

Table S1 The host range of phage vB_KpnP_JYSS5 and Dep11

Bacterial strain	Source	Serotype	Plaque assay	Hole assay	Note
21AA0009	Urine	K64	—	—	CRKP
21AA0010	Sputum	K47	—	—	CRKP
21AA0026	Sputum	K2	—	—	CRKP
21AA0029	Sputum	K57	—	+	CRKP
21AA0131	Sputum	K19	—	—	CRKP
21AA0160	Sputum	K19	—	—	CRKP
21AA0218	Sputum	K19	—	—	CRKP
21AA0275	Urine	K47	—	—	CRKP
21AA0388	Sputum	K64	—	—	CRKP
21AA0398	Sputum	K19	—	—	CRKP
21AA0520	Sputum	K19	—	—	CRKP
21AA0600	Sputum	K25	—	—	CRKP
21AA0662	Sputum	K64	—	—	CRKP
21AA0714	Sputum	K106	—	—	CRKP
21AA0786	Sputum	K64	—	—	CRKP
21AA0828	Sputum	K25	—	—	CRKP
21AA0842	Urine	K64	—	—	CRKP
21AA0863	Sputum	K64	—	—	CRKP
21AA1035	BALF	K64	—	—	CRKP
21AA1042	Sputum	K64	—	—	CRKP
21AA1074	Sputum	K64	—	—	CRKP
21AA1100	Sputum	K64	—	—	CRKP
21AA1110	Sputum	K64	—	—	CRKP
21AA1115	Urine	K55	—	—	CRKP
21AA1117	Sputum	K64	—	—	CRKP
21AA1334	Urine	K47	—	—	CRKP
21AA1746	Effusion	K64	—	—	CRKP

21AA1795	Urine	K47	—	—	CRKP
21AA1819	Sputum	K64	—	—	CRKP
21AA1830	Sputum	K47	—	—	CRKP
21AA1842	Sputum	K64	—	—	CRKP
21AA1922	Sputum	K64	—	—	CRKP
21AA1942	Secretion	K64	—	—	CRKP
21AA1978	Effusion	K64	—	—	CRKP
21AA1997	Secretion	K64	—	—	CRKP
21AA2204	Effusion	K64	—	—	CRKP
21AA2205	Blood	K64	—	—	CRKP
21AA2206	Sputum	K64	—	—	CRKP
21AA2207	Sputum	K64	—	—	CRKP
21AA2210	Urine	K64	—	—	CRKP
21AA2211	Sputum	K64	—	—	CRKP
21AA2212	Sputum	K27	—	—	CRKP
21AA2213	Sputum	K64	—	—	CRKP
21AA2214	Urine	K64	—	—	CRKP
21AA2216	Sputum	K2	—	—	CRKP
21AA2217	Sputum	K64	—	—	CRKP
21AA2218	Sputum	K64	—	—	CRKP
21AA2219	Sputum	K64	—	—	CRKP
21AA2220	Sputum	K167	—	—	CRKP
21AA2221	Sputum	K64	—	—	CRKP
21AA2222	Sputum	K64	—	—	CRKP
21AA2224	Effusion	K64	—	—	CRKP
21AA2225	Effusion	K64	—	—	CRKP
21AA2226	Sputum	K23	—	—	CRKP
21AA2227	Sputum	K64	—	—	CRKP
21AA2228	Urine	K64	—	—	CRKP

21AA2244	Sputum	K64	—	—	CRKP
21AA2271	Secretion	K64	—	—	CRKP
21AA2414	Sputum	K64	—	—	CRKP
21AA2494	Sputum	K19	—	—	CRKP
21AA2588	Sputum	K64	—	—	CRKP
21AA2657	BALF	K64	—	—	CRKP
21AA2755	Sputum	K64	—	—	CRKP
21AA2768	Sputum	K19	—	—	CRKP
21AA2861	Urine	K64	—	—	CRKP
21AA2926	Sputum	K149	—	—	CRKP
21AA2946	BALF	K19	—	—	CRKP
21AA2948	Sputum	K64	—	—	CRKP
21AA2972	Blood	K19	—	—	CRKP
21AA3004	Sputum	K57	+	+	CRKP
21AA3032	Urine	K125	—	—	CRKP
21AA3151	Urine	K64	—	—	CRKP
21AA3165	Secretion	K102	—	—	CRKP
21AA3170	Sputum	K64	—	—	CRKP
22AA0227	BALF	K47	—	—	CRKP
22AA0324	Sputum	K47	—	—	CRKP
22AA0608	Sputum	K28	—	—	CRKP
22AA0727	Urine	K64	—	—	CRKP
22AA1153	Urine	K47	—	—	CRKP
22AA1241	Effusion	K64	—	—	CRKP
22AA1259	BALF	K19	—	—	CRKP
22AA1326	Sputum	K19	—	—	CRKP
22AA1424	Urine	K47	—	—	CRKP
22AA1455	Urine	K64	—	—	CRKP
22AA1717	Sputum	K102	—	—	CRKP

