

Table S5. Phams shared between Arthrobacter phage clusters

pham	# members	# Arthro members	shared clusters	representative gene	function	Number of phages in each cluster containing pham											Galaxy	Jasmine	ArV2		
						AK	AL	AM	AN	AO	AP	AQ	AR	AT	AU						
				# of cluster members:		12	2	2	10	6	2	5	2	2	2	2	1	1	1		
199	4	4	AM, AU	Circum_gp57	NKF <sup>1</sup>			2												2	
456	8	8	AO, AR	Jawnski_gp2	terminase, large subunit					6				2							
467	3	3	AO, AT	KitKat_gp94	NKF					1						2					
712	6	4	AM, AU	Circum_gp99	NKF				2												2
1190	8	8	AO, AR	Jawnski_gp21	minor tail					6				2							
1206	8	8	AO, AR	Jawnski_gp18	LysM domain					6				2							
1601	6	4	AM, AU	Circum_gp8	terminase, large subunit				2												2
1887	13	13	AK, Galaxy	Korra_gp12	NKF		12														1
1952	6	4	AM, AU	Circum_gp12	capsid & capsid maturation protease				2												2
2021	4	4	AM, AU	Circum_gp59	NKF				2												2
2233	7	7	AK, AL	Korra_gp3	NKF		6	1													
2337	6	4	AM, AU	Circum_gp62	NKF				2												2
2340	6	4	AM, AU	Circum_gp21	NKF				2												2
2671	6	4	AM, AU	Circum_gp13	NKF				2												2
2917	4	4	AO, AU	Sonny_gp67	NKF					2											2
2918	6	4	AM, AU	Circum_gp96	hydrolase				2												2
3007	8	8	AO, AR	Jawnski_gp4	NKF					6				2							
3040	8	8	AO, AR	Jawnski_gp11	NKF					6				2							
3098	6	4	AM, AU	Circum_gp14	NKF				2												2
3272	6	4	AM, AU	Circum_gp80	ATP-dependent helicase				2												2
3273	6	4	AM, AU	Circum_gp10	portal				2												2
4051	6	4	AM, AU	Circum_gp97	NKF				2												2
4131	6	4	AM, AU	Circum_gp6	NKF				2												2
4206	12	12	AL, AL	Korra_gp55	HTH DNA binding domain		10	2													
4283	8	8	AO, AR	Jawnski_gp64	NKF					6				2							
4295	4	4	AM, AU	Circum_gp78	HNH endonuclease				2												2
4367	8	8	AO, AR	Jawnski_gp22	minor tail					6				2							
4419	6	4	AM, AU	Circum_gp98	HTH DNA binding domain				2												2
4429	4	4	AM, AU	Circum_gp50	NKF				2												2
4596	6	4	AM, AU	Circum_gp69	NKF				2												2
4669	6	4	AM, AU	Circum_gp16	NKF				2												2
5056	6	4	AM, AU	Circum_gp9	NKF				2												2
5705	6	4	AM, AU	Circum_gp22	tape measure				2												2
6565	36	5	AM, AP, Jasmine	Circum_gp93	NKF				2			2									
6612	6	4	AM, AU	Circum_gp6	NKF				2												2
6711	6	4	AM, AU	Circum_gp4	HNH endonuclease domain				2												2
6812	6	4	AM, AU	Circum_gp44	NKF				2												2
7135	3	3	AL, Jasmine	Laroye_gp71	NKF			2													1
7528	6	4	AM, AU	Circum_gp3	NKF				2												2
7626	12	8	AM, AU	Circum_gp15, Circum_gp17	major tail				4												4
7651	7	7	AO, AR	Jawnski_gp23	NKF					6				1							
7767	9	8	AO, AR	Jawnski_gp14	tail sheath					6				2							
7938	9	8	AO, AR	Jawnski_gp28	NKF					6				2							
8364	7	7	AO, AR	Jawnski_gp25	holin					6				1							
10782	3	3	AR, AT	PrincessTrina_gp67	NKF									2							1
11716	3	3	AR, AT	KitKat_gp50	NKF									1							2
12887	8	2	Galaxy, ArV2	Galaxy_gp55	Nkf																1
14489	4	4	AM, AU	Circum_gp25	NKF				2												2
15043	3	3	AL, AU	Salgado_gp30	NKF			1													2
18984	48	13	AL, AO, AP, AR, Galaxy	Laroye_gp14	ssDNA binding domain					6	2			2							1
19138	7	7	AL, AQ	Laroye_gp10	terminase, large subunit																
19180	9	3	AK, AU	Joann_gp51	NKF		1														2
19419	12	12	AK, AL, AU	Korra_gp2	NKF		6	2													4
19463	27	13	AK, Galaxy	Korra_gp7	capsid maturation protease		12														1
19525	19	13	AK, Galaxy	Korra_gp5	terminase, large subunit		12														1
19560	2	2	AR, AT	KellEzio_gp88	hydrolase domain										1	1					

<sup>1</sup>NKF, No known function