



Supplementary materials

Table S1. Gp14-like sequence alignment.

Prochlorococcus_phage_P-SSP7_gp14	-----MCLGA	5
Pseudomonas_phage_phiKMV_gp35	-----MAFW-----LPLLAAG	11
Escherichia_phage_K1E_gp34	MAIGSAVMAGMSSIGSMFAGSGAAAAAGGAGGGLLSLGGFLSGSTAGFSNAGLLGA	60
Salmonella_phage_SP6_gp35	MAIGTALTAGLSSVAGSAAASGGFLSS-LGGAIGAEGVMGSAMSLGGTTGGFSNAGLLSA	59
Salmonella_phage_Epsilon_15_gp11	-----MLYAFKLGR	9
Shigella_phage_Sf6_gp11	-----MLYAFKLGR	9
Escherichia_phage_CUS-3_gp7-like	-----MLYAFKLGR	9
Salmonella_phage_P22_gp7	-----MLYAFKLGR	9
Salmonella_phage_HK620_gp7	-----MLYAFKLGR	9
Escherichia_phage_BA14_gp14	-----MCWMAAIIPI	9
Klebsiella_phage_K11_gp14	-----MCWMAAIIPI	9
Yersenia_phage_phiYe03-12_gp14	-----MCWMAAIIPI	9
Escherichia_phage_T7_gp14	-----MCWMAAIIPI	9
Escherichia_phage_13a_gp14	-----MCWMAAIIPI	9
Prochlorococcus_phage_P-SSP7_gp14	AA-----K---AA-----NENARRRYKYENERRERNWMQTMISIYNAQKV---KYDE	45
Pseudomonas_phage_phiKMV_gp35	GMSA---LQQG---LA-----NKEERNKIKAE---KARLKTDLNGLAA-----A-R	49
Escherichia_phage_K1E_gp34	GLQGLGLIGDL---FG-----GSDEAKAMKKAQ---EEQWRQQLIATQEA-----Y-K	101
Salmonella_phage_SP6_gp35	GMQMLNPIDGY---FT-----QKETAKAMKKAQ---DEQWRQQLIATREA-----Y-A	100
Salmonella_phage_Epsilon_15_gp11	KLARGEOPYCAEKGKGGSSSSGAKAARATQYAADLQNNQFNVRVMEQLAPYAAAGLPALQ	69
Shigella_phage_Sf6_gp11	KLARGEOPYCPEKGGKGGSSDKSAKYAAEAQKYAADLQNNQWQTIMKNLAPFTPLAEQYVN	69
Escherichia_phage_CUS-3_gp7-like	KLARGEOPYPEKGGKGGSSDKSAKYAAEAQKYAADLQNNQFNTIMNNLKLFTPLAGKYVG	69
Salmonella_phage_P22_gp7	KLARGEOPYPEKGGKGGGA-DKSAKYAAEAQKYAADLQNNQFNTIMNNLKPFTPLADKYTG	68
Salmonella_phage_HK620_gp7	KLARGEOPYCPEKGGKGGSSDKSAKYAAEAQKYAADLQNNQFNTIMNNLKPFTPLADKYVG	69
Escherichia_phage_BA14_gp14	AMQGAASMIM---GGMQGQE---AKAAQIDQRRQSMQMLKEMNYNE-----ANL	52
Klebsiella_phage_K11_gp14	AMTAVQATG---QSRNEAK-----MIGLQNDQMRQSAQMIKESNIQN-----ANA	52
Yersenia_phage_phiYe03-12_gp14	AMMGAQALS---SQNSADK-----ARVAQTEAGRRQAMEMVKEMNIQN-----ANA	52
Escherichia_phage_T7_gp14	AISGAQAIS---GQNAQAK-----MIAAQTAAGRRQAMEIMRQTNIQN-----ADL	52
Escherichia_phage_13a_gp14	ALAGAQAIS---GQNTQAK-----MIAAQTAAGRRQAMEIMRQTNIQN-----ADL	52
Prochlorococcus_phage_P-SSP7_gp14	DVQNAGLAQAQVKTDQEQAMDRLARGEAIKY-AELFRK-----LLNDS	87
Pseudomonas_phage_phiKMV_gp35	DIANLG-VMA-----ASYRKQAVASQ-VEAKRQ-----G-----MLAGG	81
Escherichia_phage_K1E_gp34	TVADAERSAA-----KQYHADATSNQ-ASLLQ-----QRA	130
Salmonella_phage_SP6_gp35	SVANAERSAS-----KQYHSELIDNQ-VSLLQ-----QRA	129
Salmonella_phage_Epsilon_15_gp11	QIQQLSTL-----EGQNSALNQYNSQYKQLADQARYQSLNAAEATGGLGSTATSNQIA	124
Shigella_phage_Sf6_gp11	QLQNLSSL-----EGQGQALNQYNSQYKDLAQARYQSLAAAEATGGLGSTATSNQIA	124
Escherichia_phage_CUS-3_gp7-like	SLENLSSL-----EGQGQALNQYNSQYKDLAQARYQSLAAAEATGGLGSTATSNQIA	124
Salmonella_phage_P22_gp7	SLEGLSSL-----EGQGQALNQYNSQYKDLAQARYQSLNAAEATGGLGSTATSNQIS	123
Salmonella_phage_HK620_gp7	SLENLSSL-----EGQGQALNQYNSQYKDLAQARYQSLAAAEATGGLGSTATSNQIA	124
Escherichia_phage_BA14_gp14	KLESRLDI-----DSTVQEMTQ-----SNMNRVRNMG	79
Klebsiella_phage_K11_gp14	SLEQKQKL-----EEASSDLTA-----KNLDKQVQAMG	79
Yersenia_phage_phiYe03-12_gp14	SLEQRDAL-----EASSELTT-----RNMQKVQAMG	79
Escherichia_phage_T7_gp14	SLQARSKL-----EEASAE LTS-----QNMQKVQAMG	79
Escherichia_phage_13a_gp14	SLQARSKL-----EEASAE LTS-----QNMQKVQAMG	79
Prochlorococcus_phage_P-SSP7_gp14	TYG-KLVASGQTGQSTRR--RATMDYAKYGRDVSIDIARRLTLDNR-ELA-----RKSS	136
Pseudomonas_phage_phiKMV_gp35	SAEAQAGAFGVKGASVDA--VALDIEREVEGALIQIDNLDNQMW-NLAEQAHSIQAQK	138
Escherichia_phage_K1E_gp34	QVALLAGATGTGGSNVSS--MLNDLAADGGRNQSTIIDNYENQKI-NFTNQLKSIQGGQ	187
Salmonella_phage_SP6_gp35	QVALLAGASGTGGSNITS--MLNDLTGEAGRNQATIIDNYETQOI-NFANQLKSIQGGQ	186
Salmonella_phage_Epsilon_15_gp11	SIAPTLGQNLWSGQMNYGNLNNVQSAAAGQAS-AGQNYANN-----AGNLA	171
Shigella_phage_Sf6_gp11	TIAPTLGQSWLSNQMSNNYNNLANVGLGALQGQAN-AGQTYANN-----MSSTA	171
Escherichia_phage_CUS-3_gp7-like	TIAPTLGQQLWSGQMNNYNNLANIGLALQGQAN-AGQTYANN-----MSQIS	171
Salmonella_phage_P22_gp7	AIAPTLGQQLWSGQMNNYNNLANIGLALQGQAN-AGQTYANN-----MSQIS	170
Salmonella_phage_HK620_gp7	TIAPTLGQQLWSGQMNNYNNLANIGLALQGQAN-AGQTYANN-----MSQIS	171
Escherichia_phage_BA14_gp14	TIRAAIGEGMLEGSMER--VTRVTEGDFLRESQGLTENYQRDYSVILGKRLANHENTVS	137
Klebsiella_phage_K11_gp14	TIRAAIGEGMLEGASMDR--ISRIIEGKFIREANAVTDNYRRDYASLFAQQLGNSESTID	137
Yersenia_phage_phiYe03-12_gp14	TIRAAIGEGMLEGESMKR--IKRIIEGNYIREANSVTENYRRDYASIFAQQLGRTQSTAS	137
Escherichia_phage_T7_gp14	SIRAAIGESMLEGSSMDR--IKRVTEGQFIREANMVTENYRRDYQAIFAQQLGGTQSAAS	137
Escherichia_phage_13a_gp14	SIRAAIGESMLEGSSMDR--IKRVTEGQFIREANMVTENYRRDYQAIFAQQLGGTQSAAS	137
Prochlorococcus_phage_P-SSP7_gp14	---EQISKYKQFDEAFKAVAFQIPDVAPPQPMRNVGAEAFMGALSIASNVATMGGQS	193
Pseudomonas_phage_phiKMV_gp35	---AGLLGQKSTTAGQ-----RSPLV-----AGLMSAGSLYASQYKFGAT	176
Escherichia_phage_K1E_gp34	---MQMREFK--KPSA----MSTLV-----QGIPSLASAYVTGSKSGKAL	223
Salmonella_phage_SP6_gp35	---MMMSFE--KPSA----FSAIA-----KGVSGIGEAYLSGHQKGTAL	222
Salmonella_phage_Epsilon_15_gp11	QQMAAIRSQG-SGQST-----LGSAT-----SGGTSGALAGAGIASLL	208
Shigella_phage_Sf6_gp11	QQSAALAAANANKPSS-----LQTAI-----SGGTSGAIGAGIASLL	209
Escherichia_phage_CUS-3_gp7-like	QQSAALAAANANRPSA-----LRQGV-----SGAASGALLGGGIASAL	209
Salmonella_phage_P22_gp7	QQSAALAAANANRPSA-----MQSAI-----GGGASGATAGAGLAKLI	208
Salmonella_phage_HK620_gp7	QQSAALAAANANRPSA-----MQSAI-----GGGASGATAGAGLAKLI	209
Escherichia_phage_BA14_gp14	QIN-EINKSEPKLKGK-----LEQIIDPLGLGL-----TKLVDVATAGSPLTNKL	181
Klebsiella_phage_K11_gp14	QVK-SMQKAEKGKSK-----LEQVLDPLALMT-----SQGASAYSSTA-FDSKG	180
Yersenia_phage_phiYe03-12_gp14	QVD-AMYKSEAKGKSG-----LMRVLDPISMG-----QEAASQYAAAGG-FDKKG	180
Escherichia_phage_T7_gp14	QID-EIYKSEQKQKSK-----LQMVLDPLAIMG-----SSAASAYASGA-FDSKS	180

Escherichia_phage_13a_gp14	QID-EIYNSEQKQKSK-----LQMLDPLAAMG-----SSAASAYASGA-FDSKS	180
	:	:
Prochlorococcus_phage_P-SSP7_gp14	-----GFGWWGG-----	200
Pseudomonas_phage_phiKMV_gp35	-----PKG-----GN----	181
Escherichia_phage_K1E_gp34	-----GKALTDSRTYSSGTRGI--	240
Salmonella_phage_SP6_gp35	-----SKAWSDSRTYSSGTRGV--	239
Salmonella_phage_Epsilon_15_gp11	GT----STPWGAGIGAGIGLLGSLF	229
Shigella_phage_Sf6_gp11	ET----STPWGAGIGAGIGLLGSLF	230
Escherichia_phage_CUS-3_gp7-like	EL----STPWGAGIGAGIGLLGSLF	230
Salmonella_phage_P22_gp7	GS----STPWGAAIIGGGIGLLGSLF	229
Salmonella_phage_HK620_gp7	GS----STPWGAAIIGGGIGLLGSLF	230
Escherichia_phage_BA14_gp14	GKKVASKVKASDAKSTGGQK-----	201
Klebsiella_phage_K11_gp14	T--K---APISQAQGTKVGGK----	196
Yersenia_phage_phiYe03-12_gp14	GNQA--APISAAKGTKTGR-----	197
Escherichia_phage_T7_gp14	TT-K---APIVAAKGTKTGR-----	196
Escherichia_phage_13a_gp14	TT-K---APIVAAKGTKTGR-----	196

Table S2. Gp15-like sequence alignment.

