

Characterization of a Novel *Pseudomonas Aeruginosa* Phage Species: PaYy-2

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Supplementary Description

Table S1: General characteristics of genes coded by the genome of phage PaYy-2.

Genes	start	end	Length (aa)	strand	Function
ORF_1	19	567	183	1	putative protease subunit [Pseudomonas phage JG004]
ORF_2	628	813	62	1	hypothetical protein C11_043 [Pseudomonas phage C11]
ORF_3	810	1052	81	1	hypothetical protein C11_042 [Pseudomonas phage C11]
ORF_4	1053	1238	62	1	hypothetical protein C11_041 [Pseudomonas phage C11]
ORF_5	1273	1551	93	1	hypothetical protein C11_040 [Pseudomonas phage C11]
ORF_6	1548	1826	93	1	hypothetical protein C11_039 [Pseudomonas phage C11]
ORF_7	1807	2157	117	1	hypothetical protein BN405_2-10_Ab1_orf_35 [Pseudomonas phage vB_PaeM_C2-10_Ab1]
ORF_8	2166	2435	90	1	hypothetical protein Y35_GM000137 [Pseudomonas phage YS35]
ORF_9	2432	2644	71	1	hypothetical protein PAK_P400159 [Pseudomonas phage PAK_P4]
ORF_10	2654	2881	76	1	hypothetical protein PAK_P200158c [Pseudomonas phage PAK_P2]
ORF_11	2884	3300	139	1	putative CMP/dCMP deaminase, zinc-binding [Pseudomonas phage PAK_P1]
ORF_12	3297	4505	403	1	putative DNA ligase [Pseudomonas phage PAK_P1]
ORF_13	4518	4979	154	1	hypothetical protein PaoP5_033 [Pseudomonas phage PaoP5]
ORF_14	5044	5604	187	1	putative cell wall hydrolase [Pseudomonas phage YS35]
ORF_15	5606	6160	185	1	hypothetical protein PAK_P100158c [Pseudomonas phage PAK_P1]
ORF_16	6150	6581	144	1	hypothetical protein [Pseudomonas phage PA10]
ORF_17	6581	7135	185	1	putative phosphoesterase [Pseudomonas phage JG004]
ORF_18	7148	7384	79	1	hypothetical protein PJG4_025 [Pseudomonas phage JG004]
ORF_19	7386	7661	92	1	hypothetical protein PJG4_024 [Pseudomonas phage JG004]
ORF_20	7658	8065	136	1	hypothetical protein BN405_2-10_Ab1_orf_22 [Pseudomonas phage vB_PaeM_C2-10_Ab1]
ORF_21	8077	8994	306	1	putative RNA ligase/tail attachment protein [Pseudomonas phage PAK_P2]
ORF_22	9005	9421	139	1	hypothetical protein vB_PaeM_MAG1_165 [Pseudomonas phage vB_PaeM_MAG1]
ORF_23	9431	10297	289	1	putative phosphoribosylpyrophosphate synthetase [Pseudomonas phage PAK_P2]
ORF_24	10294	10512	73	1	hypothetical protein C11_021 [Pseudomonas phage C11]
ORF_25	10569	12257	563	1	putative nictotinate phosphoribosyltransferase [Pseudomonas phage K8]
ORF_26	12269	12466	66	1	hypothetical protein C11_019 [Pseudomonas phage C11]
ORF_27	12463	12942	160	1	macro domain protein [Pseudomonas phage vB_PaeM_MAG1]
ORF_28	12954	13103	50	1	DNA recombination-mediator protein A [Pseudomonas phage PPSC2]
ORF_29	13105	13422	106	1	hypothetical protein C11_016 [Pseudomonas phage C11]
ORF_30	13419	14000	194	1	putative DNA recombination-mediator protein A [Pseudomonas phage PaoP5]
ORF_31	14020	14397	126	1	hypothetical protein PAK_P200137c [Pseudomonas phage PAK_P2]

