



## wwPDB EM Validation Summary Report ⓘ

Nov 6, 2023 – 03:43 pm GMT

PDB ID : 8PHR  
EMDB ID : EMD-17672  
Title : Middle part of the Borrelia bacteriophage BB1 procapsid, tenfold-symmetrized outer shell  
Authors : Rumnieks, J.; Fuzik, T.; Tars, K.  
Deposited on : 2023-06-20  
Resolution : 2.65 Å(reported)  
Based on initial model : .

This is a wwPDB EM Validation Summary Report for a publicly released PDB entry.

We welcome your comments at [validation@mail.wwpdb.org](mailto:validation@mail.wwpdb.org)

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

<http://www.wwpdb.org/validation/2017/FAQs#types>.

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The following versions of software and data (see [references ⓘ](#)) were used in the production of this report:

EMDB validation analysis : 0.0.1.dev70  
MolProbity : 4.02b-467  
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)  
MapQ : **FAILED**  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.36

# 1 Overall quality at a glance

The following experimental techniques were used to determine the structure:  
*ELECTRON MICROSCOPY*

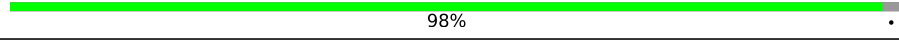
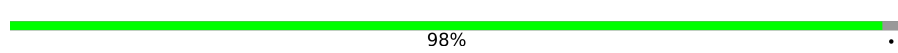
The reported resolution of this entry is 2.65 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$

Mol	Chain	Length	Quality of chain
1	A	319	 98% .
1	B	319	 98% .
1	C	319	 98% .
1	J	319	 98% .
1	K	319	 98% .
1	L	319	 98% .
1	S	319	 98% .
1	T	319	 98% .
1	U	319	 98% .
1	b	319	 98% .








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Mol	Chain	Length	Quality of chain	
1	c	319	98%	.
1	d	319	98%	.
1	k	319	98%	.
1	m	319	98%	.
1	o	319	98%	.
2	D	185	83%	17%
2	E	185	85%	15%
2	N	185	82%	18%
2	O	185	83%	17%
2	V	185	83%	17%
2	W	185	85%	15%
2	f	185	82%	18%
2	g	185	83%	17%
3	F	190	90%	10%
3	M	190	90%	10%
3	X	190	90%	10%
3	e	190	90%	10%
4	G	230	17%	83%
4	H	230	16%	84%
4	I	230	16%	84%
4	P	230	17%	83%
4	Q	230	16%	84%
4	R	230	16%	84%
4	Y	230	17%	83%
4	Z	230	16%	84%

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Mol	Chain	Length	Quality of chain	
4	a	230	 16%	84%
4	h	230	 17%	83%
4	i	230	 16%	84%
4	j	230	 16%	84%
4	l	230	 16%	84%
4	n	230	 17%	83%
4	p	230	 16%	84%

## 2 Entry composition [i](#)

There are 4 unique types of molecules in this entry. The entry contains 57317 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Major capsid protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	313	2510	1616	404	481	9	0	0
1	B	313	2510	1616	404	481	9	0	0
1	C	313	2510	1616	404	481	9	0	0
1	J	313	2510	1616	404	481	9	0	0
1	K	313	2510	1616	404	481	9	0	0
1	L	313	2510	1616	404	481	9	0	0
1	S	313	2510	1616	404	481	9	0	0
1	T	313	2510	1616	404	481	9	0	0
1	U	313	2510	1616	404	481	9	0	0
1	b	313	2510	1616	404	481	9	0	0
1	c	313	2510	1616	404	481	9	0	0
1	d	313	2510	1616	404	481	9	0	0
1	k	313	2510	1616	404	481	9	0	0
1	m	313	2510	1616	404	481	9	0	0
1	o	313	2510	1616	404	481	9	0	0

- Molecule 2 is a protein called Decorator protein P03.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	D	153	Total	C	N	O	S	0	0
			1161	730	194	233	4		
2	E	158	Total	C	N	O	S	0	0
			1198	750	202	242	4		
2	N	151	Total	C	N	O	S	0	0
			1148	721	192	231	4		
2	O	154	Total	C	N	O	S	0	0
			1173	739	196	234	4		
2	V	153	Total	C	N	O	S	0	0
			1161	730	194	233	4		
2	W	158	Total	C	N	O	S	0	0
			1198	750	202	242	4		
2	f	151	Total	C	N	O	S	0	0
			1148	721	192	231	4		
2	g	154	Total	C	N	O	S	0	0
			1173	739	196	234	4		

