

Table S1. Information regarding the accession number and species affiliation for the *Pbunavirus* phages used for genome comparison in Figures 3-5.

Phage isolate	Accession number	Defined species
Pseudomonas phage 14-1	NC_011703	<i>Pseudomonas virus 141</i>
Pseudomonas phage vB_PaeM_C1-14_Ab28	NC_026600	<i>Pseudomonas virus Ab28</i>
Pseudomonas phage vB_PaeM_CEB_DP1	NC_041870	<i>Pseudomonas virus CEBDP1</i>
Pseudomonas phage DL60	NC_028745	<i>Pseudomonas virus DL60</i>
Pseudomonas phage DL68	NC_028971	<i>Pseudomonas virus DL68</i>
Pseudomonas phage vB_PaeM_E215	NC_042080	<i>Pseudomonas virus E215</i>
Pseudomonas phage vB_PaeM_E217	NC_042079	<i>Pseudomonas virus E217</i>
Pseudomonas phage F8	NC_007810	<i>Pseudomonas virus F8</i>
Pseudomonas phage JG024	NC_017674	<i>Pseudomonas virus JG024</i>
Pseudomonas phage KPP12	NC_019935	<i>Pseudomonas virus KPP12</i>
Pseudomonas phage phiKTN6	NC_041865	<i>Pseudomonas virus KTN6</i>
Pseudomonas phage LBL3	NC_011165	<i>Pseudomonas virus LBL3</i>
Pseudomonas phage LMA2	NC_011166	<i>Pseudomonas virus LMA2</i>
Pseudomonas phage NH-4	JN254800	<i>Pseudomonas virus NH4</i>
Pseudomonas phage PA5	NC_041902	<i>Pseudomonas virus PA5</i>
Pseudomonas phage PaGU11	AP018815	no defined species
Pseudomonas phage PB1	EU716414	<i>Pseudomonas virus PB1</i>
Pseudomonas phage phiKT28	KP340287	no defined species
Pseudomonas phage vB_Pae_PS44	NC_028939	<i>Pseudomonas virus PS44</i>
Pseudomonas phage SN	FM887021	<i>Pseudomonas virus SN</i>
Burkholderia ambifaria phage BcepF1	NC_009015	<i>Burkholderia virus BcepF1</i>