ORF_32	14384	14887	168	1	toxic anion resistance protein [Pseudomonas phage PPSC2]
ORF_33	14889	15230	114	1	hypothetical protein phiMK_160 [Pseudomonas phage phiMK]
ORF_34	15227	15442	72	1	hypothetical protein C11_011 [Pseudomonas phage C11]
ORF_35	15499	15861	121	1	hypothetical protein C11_010 [Pseudomonas phage C11]
ORF_36	15861	16172	104	1	hypothetical protein PAK_P400131 [Pseudomonas phage PAK_P4]
ORF_37	16160	16438	93	1	hypothetical protein PAK_P200130c [Pseudomonas phage PAK_P2]
ORF_38	16441	17103	221	1	hypothetical protein [Pseudomonas phage vB_PaeM_C2-10_Ab02]
ORF_39	17146	17550	135	1	hypothetical protein C11_006 [Pseudomonas phage C11]
ORF_40	17547	17963	139	1	hypothetical protein C11_005 [Pseudomonas phage C11]
ORF_41	17953	18357	135	1	hypothetical protein PAK_P200127c [Pseudomonas phage PAK_P2]
ORF_42	18357	18623	50	1	hypothetical protein PAK_P200126c [Pseudomonas phage PAK_P2]
ORF_43	18686	18835	50	-1	hypothetical protein P]G4_003 [Pseudomonas phage JG004]
ORF_44	19342	19944	201	-1	putative HNH homing endonuclease [Pseudomonas phage Zigelbrucke]
ORF_45	20628	20828	67	-1	hypothetical protein Zigelbrucke_171 [Pseudomonas phage Zigelbrucke]
ORF_46	21012	21206	67	-1	hypothetical protein Zigelbrucke_168 [Pseudomonas phage Zigelbrucke]
ORF_47	21306	21572	89	-1	hypothetical protein C11_168 [Pseudomonas phage C11]
ORF_48	21666	21968	101	-1	hypothetical protein C11_167 [Pseudomonas phage C11]
ORF_49	21985	22446	154	-1	hypothetical protein C11_166 [Pseudomonas phage C11]
ORF_50	22511	22654	48	-1	hypothetical protein C11_165 [Pseudomonas phage C11]
ORF_51	22927	23139	71	-1	hypothetical protein C11_164 [Pseudomonas phage C11]
ORF_52	23208	23735	176	-1	hypothetical protein [Delftia tsuruhatensis]
ORF_53	23821	24300	160	-1	hypothetical protein Y35_GM0000012 [Pseudomonas phage YS35]
ORF_54	24336	24659	108	-1	hypothetical protein C11_161 [Pseudomonas phage C11]
ORF_55	24662	25243	194	-1	hypothetical protein C11_160 [Pseudomonas phage C11]
ORF_56	25286	25642	119	-1	hypothetical protein C11_159 [Pseudomonas phage C11]
ORF_57	25720	25974	85	-1	hypothetical protein C11_158 [Pseudomonas phage C11]
ORF_58	26079	26471	131	-1	hypothetical protein C11_157 [Pseudomonas phage C11]
ORF_59	26468	26734	89	-1	hypothetical protein C11_156 [Pseudomonas phage C11]
ORF_60	26767	26991	75	-1	hypothetical protein C11_155 [Pseudomonas phage C11]
ORF_61	26988	27284	99	-1	hypothetical protein C11_154 [Pseudomonas phage C11]
ORF_62	27300	27494	65	-1	hypothetical protein C11_153 [Pseudomonas phage C11]
ORF_63	27758	28111	118	-1	hypothetical protein C11_152 [Pseudomonas phage C11]
ORF_64	28111	28449	113	-1	hypothetical protein phiMK_21 [Pseudomonas phage phiMK]
ORF_65	28454	29125	224	-1	hypothetical protein BN405_2-10_Ab1_orf_138 [Pseudomonas phage vB_PaeM_C2-10_Ab1]
ORF_66	29201	29584	128	-1	hypothetical protein C11_149 [Pseudomonas phage C11]
ORF_67	29821	29967	49	-1	hypothetical protein PAK_P100101 [Pseudomonas phage PAK_P1]
ORF_68	30042	30350	103	-1	hypothetical protein PAK_P100100 [Pseudomonas phage PAK_P1]
ORF_69	30350	30478	43	-1	hypothetical protein PAK_P100099 [Pseudomonas phage PAK_P1]