- Molecule 3 is a protein called Decorator protein P05.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	F	171	Total	C	N	O	S	0	0
			1358	865	231	260	2		
3	M	171	Total	C	N	O	S	0	0
			1358	865	231	260	2		
3	X	171	Total	C	N	O	S	0	0
			1358	865	231	260	2		
3	e	171	Total	C	N	O	S	0	0
			1358	865	231	260	2		

- Molecule 4 is a protein called Scaffold protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
4	G	40	Total	C	N	O	0	0
			345	221	64	60		
4	H	37	Total	C	N	O	0	0
			315	203	55	57		
4	I	37	Total	C	N	O	0	0
			315	203	55	57		
4	P	40	Total	C	N	O	0	0
			345	221	64	60		
4	Q	37	Total	C	N	O	0	0
			315	203	55	57		
4	R	37	Total	C	N	O	0	0
			315	203	55	57		

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Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
4	Y	40	Total 345	C 221	N 64	O 60	0	0
4	Z	37	Total 315	C 203	N 55	O 57	0	0
4	a	37	Total 315	C 203	N 55	O 57	0	0
4	h	40	Total 345	C 221	N 64	O 60	0	0
4	i	37	Total 315	C 203	N 55	O 57	0	0
4	j	37	Total 315	C 203	N 55	O 57	0	0
4	l	37	Total 315	C 203	N 55	O 57	0	0
4	n	40	Total 345	C 221	N 64	O 60	0	0
4	p	37	Total 315	C 203	N 55	O 57	0	0

### 3 Residue-property plots [i](#)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

- Molecule 1: Major capsid protein

Chain A:  98%



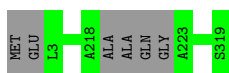
- Molecule 1: Major capsid protein

Chain B:  98%



- Molecule 1: Major capsid protein

Chain C:  98%



- Molecule 1: Major capsid protein

Chain J:  98%



- Molecule 1: Major capsid protein

Chain K:  98%



- Molecule 1: Major capsid protein

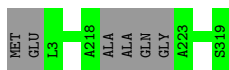
Chain L:  98%





- Molecule 1: Major capsid protein

Chain S: 98%



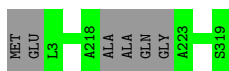
- Molecule 1: Major capsid protein

Chain T: 98%



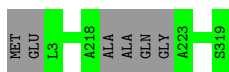
- Molecule 1: Major capsid protein

Chain U: 98%



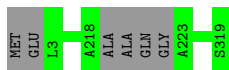
- Molecule 1: Major capsid protein

Chain b: 98%



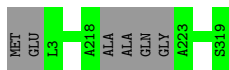
- Molecule 1: Major capsid protein

Chain c: 98%



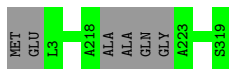
- Molecule 1: Major capsid protein

Chain d: 98%

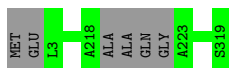


- Molecule 1: Major capsid protein

Chain k: 98%



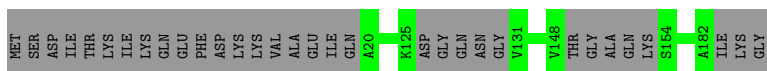
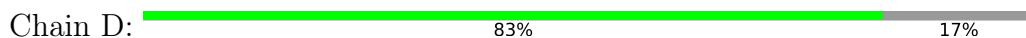
- Molecule 1: Major capsid protein



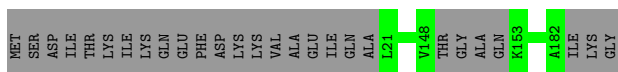
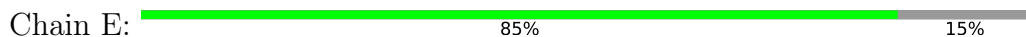
- Molecule 1: Major capsid protein