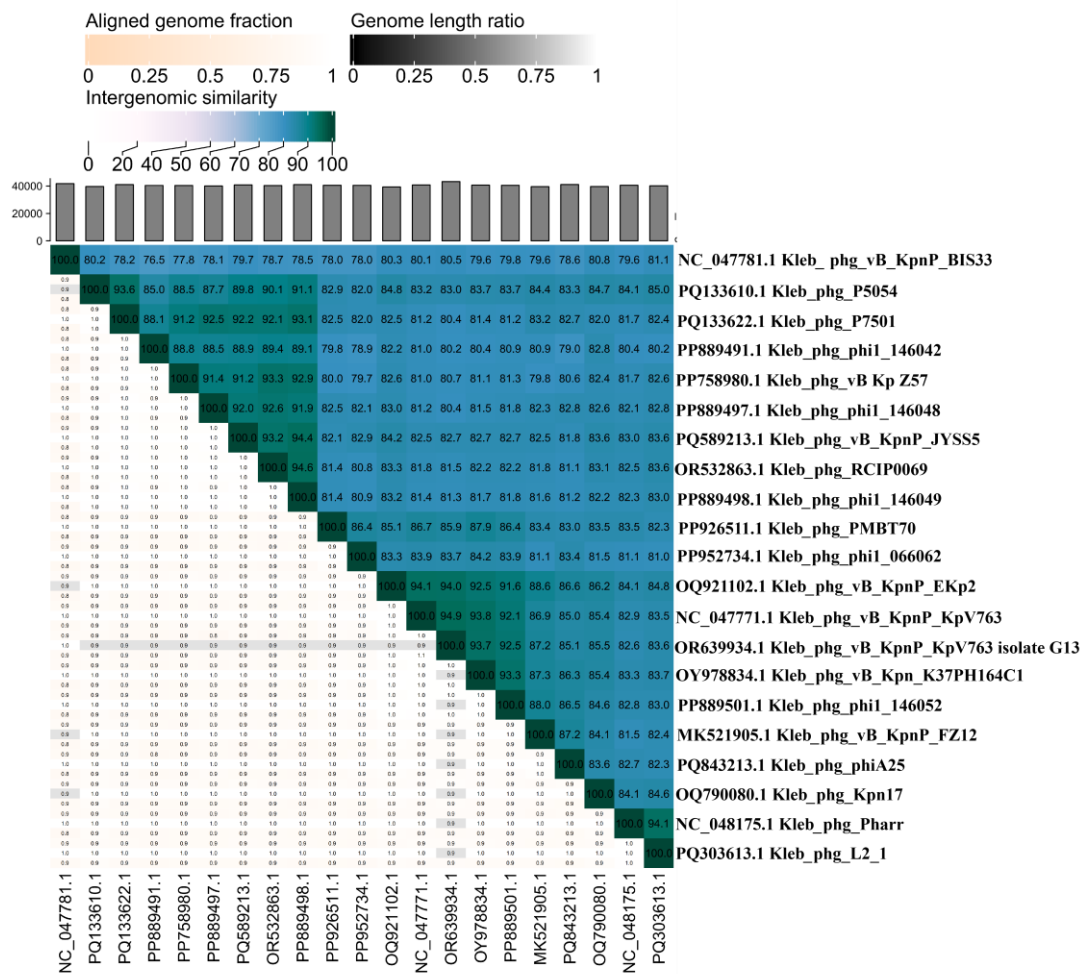


Fig. S1 VIRIDIC heat map: VIRIDIC (Virus Intergenomic Distance Calculator; VIRIDIC) computes pairwise intergenomic distances/similarities between the genome of phage vB_KpnP_JYSS5 and genomes of reference phages. Abbreviations: phg = phage; Kleb = *Klebsiella*.

