola</i>	wzi-352		KL113	OL3/ OL3a	347	5	SB5897	x	x
30	<i>K. variicola</i>	wzi-115	54	KL113	OL1v1	29	18	SB6060	x	x
31	<i>K. quasi-pneumoniae</i>	wzi-537		KL107	OL12	705	2	SB5886	x	x

(b)

Identification of the strains							Host range	
N°	Species	<i>neuC</i> (K1)	<i>kfiB</i> (K5)	TEM	CTX-M	Strain	vB_KpnA_K3- ULINTkp1	vB_KpnA_K3- ULINTkp2
1	<i>E. coli</i>				CTX-M 1	15	x	x
2	<i>E. coli</i>				CTX-M 15	142.1	x	x
3	<i>E. coli</i>	<i>neuC</i> +			CTX-M 15	143.1	x	x
4	<i>E. coli</i>				CTX-M 1	144.1	x	x
5	<i>E. coli</i>				CTX-M 1	144.2	x	x
6	<i>E. coli</i>		<i>kfiB</i> +	TEM 1	CTX-M 1	151.1	x	x
7	<i>E. coli</i>				CTX-M 1	154.2	x	x
8	<i>E. coli</i>					J96	x	x

K. pneumoniae: *Klebsiella pneumoniae*; *K. oxytoca*: *Klebsiella oxytoca*; *K. variicola*: *Klebsiella variicola*; *K. quasipneumoniae*: *Klebsiella quasipneumoniae*; ST: sequence type; CG/SL: clonal group/sublineages; K: capsular type; K_locus: K antigen and O_locus: O antigen ; *E. coli*: *Escherichia coli*

Table S2. Phenotypic antibiotic susceptibility profile of the strain *Klebsiella pneumoniae* QAMH130326/0185.

Method	Antibiotics	Results (in mm)	Interpretation
Disk diffusion	Amoxicilin + clavulanic acid	17	R
	Ampicilin	6	R
	Aztreonam	34	S
	Cefotaxim	31	S
	Cefotaxim + clavulanic acid	32	Not a ESBL
	Cefoxitin	25	S
	Cefuroxim	16	R
	Fosfomicine	16	R
	Gentamycine	24	S
	Meropenem	31	S
	Nitrofurantoin	19	S
	Norflaxacin	39	S
	Temocilin	21	I
	Trimethoprim + sulfamethoxazole	26	S
	Ceftiofur	28	S
	Cefquinon	21	I
MIC	Colistin	0,5	S

References EUCAST 2021 for: amoxicilin + clavulanic acid, ampicilin, aztreonam, cefotaxime, cefotaxime + clavulanique acid, cefoxitin, cefuroxim, fosfomicine, gentamycine, meropenem, nitrofurantoin, norflaxacin, temocilin, trimethoprim + sulfamethoxazole, and colistin. References CASFM VET 2019 for: ceftiofur and cefquinon. S: susceptible to the antibiotic; R: resistant to the antibiotic; I: susceptible at higher dosage to the antibiotic; MIC: minimal inhibitory concentration.