ORF_70	30549	30782	78	-1	hypothetical protein C11_144 [Pseudomonas phage C11]
ORF_71	30772	31062	97	-1	hypothetical protein C11_143 [Pseudomonas phage C11]
ORF_72	31062	31205	48	-1	hypothetical protein C11_142 [Pseudomonas phage C11]
ORF_73	31217	31486	90	-1	hypothetical protein C11_141 [Pseudomonas phage C11]
ORF_74	31561	32037	159	-1	SprT-like family protein [Pseudomonas phage vB_PaeM_MAG1]
ORF_75	32666	32839	58	-1	hypothetical protein PAK_P100093 [Pseudomonas phage PAK_P1]
ORF_76	33062	34048	329	-1	hypothetical protein C11_138 [Pseudomonas phage C11]
ORF_77	34216	34416	67	-1	hypothetical protein PJG4_142 [Pseudomonas phage JG004]
ORF_78	34479	34718	80	-1	hypothetical protein BN405_2-10_Ab1_orf_127 [Pseudomonas phage vB_PaeM_C2-10_Ab1]
ORF_79	34720	34914	65	-1	hypothetical protein PAK_P100089 [Pseudomonas phage PAK_P1]
ORF_80	34924	35409	162	-1	hypothetical protein C11_134 [Pseudomonas phage C11]
ORF_81	35421	35669	83	-1	hypothetical protein Y35_GM000039 [Pseudomonas phage YS35]
ORF_82	35710	35895	62	-1	hypothetical protein BN405_2-10_Ab1_orf_123 [Pseudomonas phage vB_PaeM_C2-10_Ab1]
ORF_83	35885	36199	105	-1	hypothetical protein PJG4_137 [Pseudomonas phage JG004]
ORF_84	36199	36435	79	-1	hypothetical protein PJG4_136 [Pseudomonas phage JG004]
ORF_85	36435	36668	78	-1	hypothetical protein PJG4_135 [Pseudomonas phage JG004]
ORF_86	36668	36895	76	-1	hypothetical protein PAK_P200079 [Pseudomonas phage PAK_P2]
ORF_87	36892	37038	49	-1	hypothetical protein PAK_P200078 [Pseudomonas phage PAK_P2]
ORF_88	37113	38858	582	-1	putative ribonucleoside-diphosphate reductase alpha chain [Pseudomonas phage C11]
ORF_89	38851	39897	349	-1	ribonucleoside-diphosphate reductase beta subunit [Pseudomonas phage JG004]
ORF_90	39914	40258	115	-1	hypothetical protein Y35_GM000048 [Pseudomonas phage YS35]
ORF_91	40261	41208	316	-1	thymidylate synthase [Pseudomonas phage PaoP5]
ORF_92	41263	41355	31	-1	hypothetical protein PAK_P100075 [Pseudomonas phage PAK_P1]
ORF_93	41415	42365	317	-1	3'-phosphatase, 5'-polynucleotide kinase [Pseudomonas phage PA10]
ORF_94	42358	42573	72	-1	hypothetical protein vB_PaeM_MAG1_054 [Pseudomonas phage vB_PaeM_MAG1]
ORF_95	42577	42912	112	-1	hypothetical protein PAK_P100072 [Pseudomonas phage PAK_P1]

ORF_96	42931	43140	70	-1	hypothetical protein [Delftia sp. 670]
ORF_97	43152	43334	61	-1	nucleotide pyrophosphohydrolase [Roseobacter phage DSS3P8]
ORF_98	43331	44110	260	-1	constituent protein [Pseudomonas phage K8]
ORF_99	44107	44289	61	-1	hypothetical protein PaP1_gp103 [Pseudomonas phage PaP1]
ORF_100	44291	44458	56	-1	hypothetical protein PAK_P100067 [Pseudomonas phage PAK_P1]
ORF_101	44455	44892	146	-1	hypothetical protein PAK_P100066 [Pseudomonas phage PAK_P1]
ORF_102	44889	45125	79	-1	hypothetical protein PAK_P100065 [Pseudomonas phage PAK_P1]
ORF_103	45122	45520	133	-1	putative endolysin [Pseudomonas phage Lu11]
ORF_104	45517	46080	188	-1	putative HNH endonuclease [Pseudomonas phage Zigelbrucke]
ORF_105	46077	47129	351	-1	putative exodeoxyribonuclease [Pseudomonas phage C11]
ORF_106	47171	47392	74	-1	hypothetical protein vB_PaeM_MAG1_066 [Pseudomonas phage vB_PaeM_MAG1]
ORF_107	47402	47635	78	-1	hypothetical protein phiMK_65 [Pseudomonas phage phiMK]
ORF_108	47705	48709	335	-1	hypothetical protein BN405_2-10_Ab1_orf_101 [Pseudomonas phage vB_PaeM_C2-10_Ab1]
ORF_109	48811	49527	239	-1	hypothetical protein PJG4_113 [Pseudomonas phage JG004]
ORF_110	49529	49696	56	-1	hypothetical protein PaP1_gp092 [Pseudomonas phage PaP1]
ORF_111	49719	50117	133	-1	hypothetical protein PAK_P400056 [Pseudomonas phage PAK_P4]
ORF_112	50207	52921	905	-1	putative DNA Polymerase [Pseudomonas phage vB_PaeM_C2-10_Ab08]
ORF_113	52982	54844	621	-1	putative DNA primase/helicase [Pseudomonas phage PAK_P1]
ORF_114	54898	55083	62	-1	hypothetical protein BN405_2-10_Ab1_orf_95 [Pseudomonas phage vB_PaeM_C2-10_Ab1]
ORF_115	55080	55325	82	-1	hypothetical protein PAK_P400052 [Pseudomonas phage PAK_P4]
ORF_116	55335	55526	64	-1	putative RNA methyltransferase [Pseudomonas phage PAK_P4]
ORF_117	55513	55641	43	-1	hypothetical protein PAK_P100050 [Pseudomonas phage PAK_P1]
ORF_118	55759	56181	141	-1	hypothetical protein PAK_P100048 [Pseudomonas phage PAK_P1]
ORF_119	56182	56484	101	-1	hypothetical protein PAK_P100047 [Pseudomonas phage PAK_P1]
ORF_120	56487	56654	56	-1	hypothetical protein C11_094 [Pseudomonas phage C11]
ORF_121	56641	57297	219	-1	hypothetical protein C11_093 [Pseudomonas phage C11]
ORF_122	57294	57683	130	-1	hypothetical protein BN405_2-10_Ab1_orf_88 [Pseudomonas phage vB_PaeM_C2-10_Ab1]