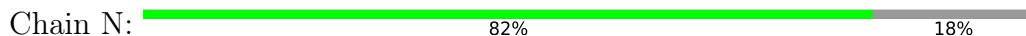
- Molecule 2: Decorator protein P03



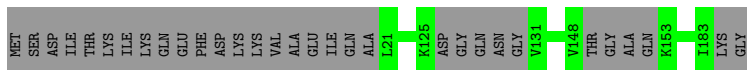
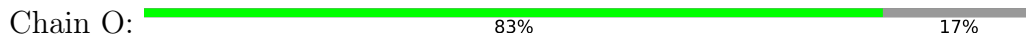
- Molecule 2: Decorator protein P03



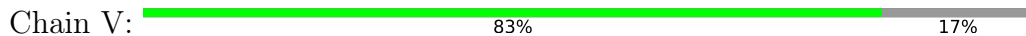
- Molecule 2: Decorator protein P03

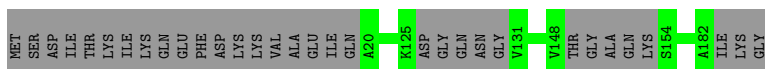


- Molecule 2: Decorator protein P03



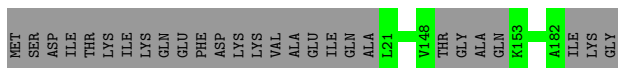
- Molecule 2: Decorator protein P03





- Molecule 2: Decorator protein P03

Chain W: 85% 15%



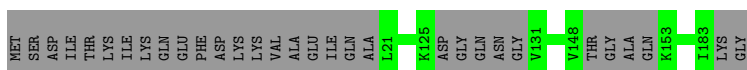
- Molecule 2: Decorator protein P03

Chain f: 82% 18%



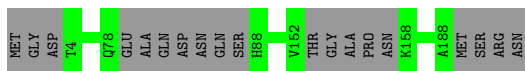
- Molecule 2: Decorator protein P03

Chain g: 83% 17%



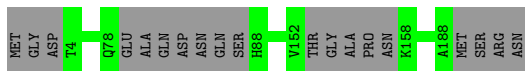
- Molecule 3: Decorator protein P05

Chain F: 90% 10%



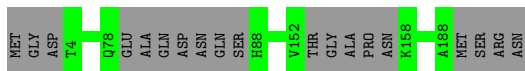
- Molecule 3: Decorator protein P05

Chain M: 90% 10%



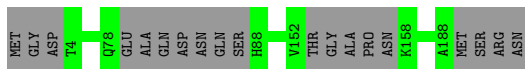
- Molecule 3: Decorator protein P05

Chain X: 90% 10%



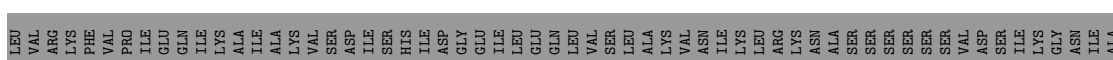
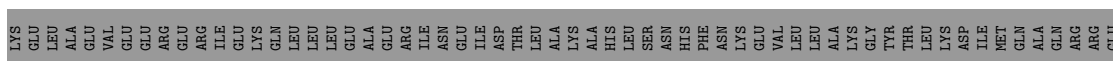
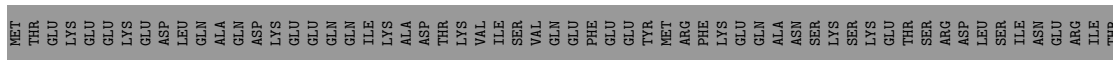
- Molecule 3: Decorator protein P05

Chain e: 90% 10%



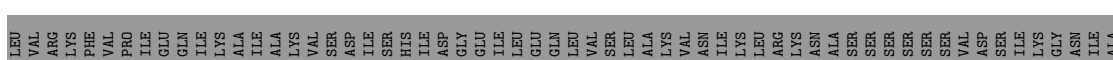
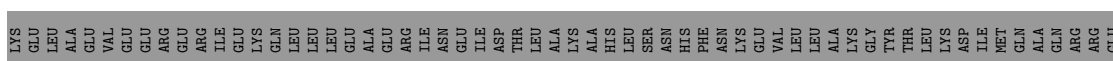
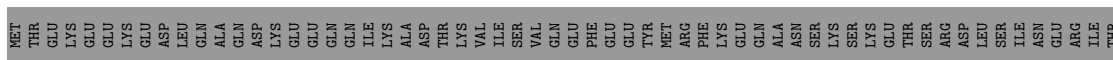
• Molecule 4: Scaffold protein