Salmonella_phage_Epsilon_15_gp12	-----	0
Prochlorococcus_phage_P-SSP7_gp15	-----MTNSFFNFTE-----	10
Escherichia_phage_BA14_gp15	-M-----SKLAQALGGMNAPSTS	17
Escherichia_phage_T7_gp15	-M-----SKIESAL-QAAQPGLS	16
Escherichia_phage_13a_gp15	-M-----SKIESAL-QAAQPGLS	16
Klebsiella_phage_K11_gp15	MA-----SKLEQALSQLPQAGST	18
Yersenia_phage_phiYe03-12_gp15	MA-----SKLNSVLGNMATPGME	18
Escherichia_phage_K1E_gp35	MAIERQAVQGLP-----QVQATS-PNVMTFAPQQVGG-----VEAGVASTSGSR	43
Salmonella_phage_SP6_gp36	MAIERQAVQGLR-----RVQSTGGPSAASFATRQVGV-----Q---ETSASGSR	41
Pseudomonas_phage_phiKMV_gp36	MAESQRASQELGINVGQTQLQPGQSARR-----GV--RDSEVNYSG-PSVGSQ	45
Shigella_phage_Sf6_gp12	MATWQG-----SNGGLLAGIGGVNSNAPSVDIGN-TLQLIRQNNDIERSGANNVGLT	52
Salmonella_phage_P22_gp20	MATWQQ-----GINSGGFLAGIGAQNENAPKARDINA-TLGLIRENNDLARSGANNVALT	54
Salmonella_phage_HK620_gp20	MATWQQ-----GINSGGFLAGIGTQENENAPKASDINA-TLGLIRENNELARSGVNNVGLT	54
Escherichia_phage_CUS-3_gp20-like	MATWQQ-----GINSGGFLAGIGAQNENAPKASDINA-TLGLIRENNELAQSGANNVGLT	54
Salmonella_phage_Epsilon_15_gp12	-----	0
Prochlorococcus_phage_P-SSP7_gp15	-----APDFAAAIGATYESVNTSYDRREELEQKNDAYRLKN	46
Escherichia_phage_BA14_gp15	RLRGTG-RVEVKASTVYEDPKYAKKSALIGTVGKLAEMGADAYM-KYDQHQDKADERS-	74
Escherichia_phage_T7_gp15	RLRGGAGGMGYRAATTQ--AEQPRS-SLLDTIGRFKAGADMYT-AKEQRARDLADERS-	71
Escherichia_phage_13a_gp15	RLRGGAGGMGYRAATTQ--AEQPRS-SLLDTIGRFKAGADMYT-AKEQRARDLADERS-	71
Klebsiella_phage_K11_gp15	RIRGGSASMQYRPVTIQ--QEGFRQSNLVQSLAKFGTAVGEAAD-AYDKRQRDKADERS-	74
Yersenia_phage_phiYe03-12_gp15	RLRG-VKGM DYRAATTQ--AEQPRAS-SLLDSIGRFKAGADMYM-AKDERDKQRADERS-	72
Escherichia_phage_K1E_gp35	FIEDLI-----RAASSVADVTTGILNQKIEEDKVVMQ-	75
Salmonella_phage_SP6_gp36	FLEDLV-----NAAGSLATVTTSLNQVRVEDDKVRQY-	73
Pseudomonas_phage_phiKMV_gp36	ILDGIL-----GAGQ-----QI-----AGKWF-	62
Shigella_phage_Sf6_gp12	ALQGLS-----GIAG-----VFQEQKQARRQKEF-	76
Salmonella_phage_P22_gp20	GLRGLA-----GVAD-----IYNQEQQQKALNAF-	78
Salmonella_phage_HK620_gp20	ALRGLA-----GVAD-----IYNQEQQQKAI SAF-	78
Escherichia_phage_CUS-3_gp20-like	ALRGLA-----GVAD-----IYKQDQQQKAINAF-	78
Salmonella_phage_Epsilon_15_gp12	-----	7
Prochlorococcus_phage_P-SSP7_gp15	AETLEKLPEEII-KTLPTVKKAVDANKKRREALL-----AKGYEGID	88
Escherichia_phage_BA14_gp15	-----NEIIRKLTPEQR-----	86
Escherichia_phage_T7_gp15	-----NEIIRKLTPEQR-----	83
Escherichia_phage_13a_gp15	-----NEIIRKLTPEQR-----	83
Klebsiella_phage_K11_gp15	-----DEIIRKLTPEQR-----	86
Yersenia_phage_phiYe03-12_gp15	-----NEIIRKLTPEQR-----	84
Escherichia_phage_K1E_gp35	-----ERAYNGLMPSEDA-----TRGGARANMLVKAQLLANDEAARMKDMATRFQGTG	123
Salmonella_phage_SP6_gp36	-----NRALTGLMPTEDA-----TVGGARAHMLVSLQNDIIAQTMLQSDDAQRFDGDD	121
Pseudomonas_phage_phiKMV_gp36	-----EHNV-----QOE-----VLRGERARMAGEAE-----E-----AVDSNVLAKPFVK	97
Shigella_phage_Sf6_gp12	-----QQAY-----ANA-----YASGDRGALRQLATQYPD-----QIESVRKGMGFI-	113
Salmonella_phage_P22_gp20	-----NQVH-----ANA-----WATGDP SGLFKFAQENPA-----FVAQAQQAFSGL-	115
Salmonella_phage_HK620_gp20	-----NKVH-----ADA-----WASGDP SGLFKFAQENPA-----FVAQAQQAFSGL-	115
Escherichia_phage_CUS-3_gp20-like	-----NKVH-----ADA-----WASGDP SGLFKFAQENPA-----FVAQAQQAFSGL-	115
Salmonella_phage_Epsilon_15_gp12	----DNLSDEEQ--IELLELLEEEENYRN-----	30
Prochlorococcus_phage_P-SSP7_gp15	----QELIDKDKESLNTLFNIGKAENFIKNEALKNGDNVTYETIDLSGPH-GTRR----	138
Escherichia_phage_BA14_gp15	----REAI-----KNGTLLYQD--DPYAMEALKTGRNAAAYLV-----	119
Escherichia_phage_T7_gp15	----REAL-----NNGTLLYQD--DPYAMEALRVKTGRNAAAYLV-----	116
Escherichia_phage_13a_gp15	----REAL-----NNGTLLYQD--DPYAMEALRVKTGRNAAAYLV-----	116
Klebsiella_phage_K11_gp15	----REAI-----KNGTLLYQD--DPYAMEALRFKTGRNAAFLI-----	119
Yersenia_phage_phiYe03-12_gp15	----RQAI-----QNGTLLYQD--DPYAMQALFKFTGRNAAFLV-----	117
Escherichia_phage_K1E_gp35	DEWTQLMVDSRNEMQNKL FQ--YPELQGDK--DTMRMVTNVFQEQQPQIWATRTQHKL	179
Salmonella_phage_SP6_gp36	SQWEDHVNARMVQDRLDWT--YPELRGDK--ESMRVVTNMFMEQQPKIFAARETAKLK	177
Pseudomonas_phage_phiKMV_gp36	GGWRKQ-----D--YRIAQADFSLKMQRFIANKGREM-----	127
Shigella_phage_Sf6_gp12	----DE-----D--QRNSIGTL-----AAGARLAA-S-----	133
Salmonella_phage_P22_gp20	----NE-----Q--QRNDMGDL-----AMKANVALSQ-----	136
Salmonella_phage_HK620_gp20	----NE-----Q--QRNDMGDL-----AMKANVALSQ-----	136
Escherichia_phage_CUS-3_gp20-like	----NE-----Q--QRNDMGDL-----AMKANVALSQ-----	136

Salmonella_phage_Epsilon_15_gp12	-----TH-----	-----LLYEFAPYSK-----	42
Prochlorococcus_phage_P-SSP7_gp15	--RLMIEEIKQR-----	-----LATEFNPWVTKNYPAG	165
Escherichia_phage_BA14_gp15	-----	-----DDEVAQKVKNGEFRTQEELEEFHRSLQEAAKN	152
Escherichia_phage_T7_gp15	-----	-----DDDDVMQKIKEGVFRTREEMEEYRHSRLQEGAKV	149
Escherichia_phage_13a_gp15	-----	-----DDDDVMQKIKEGVFRTREEMEEYRHSRLQEGAKA	149
Klebsiella_phage_K11_gp15	-----	-----DDEVAQRVQNGEFRTAEEMEEYRHKRLTEGANE	152
Yersenia_phage_phiYe03-12_gp15	-----	-----DDEVQQAIKEGRFRTREEMEEYRHSRLQEHKS	150
Escherichia_phage_K1E_gp35	REQADREDTFDGRVASTWDPNIDPEASGYALQERIREGLT	-QGLLPQEMHKKLVRRAISL	238
Salmonella_phage_SP6_gp36	QEAEARIKSMESRILLAT	-RDVPGEAMGDALNQLQEAMA-MQITKQEFDALVSQLAANR	235
Pseudomonas_phage_phiK1MV_gp36	-----	-----TPEEFKRYLSQEATHV	143
Shigella_phage_Sf6_gp12	-----	-----SPEAMQSWLQNNANEL	149
Salmonella_phage_P22_gp20	-----	-----GPEAYSKFITDNKDRL	152
Salmonella_phage_HK620_gp20	-----	-----GPEAYSKFITDNKDRL	152
Escherichia_phage_CUS-3_gp20-like	-----	-----GPEAYSKFITDNKDRL	152

Salmonella_phage_Epsilon_15_gp12	-----	-----	42
Prochlorococcus_phage_P-SSP7_gp15	FNTVQEARLAFDKYKQGI LNNADELGFNL RFTKSQLKDSFNT	-----VESTFYETTN	217
Escherichia_phage_BA14_gp15	YAEQFGIDETDEHYKQGFNSDITER NIALYGAHDNFLSDQAKKGAVINSRVEL	-----	205
Escherichia_phage_T7_gp15	YAEQFGIDPEDVDYQRGFN G DITER NISLYGAHDNFLSQQAQKGAIMNSRVEL	-----	202
Escherichia_phage_13a_gp15	YAEQFGIDPEDVDYQRGFN G DITER NISLYGAHDNFLSQQAQKGAIMNSRVEL	-----	202
Klebsiella_phage_K11_gp15	FAEQFMINPEDESEFQRGFNANITER NISLYGKHDTFLSEQAQKGAILASKVEL	-----	205
Yersenia_phage_phiYe03-12_gp15	FAEQFGINEMDEEYQKGFNANITER NIALYGAHDTFLSDQAKKGAILNSKVEL	-----	203
Escherichia_phage_K1E_gp35	AQGG-----D--VSMAEALYKVKDDKGVSVAKNPQLITAITSGNAVWARNNVADVTRMSF	-----	292
Salmonella_phage_SP6_gp36	AAIG-----D--DSMIQGT KSLKDENGVS LYDRVGQLQTGEIQANRTWAAQNQVALFEK KD	-----	289
Pseudomonas_phage_phiK1MV_gp36	LDSTEGMNP-----NDALQALAQQQ-----	-----KAEQELFGMQAKAYMDWSIDQAARGFR TQG	193
Shigella_phage_Sf6_gp12	A--RVGVDP-----NNVAQMYQQNP-----	-----SGFGEFV--DHLG--M-----AAL-----	182
Salmonella_phage_P22_gp20	N--RVGANP-----DMMIQTGVQNP-----	-----EQLSHML--TTMS--L-----GAL-----	185
Salmonella_phage_HK620_gp20	N--RVGANA--DMMIQTGIQNP-----	-----EQLSHML--TTMS--L-----GAL-----	185
Escherichia_phage_CUS-3_gp20-like	N--RVGANA--DMMIQTGIQNP-----	-----EQLSHML--TTMS--L-----GAL-----	185

Salmonella_phage_Epsilon_15_gp12	-----	-----QREFID-----A-----GHDYPE----	55
Prochlorococcus_phage_P-SSP7_gp15	TAITSKNVLKEQSRMISEVTHALNAEDPLKAFIEASEYNIGYFEG	-----NIAKAE----	268
Escherichia_phage_BA14_gp15	-----	-----N-----SVLNDPE--TLRSPHAGEFFENYFSAGLTTGSIPSD--Q	242
Escherichia_phage_T7_gp15	-----	-----N-----GVLQDPD--MLRRPDSADFFEKYIDNGLVTGAIPSDA--Q	239
Escherichia_phage_13a_gp15	-----	-----N-----GVLQDPD--MLRRPDSADFFEKYIDNGLVTGAIPSDA--Q	239
Klebsiella_phage_K11_gp15	-----	-----S-----GVLKDPA--VLARPESGEFFQRYIDNALKTGSIPSDA--Q	242
Yersenia_phage_phiYe03-12_gp15	-----	-----N-----GVLSDPD--LLSRPESGEFFQNYIDNSLVTGMT--DN--Q	238
Escherichia_phage_K1E_gp35	EVKESY-----	-----LA-----GDLTD-----	305
Salmonella_phage_SP6_gp36	AAIKAF-----	-----EA-----GGQ LNR-----	302
Pseudomonas_phage_phiK1MV_gp36	NSILAKAV--QAQATG--	-----DELSR--QSLSEAGLFYTNIMT--SEDIPLVDRDKV	240
Shigella_phage_Sf6_gp12	GPIDYFNV--QDKMAG--	-----REIDR--GR LAET-----IR-----S-----NKA	213
Salmonella_phage_P22_gp20	GPEKAFAV--QDKMVG--	-----REIDR--GR LAET-----IR-----S-----NKA	216
Salmonella_phage_HK620_gp20	GPEKAFAV--QDKMVG--	-----RQEQ--QRINET-----IR-----N-----NDM	216
Escherichia_phage_CUS-3_gp20-like	GPEKAFAV--QDKMVG--	-----RQEQ--QRINET-----IR-----N-----NDM	216

Salmonella_phage_Epsilon_15_gp12	-RCFMAG----	-NQLG--KSFTG--AA--EVAFHLTGRY--PGTKGYPADGKYGGEWKG	100
Prochlorococcus_phage_P-SSP7_gp15	-RAFINI----	-GLMG--TKGS--INIDKFESVLFGEVTA KGDKTRILIDKLG GGE--	315
Escherichia_phage_BA14_gp15	-AFTM--ISQGLSDV--	-VNREGGQFLQQIENRKVKLHGKET T-----F--KELMGAEQW	290
Escherichia_phage_T7_gp15	-ATQL--ISQAFSDA--	-SSRAGGADFLMRVGDKKVTLNGATTT-----Y--RELIGEEQW	287
Escherichia_phage_13a_gp15	-ATQL--ISQAFSDA--	-SSRAGGADFLMRVGDKKVTLNGATTT-----Y--RELIGEEQW	287
Klebsiella_phage_K11_gp15	-AQQV--IIGSLNDV--	-IQRPGATNFLQSL EGRPVTLNGKTTT-----Y--KELMGEEQW	290
Yersenia_phage_phiYe03-12_gp15	-AQQV--ISSSLNDV--	-LQRPGGAAFLQNIENRKVTLNGATTT-----Y--RELMDGEQW	286
Escherichia_phage_K1E_gp35	-EELLERAQHINN L-----	-TGN SVFSNP-----	327
Salmonella_phage_SP6_gp36	-EQLLQVMQNHNEI-----	-SGGTAWSDS-----	324
Pseudomonas_phage_phiK1MV_gp36	-GMQFLAASLDMNQRIYEGLRDAGFLDS--MSFD-----	-----	272
Shigella_phage_Sf6_gp12	-GEALTVRGQDTIQIRGQNI SAQNAALSREIQR AE-----	-----	246
Salmonella_phage_P22_gp20	-GEG LQARGQNTMRGQDMSAATARRGQDLATQR-----	-----	249
Salmonella_phage_HK620_gp20	-TNARAIRGQDLSYKAQMARLNH-----	-DKYVFK-----	244
Escherichia_phage_CUS-3_gp20-like	-TNARAIRGQDLSYKAQMARLNH-----	-DKYVFK-----	244

Salmonella_phage_Epsilon_15_gp12	-----	-----KRFYEPVFWIGGETNETV-----	119
Prochlorococcus_phage_P-SSP7_gp15	-----	-----ENRLWAEGVLNEIENAKKGVFENKELNRTNYA--KGF--	350
Escherichia_phage_BA14_gp15	-----	-----NNLMVKAQHNEFLNAKKTEAFQLNVNSALNQ--ENVNTGWEQLQSIKAE LDTLPGE--	346
Escherichia_phage_T7_gp15	-----	-----NALMVTARSQFETDAKLNEQYRLKINSALNQ--EDPRTAW EMLQGIKAE LDKVQPD--	343
Escherichia_phage_13a_gp15	-----	-----NALMVTARSQFENDAKLNEQYRLKINSALNQ--EDPRTSWEMLQGIKAE LDKVQPD--	343
Klebsiella_phage_K11_gp15	-----	-----NALMVKASQTQFNDAKLSEGFRLGIT SALNQ--DDTSKGWEMLQGAKE LDRLPGE--	346
Yersenia_phage_phiYe03-12_gp15	-----	-----QAMMIKAQHTQFQNNAKLTEKFR L DINSALNQ--ADTGKGWETLQGIKAE LDKIQPGE--	342
Escherichia_phage_K1E_gp35	-----	-----ELEALMRQRAKQNAELGAMQDMRRELYS DRLTGFGQ	363
Salmonella_phage_SP6_gp36	-----	-----EIKSLFDRQAKARATS AKLEDLVARGEHGSPLGLQD	360
Pseudomonas_phage_phiK1MV_gp36	-----	-----D-----RRALNGLYEKSKAQTRAKESMATLRA--D-----ADF--	303
Shigella_phage_Sf6_gp12	-----	-----LQ-----EKALDRQIARES NQLK--L EELKQKQ--ADV--	275
Salmonella_phage_P22_gp20	-----	-----AN-----ARTISGSEGNRVVQL-----ADGRT--VSV--	274
Salmonella_phage_HK620_gp20	-----	-----QS-----QAALERAGQL-----QDMDV-----LSL--	264
Escherichia_phage_CUS-3_gp20-like	-----	-----QS-----QAALERAGQL-----QDMDV-----LSL--	264