ORF_123	57685	57939	85	-1	hypothetical protein PAK_P200043 [Pseudomonas phage PAK_P2]
ORF_124	57973	58458	162	-1	hypothetical protein PAK_P200042 [Pseudomonas phage PAK_P2]
ORF_125	58461	58658	66	-1	hypothetical protein C11_089 [Pseudomonas phage C11]
ORF_126	59099	59332	78	1	hypothetical protein PJG4_098 [Pseudomonas phage JG004]
ORF_127	59370	59603	78	1	hypothetical protein PJG4_097 [Pseudomonas phage JG004]
ORF_128	59635	60786	384	1	RNA ligase [Pseudomonas phage vB_PaeM_MAG1]
ORF_129	60799	60957	53	1	hypothetical protein phiMK_86 [Pseudomonas phage phiMK]
ORF_130	60950	61759	270	1	pyrophosphatase [Pseudomonas phage K8]
ORF_131	61761	62081	107	1	hypothetical protein C11_083 [Pseudomonas phage C11]
ORF_132	62092	62400	103	1	hypothetical protein C11_082 [Pseudomonas phage C11]
ORF_133	62448	62762	105	-1	hypothetical protein C11_081 [Pseudomonas phage C11]
ORF_134	62798	63103	102	-1	hypothetical protein PAK_P100032 [Pseudomonas phage PAK_P1]
ORF_135	63093	63374	94	-1	hypothetical protein PJG4_090 [Pseudomonas phage JG004]
ORF_136	63665	63904	80	-1	hypothetical protein PJG4_088 [Pseudomonas phage JG004]
ORF_137	63922	64482	187	-1	Putative peptidoglycan binding protein [Pseudomonas phage vB_PaeM_C2-10_Ab02]
ORF_138	64499	65998	500	-1	putative tail fiber protein [Pseudomonas phage C11]
ORF_139	66010	66384	125	-1	putative tail fiber assembly protein [Pseudomonas phage vB_PaeM_PAO1_Ab03]
ORF_140	66428	68485	686	-1	tail fiber protein [Pseudomonas phage PaoP5]
ORF_141	68496	69227	244	-1	hypothetical protein PJG4_083 [Pseudomonas phage JG004]
ORF_142	69246	70709	488	-1	Putative baseplate component [Pseudomonas phage JG004]
ORF_143	70711	71082	124	-1	putative structural protein [Pseudomonas phage ventosus]
ORF_144	71093	71833	247	-1	Putative baseplate protein [Pseudomonas phage JG004]
ORF_145	71830	72747	306	-1	putative structural protein [Pseudomonas phage vB_PsyM_KIL1]
ORF_146	72744	73100	119	-1	hypothetical protein BN405_2-10_Ab1_orf_65 [Pseudomonas phage vB_PaeM_C2-10_Ab1]
ORF_147	73106	73867	254	-1	putative structural protein [Acinetobacter phage YMC13/03/R2096]
ORF_148	73864	76230	789	-1	putative tape measure protein [Pseudomonas phage vB_PaeM_C2-10_Ab1]