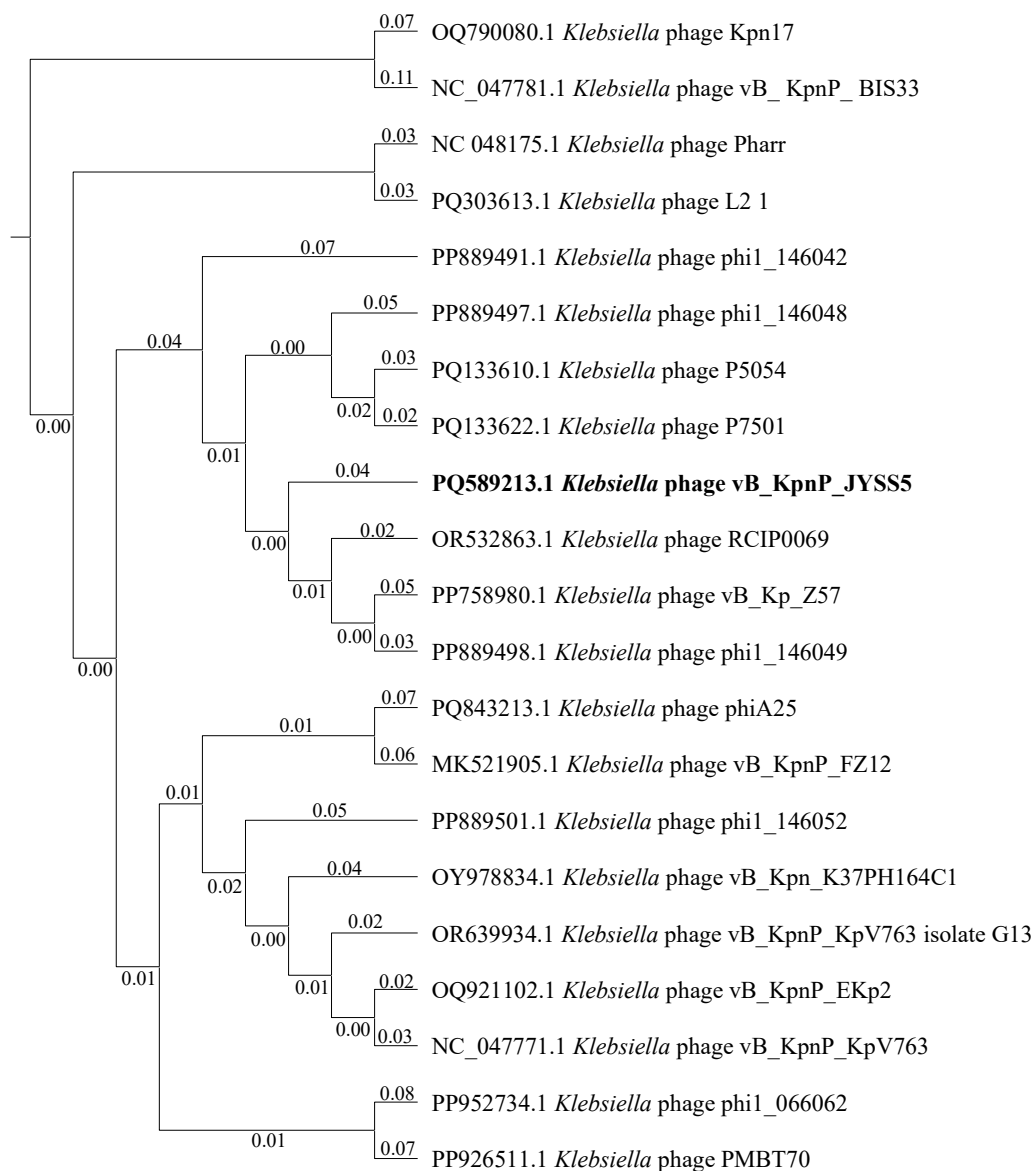


Fig. S2 The phylogenetic tree based on genome sequences of vB_KpnP_JYSS5 and related phages. Values on branch points represent support values.