Chain G: 17% 83%



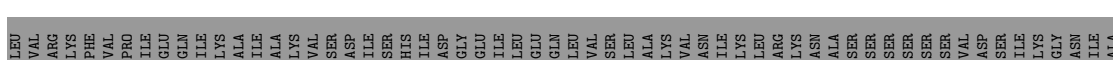
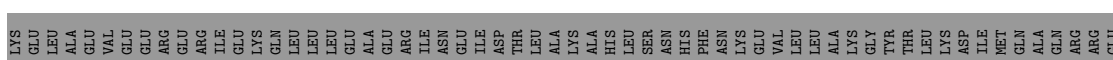
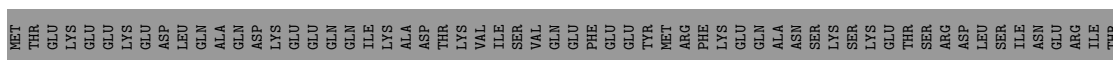
• Molecule 4: Scaffold protein

Chain H: 16% 84%



• Molecule 4: Scaffold protein

Chain I: 16% 84%



• Molecule 4: Scaffold protein

Chain P: 17% 83%





MET THR GLU LYS MET THR  
 THR GLU SER LYS THR  
 GLU ALA GLU THR  
 VAL VAL GLU  
 LEU LYS  
 ASP GLU  
 ARG GLU  
 GLN GLN  
 ARG GLN  
 ALA GLN  
 ASP ASP

LYS LEU LYS MET THR  
 GLU LEU ALA GLU THR  
 VAL VAL GLU  
 VAL VAL GLU  
 LEU LYS  
 ASP GLU  
 ARG GLU  
 GLN GLN  
 ARG GLN  
 ALA GLN  
 ASP ASP

LEU VAL LYS MET THR  
 VAL ARG LYS THR  
 ARG LYS THR  
 PHE GLU THR  
 VAL VAL GLU  
 PRO PRO  
 ILE ILE  
 GLU GLU  
 ARG ARG  
 GLN GLN  
 LEU LEU  
 ILE ILE  
 THR THR  
 ASP ASP

ILE LYS MET THR  
 LYS SER LYS THR  
 SER GLU THR  
 GLU GLU THR  
 ARG ARG  
 A187 R223  
 HIS HIS  
 THR THR  
 ARG ARG  
 THR THR  
 SER SER  
 ILE ILE  
 ALA ALA

• Molecule 4: Scaffold protein

Chain j:  16% 84%

MET THR GLU LYS MET THR  
 THR GLU SER LYS THR  
 GLU ALA GLU THR  
 VAL VAL GLU  
 LEU LYS  
 ASP GLU  
 ARG GLU  
 GLN GLN  
 ARG GLN  
 ALA GLN  
 ASP ASP

LYS LEU LYS MET THR  
 GLU LEU ALA GLU THR  
 VAL VAL GLU  
 VAL VAL GLU  
 LEU LYS  
 ASP GLU  
 ARG GLU  
 GLN GLN  
 ARG GLN  
 ALA GLN  
 ASP ASP

LEU VAL LYS MET THR  
 VAL ARG LYS THR  
 ARG LYS THR  
 PHE GLU THR  
 VAL VAL GLU  
 PRO PRO  
 ILE ILE  
 GLU GLU  
 ARG ARG  
 GLN GLN  
 LEU LEU  
 ILE ILE  
 THR THR  
 ASP ASP

ILE LYS MET THR  
 LYS SER LYS THR  
 SER GLU THR  
 GLU GLU THR  
 ARG ARG  
 A187 R223  
 HIS HIS  
 THR THR  
 ARG ARG  
 THR THR  
 SER SER  
 ILE ILE  
 ALA ALA

• Molecule 4: Scaffold protein

Chain l:  16% 84%

MET THR GLU LYS MET THR  
 THR GLU SER LYS THR  
 GLU ALA GLU THR  
 VAL VAL GLU  
 LEU LYS  
 ASP GLU  
 ARG GLU  
 GLN GLN  
 ARG GLN  
 ALA GLN  
 ASP ASP