ORF_149	76227	76379	51	-1	hypothetical protein PAK_P200016 [Pseudomonas phage PAK_P2]
ORF_150	76487	76858	124	-1	hypothetical protein PaoP5_067 [Pseudomonas phage PaoP5]
ORF_151	76872	77351	160	-1	hypothetical protein PaoP5_066 [Pseudomonas phage PaoP5]
ORF_152	77351	77851	167	-1	putative structural protein [Pseudomonas phage POR1]
ORF_153	77926	78450	175	-1	structural protein [Pseudomonas phage KPP10]
ORF_154	78481	79767	429	-1	putative tail sheath protein [Pseudomonas phage Zigelbrucke]
ORF_155	79780	80343	188	-1	hypothetical protein BN405_2-10_Ab1_orf_56 [Pseudomonas phage vB_PaeM_C2-10_Ab1]
ORF_156	80340	80720	127	-1	putative head-tail joining protein [Pseudomonas phage Zigelbrucke]
ORF_157	80720	81199	160	-1	putative RNA polymerase [Pseudomonas phage JG004]
ORF_158	81171	81647	159	-1	hypothetical protein BN405_2-10_Ab1_orf_53 [Pseudomonas phage vB_PaeM_C2-10_Ab1]
ORF_159	81699	82733	345	-1	major capsid protein [Pseudomonas phage PaoP5]
ORF_160	82777	83187	137	-1	structural protein [Pseudomonas phage KPP10]
ORF_161	83215	84132	306	-1	hypothetical protein PJG4_062 [Pseudomonas phage JG004]
ORF_162	84129	84599	157	-1	putative methyltransferase [Pseudomonas phage JG004]
ORF_163	84609	86048	480	-1	putative portal protein [Pseudomonas phage ventosus]
ORF_164	86061	87581	507	-1	putative terminase large subunit [Pseudomonas phage PAK_P1]
ORF_165	90382	90705	108	-1	hypothetical protein Y35_GM000126 [Pseudomonas phage YS35]
ORF_166	90848	91036	63	-1	hypothetical protein VCM_00139 [Pseudomonas phage VCM]
ORF_167	91511	91978	156	1	hypothetical protein PaP1_gp043 [Pseudomonas phage PaP1]
ORF_168	91975	92331	119	1	hypothetical protein PJG4_043 [Pseudomonas phage JG004]

Table S2: Predicted 15 tRNAs of the genome of phage PaYy-2

tRNA	Amino Acids	Codon	start	end	length	score	Sequence
tRNA1	Gln	TTG	90376	90302	75	54.5	TGCCGCTTCGTTCAATGGTAGGACGCCAGACTTTGAATCTGGAGATGATG GTTCGATCCCATCAGTGGCTGCCAA
tRNA2	Trp	CCA	90221	90148	72	55.6	
tRNA3	Arg	TCT	90097	90026	74	30.1	GGGTCGGTGAGCGTAATTGGCAACCTACTGGATTCCAAATCCTCGTATT TCTGTTTCAATCAGAGTCGGCCCG
tRNA4	Lys	TTT	90015	89942	74	40.3	TGGACGGAAGCTAAAGTGGATAGGCATCTGGCTTTTAAACAGATTATA GTGAGTTCGAGTCTCACCCGTTCAA
tRNA5	Ser	AGA	89760	89674	87	22.8	AGCGAGTAGCCCTGAGTAGGTCGGGAACCTAGTCTAGAAAACCTAGGCCAC TGTGATGAACGGTGGAGGGTTCGACTCCTTTACTCGCTG
tRNA6	Leu	TAG	89664	89583	82	61.1	GGCCCTGTGGTGGAAATTGGTATACACATCAGTCTTAGAAAACCTGACGCCG AGAGGATTGAGGGTTCAAGTCCCTCCGGGGCCA
tRNA7	Ile	GAT	89369	89297	73	66.6	AGCCGGATAGCTCAATTGGTATAGACACCCGACCGATAATCGGATGGTTG AAGGTTCAAGTCTTCTCTGGCTA
tRNA8	Asp	GTC	89284	89209	76	58.6	GGCCATTAGCTCAGTCTGGACTAGAGCAAGCCCTGTCTAGGGCAAGG TCGTCGGTTCGAATCCGACATGGGTCG
tRNA9	Tyr	GTA	89200	89118	83	26.2	GTCGTTGTAGAGATAGATGGCTACTATCATCCGGCTGTAACCCGGACGCC ATAGGCTAGAGGTTCAATTCCTTCTTCGACCA
tRNA10	Cys	GCA	88750	88674	77	54.4	GCCCCGTTGGCCGAGAGGTTTAGCGGGCGGATTGCAAATCCGTCTCAC ATCGGTTCAAATCCGATACGCGGCTCCA
tRNA11	Asn	GTT	88663	88591	73	69.2	TGGGATGTAGCTCAGTTGGTATAGACAGGGAGCTGTTAACTCTCAGGTCG CAGGTTCAACCCCTGCCGTCCAG
tRNA12	Pro	TGG	88523	88448	76	69.4	CCTCGTAGCTCAGTCTGGTTAGAGTGTTCGGATTTGGAATCCGAAGGTCGA AGGTTCAAATCCTTCCGGGGTGACCA
tRNA13	Gly	TCC	88276	88201	76	67.6	GCGGGTATAGCTCAGTTGGTATAGAGCTTGCCTTCCAAGCAGTTCGTCGT CGGTTTCGAGTCCGTCTATCCGCTCCA
tRNA14	Glu	TTC	88112	88037	76	67.6	GCAGTTATAGATTAATTTGGTTAAATCGCCAGACTTTCAATCTGGTGTTC GGGTTTCGATCCCCGGTAACTGCTCCA
tRNA15	Thr	TGT	87715	87644	72	21.5	GCCCTTAAAGCATTTATGGTGTATGCACCGGCTTTGTAACCCGGCGAATTC TGTTCAAGTCAGGAATGGGGCA