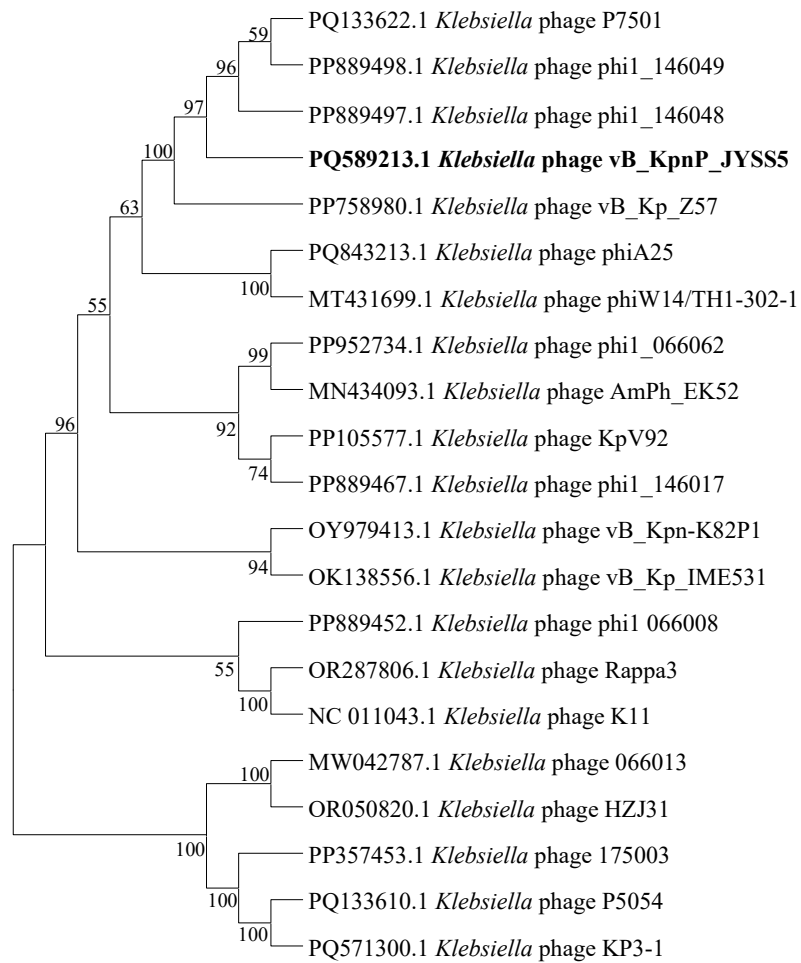


Fig. S3 The phylogenetic tree based on the terminase large subunit genes of phage vB_KpnP_JYSS5 and related phages. Values on branch points are the percentage of the resulting values formed by 1000 bootstrap analyses.