LYS LEU LYS MET THR  
 GLU LEU ALA GLU THR  
 VAL VAL GLU  
 VAL VAL GLU  
 LEU LYS  
 ASP GLU  
 ARG GLU  
 GLN GLN  
 ARG GLN  
 ALA GLN  
 ASP ASP

LEU VAL LYS MET THR  
 VAL ARG LYS THR  
 ARG LYS THR  
 PHE GLU THR  
 VAL VAL GLU  
 PRO PRO  
 ILE ILE  
 GLU GLU  
 ARG ARG  
 GLN GLN  
 LEU LEU  
 ILE ILE  
 THR THR  
 ASP ASP

ILE LYS MET THR  
 LYS SER LYS THR  
 SER GLU THR  
 GLU GLU THR  
 ARG ARG  
 A187 R223  
 HIS HIS  
 THR THR  
 ARG ARG  
 THR THR  
 SER SER  
 ILE ILE  
 ALA ALA

• Molecule 4: Scaffold protein

Chain n:  17% 83%

MET THR GLU LYS MET THR  
 THR GLU SER LYS THR  
 GLU ALA GLU THR  
 VAL VAL GLU  
 LEU LYS  
 ASP GLU  
 ARG GLU  
 GLN GLN  
 ARG GLN  
 ALA GLN  
 ASP ASP

LYS LEU LYS MET THR  
 GLU LEU ALA GLU THR  
 VAL VAL GLU  
 VAL VAL GLU  
 LEU LYS  
 ASP GLU  
 ARG GLU  
 GLN GLN  
 ARG GLN  
 ALA GLN  
 ASP ASP

LEU VAL LYS MET THR  
 VAL ARG LYS THR  
 ARG LYS THR  
 PHE GLU THR  
 VAL VAL GLU  
 PRO PRO  
 ILE ILE  
 GLU GLU  
 ARG ARG  
 GLN GLN  
 LEU LEU  
 ILE ILE  
 THR THR  
 ASP ASP

ILE  
LYS  
SER  
GLU  
GLU  
ARG  
A187  
R226  
THR  
SER  
ILE  
ALA

● Molecule 4: Scaffold protein

Chain p:  16%  84%

MET  
THR  
GLU  
LYS  
GLU  
VAL  
LYS  
GLU  
ASP  
LEU  
GLN  
ALA  
GLN  
ASP  
LYS  
GLN  
LEU  
LEU  
GLU  
LEU  
GLN  
GLN  
ILE  
LYS  
GLU  
ALA  
ARG  
ASP  
THR  
LYS  
VAL  
ILE  
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THR  
VAL  
ALA  
GLN  
GLU  
PHE  
GLU  
HIS  
LEU  
TYR  
MET  
ASN  
ARG  
PHE  
LYS  
GLU  
GLN  
VAL  
ALA  
ASN  
SER  
LYS  
SER  
TYR  
THR  
SER  
SER  
ARG  
ASP  
ILE  
LEU  
MET  
SER  
ILE  
GLN  
ASN  
GLU  
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## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, D5	Depositor
Number of particles used	29011	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	44	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1800	Depositor
Magnification	165000	Depositor
Image detector	GATAN K3 (6k x 4k)	Depositor