Table S3: General characteristics of the reference genome Pseudomonas phage YS35

Genes	start	end	Length (aa)	strand	Function
ORF_1	229	831	201	-1	hypothetical protein
ORF_2	1612	1872	87	-1	hypothetical protein
ORF_3	1921	2067	49	-1	hypothetical protein
ORF_4	2304	2498	65	-1	hypothetical protein
ORF_5	2580	2870	97	-1	hypothetical protein
ORF_6	2867	3028	54	-1	hypothetical protein
ORF_7	3112	3564	151	-1	hypothetical protein
ORF_8	3620	3790	57	-1	hypothetical protein
ORF_9	3820	4032	71	-1	hypothetical protein
ORF_10	4101	4670	190	-1	hypothetical protein
ORF_11	4707	5222	172	-1	hypothetical protein
ORF_12	5306	5785	160	-1	hypothetical protein
ORF_13	5821	6159	113	-1	hypothetical protein
ORF_14	6171	6416	82	-1	hypothetical protein
ORF_15	6517	6909	131	-1	hypothetical protein
ORF_16	6906	7172	89	-1	hypothetical protein
ORF_17	7205	7429	75	-1	hypothetical protein
ORF_18	7426	7722	99	-1	hypothetical protein
ORF_19	7738	7932	65	-1	hypothetical protein
ORF_20	8017	8220	68	-1	hypothetical protein
ORF_21	8217	8570	118	-1	hypothetical protein
ORF_22	8570	8908	113	-1	hypothetical protein
ORF_23	8913	9584	224	-1	hypothetical protein
ORF_24	9660	10043	128	-1	hypothetical protein
ORF_25	10280	10426	49	-1	hypothetical protein
ORF_26	10500	10808	103	-1	hypothetical protein
ORF_27	10808	10936	43	-1	hypothetical protein
ORF_28	11007	11255	83	-1	hypothetical protein
ORF_29	11252	11539	96	-1	hypothetical protein
ORF_30	11539	11682	48	-1	hypothetical protein
ORF_31	11696	11962	89	-1	hypothetical protein
ORF_32	12038	12514	159	-1	hypothetical protein
ORF_33	13143	13316	58	-1	hypothetical protein
ORF_34	13539	14525	329	-1	hypothetical protein
ORF_35	14692	14892	67	-1	hypothetical protein
ORF_36	14955	15194	80	-1	hypothetical protein
ORF_37	15196	15390	65	-1	hypothetical protein
ORF_38	15400	15885	162	-1	hypothetical protein
ORF_39	15897	16172	92	-1	hypothetical protein
ORF_40	16186	16371	62	-1	hypothetical protein
ORF_41	16361	16675	105	-1	hypothetical protein
ORF_42	16675	16911	79	-1	hypothetical protein
ORF_43	16911	17144	78	-1	hypothetical protein
ORF_44	17144	17371	76	-1	hypothetical protein
ORF_45	17368	17514	49	-1	hypothetical protein
ORF_46	17589	19334	582	-1	putative ribonucleoside-diphosphate reductase alpha chain
ORF_47	19327	20373	349	-1	ribonucleotide-diphosphate reductase beta subunit
ORF_48	20390	20770	127	-1	hypothetical protein