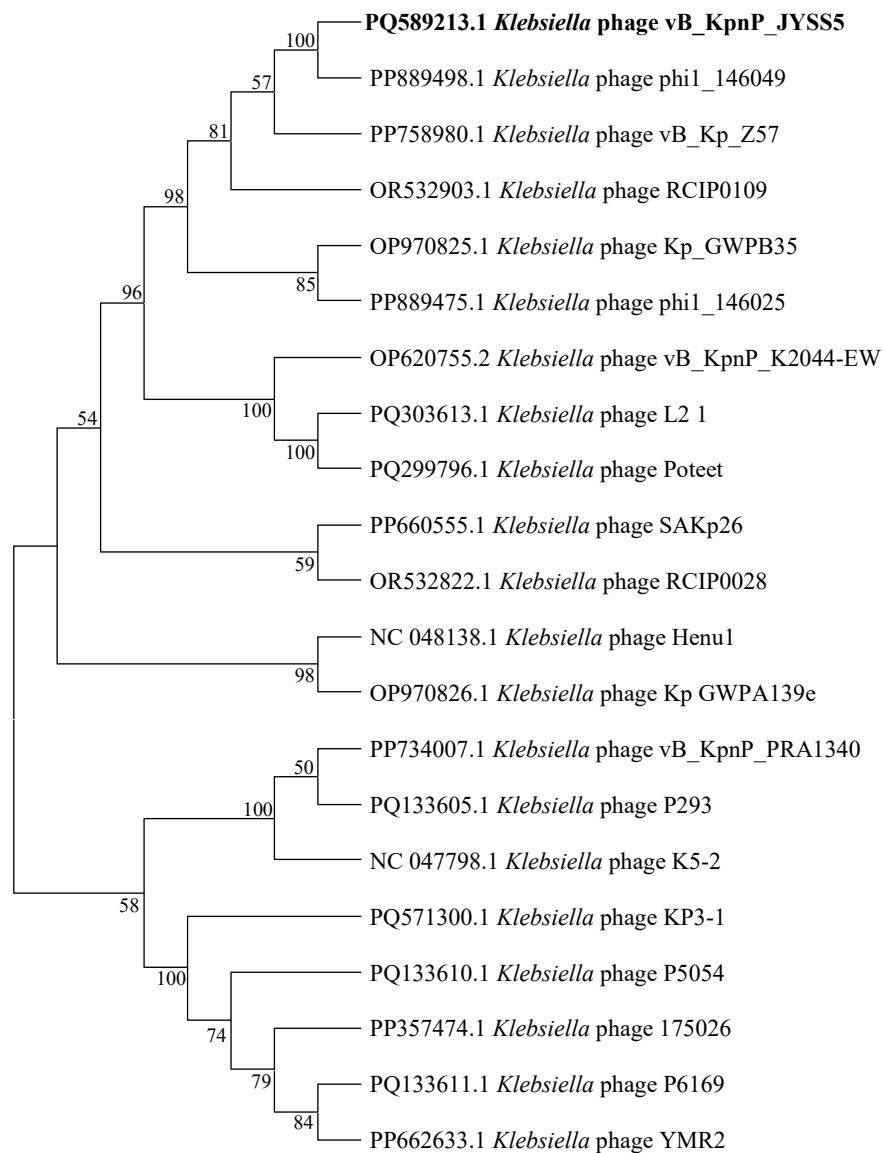


Fig. S4 The phylogenetic tree based on the DNA polymerase genes of phage vB_KpnP_JYSS5 and related phages. Values on branch points are the percentage of the resulting values formed by 1000 bootstrap analyses.

