Table S1. High-resolution structures of archaeal virus proteins.

PDB ID	Virus name	Protein name	Function	Fold	References
Fuselloviridae					
4LID	SSV1	A100	Essential protein conserved in fuselloviruses	Novel α+β fold	Unpublished
2WBT	SSV1	B129	Putative DNA-binding protein	Double C2H2 zinc finger	Unpublished
3VCF, 4DKS, 3UXU	SSV1	D335	Tyrosine recombinase	α/β integrase fold	(Eilers et al., 2012; Zhan et al., 2012)
1SKV	SSV1	D63	Putative adaptor protein	Four-helix bundle, dimer	(Kraft et al., 2004a)
2W8M	SSV-RH	D212	Putative Holliday junction resolvase	PD-(D/E)XK fold	(Menon et al., 2010)
4AAI	SSV-RH	E73	Putative transcription regulator	RHH	(Schlenker et al., 2012)
1TBX	SSV1	F93	Putative transcription regulator	wHTH	(Kraft et al., 2004b)
2VQC	SSV1	F112	Putative transcription regulator	wHTH	(Menon et al., 2008)
Bicaudaviridae					
4ART, 4ATS	ATV	ORF273	Structural protein	Novel α+β fold	(Felisberto-Rodrigues et al., 2012)
3FAJ	ATV	P131	Major structural protein	Four-helix bundle	(Goulet et al., 2010b)
5EQW	ATSV	D135	Major structural protein	Four-helix bundle	(Hochstein et al., 2015)
Rudiviridae					
2X48	SIRV1	ORF55	DNA-binding protein	wHTH	(Oke et al., 2010)
2KEL	SIRV1	ORF56b	transcriptional regulator SvtR	RHH	(Guilliere et al., 2009)
2X4I	SIRV1	ORF114a	Unknown, DNA-binding protein	Novel α+β fold	(Oke et al., 2010)
2X3G	SIRV1	ORF119	Rep protein	α/β RCRE fold	(Oke et al., 2010; Oke et al., 2011)
2X5T, 2X5G, 2X5H	SIRV1	ORF131	ssDNA-binding protein	Novel α+β fold	(Oke et al., 2010)
3J9X	SIRV2	ORF134	Major capsid protein	α-helical bundle	(DiMaio et al., 2015)
3F2E	SIRV-YNP	MCP	Major capsid protein	α-helical bundle	(Szymczyna et al., 2009)
Lipothrixviridae					
2LVH	AFV1	ORF59a	DNA binding, putative transcription regulator	C2H2 zinc finger	(Guilliere et al., 2013)
3DF6, 3DJW	AFV1	ORF99	Unknown	Novel α+β fold	(Goulet et al., 2009b)
2WB6	AFV1	ORF102	Putative macromolecular binding protein	Novel β/α/β sandwich	(Keller et al., 2009)
5W7G_B, 3FBL	AFV1	ORF132	Major capsid protein 1	α-helical bundle	(Goulet et al., 2009a; Kasson et al., 2017)
5W7G_A, 3FBZ	AFV1	ORF140	Major capsid protein 2	α-helical bundle	(Goulet et al., 2009a; Kasson et al., 2017)
3II2, 3II3, 3ILD, 3ILE	AFV1	ORF157	Nuclease	α+β nucleotidyltransferase fold	(Goulet et al., 2010a)
2J6B, 2J6C	AFV3	ORF109	Unknown, DNA-binding protein	Novel α+β fold	(Keller et al., 2007)
4HV0	AFV6	gp29	Transcriptional regulator AvtR	RHH	(Peixeiro et al., 2013)
2H36	SIFV	SIFV0014	Unknown	Novel α+β fold	(Goulet et al., 2009b)
Globuloviridae					
2X5R	PSV	ORF126	Unknown	Novel fold	(Oke et al., 2010)
2X5C	PSV	ORF131	Unknown	Novel fold	(Oke et al., 2010)
2X4J	PSV	ORF137	Putative archaeal Hfq-like protein	α/β Sm/Hfq fold	(Oke et al., 2010)
2X3M	PSV	ORF239	Unknown	Novel fold	(Oke et al., 2010)
2VXZ	PSV	ORF165a	Putative transcriptional regulator	wHTH	(Oke et al., 2010)
Turriviridae					
3RKL	STIV	A81	Unknown	Novel α+β fold	Unpublished
2C0N	STIV	A197	Glycosyltransferase	α/β/α sandwich	(Larson et al., 2006)
4IL7	STIV	A223	Structural protein, penton base	Triple jelly roll fold	(Veesler et al., 2013)
2J85	STIV	B116	Unknown, DNA-binding protein	Novel α+β fold	(Larson et al., 2007b)
4R2H, 4R2I	STIV	B204	Genome packaging ATPase	FtsK-HerA fold	(Dellas et al., 2015)
2BBD, 3J31	STIV	B345	Major capsid protein	Double β-barrel	(Khayat et al., 2005; Veesler et al., 2013)
4IND	STIV	C381	Structural protein, turret	Triple jelly roll fold	(Veesler et al., 2013)
2CO5	STIV	F93	Putative transcriptional regulator	wHTH	(Larson et al., 2007a)

4KFR, 4KFS, 4KFT, 4KFU	STIV2	B204	Genome packaging ATPase	FtsK-HerA fold	(Happonen et al., 2013)
Clavaviridae					
5OXE	APBV1	VP1	Major capsid protein	Novel, α-helical hairpin	(Ptchelkine et al., 2017)
Unclassified					
4HR1	PAV1	ORF137	Unknown. predicted involvement in protein-protein/DNA interactions	Four-helix bundle	(Leulliot et al., 2013)

Abbreviations: (w)HTH, (winged) helix-turn-helix; RHH, ribbon-helix-helix; RCRE, rolling circle replication initiation endonuclease. The table is updated from (Dellas et al., 2014).

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