ORF_49	20736	21701	322	-1	thymidylate synthase
ORF_50	21756	21848	31	-1	hypothetical protein
ORF_51	21908	22858	317	-1	hypothetical protein
ORF_52	22851	23063	71	-1	hypothetical protein
ORF_53	23067	23402	112	-1	hypothetical protein
ORF_54	23421	23630	70	-1	hypothetical protein
ORF_55	23642	23824	61	-1	hypothetical protein
ORF_56	23821	24600	260	-1	hypothetical protein
ORF_57	24597	24767	57	-1	hypothetical protein
ORF_58	24764	25201	146	-1	hypothetical protein
ORF_59	25198	25428	77	-1	hypothetical protein
ORF_60	25425	25811	129	-1	hypothetical protein
ORF_61	25808	26371	188	-1	hypothetical protein
ORF_62	26368	27420	351	-1	putative exodeoxyribonuclease
ORF_63	27463	27684	74	-1	hypothetical protein
ORF_64	27694	27828	45	-1	hypothetical protein
ORF_65	27995	28999	335	-1	hypothetical protein
ORF_66	29101	29811	237	-1	hypothetical protein
ORF_67	29813	29980	56	-1	hypothetical protein
ORF_68	30009	30407	133	-1	hypothetical protein
ORF_69	30497	31186	230	-1	hypothetical protein
ORF_70	31338	31817	160	-1	endonuclease VII
ORF_71	31921	33921	667	-1	putative DNA polymerase
ORF_72	33982	35844	621	-1	putative DNA primase/helicase
ORF_73	35898	36083	62	-1	hypothetical protein
ORF_74	36080	36325	82	-1	hypothetical protein
ORF_75	36335	36526	64	-1	hypothetical protein
ORF_76	36513	36641	43	-1	hypothetical protein
ORF_77	36759	37181	141	-1	hypothetical protein
ORF_78	37182	37484	101	-1	hypothetical protein
ORF_79	37487	37651	55	-1	hypothetical protein
ORF_80	37638	38303	222	-1	hypothetical protein
ORF_81	38300	38668	123	-1	hypothetical protein
ORF_82	38691	38945	85	-1	hypothetical protein
ORF_83	38979	39464	162	-1	hypothetical protein
ORF_84	39467	39664	66	-1	hypothetical protein
ORF_85	39883	39895	_	-1	sRNA
ORF_86	40105	40338	78	1	hypothetical protein
ORF_87	40370	41506	379	1	hypothetical protein
ORF_88	41509	41664	52	1	hypothetical protein
ORF_89	41657	42466	270	1	hypothetical protein
ORF_90	42468	42788	107	1	hypothetical protein
ORF_91	42800	43111	104	1	hypothetical protein
ORF_92	43149	43463	105	-1	hypothetical protein
ORF_93	43499	43804	102	-1	hypothetical protein
ORF_94	43936	44379	148	-1	hypothetical protein
ORF_95	44366	44605	80	-1	hypothetical protein
ORF_96	44623	45183	187	-1	hypothetical protein
ORF_97	45200	46699	500	-1	putative tail fiber protein
ORF_98	46711	47187	159	-1	hypothetical protein
ORF_99	47189	47569	127	-1	hypothetical protein
ORF_100	47605	49620	672	-1	putative tail fiber protein