Salmonella_phage_Epsilon_15_gp12	-----	-----TKTTQRILCGRIEEN	134
Prochlorococcus_phage_P-SSP7_gp15	-----	-----VEGI-----QEEENKTN--TRMTKVELARYVTEN	377
Escherichia_phage_BA14_gp15	-----	-----EMTPERQALINAQTQM QDRMKRETAELAKQMDKQKSMNKMNVIDAQFQKRLNGQYVSTA	406
Escherichia_phage_T7_gp15	-----	-----QMTPQREW LISAQEQQNQMNAWTKAQAKALDDSMKSMNKL DVIGKQFQKRINGEWVSTD	403

Escherichia_phage_13a_gp15	QMTQREWLISAQEQVQNMNAWTKAQAKALDDSMKSMNKLVDIDKQFQKRINGEWVSTD	403
Klebsiella_phage_K11_gp15	QMTPERERLIQAEQMQARFRQEAQAAAKEMDKRQKTINKNQVIDQQFQKRINGQYVSTS	406
Yersenia_phage_phiYe03-12_gp15	EMTPEREWLISAQEQMRTFRKQEQAEATAKLMDKQKTLNKS LVIDKQFQKRLNGEYVSTN	402
Escherichia_phage_K1E_gp35	KTDKEKKAYIDVIKQDSQLYAD-----QQIKQRGLDPYSQEAFAIRGAVEVQR	411
Salmonella_phage_SP6_gp36	ISKEDRKAYAGALVDAYTKLAN-----DEITRTG--ATGEEFAAIRGRYEQMR	406
Pseudomonas_phage_phiK1MV_gp36	-----Q-----QRVANGAITDLAEVEAYS RGMVEEGR	330
Shigella_phage_Sf6_gp12	-----R-----QKADIARADR---QAAA---QGAVDT	296
Salmonella_phage_P22_gp20	-----G-----GKLGAGANA-----	285
Salmonella_phage_HK620_gp20	-----N-----SQIAATGIDPLTGKAATSARMSQAKR	291
Escherichia_phage_CUS-3_gp20-like	-----N-----SQIAATGIDPLTGKAATSARMSQAKR	291
Salmonella_phage_Epsilon_15_gp12	DEPGYGSIPKEDIISWKSPPFPNLVDHLLVKHHTP-EGVEDGISICYF-----KP---	184
Prochlorococcus_phage_P-SSP7_gp15	WDITQGG---SNLPEFVKNRFAKETGDDILKAELD-YKLDKGIPITEKEVLKLSDPFVE	433
Escherichia_phage_BA14_gp15	YGDMPNTN---ENTGEFTHSDMV-----NYANKKLADIDAMDIPAEQKDRMK	449
Escherichia_phage_T7_gp15	FKDMPVN---ENTGEFKHSDMV-----NYANKKLAEIDSMIDIPDGAKDAMK	446
Escherichia_phage_13a_gp15	FKDMPVN---ENTGEFKHSDMV-----NYANKKLAEIDSMIDIPDAAKDAMK	446
Klebsiella_phage_K11_gp15	YKDMPNTN---ENTGEFTHSDMV-----NYANGKLAEIDQMQLTEQQKDRMK	449
Yersenia_phage_phiYe03-12_gp15	YKDMPNTN---ENTGEFTHSDMV-----NYANQKLAEIEAMDLTPEQKDKLK	445
Escherichia_phage_K1E_gp35	LQFMN-----SKGL---VDDTF-ESRIK-AMES-MLS-PEHFAKGEQ---E	448
Salmonella_phage_SP6_gp36	YAKLG-----QQLI---EDPII-KERYG-SLMQ-LSSANLQDMKIEPE---A	444
Pseudomonas_phage_phiK1MV_gp36	WSDAQAI-----SFMT-----KAMTGLGNAQ---R	352
Shigella_phage_Sf6_gp12	FSTALDS---LNEIE-----QSPGLSKAV---G	318
Salmonella_phage_P22_gp20	FYEGIDD---NGNMVVRPASAI---AAPPTSAASAQNYAMK-----KDIDAIANAD---A	331
Salmonella_phage_HK620_gp20	WLDGNNN---YNNALITGERGI-----EKIDSLLGK-----KELEGIGRFE---G	330
Escherichia_phage_CUS-3_gp20-like	WLDGNNN---YNNALITGERGI-----EKIDSLLGK-----KELEGIGRFE---G	330
Salmonella_phage_Epsilon_15_gp12	-----YSQG-----RARWQGD-----	196
Prochlorococcus_phage_P-SSP7_gp15	AQYLAKVKTGNPLAPSSDFKALAKSQIKGYATVHAKQAGVAPGKESQWNNI VENAEREY	493
Escherichia_phage_BA14_gp15	LDYLRADSEK-----A--FRTAVGELIGDAEKWTS-----	480
Escherichia_phage_T7_gp15	LKYLQADSKDG-----A--FRTAIGTMVTDAGQEWSA-----	477
Escherichia_phage_13a_gp15	LKYLQADSKDG-----A--FRTAIGTMVTDAGQEWSA-----	477
Klebsiella_phage_K11_gp15	LSYLRADSEGG-----A--FRTVVGQLVTDAGSEWSA-----	480
Yersenia_phage_phiYe03-12_gp15	LDYLRADSEK-----A--FRAAFGEMITDAGNEWQAA-----	476
Escherichia_phage_K1E_gp35	LMT-----IRQLWEQLPEE-SRGV	466
Salmonella_phage_SP6_gp36	LQT-----IMRARDSIPEDARRAV	463
Pseudomonas_phage_phiK1MV_gp36	MQGIMAALEAG-----DINALHTLGTNVTEALEQWDMQAAANGSSL	393
Shigella_phage_Sf6_gp12	-----IRSA-----	322
Salmonella_phage_P22_gp20	-----SALDFMTGMTGGAGNP-----	347
Salmonella_phage_HK620_gp20	-----RNIDGFTSAEGLANRN-----	346
Escherichia_phage_CUS-3_gp20-like	-----RNIDGFTSAEGLANRN-----	346
Salmonella_phage_Epsilon_15_gp12	-----I-----	197
Prochlorococcus_phage_P-SSP7_gp15	P-----LLFAKYMQTADS AVDAHILAKDLESRTNNGVYDNLVNTDKNKIRSVE	543
Escherichia_phage_BA14_gp15	-----VINGKMPEDGGVALN-----A---LRR-----VRNADPELF AALY	512
Escherichia_phage_T7_gp15	-----VINGKLPERT-PAMD-----A---LRR-----IRNADPQLIAALY	508
Escherichia_phage_13a_gp15	-----VINGKLPERT-PAMD-----A---LRR-----IRNADPQLIAALY	508
Klebsiella_phage_K11_gp15	-----VINGKLPEDT-TALN-----K---LRT-----MRNTDPDLFAALY	511
Yersenia_phage_phiYe03-12_gp15	-----VINGKMPEST-PAMD-----N---LRR-----IRNTDPDLIASLY	507
Escherichia_phage_K1E_gp35	-----	466
Salmonella_phage_SP6_gp36	-----	463
Pseudomonas_phage_phiK1MV_gp36	TDRLVQGTQLGLRLGTFPKTYGESVGS AVRMQI---AAK-----EGEANPELVNTLN	442
Shigella_phage_Sf6_gp12	-----FPTVPGSD-----AANFEARLD	339
Salmonella_phage_P22_gp20	-----AIGADVRSRLTGKE-----QRQLYNSAQ	370
Salmonella_phage_HK620_gp20	-----AI-----E	349
Escherichia_phage_CUS-3_gp20-like	-----AI-----E	349
Salmonella_phage_Epsilon_15_gp12	-----HGVWFDEEPPYS-----IYG-----EGLT	216
Prochlorococcus_phage_P-SSP7_gp15	LIKAEH-----IKTIDPNVINTGLIFGTEEVIKEAAELPTGQTHLFYDQLAAKIPGVT	597
Escherichia_phage_BA14_gp15	PDKAEMFLTMDM---MDNQGIDPQILLDADKARQS-----LTKEMQYE-	552
Escherichia_phage_T7_gp15	PDQAEFLTMDM---MDKQGIDPQVILDADRLTVK-----RSKEQRFE-	548
Escherichia_phage_13a_gp15	PDQAEFLTMDM---MDKQGIDPQVILDADRLTAK-----RSKEQRFE-	548
Klebsiella_phage_K11_gp15	PDKADFLTMDM---MDKQGIDPQILIDADRSRRS-----LTKEMQYE-	551
Yersenia_phage_phiYe03-12_gp15	PDKAELFLTMDM---LDNQGIDTQVILDADKSRAQ-----KTKEMQFE-	547
Escherichia_phage_K1E_gp35	-----F-----	467
Salmonella_phage_SP6_gp36	-----M-----	464
Pseudomonas_phage_phiK1MV_gp36	SI----F-EQVASAQEIN---P-SA---GNV-----M---LSGI-	466
Shigella_phage_Sf6_gp12	TFKAQTF LPMVQSLKGMGALS---DAE-----GKK-----L---SDAV-	371
Salmonella_phage_P22_gp20	RIQGRMNQGVAAARDMGASGINTIAE---AKM-----Y---FQGM-	405
Salmonella_phage_HK620_gp20	ELKSGAFVQNVQTM RGMGSL---NAE-----GQK-----L---ENLI-	381
Escherichia_phage_CUS-3_gp20-like	ELKSGAFVQNVQIM RGMGSL---NAE-----GQK-----L---ENLI-	381
Salmonella_phage_Epsilon_15_gp12	R-TNKYGQFSILTFT-----PLMGMSDVVTKFLKNPSKSQKVNMNTIYDAEH	262
Prochlorococcus_phage_P-SSP7_gp15	GAEIQYQVEIYNKMNKLKPKVKSVDVLLAYEKLSP TVQFYLSHHPSPAKVARAKI--EA	654
Escherichia_phage_BA14_gp15	-DDKAWASLKNNSE-----SPELSRMPATLDAGARKIYDSVK	588
Escherichia_phage_T7_gp15	-DDKAFESALNASK-----APEIARMPASLRESARKIYDSVK	584
Escherichia_phage_13a_gp15	-DDKAFESALNSST-----APEIARMPASLRESARKIYDSVK	584
Klebsiella_phage_K11_gp15	-DDKAWASLKNNSE-----SPELSRIPASLDGMARKIYDSVK	587
Yersenia_phage_phiYe03-12_gp15	-DDRAWAAMMNDK-----NPQIKYMPSSVQGYARKIYDSVK	583
Escherichia_phage_K1E_gp35	-GDTVNGYMDNYNT-----ALQMGETPLQAARFAR-----	496
Salmonella_phage_SP6_gp36	-GDKEYAFAENYDL-----ATRMGYTPGQAI EFAQ-----	493