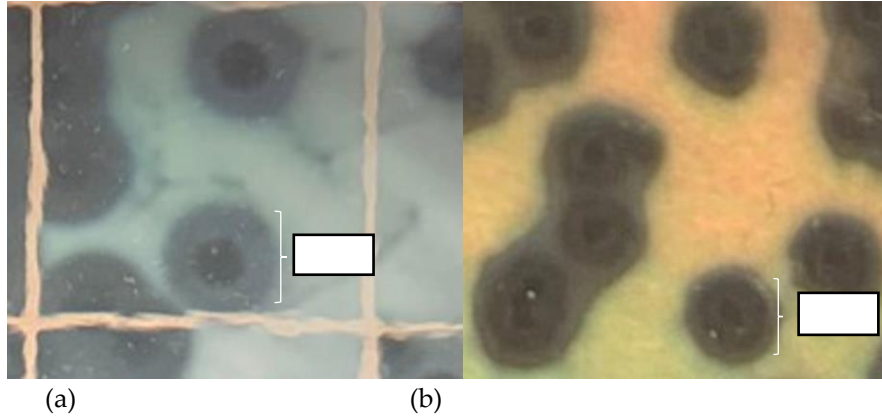
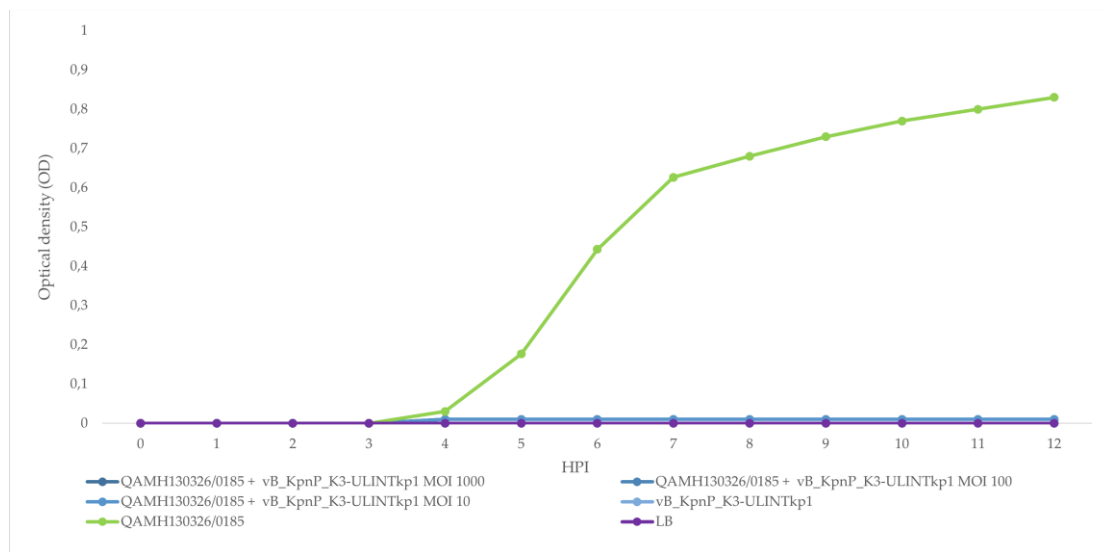
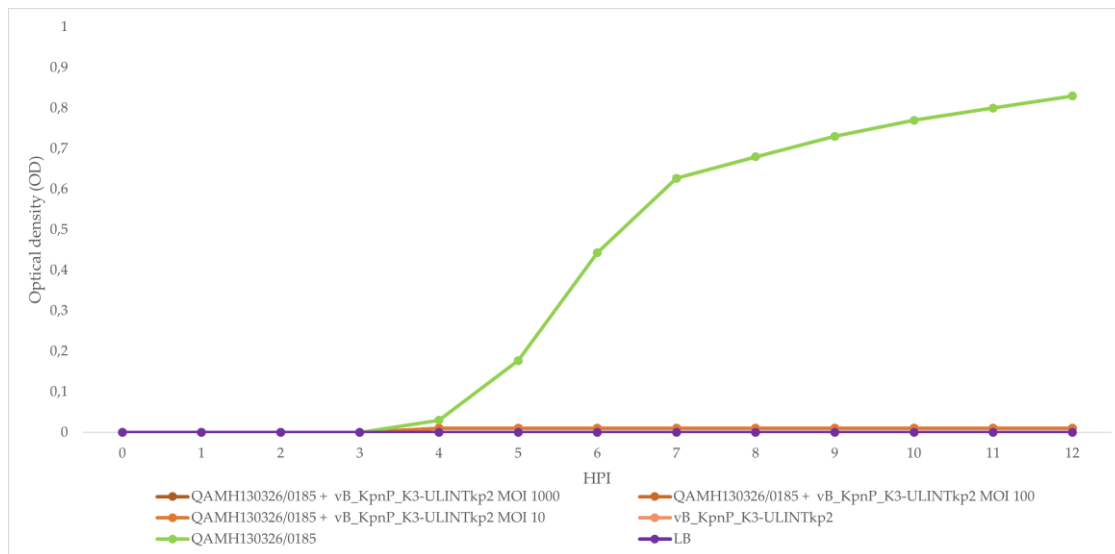


Figure S1. Pictures of the plaques of lysis of the bacteriophages **(a)** vB_KpnA_K3-ULINTkp1 and **(b)** vB_KpnA_K3-ULINTkp2.



(a)



(b)

Figure S2. In vitro assessment, in biological triplicate, of the efficacy of the bacteriophages vB_KpnA_K3-ULINTkp1 **(a)** and vB_KpnA_K3-ULINTkp2 **(b)** against *K. pneumoniae* 130326/0185 with the measure of the optical density, OD (600nm). HPI: hours post inoculation.