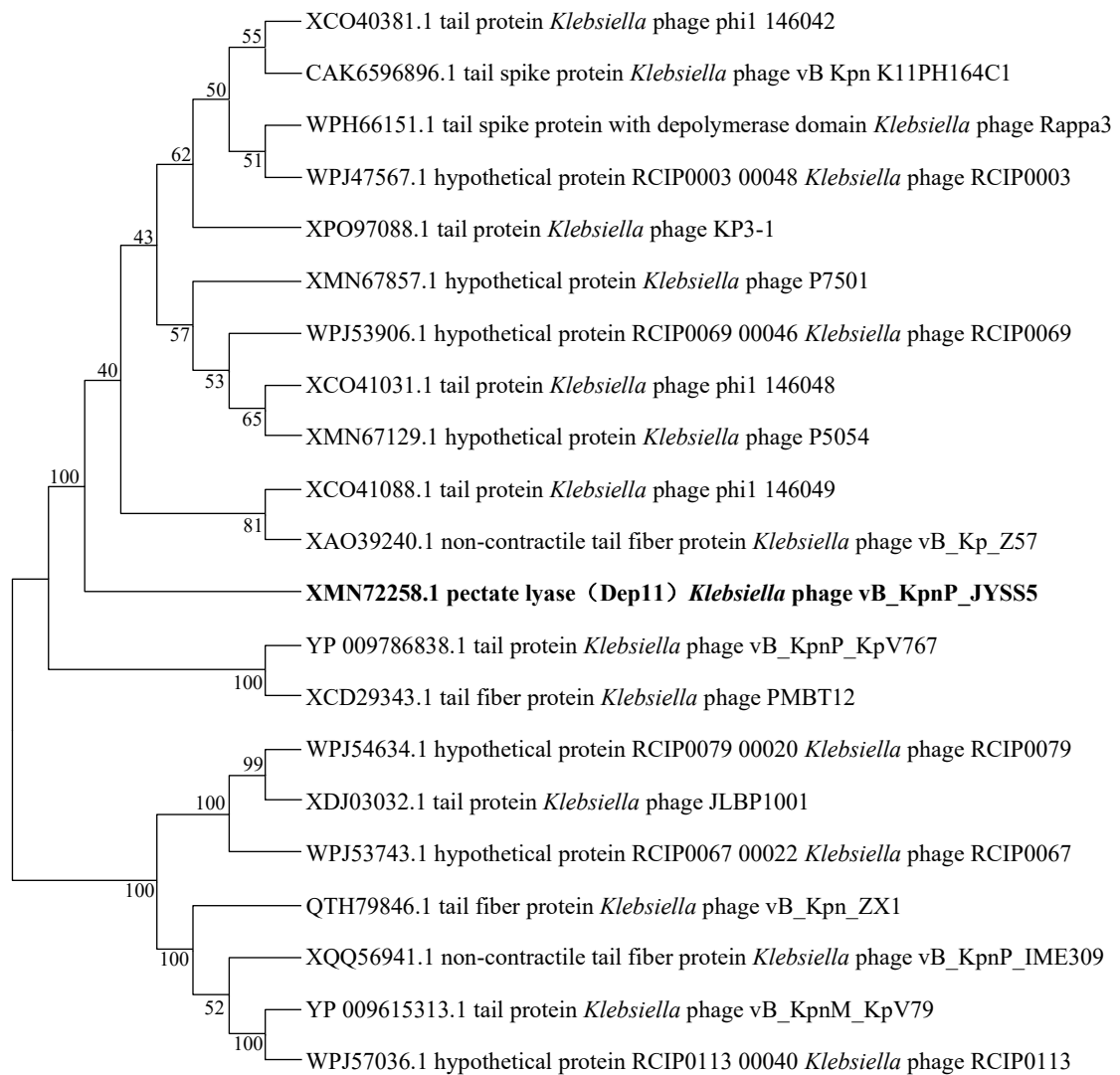


Fig. S5 The phylogenetic tree based on depolymerase amino acid sequences of phage vB_KpnP_JYSS5 and related tail or hypothetical proteins of *Klebsiella* phages. Values on branch points are the percentage of the resulting values formed by 1000 bootstrap analyses.