Pseudomonas_phage_phiKMV_gp36	-PEAEQGAVAWALK-----QMKMGIAPAQALR-----E	493
Shigella_phage_Sf6_gp12	-GALSPKMSEKAFR-----DSIGKIRNQLES-----K	397
Salmonella_phage_P22_gp20	-PQVDYSSPEAMQ-----QSIREIQEYTNNNYQ-Q	433
Salmonella_phage_HK620_gp20	-AKLDITQPEEVVR-----KQLSEIR---SQYSV-F	407
Escherichia_phage_CUS-3_gp20-like	-AKLDITQPEEVVR-----KQLSEIR---SQYSV-F	407
Salmonella_phage_Epsilon_15_gp12	YT-DEQK---EQIIASYPEHEREARARGIPTMGSG-----	293
Prochlorococcus_phage_P-SSP7_gp15	FK-DDAQIDFDEIDFLP-AAKEALEKTIEDEGAS-----	687
Escherichia_phage_BA14_gp15	YRTGNADMAMQVDKYLKENTTTLTGDDVDGDTIGVLTNRALRVTDPPDSWKQ-----	641
Escherichia_phage_T7_gp15	YRSGNESMAMEQMTKFLKESTYFTFGDDVDGDTVGVIKNNMMQVNSDPKSWEQ-----	637
Escherichia_phage_13a_gp15	YRSGNESMAMEQMTKFLQESTYFTFGDDVDGDTVGVIKNNMMQVNSDPKSWEQ-----	637
Klebsiella_phage_K11_gp15	YRTGNSDMAMQQTDKFLKESTVTFKGDDVDGDTIGIIPKNILQVSDDPKSWEQ-----	640
Yersenia_phage_phiYe03-12_gp15	YRTGNPDMATEQVAKFLSDSTTTTSSSDVDGDTYGVLKPNILTVSDDPKSWEQ-----	636
Escherichia_phage_K1E_gp35	---EA---QQKFSRTEKTEKKFNISAIGDALDE-----VSGAGWFD--GKTE-	534
Salmonella_phage_SP6_gp36	---NA---SRGDKLPGSVMKELNDEVGVVSD-----VASGSWLT--RGDN-	531
Pseudomonas_phage_phiKMV_gp36	F-SANAE-VVKQMDFEKQNTKAFKDNLGKQVNDKFNNN-----IFGRAWNMLTGESDL	546
Shigella_phage_Sf6_gp12	L-S---T-VKKQFDYQEPVQNTPVQ-----Q-	418
Salmonella_phage_P22_gp20	Y-NVN---VGNGLKSPRQQPDTQQSAGGS-----	459
Salmonella_phage_HK620_gp20	Q-KVAAR-EAESMGYSYSSGYDTYVSEKSGS-----	436
Escherichia_phage_CUS-3_gp20-like	Q-KVAAR-EAESMGYSYSSGYDTYVSEKSGS-----	436
Salmonella_phage_Epsilon_15_gp12	-----RIFQI-----PE-E-----T-----	302
Prochlorococcus_phage_P-SSP7_gp15	-----FILNE-----LDTEEFLELD-----	702
Escherichia_phage_BA14_gp15	-----GKDII-----DTAAK-----	651
Escherichia_phage_T7_gp15	-----GRDIL-----EEARK-----	647
Escherichia_phage_13a_gp15	-----GRDIL-----EEARK-----	647
Klebsiella_phage_K11_gp15	-----GRDIL-----EEARK-----	650
Yersenia_phage_phiYe03-12_gp15	-----GKNIL-----DEAIK-----	646
Escherichia_phage_K1E_gp35	-----VSDLGKAIAEELRAKANMLWSSGMRNMDSIKKALITWGNKRYTQSEDAKTSGGY	589
Salmonella_phage_SP6_gp36	-----MSDMGRDLMLEEANQIARSMKVAG-HNNDTIKRHLKSFLQNYQYQLSEGFFTQGV	585
Pseudomonas_phage_phiKMV_gp36	SNNEAVLSMYRRATIDEANWLASDRKHAGLLTSDTGREALLEIAAANVRNRTTQVGEGRN	606
Shigella_phage_Sf6_gp12	-----	418
Salmonella_phage_P22_gp20	-----	459
Salmonella_phage_HK620_gp20	-----	436
Escherichia_phage_CUS-3_gp20-like	-----	436
Salmonella_phage_Epsilon_15_gp12	-----IKCQP-----	307
Prochlorococcus_phage_P-SSP7_gp15	-----TEAQE-----	707
Escherichia_phage_BA14_gp15	-----KLAETNPWVTNKQLTVFERGDSIYLM-----TTG	681
Escherichia_phage_T7_gp15	-----GIIASNPWITNKQLTMYSQGDSIYLM-----TTG	677
Escherichia_phage_13a_gp15	-----GIIASNPWITNKQLTMYSQGDSIYLM-----TTG	677
Klebsiella_phage_K11_gp15	-----GIIAANPWVTNKQLTMYQQGDSIYMD-----TTG	680
Yersenia_phage_phiYe03-12_gp15	-----RITEANPWITNKQLTVYQQGDAIYLM-----TTG	676
Escherichia_phage_K1E_gp35	FIKGDYTSASD-----MLMSVG-----KGVNPTDVPLALGRYVETQMPKELQEWETKD	640
Salmonella_phage_SP6_gp36	LVKGDVRT-----LGDT-----IGANQKDVPVTLRQYLDNHKQALLDASG-GMEEG	630
Pseudomonas_phage_phiKMV_gp36	LKEGDLFSRRDSAPLILPRGTTAEQLFGTND--TETIGTVLAEQHKPHVEGLLG---YKS	661
Shigella_phage_Sf6_gp12	-----	418
Salmonella_phage_P22_gp20	-----	459
Salmonella_phage_HK620_gp20	-----	436
Escherichia_phage_CUS-3_gp20-like	-----	436
Salmonella_phage_Epsilon_15_gp12	-----	307
Prochlorococcus_phage_P-SSP7_gp15	-----	707
Escherichia_phage_BA14_gp15	QVNIRYDKQ---LLSKMYQE-----NQAKLDEEARNKALKDANKRTLHTRA	724
Escherichia_phage_T7_gp15	QVRVRYDKE---LLSKVWSE-----NQKKLEEKAREKALADVNRKRAPIVAA	720
Escherichia_phage_13a_gp15	QVRVRYDKE---LLSKVWSE-----NQKKLEEKAREKALADVNRKRAPIVAA	720
Klebsiella_phage_K11_gp15	TVRIRYDKE---LLTRTYQE-----QQORLAKEAEEKALKEATKRAPIAAA	723
Yersenia_phage_phiYe03-12_gp15	QVTRFRDQE---LLKREYQR-----TAQMQAEEAREKALKEANKRAPISRV	719
Escherichia_phage_K1E_gp35	DVYIDYNEQKGTFFVIR-AGAAGRPLSGVIPVTSLDTTSLDSAYQKKVEERDKGEYVH--	697
Salmonella_phage_SP6_gp36	DLYFDVDSKRGMTFIR-AGSGRPVPTPAMPLSEIKGQDLLKEHYEKAVKERDEAKKNFEA	689
Pseudomonas_phage_phiKMV_gp36	VVAFEYDRTSGLLAVEYDENGVAL-----DRTRVDPQAVGKVLKRNADK	707
Shigella_phage_Sf6_gp12	-----	418
Salmonella_phage_P22_gp20	-----	459
Salmonella_phage_HK620_gp20	-----	436
Escherichia_phage_CUS-3_gp20-like	-----	436
Salmonella_phage_Epsilon_15_gp12	-----FECF---DHFY	315
Prochlorococcus_phage_P-SSP7_gp15	-----LIMPTPQLGEYN	719
Escherichia_phage_BA14_gp15	MNRKR-----EREAKPKRSGSMYDSVSGKILDTLTGKD-----	759
Escherichia_phage_T7_gp15	TKAREAAAKRVREKRK-QTPKFIYGRKE-----	747
Escherichia_phage_13a_gp15	TKAREAAAKLVRDKRK-QTPKFIYGRKE-----	747
Klebsiella_phage_K11_gp15	TQARKAAGERVRAKRK-ATPKFIYGGGDQ-----	751
Yersenia_phage_phiYe03-12_gp15	PQAREEARKRVQEKRK-KTPKFIYGRKED-----	747
Escherichia_phage_K1E_gp35	---P-----YRTDIGAQEPMPAKPTAKDIGKLGLANFLMSSAFASGEN	737
Salmonella_phage_SP6_gp36	NQMR-----MWGAGGYQSPAPEKTTAKTVGSRGIADFLMSPAFAFASGEN	732
Pseudomonas_phage_phiKMV_gp36	-----LNAMRGAEGYANVKVSGTD-----IRMNGGNS--AG	736
Shigella_phage_Sf6_gp12	-----	418
Salmonella_phage_P22_gp20	-----	459
Salmonella_phage_HK620_gp20	-----	436
Escherichia_phage_CUS-3_gp20-like	-----	436

Salmonella_phage_Epsilon_15_gp12	VIDAQDFGWNHPQAHQLWMDKADVFYLARVWKKSE-----	352
Prochlorococcus_phage_P-SSP7_gp15	RAEPVEGNWQKIPNQIGY-----YVYKNGEWQKSGQRGNKLEYKDLIDGYRIDIGYF	772
Escherichia_phage_BA14_gp15	-----	759
Escherichia_phage_T7_gp15	-----	747
Escherichia_phage_13a_gp15	-----	747
Klebsiella_phage_K11_gp15	-----	751
Yersenia_phage_phiYe03-12_gp15	-----	747
Escherichia_phage_K1E_gp35	LPSNFEINYRGNMQQF-----YDKLAMDENK-----DKVGFNKATGTF	775
Salmonella_phage_SP6_gp36	LPSNFEFNYKRNNMDF-----YNYVAKTENG-----ANVGFDVRVAGVY	770
Pseudomonas_phage_phiKMV_gp36	MLKQDVFNWRKELAQF-----EAY-----RG	757
Shigella_phage_Sf6_gp12	-----	418
Salmonella_phage_P22_gp20	-----	459
Salmonella_phage_HK620_gp20	-----	436
Escherichia_phage_CUS-3_gp20-like	-----	436
Salmonella_phage_Epsilon_15_gp12	-----NTAVQAWGAVKSWANK---IPVAWPHDGHQHEKGGGEQLKTQYAD----A	395
Prochlorococcus_phage_P-SSP7_gp15	KPTFKADPSNPNLGAWKKIPNAIGYFVWDGKEWVRSGQ--KGK-----	813
Escherichia_phage_BA14_gp15	-----	759
Escherichia_phage_T7_gp15	-----	747
Escherichia_phage_13a_gp15	-----	747
Klebsiella_phage_K11_gp15	-----	751
Yersenia_phage_phiYe03-12_gp15	-----	747
Escherichia_phage_K1E_gp35	TPYKDAHGESIGYGHFLTEEEKRDGYIKIGDELVPY----RGSMSQLTESKARALMEQD	830
Salmonella_phage_SP6_gp36	TPYKDAHQSVMGYGHFLTEEEKKNYITIGEDKVPF-----APGQSQLTPERAMRLLEQD	825
Pseudomonas_phage_phiKMV_gp36	EAYKDADGYSVGLGHYLGSGNAGAGTTV-----TPEQAAQWFAED	797
Shigella_phage_Sf6_gp12	-----	418
Salmonella_phage_P22_gp20	-----	459
Salmonella_phage_HK620_gp20	-----	436
Escherichia_phage_CUS-3_gp20-like	-----	436
Salmonella_phage_Epsilon_15_gp12	GFSMLPEHATFPD-----G--G--NSVESGISELRDLMLEG-----RFKVFN	433
Prochlorococcus_phage_P-SSP7_gp15	-----G---EEFEGDIENFRDINLDE-----TIKKVN	837
Escherichia_phage_BA14_gp15	-----	759
Escherichia_phage_T7_gp15	-----	747
Escherichia_phage_13a_gp15	-----	747
Klebsiella_phage_K11_gp15	-----	751
Yersenia_phage_phiYe03-12_gp15	-----	747
Escherichia_phage_K1E_gp35	ARKHVPPTRDWKIPFDQMHPAQQRGLMDLTYNLGKGGIQNSPRALAAFK-----AGK	882
Salmonella_phage_SP6_gp36	MKSHVPSTKDWAVPFDMHPGVQGRGLMDLSYNLGKDGKINAPKAYAAFK-----AGK	877
Pseudomonas_phage_phiKMV_gp36	TDRLDQGVRLADELGVTTNASILGLAGMAFQMGEGRARQFRNTFQAIKDRNKEAFEAGV	857
Shigella_phage_Sf6_gp12	-----	418
Salmonella_phage_P22_gp20	-----	459
Salmonella_phage_HK620_gp20	-----	436
Escherichia_phage_CUS-3_gp20-like	-----	436
Salmonella_phage_Epsilon_15_gp12	TCEPFFEEFRL-----YHRDENGKIVKTNDLDLATRYGYMMRRFRAR	475
Prochlorococcus_phage_P-SSP7_gp15	-----	837
Escherichia_phage_BA14_gp15	-----	759
Escherichia_phage_T7_gp15	-----	747
Escherichia_phage_13a_gp15	-----	747
Klebsiella_phage_K11_gp15	-----	751
Yersenia_phage_phiYe03-12_gp15	-----	747
Escherichia_phage_K1E_gp35	LTEGFIEMLGTASSEGRKIPGLLKRRAEAYNMAAAG-GVPKITE-VETREDGSMWVKFGG	940
Salmonella_phage_SP6_gp36	FTDGFIEMLSTASTEGKRSSGLLVRRAEAYNLAQSGGSVPKISE-VETREDGSMYVKFSG	936
Pseudomonas_phage_phiKMV_gp36	RNSKWYTQ-----TPDRAEAFIKRMAPHFDTP-----	884
Shigella_phage_Sf6_gp12	-----PTTG-----	422
Salmonella_phage_P22_gp20	-----YTSK-----	463
Salmonella_phage_HK620_gp20	-----DSNK-----	440
Escherichia_phage_CUS-3_gp20-like	-----DSNK-----	440
Salmonella_phage_Epsilon_15_gp12	MMRDIRKPK--EKKIP-----A-P---IRPVRRGR---	499
Prochlorococcus_phage_P-SSP7_gp15	-----	837
Escherichia_phage_BA14_gp15	-----	759
Escherichia_phage_T7_gp15	-----	747
Escherichia_phage_13a_gp15	-----	747
Klebsiella_phage_K11_gp15	-----	751
Yersenia_phage_phiYe03-12_gp15	-----	747
Escherichia_phage_K1E_gp35	PMPAGSVSAWTHKRIGADGWYQVYEAAPTCLAKDSKVGVKVL	982
Salmonella_phage_SP6_gp36	SMSEAFVSKSILGKIGKDGWMEVYPPKAGALASGTVGRIKL	978
Pseudomonas_phage_phiKMV_gp36	-----SQIG--VDWYSAATAE-----	898
Shigella_phage_Sf6_gp12	-----SNFS--SLWGD-----	431
Salmonella_phage_P22_gp20	-----SGIK--FTVE-----	471
Salmonella_phage_HK620_gp20	-----SGFS--SLWGD-----	449
Escherichia_phage_CUS-3_gp20-like	-----SGFS--SLWGD-----	449

Table S3. Gp16-like sequence alignment.