ORF_101	49631	50362	244	-1	hypothetical protein
ORF_102	50381	51844	488	-1	putative baseplate component
ORF_103	51846	52145	100	-1	hypothetical protein
ORF_104	52228	52968	247	-1	putative baseplate protein
ORF_105	52965	53882	306	-1	hypothetical protein
ORF_106	53879	54235	119	-1	hypothetical protein
ORF_107	54241	55002	254	-1	hypothetical protein
ORF_108	54999	57365	789	-1	putative tape measure protein
ORF_109	57362	57514	51	-1	hypothetical protein
ORF_110	57622	57993	124	-1	putative structural protein
ORF_111	58007	58486	160	-1	putative structural protein
ORF_112	58486	58959	158	-1	hypothetical protein
ORF_113	59061	59585	175	-1	putative structural protein
ORF_114	59616	60902	429	-1	hypothetical protein
ORF_115	60915	61478	188	-1	hypothetical protein
ORF_116	61475	61855	127	-1	hypothetical protein
ORF_117	61855	62268	138	-1	hypothetical protein
ORF_118	62306	62782	159	-1	hypothetical protein
ORF_119	62833	63867	345	-1	putative major head capsid protein
ORF_120	63911	64321	137	-1	hypothetical protein
ORF_121	64349	65266	306	-1	hypothetical protein
ORF_122	65263	65733	157	-1	putative methyltransferase
ORF_123	65743	67182	480	-1	hypothetical protein
ORF_124	67195	68715	507	-1	putative terminase large subunit
ORF_125	68774	68850	_	1	tRNA-Thr
ORF_126	69171	69246	_	1	tRNA-Glu
ORF_127	69253	69328	_	1	tRNA-Phe
ORF_128	69391	69467	_	1	tRNA-Gly
ORF_129	69475	69552	_	1	tRNA-Pro
ORF_130	69614	69692	_	1	tRNA-Asn
ORF_131	69701	69776	_	1	tRNA-Cys
ORF_132	70188	70266	_	1	tRNA-Asp
ORF_133	70276	70351	_	1	tRNA-Ile
ORF_134	70375	70464	32	-1	hypothetical protein
ORF_135	70562	70646	_	1	tRNA-Leu
ORF_136	70983	71408	142	-1	HNH endonuclease
ORF_137	71465	71540	_	1	tRNA-Arg
ORF_138	71588	71664	_	1	tRNA-Trp
ORF_139	71746	71819	_	1	tRNA-Gln
ORF_140	71825	72148	108	-1	hypothetical protein
ORF_141	72288	72503	72	1	hypothetical protein
ORF_142	72953	73420	156	1	hypothetical protein
ORF_143	73417	73773	119	1	hypothetical protein
ORF_144	73821	74369	183	1	putative protease subunit
ORF_145	74430	74615	62	1	hypothetical protein
ORF_146	74612	74905	98	1	hypothetical protein
ORF_147	74906	75091	62	1	hypothetical protein
ORF_148	75126	75404	93	1	hypothetical protein
ORF_149	75401	75679	93	1	hypothetical protein
ORF_150	75693	76010	106	1	hypothetical protein

ORF_151	76019	76288	90	1	hypothetical protein
ORF_152	76285	76497	71	1	hypothetical protein
ORF_153	76508	76732	75	1	hypothetical protein
ORF_154	76735	77151	139	1	putative CMP/dCMP deaminase, zinc-binding
ORF_155	77148	78356	403	1	DNA ligase
ORF_156	78369	78830	154	1	hypothetical protein
ORF_157	78895	79455	187	1	putative cell wall hydrolase
ORF_158	79457	80017	187	1	metal dependent phosphohydrolase HD region
ORF_159	80007	80438	144	1	hypothetical protein
ORF_160	80438	81004	189	1	putative phosphoesterase domain containing protein
ORF_161	80985	81242	86	1	hypothetical protein
ORF_162	81244	81519	92	1	hypothetical protein
ORF_163	81516	81923	136	1	hypothetical protein
ORF_164	81935	82852	306	1	RNA ligase/tail attachment protein
ORF_165	82863	83279	139	1	hypothetical protein
ORF_166	83289	84155	289	1	phosphoribosyl pyrophosphate synthetase
ORF_167	84152	84370	73	1	hypothetical protein
ORF_168	84427	86115	563	1	putative nicotinamide phosphoribosyl transferase family protein
ORF_169	86193	86324	44	1	hypothetical protein
ORF_170	86321	86800	160	1	hypothetical protein
ORF_171	86812	86961	50	1	hypothetical protein
ORF_172	86963	87280	106	1	hypothetical protein
ORF_173	87277	87858	194	1	hypothetical protein
ORF_174	87878	88255	126	1	hypothetical protein
ORF_175	88242	88745	168	1	hypothetical protein
ORF_176	88747	89088	114	1	hypothetical protein
ORF_177	89085	89300	72	1	hypothetical protein
ORF_178	89357	89719	121	1	hypothetical protein
ORF_179	89719	90030	104	1	hypothetical protein
ORF_180	90018	90296	93	1	hypothetical protein
ORF_181	90299	90961	221	1	hypothetical protein
ORF_182	91004	91408	135	1	hypothetical protein
ORF_183	91405	91821	139	1	hypothetical protein
ORF_184	91811	92221	137	1	hypothetical protein
ORF_185	92214	92480	89	1	hypothetical protein
ORF_186	92534	92692	53	1	hypothetical protein