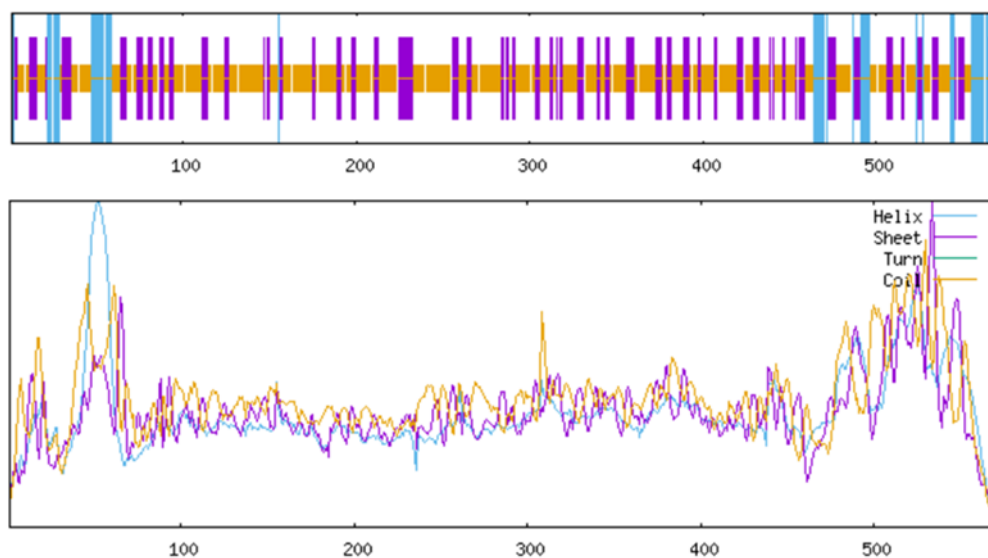


Fig. S6 The secondary structure of Dep11

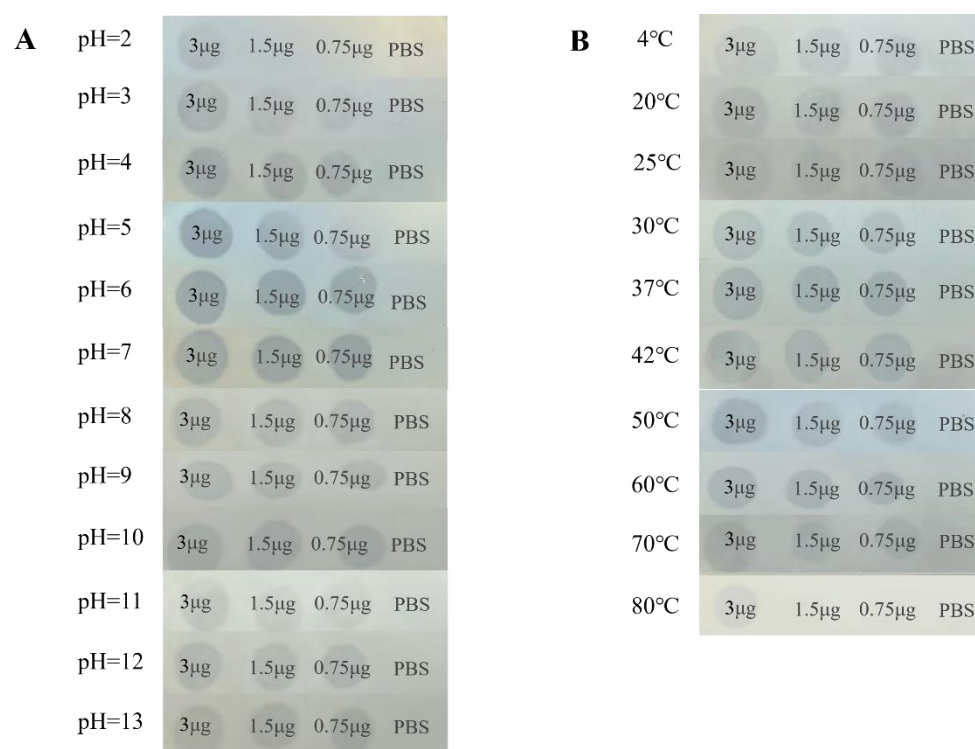


Fig. S7 Stability of Dep11

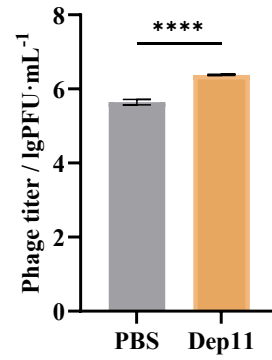


Fig. S8 Phage titer in the supernatant after strain 21AA3004 treated with Dep11.

$P < 0.001$ (****).

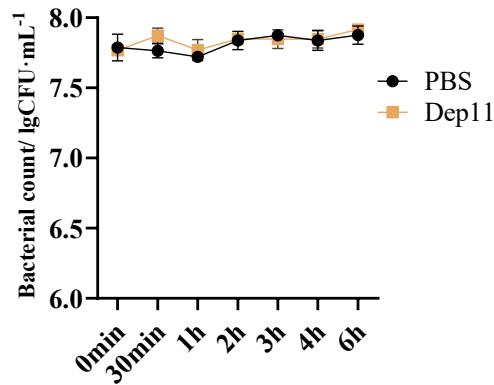


Fig. S9 In vitro bactericidal activity of Dep11

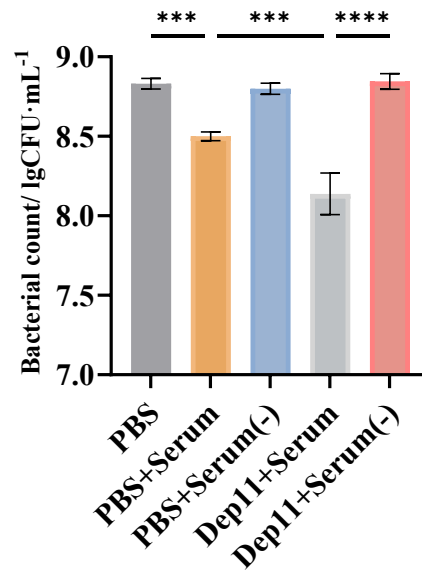


Fig. S10 Bactericidal effect of Dep11 in combination with serum. $0.001 < P < 0.01$ (***), $P < 0.001$ (****). Serum (-) represents heat-inactivated serum.

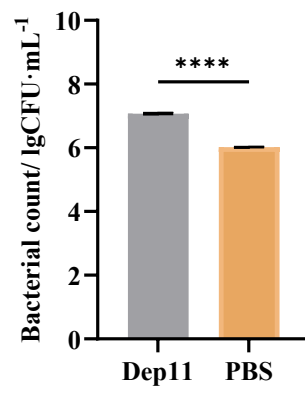


Fig. S11 The bacterial loads of intracellular *K. pneumoniae* 21AA3004 in RAW264.7 cells. $P < 0.001$ (****).