Escherichia_phage_BA14_gp16	MDKYNPNPHEYDALFQQAADTHGVSYGLLRKVGWVESRFKPTAQSPGTGRGMVQFTKAT	60
Escherichia_phage_T7_gp16	MDKYDKNVPSPDYDGLFQKAADANGVSYDLLRKVAWTESRFVPTAKSKTGPLGMMQFTKAT	60
Escherichia_phage_13a_gp16	MDKYDKNVPSPDYDGLFQKAADANGVSYDLLRKVAWTESRFVPTAKSKTGPLGMMQFTKAT	60
Klebsiella_phage_K11_gp16	-MSYDKSKPSDYDGIQKAADSHGVSYDLLRKLFSNFESSFNPKAVSKTGPKGIMQFTTRNT	59
Yersenia_phage_phiYe03-12_gp16	-MSYDKNKPSEFDGLFQKAADKHGVSYDLLRKLAFNESSFNPKAKSPTGPKGLMQFTKGT	59
Prochlorococcus_phage_P-SSP7_gp16	-----MSSDYQIDID---AQA	13
Escherichia_phage_K1E_gp36	-----	0
Salmonella_phage_SP6_gp37	-----	0
Pseudomonas_phage_phiK16V_gp37	-----MAKQFKGRMT-PKYPLDQAQLDEAQ	24
Shigella_phage_Sf6_gp13	-----MAKAWKDVIASPYQ---ALAPEQK	22
Salmonella_phage_P22_gp16	-----MK	2
Salmonella_phage_HK620_gp16	-----MAKAWKDVVASPYQ---ALTEEQK	22
Salmonella_phage_Epsilon_15_gp13	-----MMK---VTANGK-----	9
Escherichia_phage_CUS-3_gp16-like	-----MAKAWKDVIASPYQ---ALTEEQK	22
Escherichia_phage_BA14_gp16	GQA-----YGLQN---DEDFTDPAKSIDAGARYLADLVK-KYDGDDELKAALAYNQGE	108
Escherichia_phage_T7_gp16	AKA-----LGLRVTGDPDDRLNPELAINAALKLAGLVG-KFDGDELKAALAYNQGE	112
Escherichia_phage_13a_gp16	AKA-----LGLRVTGDPDDRLNPELAINAALKLAGLVG-KFDGDELKAALAYNQGE	112
Klebsiella_phage_K11_gp16	ARA-----MGLNVTGDDDDGRYNPELAIDAGAKLLASLVK-KYNGDELKAALAYNQGE	111
Yersenia_phage_phiYe03-12_gp16	ATA-----LGLKVTADDDDRYNPELAVDAAARHLSDLIR-KYDGDDELKAALAYNQGE	111
Prochlorococcus_phage_P-SSP7_gp16	IQDSA-----LEFNEIYEENEK-----IEAQKR-----EQEL-	40
Escherichia_phage_K1E_gp36	-----MEQDIKTNWAG---YVQSTPEPF---SIEAAPVSAPTIRQRN-	36
Salmonella_phage_SP6_gp37	-----MADDISQSWVT---VSQRRLPPT---F-----AQVA-	25
Pseudomonas_phage_phiK16V_gp37	VQGLDAVPTVGFDALTGGIEGRNVA---AGQRANARELERIVADQEL--PA-LDRA-	76
Shigella_phage_Sf6_gp13	AQAQE-----QYFNEVVAPQAGENAEQ---AKQA-----FYAAYPL--PF-VQSV-	61
Salmonella_phage_P22_gp16	VTANG-----KTFNFPDG--TSTEDIGA---AVDE-----YFAGQAS--AA-ETQP-	40
Salmonella_phage_HK620_gp16	AQAQA-----QYFDEVVAPKAGDKWAE---ARDQ-----FYAA-----	52
Salmonella_phage_Epsilon_15_gp13	---TF---TFPDGT---STEDIGT---AIDE-----YFAGQAV--QQ-Q-TV-	40
Escherichia_phage_CUS-3_gp16-like	AQAQA-----QYFDEVVAPKAGDKWAE---ARDQ-----FYAA-----	52
Escherichia_phage_BA14_gp16	GRNGKPQLEAYDS-----GNFA-----SIG-DEGRNYLRSLLDVAKSP	145
Escherichia_phage_T7_gp16	GRLGNPQLEAYSK-----GDFA-----SIS-EEGRNYMRNLLDVAKSP	149
Escherichia_phage_13a_gp16	GRLGNPQLEAYSK-----GDFA-----SIS-EEGRNYMRNLLDVAKSP	149
Klebsiella_phage_K11_gp16	GPAGAPQLQAYDK-----GDFG-----SIS-EEGRNYMRKLLDVAKSP	148
Yersenia_phage_phiYe03-12_gp16	GRNGAPQMAYDK-----GDWA-----SIS-EEGRNYMRNLMDVANS	148
Prochlorococcus_phage_P-SSP7_gp16	-LLQQQEQQAQA---EFDDPR---NKEGGGGLRGIS--KEIRSAITGGGLQDTASSIVTLP	91
Escherichia_phage_K1E_gp36	-ELQEQLVLEAKADADILGAVGAFFQNEW--LAFGGKRWYDRATA--DFTPPQDFEIQPEQ	91
Salmonella_phage_SP6_gp37	-EAERKLEEQRAS---DKVMQTALESEW--ALYGGQRAIERHTT--EFAEQEGYTVPEST	77
Pseudomonas_phage_phiK16V_gp37	-----SAL-----WNQSTLVGRWGDAL---QLDADLA-ANSTGEVDPNFDAGTYG	117
Shigella_phage_Sf6_gp13	-ETQQPVAQQQ-----PQQSGFMSDL-----GEAVKETGRGLVQAGVNVANIP	103
Salmonella_phage_P22_gp16	--AEQQ-EEPQ-----QPEQSLMQRAGDLLTGGQSAGQIAEQAGRGLVNIIPFDVLQGG	90
Salmonella_phage_HK620_gp16	---YPP-HQQQ-----KEEPSLMQAGDWLTGGQSAGQIAEQAGRGLVNIIPFDVLQGG	101
Salmonella_phage_Epsilon_15_gp13	--NQAN-NAPT-----REEPSLMQAGDWLTGGQSAGQIAEQAGRGLVNIIPFDVLQGG	90
Escherichia_phage_CUS-3_gp16-like	---YPP-PQQQ-----KEEPSLMQAGDWLTGGQSAGQIAEQAGRGLVNIIPFDVLQGG	101
Escherichia_phage_BA14_gp16	KSGDIESFGGITPKAKGIPFDAAMSGIGKKGVTTTELPEPESHE-----MSFQ-----	191
Escherichia_phage_T7_gp16	MAGQLETFGGITPKKGIPAEVGLAGIGHKQKVTQELPESTS-----FDVK-----	195
Escherichia_phage_13a_gp16	MAGQLETFGGITPKKGIPAEVGLAGIGHKQKVTQELPESTS-----FDVK-----	195
Klebsiella_phage_K11_gp16	NSGALEAFGGITPKKGIPAEADAFKGIKAGKVGTELPESHG-----FDIE-----	194
Yersenia_phage_phiYe03-12_gp16	RKGDLEAFGGITPKAKGIPSGDAFAGIGKKQTVGTDLPESTG-----FKVE-----	194
Prochlorococcus_phage_P-SSP7_gp16	ER-AIDMFSG-----EMVQE-----QQT-----EGYGAEWDD-WF	120
Escherichia_phage_K1E_gp36	---REALRF-----KYGTDMQITITEGVRSE---DELNFRIQNADEDL--	128
Salmonella_phage_SP6_gp37	---KDELSK-----IHGFETIAQDIVKDVKSP---EELQFRMSNAMADK--	114
Pseudomonas_phage_phiK16V_gp37	VQ-AL-----QAAGIQPTDNYLQIMARAGNAKDAAYL	148
Shigella_phage_Sf6_gp13	AS-VADAVTSAAAWA-----GGKLGIGDGYTHAPRVTTQGLEQDFGLQQG-----	148
Salmonella_phage_P22_gp16	AS-LINAIISQ---G-----LGGPKVLDDVYRPVDRPTDPYAQ-----	123
Salmonella_phage_HK620_gp16	AS-LINAIISQ---G-----LGGPKVLDDVYRPVDRPTDPYAQ-----	134
Salmonella_phage_Epsilon_15_gp13	AS-LINAIISQ---G-----LGGPKVLDDVYRPVDRPTDPYAQ-----	123
Escherichia_phage_CUS-3_gp16-like	AS-LINAIISQ---G-----LGGPKVLDDVYRPAERPTDPYAQ-----	134
Escherichia_phage_BA14_gp16	---GKEQAAPNQPFQKDYWEAKGTTLDLEANERSTFFGFGNAAEAELS-----	235
Escherichia_phage_T7_gp16	---GIEQEATAKPFKDFWETHGETLDEYNSRSTFFGFGNAAEAELS-----	239
Escherichia_phage_13a_gp16	---GIEQEAPAKPFKDFWETHGETLDEYNSRSTFFGFGNAAEAELS-----	239
Klebsiella_phage_K11_gp16	---GVAQEAPNTPYAKDFWEKTGTTLDYNSRSTFFGFGDAEEAIQI-----	238
Yersenia_phage_phiYe03-12_gp16	---GKEQKAPNVPYAKDFWEKTGTTDEFNARSTFFGIGDATSAELH-----	238
Prochlorococcus_phage_P-SSP7_gp16	VD---DANPIE---TKTWGGALRSLVHFSGMAAAI-IPAAKVLGVTAASTAVGSLVRG	172
Escherichia_phage_K1E_gp36	---ERNKRIAQAQWAGSVATIGAAVLDPVGVWASI---PTGGAAKVG---LVGRAVRG	177
Salmonella_phage_SP6_gp37	---ERSEILARNGTGFSQAQAAGIFDPVGAASMAAPVAGAVKVA---RVGRIIK	166
Pseudomonas_phage_phiK16V_gp37	LSRIQRYEQDEQIVRDNPNWFAAGMLDPAALAVDVTFGAGRALRLG---RA---G	199
Shigella_phage_Sf6_gp13	--ALT---P-QTTEGRVFAEALPYLTPAGVERAAIQAP-TLAGRIA---QGATRLLA	195
Salmonella_phage_P22_gp16	-----AGE---SIGGYLIPG-----AG---VA---G	140
Salmonella_phage_HK620_gp16	-----AGE---TIGGYLLPIGTAAGAAGAPAKLAGDIG---SA---G	167
Salmonella_phage_Epsilon_15_gp13	-----AGE---AIGGYLLPIGTAAGAAGAPAKLAGDIG---SA---G	156
Escherichia_phage_CUS-3_gp16-like	-----AGE---TIGGYLLPIGTAAGAAGATAKLAGDIG---SA---G	167
Escherichia_phage_BA14_gp16	---NSTLGVAFRAGKRDNGFDVLTDLVQPTRFNNSHIWTPPEE---LNKIRTEVKNPAYMN	288
Escherichia_phage_T7_gp16	---NSVAGMAFRAGRLDNGFDVFKDITPTRWNNSHIWTPPEE---LEKIRTEVKNPAYIN	292
Escherichia_phage_13a_gp16	---NSVAGMAFRAGRLDNGFDVFKDITPTRWNNSHIWTPPEE---LEKIRTEVKNPAYIN	292
Klebsiella_phage_K11_gp16	---NSTLGVAFRAARADDYGVFKDITPTRWNNSVYPSKED---LQKLDSGLPPSYYG	291

Yersenia_phage_phiYe03-12_gp16	---NSVLGVAFRAARSDDGFDLFKDTITPTRWNSHTWTPEE---LERIRKEVKNPSYIN	291
Prochlorococcus_phage_P-SSP7_gp16	AG-VGAVSDVISKYSQEDNGLILRDRFNFDIT--PISTKEHDPAMKTLKNVVEGMIG	229
Escherichia_phage_K1E_gp36	ATAAG-VSNAAI-----ESVLVQGDMDRLDDI	204
Salmonella_phage_SP6_gp37	AAVAG-AENAAAL-----EAILASGDYQKADDV	193
Pseudomonas_phage_phiKMV_gp37	MAAAGGAGQVGY-----VAGLDAAGADVDAITY	227
Shigella_phage_Sf6_gp13	ENAVGSLAA--N-----SAKDDAEALATDLGVG	221
Salmonella_phage_P22_gp16	NMAIGSVAAEAN-----QQGDFAGNVAKNAVN	168
Salmonella_phage_HK620_gp16	NMIAGSLADAAN-----QDGDFAQNAAINGGIN	195
Salmonella_phage_Epsilon_15_gp13	NMIAGSLADAAN-----QEGDFAQNAAINGGIN	184
Escherichia_phage_CUS-3_gp16-like	NMIAGSLADAAN-----QEGDFAQNAAINGGIN	195
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Escherichia_phage_BA14_gp16	VVLGGSANLDEL IKMANENFEADAKAAEAGLGAKLSAGLIGAGVDPLTYVPIAGATAKG	348
Escherichia_phage_T7_gp16	VVTGGSPENLDDL IKLANENFENDSRAAEAGLGAKLSAGIIGAGVDPLSYVPMVGTGKG	352
Escherichia_phage_13a_gp16	VVTGGSPENLDDL IKLANENFENDSRAAEAGLGAKLSAGIIGAGVDPLSYVPMVGTGKG	352
Klebsiella_phage_K11_gp16	VVTGGDGENWDAL IKLAKDNFEADQRAAEAGTGAKLAAIGVAGVDPLSYVPLVGVAGKG	351
Yersenia_phage_phiYe03-12_gp16	VVTGGSPENLDAL IKMANDNYEMDARSADAGVGAKLTAGIVGAGVDPLSYVPLVGVAGKG	351
Prochlorococcus_phage_P-SSP7_gp16	VVFDGLGIALGKGLRKTK-----INKAGQEV-----VEDG	259
Escherichia_phage_K1E_gp36	MVALGSGMAMGGVIGAVA--R-----GRATKLSE-QG-----DDR-	236
Salmonella_phage_SP6_gp37	LAAAGFGMIMGGTIGAAAT--R-----ERIARKPGVQG-----VNDG	227
Pseudomonas_phage_phiKMV_gp37	IVAGALGAGVGALLGSGA-----GRIAAEAPTQP--HVPEVSAPTIVG	267
Shigella_phage_Sf6_gp13	VLAGGAINAAGRGLGAAYRGVR-----GAIAPAEQQAII--RF--AEREVGP	263
Salmonella_phage_P22_gp16	LGAQGLLSGAAKLVGRGITAAR-----GEIAPPEARQLI--DT--AESMG--	208
Salmonella_phage_HK620_gp16	IGAQGVLSGVGRVIAPRVSQAL-----GGAALNSANDV--SK--MAKSGTG	237
Salmonella_phage_Epsilon_15_gp13	IGAQGVLSGVGRVIAPRVSQAL-----GGAALNSANDV--SR--MAKSGAG	226
Escherichia_phage_CUS-3_gp16-like	IGAQGVLSGVGRVIAPRVSQAL-----GGAALNSANDV--SR--MAKSGAG	237
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Escherichia_phage_BA14_gp16	FKLV-----NKALVVGAAQAGMLNV-----ASEGLRTSVAG	378
Escherichia_phage_T7_gp16	FKLI-----NKALVVGAEASALNV-----ASEGLRTSVAG	382
Escherichia_phage_13a_gp16	FKLI-----NKALVVGAEASALNI-----ASEGLRTSVAG	382
Klebsiella_phage_K11_gp16	LKVV-----NKALLVGAQAGALSV-----ASEGIRTSVAG	381
Yersenia_phage_phiYe03-12_gp16	LKVI-----NKAFVVGTSAGLAI-----ASEGIRTSIAG	381
Prochlorococcus_phage_P-SSP7_gp16	VSDAVNR-----ATAR--EANVNAQIDEKAALQAQSM-----R--GQY	293
Escherichia_phage_K1E_gp36	-----AASIVRSADAG	247
Salmonella_phage_SP6_gp37	AETVDD-----LDTVVKGADEFDAS-----AAKAVREAMEY	259
Pseudomonas_phage_phiKMV_gp37	LPEVAMT----AEEAAARGFKAGDVVDLLDEGTVLSRIS-----A-RVEQA-	308
Shigella_phage_Sf6_gp13	L-----HTTDLQLQPTRSRVGKMAQTAEINPLAGTSGMRATQ--	299
Salmonella_phage_P22_gp16	V-----KPMTSDMIKPGNAFTRSLMQGGEG-ALLGTGGKRAEQ--	245
Salmonella_phage_HK620_gp16	REIARQSANVSDEIAKAADTAGIDINALTPGMRSGSRGLAQAEQ-ILASKPGITQDAHT	296
Salmonella_phage_Epsilon_15_gp13	RQSIASQAANVSDEVAKAAESAGIDINALTPGMRSGSRGIAQAEQ-ALASTPGIVQDAHQ	285
Escherichia_phage_CUS-3_gp16-like	RQSIASQAANVSDEVAKAAESAGIDINALTPGMRSGSRGIAQAEQ-ALASTPGIVQDAHQ	296
Escherichia_phage_BA14_gp16	GDAHYAEA-----ALAGM--	391
Escherichia_phage_T7_gp16	GDADYAGA-----ALGGF--	395
Escherichia_phage_13a_gp16	GDADYAGA-----ALGGF--	395
Klebsiella_phage_K11_gp16	GEAHYADA-----ALGGL--	394
Yersenia_phage_phiYe03-12_gp16	GEAHYADA-----ALGGL--	394
Prochlorococcus_phage_P-SSP7_gp16	G--GYKNKPISDPWQASP-----NSTGK-AADVYQKQRIDTDWGSQHGW	334
Escherichia_phage_K1E_gp36	D--RYVR-----	252
Salmonella_phage_SP6_gp37	D--AYMAVRSYELPRAKEVDMDVAILSHLDDLKANSSVRMSASEKGKLEQIRQLETEAA	317
Pseudomonas_phage_phiKMV_gp37	-----EI-----PA-----IP-----RRDTAFGDELH	325
Shigella_phage_Sf6_gp13	-----QEARS-----QL-----VQ-----RFADKFGEYDP	319
Salmonella_phage_P22_gp16	----Y-AIRS-----KL-----LG-----DYFDRVGGYNP	265
Salmonella_phage_HK620_gp16	K--AFSEIES-----K-----FN-----SALDEFGAEAG	318
Salmonella_phage_Epsilon_15_gp13	A--AFNEISS-----K-----LS-----RNLDEFGAASG	307
Escherichia_phage_CUS-3_gp16-like	A--AFNEISS-----K-----LS-----RNLDEFGAASG	318
Escherichia_phage_BA14_gp16	-----LLAGGLTAVADGVAAG-----LR	409
Escherichia_phage_T7_gp16	-----VFGAGMSAISDAVAAG-----LK	413
Escherichia_phage_13a_gp16	-----LFGAGMSAISDAVAAG-----LK	413
Klebsiella_phage_K11_gp16	-----LFGAGMSALSDAVAAG-----IR	412
Yersenia_phage_phiYe03-12_gp16	-----LFGAGMSAISDAIAAG-----VR	412
Prochlorococcus_phage_P-SSP7_gp16	STDSPFTQRQIENLSESADIAEKEMVELMKPFMSDARIQAEIQGLKSGQSLADKFYDSIR	394
Escherichia_phage_K1E_gp36	-----252	
Salmonella_phage_SP6_gp37	T-----IKGKKVDAVAEAAAAAG-----AP-----KSAADRDLDDVK	349
Pseudomonas_phage_phiKMV_gp37	S-----LSGRKLSSEVVDHLKTHA-----E-----	344
Shigella_phage_Sf6_gp13	A-----V-----VIDSLKAKT-----SG-----IRRAAG-----	338
Salmonella_phage_P22_gp16	D-----DIVKSMSTSV-----GG-----RKNAAG-----	284
Salmonella_phage_HK620_gp16	T-----ASE-KSAAIKQRVLASI-----DK-----MKNSEK-----	343
Salmonella_phage_Epsilon_15_gp13	T-----ASE-KSAAIKQRILQNL-----DQ-----MKDAER-----	332
Escherichia_phage_CUS-3_gp16-like	T-----ASE-KSAAIKQRILQNL-----DQ-----MKDAER-----	343
Escherichia_phage_BA14_gp16	KSGA-EQIENPFAAAQMRFEARETARNTGGYDASRM-----	444
Escherichia_phage_T7_gp16	RSKPEAEFDNEFIGPMMLREARETARNANSADLSRM-----	449
Escherichia_phage_13a_gp16	RSKPEAEFDNEFIGPMMLREARETARNANSADLSRM-----	449
Klebsiella_phage_K11_gp16	KARG-VDSVNEFAGPALRMEARETAINTGGHDTSTL-----	447
Yersenia_phage_phiYe03-12_gp16	RSRG-TEVVNDFAPMAHRLREARETALNSGGEDLTRM-----	447
Prochlorococcus_phage_P-SSP7_gp16	RAHEVMNGRERLEDIDPDMFAAFDARSOTI---K-----GKKVWQTADVLAADFVIGAL	445
Escherichia_phage_K1E_gp36	-----252	
Salmonella_phage_SP6_gp37	KKALARRFDEPLADIQTRLDE---LNAKLARVENVGSKKEELK-----R	390
Pseudomonas_phage_phiKMV_gp37	-----VPKPLQGIAAKV-----ADTLKTLEGLQRTAFRVVQGGDTASS-----A	384

