

**Table S5** CDS associated with tRNA gene clusters shared among the phages

Genome/group (1)	Host phylum (1)	Genome/group (2)	Host phylum (2)	# shared genes	Gene product
Roseobacter phage DSS3P8	<i>Proteobacteria</i>	Stenotrophomonas phage vB SmaS-DLP 6	<i>Proteobacteria</i>	1	Ribonuclease H-like
		Klebsiella phage IME260	<i>Proteobacteria</i>	3	hypothetical (3)
Pectobacterium phage My1	<i>Proteobacteria</i>	G8	<i>Proteobacteria</i>	4	hypothetical (3)
		G14	<i>Proteobacteria</i>	1	Cell wall hydrolase
		G15	<i>Proteobacteria</i>	1	hypothetical
		Klebsiella phage IME260	<i>Proteobacteria</i>	3	DUF4326 superfamily
G8	<i>Proteobacteria</i>	G5	<i>Proteobacteria</i>	1	hypothetical (3)
		G17	<i>Proteobacteria</i>	1	hypothetical
Streptomyces phage Brock	<i>Actinobacteria</i>	G4	<i>Actinobacteria</i>	1	Permuted papain-like amidase enzyme (NLPC_P60)
Cronobacter phage S13	<i>Proteobacteria</i>	G1	<i>Proteobacteria/Firmicutes</i>	1	hypothetical
G5	<i>Proteobacteria</i>	G7	<i>Proteobacteria</i>	1	hypothetical
G6	<i>Actinobacteria</i>	G9	<i>Actinobacteria</i>	1	HNH endonuclease
G13	<i>Proteobacteria</i>	G5	<i>Proteobacteria</i>	1	hypothetical
		G21	<i>Proteobacteria</i>	1	hypothetical
		G21	<i>Proteobacteria</i>	1	hypothetical
		G23	<i>Proteobacteria</i>	4	hypothetical (4)
G14	<i>Proteobacteria</i>	Acinetobacter phage Acj9	<i>Proteobacteria</i>	1	hypothetical
		Acinetobacter phage 133	<i>Proteobacteria</i>	1	hypothetical
		G1	<i>Proteobacteria/Firmicutes</i>	1	hypothetical
G16	<i>Proteobacteria</i>	Pseudomonas phage VCM	<i>Proteobacteria</i>	1	hypothetical
		Pseudomonas phage phiPsa374	<i>Proteobacteria</i>	1	hypothetical
G20	<i>Firmicutes</i>	Enterococcus phage EFDG1	<i>Firmicutes</i>	1	PHA02414 superfamily
G21	<i>Proteobacteria</i>	G7	<i>Proteobacteria</i>	1	hypothetical
		G21	<i>Proteobacteria</i>	1	hypothetical
G23	<i>Proteobacteria</i>	Acinetobacter phage Acj9	<i>Proteobacteria</i>	1	hypothetical
		Acinetobacter phage 133	<i>Proteobacteria</i>	1	hypothetical