Shigella_phage_Sf6_gp13	--NRLEQVQNMAGINIQPARAIQQIDTEISNLQKLGKADVNETISK-----	383
Salmonella_phage_P22_gp16	--AVRDEIVNRMGSAVGTITNSINAIDNTIARLEKLGTSADQRLTLTA-----	329
Salmonella_phage_HK620_gp16	--AAWDSVRSTMPDAKARMSNLNATIQQDI-----LAGMPLTPE-----	380
Salmonella_phage_Epsilon_15_gp13	--AAWDDVRSTMPNQKARMLNGNAVIQAER-----SAGIPLTPE-----	369
Escherichia_phage_CUS-3_gp16-like	--AAWDDVRSTMPNQKARMLNGNAVIQAER-----SAGIPLTPE-----	380
Escherichia_phage_BA14_gp16	-----P-----	445
Escherichia_phage_T7_gp16	-----N-----	450
Escherichia_phage_13a_gp16	-----N-----	450
Klebsiella_phage_K11_gp16	-----P-----	448
Yersenia_phage_phiYe03-12_gp16	-----P-----	448
Prochlorococcus_phage_P-SSP7_gp16	FRKARDHGIAGRE-LFEIADLADIDGPAKALYDTLVGAVIQRKIASYTRGMELKNLDVRN	504
Escherichia_phage_K1E_gp36	-----	252
Salmonella_phage_SP6_gp37	FS----NLTREQQI----KELGLDAPARKV-EMTS--AVREALA---AI--RAEKKKT	432
Pseudomonas_phage_phikMV_gp37	FLKPGTAGLHSTQGLDITLVQVRGSTAPGRVGTNPVT--VLHEAVHAATVGV--MNAALRN	440
Shigella_phage_Sf6_gp13	-----L--QSYRDELVRNAGPDGPVNLDLKQLS--DLRSQFRMDVKGE--R--PVL	426
Salmonella_phage_P22_gp16	-----L----KN----LKGLNSGNVDFDLLQ--QHRTAFRNTVQGD--A---MVF	365
Salmonella_phage_HK620_gp16	-----M--KQFAS----AYAKTGKNGITFDAMK--AWRSKLADAEQKY--I-----R	417
Salmonella_phage_Epsilon_15_gp13	-----M--KQFVQ----AN---NQGGVTFDGMK--AWRAKFADAEQKY--K-----R	403
Escherichia_phage_CUS-3_gp16-like	-----M--KQFVQ----AN---NQGGVTFDGMK--AWRAKFADAEQKY--K-----R	414
Escherichia_phage_BA14_gp16	PSEDRV-----FSQHNGVEYAPLET-----EPGAVVLKDGSIISDTN	482
Escherichia_phage_T7_gp16	TENMKF-----EGEHNGVPYEDLPT-----ERGAVVLHDGSLVSASN	487
Escherichia_phage_13a_gp16	TENMKF-----EGEHNGVPYEDLPT-----ERGAVVLHDGSLVSASN	487
Klebsiella_phage_K11_gp16	PENFSF-----EQDHRGVFPADHPT-----EEGAVVLANGSILSDTN	485
Yersenia_phage_phiYe03-12_gp16	SENRVF-----DREHAGVEYSPLET-----EPGAVVLPQGGIILSDTN	485
Prochlorococcus_phage_P-SSP7_gp16	PANKQA-----	510
Escherichia_phage_K1E_gp36	-----AVADDSIGAMRVKGEE-----VLTEGAFDISSKG	281
Salmonella_phage_SP6_gp37	PTQTHA-----EAKAQAEVEVRQKRDDSIGAKRVEDSE-----IAGEQFDLSDSM	477
Pseudomonas_phage_phikMV_gp37	PGAMSP----KVAQAMQTLNVRGNVLNALKQDRAAGRQLSEFEETLLAGNSNTLANVK	495
Shigella_phage_Sf6_gp13	PNRSDAAIQ--RVYKAM--TDDINGAIGQNLGNDTLR-----KYQQANAVYADEAA	473
Salmonella_phage_P22_gp16	PNQAKAATN--MVENAM--TRDLRNAVGKSLGPQDAA-----KYLKSNSDFANIYN	412
Salmonella_phage_HK620_gp16	SGEANTARRMAELRDA--TEDMR-----IMAQNGGFLLDDWQ	452
Salmonella_phage_Epsilon_15_gp13	SGEANAARRAGEIRRAI--TDDMR-----TMAENGGFLLDDWQ	438
Escherichia_phage_CUS-3_gp16-like	SGEANAARRAGEIRRAI--TDDMR-----TMAENGGFLLDDWQ	449
Escherichia_phage_BA14_gp16	-----LANPMTAKEFAEVDPERAAWGLPMRGL-----	509
Escherichia_phage_T7_gp16	-----PINPKTLKEFSEVDPEKAARGIKLAGF-----	514
Escherichia_phage_13a_gp16	-----PINPKTLKEFSEVDPEKAARGIKLAGF-----	514
Klebsiella_phage_K11_gp16	-----PLNPRTQRDFAEIDPERAAPGKIKLGGF-----	512
Yersenia_phage_phiYe03-12_gp16	-----PLNPQTLSEFAVNPERAARGISLGGF-----	512
Prochlorococcus_phage_P-SSP7_gp16	-----	510
Escherichia_phage_K1E_gp36	EDLLKTLQRE-----GNAIDMTPRRWAGTMSALGT-----	311
Salmonella_phage_SP6_gp37	EDLMDDLARE-----AYQSEVRPVNLKG-LGSVSS-----	506
Pseudomonas_phage_phikMV_gp37	ELVWGLTDTRFQRTLNRRLRYSDGGPGLWSR--FVEGIRSLGLRSDADTALSRLVAASE	553
Shigella_phage_Sf6_gp13	K--LKN--TRLKNVL--MKG-DLTPVVNNMFLFSKN-----KSEIK	507
Salmonella_phage_P22_gp16	K--VLN--KRISNTLNKARS-EYTPELINTVVFSSR-----K-PSDJK	448
Salmonella_phage_HK620_gp16	K--ANDLSKARFT-AQEQAFAFGRDLATDQVLTNGSKALQGSAAK----SG-TGQFH	501
Salmonella_phage_Epsilon_15_gp13	K--ANDLSKARLS-AQESAES-VFGRDLATDALITNGVSKLQSSSA--KGLNG-PAGFH	490
Escherichia_phage_CUS-3_gp16-like	K--ANDLSKARLS-AQESAES-VFGRDLATDALITNGVSKLQSSSA--KGLNG-PAGFH	501
Escherichia_phage_BA14_gp16	-----SEIGLRTL-----RSEHAEIRGLAKD-LVRSPPTGMESGSHGKF	546
Escherichia_phage_T7_gp16	-----TEIGLRTL-----GSSDADIRRVIAID-LVRSPPTGMQSGASGKF	551
Escherichia_phage_13a_gp16	-----TDIGLRTL-----GSSDADIRRVIAID-LVRSPPTGMQSGASGKF	551
Klebsiella_phage_K11_gp16	-----TEIGLRTL-----GSKDAGVRAIAQD-LVRSPPTGMQSGSGKF	549
Yersenia_phage_phiYe03-12_gp16	-----TEIGLRTL-----RSENPVRSIAISD-LVRSPPTGMESGTSKGKF	549
Prochlorococcus_phage_P-SSP7_gp16	-----LKDGNAE-----IE-----KTK--LAYQVAF	530
Escherichia_phage_K1E_gp36	VVHSSQDA----SVRGLGARLFES-----PQG--LGMQKA-	340
Salmonella_phage_SP6_gp37	VILNSKNP-----VFRGLGLRLLEN-----AQG--GAYQKG-	535
Pseudomonas_phage_phikMV_gp37	TIMDAMPGYTKAQAKWANKGAPV-----TEEASLETIVQSTRERAREG--AGFVNRK	603
Shigella_phage_Sf6_gp13	TLYNSVGRVGRQAQMRNGIIG-----KAM-----EKS--GGSPDQF	540
Salmonella_phage_P22_gp16	RIWSSLDNKGK-----DAMR-----AAYISKIAEK-----TGD-----SPAIF	481
Salmonella_phage_HK620_gp16	KIISALPESERAPAIASILQDVTVSQGVRRGKSEGAGIKHIATI--LTPQN--VKAISRY	556
Salmonella_phage_Epsilon_15_gp13	SMIRALPESERVPAISSMLQDAISHGVRRGKSDAAGIHIIAGI--LTPQN--VKAISRY	545
Escherichia_phage_CUS-3_gp16-like	SMIRALPESERVPAISSMLQDAISHGVRRGKSDAAGIHIIAGI--LTPQN--VKAISRY	556
Escherichia_phage_BA14_gp16	GAT----ASDIKER-----LHSNNQRTYNLDLYGAM-KEAMADPEW-----	581
Escherichia_phage_T7_gp16	GAT----ASDIHER-----LHGTDQRTYNLDLYKAM-SDAMKDPEF-----	586
Escherichia_phage_13a_gp16	GAT----ASDIHER-----LHGTDQRTYNLDLYKAM-SDAMKDPEF-----	586
Klebsiella_phage_K11_gp16	GAT----ASDIHER-----LHATDQRMYNQLYDAV-DRAMKDPEF-----	584
Yersenia_phage_phiYe03-12_gp16	GAT----ASDIKER-----LHANNQRTYNQLYDAV-RTAMKDPEF-----	584
Prochlorococcus_phage_P-SSP7_gp16	KYAGDNQDDSLFRAYYEA-----VSMNSNDIHNFDFFDAFIKRLKGGELNGKVKTVGLTK	585
Escherichia_phage_K1E_gp36	--S-----ASLMQNTNLNR----LKSADMNRNFNDGFDLWLKEN-----	372
Salmonella_phage_SP6_gp37	--T-----ASILSNVYGNL----IRFAEKNRNYNDGFSQFIKDN-----	567
Pseudomonas_phage_phikMV_gp37	FSE-----ADLLAQPGEGARRLLGLRIDDPVRRDGFSTND-----	638
Shigella_phage_Sf6_gp13	LRQ----LNLQNTGTI-----TFKG-----	557
Salmonella_phage_P22_gp16	ITE-----VNKLKAQSGGE-----IYNTIFSG-----	503
Salmonella_phage_HK620_gp16	SPE-----LGRIASSYGEL----ARAATKPLRYVEQTG-----	585
Salmonella_phage_Epsilon_15_gp13	SSE-----LGRIADAYGTL----ARAAVKPQQYIERTG-----	574
Escherichia_phage_CUS-3_gp16-like	SSE-----LGRIADAYGTL----ARAAVKPQQYIERTG-----	585

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Escherichia_phage_BA14_gp16 -----SVGM-----FKQGAQGARQEYRRVAIAIER-----PEL      610
Escherichia_phage_T7_gp16 -----STGG-----AKMSREETRYTIYRRAALAIER-----PEL      615
Escherichia_phage_13a_gp16 -----STGG-----AKMSREEARYTIYRRAALAIER-----PEL      615
Klebsiella_phage_K11_gp16 -----SVGE-----QKMSRRAIRQEVYKRASLAIER-----PEL      613
Yersenia_phage_phiYe03-12_gp16 -----STGG-----ATMSRKEIRQEYIKRAALAIER-----PEL      613
Prochlorococcus_phage_P-SSP7_gp16 ELQGVMINSVLSGPKTSVRAIMGTGTATFLRPFQVIG-ATL-----        626
Escherichia_phage_K1E_gp36 -----NINPVAGHTNSHYVQQYNEKVWEAVRIGMDE-----        403
Salmonella_phage_SP6_gp37 -----NLRAVDY-LNPAVTRDFNNQIYTAIVKGIPD-----        597
Pseudomonas_phage_phiKMV_gp37 -----NAASYLRRYRNEF-EGYVKSYDEMMAKAMAEQGVGL-----        673
Shigella_phage_Sf6_gp13 -----QDAAYLKGLKN-----YLQSTQ-----        574
Salmonella_phage_P22_gp16 -----RHMKELDALHD-----VL-----RQTA-----        520
Salmonella_phage_HK620_gp16 -----RSMIPAISTLEK-----GLHPVLESVLSGAF-----        610
Salmonella_phage_Epsilon_15_gp13 -----RTANVLRDLDA-----GLSNVTSTVLNAIA-----        599
Escherichia_phage_CUS-3_gp16-like -----RTANVLRDLDA-----GLSNVTSTVLNAIA-----        610

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Escherichia_phage_BA14_gp16 QANLTKEA--RKVMDIMKEHFDLKREMMENPSM---FGNK-----        645
Escherichia_phage_T7_gp16 QKALTPSE--RIVMDIIRKHFDTKRELMENPAI---FGNTK-----        651
Escherichia_phage_13a_gp16 QKALTPSE--RIVMDIIRKHFDTKRELMENPAI---FGNTK-----        651
Klebsiella_phage_K11_gp16 QADLTKEG--REVMDLLKEHFDTKRELMEQPGI---FGNAN-----        649
Yersenia_phage_phiYe03-12_gp16 QANLTKEG--RNVMNILKQHFDLKREIMENPSI---FGNTK-----        649
Prochlorococcus_phage_P-SSP7_gp16 TGDKTTQRAALAAMSGMM-----ESIPEAWKVFS-----KLNSY      661
Escherichia_phage_K1E_gp36 -----ATPKSIRMAAEGQQAM-----        419
Salmonella_phage_SP6_gp37 -----DTPRGVKLAAEGIADK-----        613
Pseudomonas_phage_phiKMV_gp37 TARALNSRRAMAVRDQLNE---QVTRELLRRDREWTAAGSVRVDPNLPPTIKALADRSDEI      731
Shigella_phage_Sf6_gp13 -----QAAKAAV-----        581
Salmonella_phage_P22_gp16 -----RSDSANV-----        527
Salmonella_phage_HK620_gp16 -----PTAGAI-----        616
Salmonella_phage_Epsilon_15_gp13 -----NSTSGAI-----        606
Escherichia_phage_CUS-3_gp16-like -----NSTSGAI-----        617

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Escherichia_phage_BA14_gp16 -----ANSIFPNSRHKGTYVPHVYSREAKQLYSQALGGSDGLQEAI--ASW-M      691
Escherichia_phage_T7_gp16 -----AVSIFPESRHKGTYVPHVYDRHAKALMIQR-YGAEGLQEGIA--RSW-M      696
Escherichia_phage_13a_gp16 -----AVSIFPESRHKGTYVPHVYDRHAKALMIQR-YGVEGLQEGIA--RSW-M      696
Klebsiella_phage_K11_gp16 -----AVSIFPGSRHKGTYVPNVYDRGAKELMMQKLGPEGLQQAIA--QSW-L      695
Yersenia_phage_phiYe03-12_gp16 -----AVSIFPGSRHKGTYVPNVYDRAIKIEMVKR-YDNDGLQRAIA--ESW-L      694
Prochlorococcus_phage_P-SSP7_gp16 W---SGDISTIKTRFNQVTKGDEQWAMLGDWIENSGKAN--AGDKAAYMANQARALND      715
Escherichia_phage_K1E_gp36 YREALALRQRSGEAGFEKVKADDKYMPDIFDSMKARRQFG-MHDKEDIIEIFS--RAYQN      476
Salmonella_phage_SP6_gp37 LAKSLEIRKAAGEKGFEDVKSARDYIPVIYDGKIVTEAVNRLGSSSEAVIALLS--KGQYT      671
Pseudomonas_phage_phiKMV_gp37 HGLMGQRAREAGVRGFEDFAPRPGYFHRSNWWSKMA-----QMDEAAPGLAR--RAISE      783
Shigella_phage_Sf6_gp13 TTPTGQQ-TIPFII-----GYGTAMN---PAT-----TGAAVSYGLLT--RAYES      620
Salmonella_phage_P22_gp16 VTQTGQALANPVRL-----GAAIPTL---GKS-----LAAEAGYGLAM--RVYES      567
Salmonella_phage_HK620_gp16 AGFSGGGVIGAI-----VGGAG--GATD-----        638
Salmonella_phage_Epsilon_15_gp13 VGGAGGGGIAG-----AAAG-----ALVG-----        624
Escherichia_phage_CUS-3_gp16-like VGGAGGGGIAG-----AAAG-----ALVG-----        635

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Escherichia_phage_BA14_gp16 TSYSRPEVKARVDEHLAETLGID-VKAVTEEMVMKHASDKAYGIAKTDQFNSSVIDDN      750
Escherichia_phage_T7_gp16 NSYVSRPEVKARVDEMLKELHGV---KEVTPPEMVEKYAMDKAYGISHSDQFTNSSIIEN      753
Escherichia_phage_13a_gp16 NSYVSRPDVKARVDEMLKEVHGV---KEVTPPEMVEKYAMDKAYGISHSDQFTNSSIIEN      753
Klebsiella_phage_K11_gp16 TSYSRPEVKARVDEYLMELNGKYSVDQVTPPEVQKHAMDKAYGISHTEDFTASSVIDDN      755
Yersenia_phage_phiYe03-12_gp16 TSYRARPEVKARVDEYLMELNGLKSVHEVTPPEMVQKHAMDKAYGISHTDQFSASSVIDEN      754
Prochlorococcus_phage_P-SSP7_gp16 NKFLT-----YST-----K-----        724
Escherichia_phage_K1E_gp36 ----GARKIPKEVADEIARAQVN---RVVDATLTGRMSFEKAMSGQTKAEYEAIM---R      525
Salmonella_phage_SP6_gp37 ----GKYKMGKKAADALAKVQYI---RASDSTLSSRVAFDRVVSQQQQAQLIEDL---K      720
Pseudomonas_phage_phiKMV_gp37 AVFRGIPGLDRADADTIAQAIQV---RARDRATGIRSEFMGAMGVADTAFIRQAL---E      836
Shigella_phage_Sf6_gp13 EPFRN-----        625
Salmonella_phage_P22_gp16 KPIRN-----        572
Salmonella_phage_HK620_gp16 AIAKG-----        643
Salmonella_phage_Epsilon_15_gp13 AGLKG-----        629
Escherichia_phage_CUS-3_gp16-like AGLKG-----        640

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Escherichia_phage_BA14_gp16 IEGLVGIENNSFLEARNLFD-----SDMPVT----LPNGQQFSVNDLRDFDMKH      795
Escherichia_phage_T7_gp16 IEGLVGIENNSFLEARNLFD-----SDLSIT----MPDGGQQFSVNDLRDFDMFR      798
Escherichia_phage_13a_gp16 IEGLVGIENNSFLEARNLFD-----SDLSIT----MPDGGQQFSVNDLRDFDMFR      798
Klebsiella_phage_K11_gp16 ITGLVGIENNSFLEARNMFD-----SDLPVT----LPDGGSTFSVNDLRDFDMAR      800
Yersenia_phage_phiYe03-12_gp16 IEGLVGIENNNFLEARNMFD-----SDMAVT----LPDGNTFVNDLRTYDMAE      799
Prochlorococcus_phage_P-SSP7_gp16 IMAATDDTFGFLLARSRAKE-----K--AMRLAM-----EQLNKGNGITE      761
Escherichia_phage_K1E_gp36 KAGFSDEEIEKMVEALDNKETKDNISNRAKMSLGLDVTQ---EYNGIRMRDFMNTNVEE      581
Salmonella_phage_SP6_gp37 RAGVPDNIIDNFIEGTELGQEMAESVSNRAKASMGINTQA----EYGGMKVQDLLNTNVGE      776
Pseudomonas_phage_phiKMV_gp37 EANVSQAKFDSIMAKIEQKQSDQGTVKYKGRLSLDMTAEINHNGTVYRVQDLIDRDLDR      896
Shigella_phage_Sf6_gp13 -----        625
Salmonella_phage_P22_gp16 -----        572
Salmonella_phage_HK620_gp16 -----        643
Salmonella_phage_Epsilon_15_gp13 -----        629
Escherichia_phage_CUS-3_gp16-like -----        640

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Escherichia_phage_BA14_gp16 VMPAYDRRVGDIAIMGGTGKTTAELKDAIMALDKKSEGKG-----        836
Escherichia_phage_T7_gp16 IMPAYDRRVNGDIAIMSGTGKTTKELKDEILAKAKAEGDG-----        839
Escherichia_phage_13a_gp16 IMPAYDRRVNGDIAIMSGTGKTTKELKDEILAKAKAEGDG-----        839

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Klebsiella_phage_K11_gp16	IIPAYDRRVNGDISIMGGSGKTTQQLKDEIMALDKRAERKG-----	841
Yersenia_phage_phiYe03-12_gp16	IIPAYDRRVGDVAIMGGSGKTTKDLKDEIMALDKQSENG-----	840
Prochlorococcus_phage_P-SSP7_gp16	ITPDLKKNAQDRFY--AQITDADGNITEAATLFAPKEATLTDD-----	802
Escherichia_phage_K1E_gp36	LTDNMKEAAGGAALARQGFSTYQAALNAIDLVERNARNAAKDTK-AHAQFEAESAKIRQ	640
Salmonella_phage_SP6_gp37	LAENYGKEAAGGAALAMGFPTRQSVLNAIDAAERAGRNMAGADAKAIK-----	825
Pseudomonas_phage_phiKMV_gp37	LMENYAGSMSGRSALARAGMPGDSEIEAFIREYQREAAHLGTD-----	939
Shigella_phage_Sf6_gp13	AMLRMANTPRGSTAFKAMQSQKAINALTQGAQS-----	660
Salmonella_phage_P22_gp16	MLRLANTKPGTPAYERALNQAAATAVRP-----	600
Salmonella_phage_HK620_gp16	SIAKLSATRSGRYAIEKAVQEATKAVKVGA---SD-----	675
Salmonella_phage_Epsilon_15_gp13	AVSKIATTRSGRYAIEKAVQEATKAVRAGG---SK-----	661
Escherichia_phage_CUS-3_gp16-like	AVSKIATTRSGRYAIEKAVQEATKAVRAGG---SK-----	672
Escherichia_phage_BA14_gp16	-----TMKGEVEALKDVTVKILTGRARRNHD-TVGD	865
Escherichia_phage_T7_gp16	-----KKTGEVHALMDTVKILTGRARRNQD-TVWE	868
Escherichia_phage_13a_gp16	-----KKTGEVHALMDTVKILTGRARRNQD-TVWE	868
Klebsiella_phage_K11_gp16	-----QLKGEVEALKDVTVKILTGRARRNND-TAFE	870
Yersenia_phage_phiYe03-12_gp16	-----TLKGEVEALKDVTVKILTGRARRNPE-GAWG	869
Prochlorococcus_phage_P-SSP7_gp16	-----LTGFSKGLNDVFEAAPWAKPFFLFA	827
Escherichia_phage_K1E_gp36	SEPDYKKAQEKIEELKKRLKLEKDEAAGLAIDEEIRQMREGLRLIMGKSIDADPQALST	700
Salmonella_phage_SP6_gp37	-----QLRAESEMLRDSVKLIYGNITIDANPNAGIV	855
Pseudomonas_phage_phiKMV_gp37	-----KVQELTGQLRGVFGDFTGNVPREH---QLG	966
Shigella_phage_Sf6_gp13	-----DALSE-----	665
Salmonella_phage_P22_gp16	-----LLANEATRQ-----	609
Salmonella_phage_HK620_gp16	-----GSLAAAEERRFMANKAAVK---AI-	695
Salmonella_phage_Epsilon_15_gp13	-----EALAAAEERRFMANKAAVK---AI-	681
Escherichia_phage_CUS-3_gp16-like	-----EALAAAEERRFMANKAAVK---AI-	692
Escherichia_phage_BA14_gp16	TMF-----R-----ALSDMSFFTKNAYMGLQNLTEI-SGLLAKG	898
Escherichia_phage_T7_gp16	TSL-----R-----AINDLGFFAKNAYMGAQNITEI-AGMIVTG	901
Escherichia_phage_13a_gp16	TSL-----R-----SINDLGFFAKNAYMGAQNITEI-AGMIVTG	901
Klebsiella_phage_K11_gp16	TAM-----R-----TLNDLAFFAKNFYMGPNLTEI-AGMLAKG	903
Yersenia_phage_phiYe03-12_gp16	TAL-----R-----SVNDLTFFAKNAYMGAQNITEI-AGMLAKG	902
Prochlorococcus_phage_P-SSP7_gp16	RTGVNGLSLTAKHTPGFNFLVKEWNEIAFADPSNLSGLQRYGIETAEDLANAKALQVGR	887
Escherichia_phage_K1E_gp36	KMLR-----RGRDITGVLRRLGQMGAQLGEL-ANFMGEF	733
Salmonella_phage_SP6_gp37	RGTR-----RVREITGLRLRLGQMGAQVPEL-ARAITKM	888
Pseudomonas_phage_phiKMV_gp37	PVAQ-----RASGLTSATMLGFSGVYQLAEL-ATMAHRQ	999
Shigella_phage_Sf6_gp13	-----	665
Salmonella_phage_P22_gp16	-----RDALGNEEFQRL-----SRA	710
Salmonella_phage_HK620_gp16	-----RDAVGNEEFNRL-----ARA	696
Salmonella_phage_Epsilon_15_gp13	-----RDAVGNEEFNRL-----ARA	707
Escherichia_phage_CUS-3_gp16-like	-----RDAVGNEEFNRL-----ARA	707
Escherichia_phage_BA14_gp16	NTRAMLHGIPALRD---LAF-----RNKPVSGKELKELHSMVFGKEFDDLIRPARQ	946
Escherichia_phage_T7_gp16	NVRALGHGIPILRD---TLY-----KSKPVSAKELKELHASLFGKEVDQLIRPKRA	949
Escherichia_phage_13a_gp16	NVRALSHGIPILRD---TLY-----KSKPVSAKELKELHASLFGKEVDQLIRPKRA	949
Klebsiella_phage_K11_gp16	NVKAHLHGIPILRD---LAT-----RTSPVSGSELRELHGALFGKELDQLIRPGRE	951
Yersenia_phage_phiYe03-12_gp16	NVSAITHGIPMIND---WVN-----RGKPLRASEIKELHGMVFGKELDQLIRPGRE	950
Prochlorococcus_phage_P-SSP7_gp16	AIGSSVISMAALHFMNGGLTGNG-PADRQKRQAWI-----DAGYK-PRT---I----	930
Escherichia_phage_K1E_gp36	GIAATTIALGKQFRFTSKALR---SGDGFRRDKNLA-EVERMVGY-IGED---N----	779
Salmonella_phage_SP6_gp37	GVGTVLKSIPTKFLRSRAGRKGGAQGLLEPELR-EMEELIGY-IGED---N----	937
Pseudomonas_phage_phiKMV_gp37	GVFNVMKAMLSN-----RMGD---FVGAMRRNPDLADEMQTVLGLNLAND---I----	1042
Shigella_phage_Sf6_gp13	-----	665
Salmonella_phage_P22_gp16	-----	609
Salmonella_phage_HK620_gp16	GIV-----	713
Salmonella_phage_Epsilon_15_gp13	GIV-----	699
Escherichia_phage_CUS-3_gp16-like	GIV-----	710
Escherichia_phage_BA14_gp16	DIQRLRESTDTPDLAAKVVGTIK-HTTQELAARSPFTKFLNG---TSNYILDMARQGV	1002
Escherichia_phage_T7_gp16	DIVQRLREATDTGPAVANIVGTLK-YSTQELAARSPWTKLLNG---TTNYLLDAARQGM	1005
Escherichia_phage_13a_gp16	DIVQRLREATDTGPAVANIVGTLK-YSTQELAARSPWTKLLNG---TTNYLLDAARQGM	1005
Klebsiella_phage_K11_gp16	DIVQRIREASDTSGAMASVGTIK-FGTQELSARSPWTKMLNG---TANYILDTARQGV	1007
Yersenia_phage_phiYe03-12_gp16	DHVRRLRESTDTSAAVANVVGIR-FGTQELAARSPWTKMLNG---TSNYILDAARQGV	1006
Prochlorococcus_phage_P-SSP7_gp16	-TIGGVQVSYSFEPFNLI-----	948
Escherichia_phage_K1E_gp36	-WLTTLKGARPDFGDDVTTVKGMMA-HFDQSMNSIRRAQTNLSLFRMAQGSLEMTNRQIA	837
Salmonella_phage_SP6_gp37	-WLSGWNVRHDEFGETADNMGRLSAIDNGLAMGSRINTWLSGFKAIQGGSEKIVARSIN	996
Pseudomonas_phage_phiKMV_gp37	-RMKPWKQRQDFTFLASQDT-----FMDRFLHAGKQAVPVLNGMKFIHNWQSRMNANLTL	1095
Shigella_phage_Sf6_gp13	-----	665
Salmonella_phage_P22_gp16	-----ASLSGMAQE-----	609
Salmonella_phage_HK620_gp16	-----ASLSGMAQE-----	722
Salmonella_phage_Epsilon_15_gp13	-----ASLSGIAQE-----	708
Escherichia_phage_CUS-3_gp16-like	-----ASLSGMAQE-----	719
Escherichia_phage_BA14_gp16	GDVVTHAITGKGANKWIKKMLKSASISKEQWEGIQNLIRENVQTQADGKYTFKDKRKL	1062
Escherichia_phage_T7_gp16	GDVISATLTGKT-TRWEKEGFLRGASVTPQMGAGIKSLIKEHMMVRGEDGKFTVKDKQAF	1064
Escherichia_phage_13a_gp16	GDVISATLTGKT-TRWEKEGFLRGASVTPQMGAGIKSLIKEHMMVRGEDGKFTVKDKQAF	1064
Klebsiella_phage_K11_gp16	GDVAGAALGGKG-SKFGKENFLKAASISPEQWKGKIKQLFVDHATRDANGQFTIKDKKAF	1066
Yersenia_phage_phiYe03-12_gp16	GDVAGAALAGKA-SKFGKANYLKSASISPEQWNGIKQLFRDYATRAGEDGKFTIRDKQAF	1065
Prochlorococcus_phage_P-SSP7_gp16	-----LSTIA	953
Escherichia_phage_K1E_gp36	LSFIDHLEGGKIIIPQ-----KKLEELGLTQEFMTNLQKHYD	873
Salmonella_phage_SP6_gp37	KRLKQHLMGRELKPK-----RDLEEVLDEATMKRLKRHFD	1032

Pseudomonas_phage_phiKMV_gp37	NKVARAAQG-DEAAL-----RVLQQYGGKDVWDTPV---LA	1126
Shigella_phage_Sf6_gp13	-----	665
Salmonella_phage_P22_gp16	-----	609
Salmonella_phage_HK620_gp16	-----	722
Salmonella_phage_Epsilon_15_gp13	-----	708
Escherichia_phage_CUS-3_gp16-like	-----	719
Escherichia_phage_BA14_gp16	NDP-----R--AMDWLRLADK-----VADETMLRPHKVSLQDSHAFG	1097
Escherichia_phage_T7_gp16	MDP-----R--AMDWLRLADK-----VADEAML RPHKVSLQDSHAFG	1099
Escherichia_phage_13a_gp16	MDP-----R--AMDWLRLADK-----VADEAML RPHKVSLQDSHAFG	1099
Klebsiella_phage_K11_gp16	QDP-----R--AMDWLRLADK-----VADETMLRPHKVSLQDSHAFG	1101
Yersenia_phage_phiYe03-12_gp16	NDP-----R--SMDLWRLADK-----VADETIL RPHKVSLQDSHAFG	1100
Prochlorococcus_phage_P-SSP7_gp16	DVG DYSQLMGE EWTE DQFQKLA----LVVAQGIS SKSYMAGIQQFVDLFGGQAGSWERI	1008
Escherichia_phage_K1E_gp36	ANSK-----GSGLLGFDTPMPYAMG-ETLANAIRR---KSGL-IIQRNFIGDEGIWMNK	921
Salmonella_phage_SP6_gp37	ENPMYADYNGE KVRMMNF DAMEPDLR-EIVGVAVRR---MSGR-LIQRNFIGDEGIWMNK	1087
Pseudomonas_phage_phiKMV_gp37	RVRGYVTVYGRNAQSMNWGAWSQADVNTVMNTALRI---MDDS-LL-YGRVGGNSGFARS	1181
Shigella_phage_Sf6_gp13	-----	665
Salmonella_phage_P22_gp16	-----	609
Salmonella_phage_HK620_gp16	-----	722
Salmonella_phage_Epsilon_15_gp13	-----	708
Escherichia_phage_CUS-3_gp16-like	-----	719
Escherichia_phage_BA14_gp16	AAAKLVLFKSFVIK-----SMNAKFIRSGHEAMKNHRAMDMA-----	1135
Escherichia_phage_T7_gp16	ALGKMVMQFKSFITK-----SLNSKFLRTFYDGYKNNRAIDAA-----	1137
Escherichia_phage_13a_gp16	ALGKMVMQFKSFITK-----SLNSKFLRTFYDGYKNNRAIDAA-----	1137
Klebsiella_phage_K11_gp16	AGVKMAMQFKNFITK-----SLNAKFIRSFYEGYKNNRAIDMA-----	1139
Yersenia_phage_phiYe03-12_gp16	AGVKMVMQFKNFVIK-----SLNSRFVRSFYEATKNNRALDQA-----	1138
Prochlorococcus_phage_P-SSP7_gp16	ISGLINNIGLPLSSLRNELGKVFNP HMKELNSGIIIESIRNRNLISEGLAINELPTKYDMLN	1068
Escherichia_phage_K1E_gp36	ALGKTFAQLKSFSLV-----SGEK---QFGRGIRH-----DKIG	952
Salmonella_phage_SP6_gp37	WWGKALTQFKSFSTIV-----SIEK---QLIHDLRG-----DKIQ	1118
Pseudomonas_phage_phiKMV_gp37	PVGQILGQFRSFVAF-----AHNK---LLRGTYEN-----SGVLG	1213
Shigella_phage_Sf6_gp13	-----	665
Salmonella_phage_P22_gp16	-----	609
Salmonella_phage_HK620_gp16	-----	722
Salmonella_phage_Epsilon_15_gp13	-----	708
Escherichia_phage_CUS-3_gp16-like	-----	719
Escherichia_phage_BA14_gp16	LTYAISGGIAGSYVVAQAHKKAAGLPKEQQKDYLLKKALDPKMIAYAAASRSSHLGSPLSI	1195
Escherichia_phage_T7_gp16	LSIITSMGLAGGFYAMAAHV KAYALPKEKRKEYLERALDPTMIAHAALSRSSQLGAPLAM	1197
Escherichia_phage_13a_gp16	MSIVTSMGLAGGFYAMAVHV KAYALPKEKRKEYLERALDPTMIAHAALSRSSHLGAPLAM	1197
Klebsiella_phage_K11_gp16	LTHVLSLGIAGTYFAMQAHVKAYGLQESQRKDYLLKKALNPTMLGYAALTRSSHTGAPLSI	1199
Yersenia_phage_phiYe03-12_gp16	LTHIISLGLAGGYVVGQAHLKAASLQEHKRKEYLKNALDPKMIAHASISRSSHLGSPLSI	1198
Prochlorococcus_phage_P-SSP7_gp16	GRPIKDWDFPTRMFNMFS PFYVNLQDSEGRKLLFNSGYDLRMSTYSSPDGID-LSDNARL	1127
Escherichia_phage_K1E_gp36	LAKKTAYGFALGSIVYAAKAYVNSIGREDQDEYLEEKLSPKG-----LA-----	996
Salmonella_phage_SP6_gp37	AAQIMAWSSLLGFASYATQM QMAIGREDRDKFLREKFDTON-----IA-----	1162
Pseudomonas_phage_phiKMV_gp37	VASLLAFQYPLTALMMGAKAAI-----NGKFDTS-----EGIR-----	1247
Shigella_phage_Sf6_gp13	-----	665
Salmonella_phage_P22_gp16	-----	609
Salmonella_phage_HK620_gp16	-----	722
Salmonella_phage_Epsilon_15_gp13	-----	708
Escherichia_phage_CUS-3_gp16-like	-----	719
Escherichia_phage_BA14_gp16	ANFAMGAAGYDQG-----	1208
Escherichia_phage_T7_gp16	VDLVGGVLGFESS-----	1210
Escherichia_phage_13a_gp16	ADLVGGALGFESS-----	1210
Klebsiella_phage_K11_gp16	VSMMAGAAGFQDA-----	1212
Yersenia_phage_phiYe03-12_gp16	YDMFAGMVGSDTY-----	1211
Prochlorococcus_phage_P-SSP7_gp16	RSLYMKAIGDQNL EAKLNKLAKNP KVIASIEKMQADLRAGKKEINPRTAYVHNKMIHTLF	1187
Escherichia_phage_K1E_gp36	----FGAMG-----MMSTTAV	1008
Salmonella_phage_SP6_gp37	----MGVFN-----KL PQVAG	1174
Pseudomonas_phage_phiKMV_gp37	----KMAID-----GIGYTAG	1259
Shigella_phage_Sf6_gp13	-----	665
Salmonella_phage_P22_gp16	-----	609
Salmonella_phage_HK620_gp16	-----	722
Salmonella_phage_Epsilon_15_gp13	-----	708
Escherichia_phage_CUS-3_gp16-like	-----	719
Escherichia_phage_BA14_gp16	-----LMVRSTILPKGDDK-RDRNKAVTSRDMGDSIMGAIGE QVPALGFAGATLAAGR N	1261
Escherichia_phage_T7_gp16	-----KMARSTILPKD TVKERDPNKP YTSREVVMGAMGSNLL EQMPSAGFVANVGATLMN	1264
Escherichia_phage_13a_gp16	-----KMARSTILPKD TTKERDPNKP YTSREVVMGAMGSNLL EQMPSAGFVANVGATLMN	1264
Klebsiella_phage_K11_gp16	-----NMLRSTILPKEEQF-QKKD GASKGRAESSNLAGNLGSQVPALGVYGNVIATAKN	1265
Yersenia_phage_phiYe03-12_gp16	-----KYTRSTVLPKESEK-RDPNKA MTGRQVASTIAGAVGEQVPG LGFVGSVGATATN	1264
Prochlorococcus_phage_P-SSP7_gp16	MEARKIAWAKVRNDPEALQL-----YAEDKRINIQN-----ETS-----	1221
Escherichia_phage_K1E_gp36	FSLGGDFLGG LGVLPSLVLQ-----S--RYEAGFQT KGLIDQIPLVGVGQDA-----	1053
Salmonella_phage_SP6_gp37	FGLAGDTFATFGLMPDSMMQ-----A--PGRMGFRQQGFGDLVAGAGVISDA-----	1219
Pseudomonas_phage_phiKMV_gp37	LGFTADMWGVVT--GH-----SRMSA-----PVFGLAEHS-----	1287
Shigella_phage_Sf6_gp13	-----	665
Salmonella_phage_P22_gp16	-----	609
Salmonella_phage_HK620_gp16	-----	722
Salmonella_phage_Epsilon_15_gp13	-----	708

Escherichia_phage_CUS-3_gp16-like	-----	719
Escherichia_phage_BA14_gp16	AYGVLTAPNKPTER---EMMTGLMNAHREMIPNDP---ISQQMLIKFYANGVHIKADK	1314
Escherichia_phage_T7_gp16	AAGVVNSPNKATEQ---DFMTGLMNSTKELVPNDP---LTQQLVLKIYEANGVNLRRER	1317
Escherichia_phage_13a_gp16	AAGVVNSPNKATEQ---DFMTGLMNSTKELVPNDP---LTQQLVLKIYEANGVNLRRER	1317
Klebsiella_phage_K11_gp16	AYGVATAPNKPTER---DYMTGLMNSTKELVPNDP---LTQQLIMKIYEANGVTIKQQP	1318
Yersenia_phage_phiYe03-12_gp16	AASLLSSPNKATAL---EFRTGLFNSTRELIPNDP---LSQQLIMKIYEANGIRIKETP	1317
Prochlorococcus_phage_P-SSP7_gp16	---LNTTRNYTNQNAES-----NPSNLLLPYR-----	1245
Escherichia_phage_K1E_gp36	-YRLADSITKYAEGDTE-G--VDVARRALRLVPLTNVIGIQNALRYG-----LDELED-	1102
Salmonella_phage_SP6_gp37	-VNLSQALVKYANGDDD-VSTRQLVDKVRRLVPLANTIGVGQMTKAS-----VDLLED-	1270
Pseudomonas_phage_phiKMV_gp37	-NEVFRGVKDLVTGDDPAAATGDIVSGAAGALPFVNVFPATKL LLES-----IKGE---	1337
Shigella_phage_Sf6_gp13	-----	665
Salmonella_phage_P22_gp16	-----	609
Salmonella_phage_HK620_gp16	-----	722
Salmonella_phage_Epsilon_15_gp13	-----	708
Escherichia_phage_CUS-3_gp16-like	-----	719
Escherichia_phage_BA14_gp16	K--	1315
Escherichia_phage_T7_gp16	K--	1318
Escherichia_phage_13a_gp16	K--	1318
Klebsiella_phage_K11_gp16	KPN	1321
Yersenia_phage_phiYe03-12_gp16	KKQ	1320
Prochlorococcus_phage_P-SSP7_gp16	---	1245
Escherichia_phage_K1E_gp36	---	1102
Salmonella_phage_SP6_gp37	---	1270
Pseudomonas_phage_phiKMV_gp37	---	1337
Shigella_phage_Sf6_gp13	---	665
Salmonella_phage_P22_gp16	---	609
Salmonella_phage_HK620_gp16	---	722
Salmonella_phage_Epsilon_15_gp13	---	708
Escherichia_phage_CUS-3_gp16-like	---	719