## 5 Model quality [i](#)

### 5.1 Standard geometry [i](#)

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with  $|Z| > 5$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	0.24	0/2558	0.42	0/3458
1	B	0.24	0/2558	0.43	0/3458
1	C	0.24	0/2558	0.42	0/3458
1	J	0.24	0/2558	0.43	0/3458
1	K	0.24	0/2558	0.42	0/3458
1	L	0.24	0/2558	0.43	0/3458
1	S	0.24	0/2558	0.42	0/3458
1	T	0.24	0/2558	0.43	0/3458
1	U	0.24	0/2558	0.42	0/3458
1	b	0.24	0/2558	0.42	0/3458
1	c	0.24	0/2558	0.42	0/3458
1	d	0.24	0/2558	0.43	0/3458
1	k	0.24	0/2558	0.43	0/3458
1	m	0.24	0/2558	0.42	0/3458
1	o	0.24	0/2558	0.42	0/3458
2	D	0.24	0/1178	0.45	0/1586
2	E	0.24	0/1216	0.44	0/1637
2	N	0.24	0/1165	0.43	0/1568
2	O	0.24	0/1190	0.44	0/1601
2	V	0.24	0/1178	0.45	0/1586
2	W	0.24	0/1216	0.44	0/1637
2	f	0.24	0/1165	0.44	0/1568
2	g	0.24	0/1190	0.44	0/1601
3	F	0.24	0/1381	0.45	0/1855
3	M	0.24	0/1381	0.45	0/1855
3	X	0.24	0/1381	0.45	0/1855
3	e	0.24	0/1381	0.45	0/1855
4	G	0.24	0/352	0.46	0/472
4	H	0.25	0/321	0.43	0/432
4	I	0.25	0/321	0.42	0/432
4	P	0.24	0/352	0.45	0/472
4	Q	0.25	0/321	0.43	0/432
4	R	0.25	0/321	0.43	0/432
4	Y	0.24	0/352	0.46	0/472

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
4	Z	0.25	0/321	0.43	0/432
4	a	0.25	0/321	0.42	0/432
4	h	0.24	0/352	0.45	0/472
4	i	0.25	0/321	0.43	0/432
4	j	0.25	0/321	0.43	0/432
4	l	0.25	0/321	0.43	0/432
4	n	0.25	0/352	0.46	0/472
4	p	0.25	0/321	0.42	0/432
All	All	0.24	0/58362	0.43	0/78754

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

## 5.2 Too-close contacts [i](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

## 5.3 Torsion angles [i](#)

### 5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	309/319 (97%)	305 (99%)	4 (1%)	0	100	100
1	B	309/319 (97%)	306 (99%)	3 (1%)	0	100	100
1	C	309/319 (97%)	306 (99%)	3 (1%)	0	100	100
1	J	309/319 (97%)	302 (98%)	7 (2%)	0	100	100
1	K	309/319 (97%)	307 (99%)	2 (1%)	0	100	100
1	L	309/319 (97%)	305 (99%)	4 (1%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	S	309/319 (97%)	305 (99%)	4 (1%)	0	100	100
1	T	309/319 (97%)	307 (99%)	2 (1%)	0	100	100
1	U	309/319 (97%)	305 (99%)	4 (1%)	0	100	100
1	b	309/319 (97%)	301 (97%)	8 (3%)	0	100	100
1	c	309/319 (97%)	305 (99%)	4 (1%)	0	100	100
1	d	309/319 (97%)	305 (99%)	4 (1%)	0	100	100
1	k	309/319 (97%)	307 (99%)	2 (1%)	0	100	100
1	m	309/319 (97%)	305 (99%)	4 (1%)	0	100	100
1	o	309/319 (97%)	305 (99%)	4 (1%)	0	100	100
2	D	147/185 (80%)	145 (99%)	2 (1%)	0	100	100
2	E	154/185 (83%)	153 (99%)	1 (1%)	0	100	100
2	N	145/185 (78%)	144 (99%)	1 (1%)	0	100	100
2	O	148/185 (80%)	146 (99%)	2 (1%)	0	100	100
2	V	147/185 (80%)	146 (99%)	1 (1%)	0	100	100
2	W	154/185 (83%)	152 (99%)	2 (1%)	0	100	100
2	f	145/185 (78%)	145 (100%)	0	0	100	100
2	g	148/185 (80%)	147 (99%)	1 (1%)	0	100	100
3	F	165/190 (87%)	164 (99%)	1 (1%)	0	100	100
3	M	165/190 (87%)	163 (99%)	2 (1%)	0	100	100
3	X	165/190 (87%)	163 (99%)	2 (1%)	0	100	100
3	e	165/190 (87%)	162 (98%)	3 (2%)	0	100	100
4	G	38/230 (16%)	38 (100%)	0	0	100	100
4	H	35/230 (15%)	35 (100%)	0	0	100	100
4	I	35/230 (15%)	35 (100%)	0	0	100	100
4	P	38/230 (16%)	38 (100%)	0	0	100	100
4	Q	35/230 (15%)	35 (100%)	0	0	100	100
4	R	35/230 (15%)	35 (100%)	0	0	100	100
4	Y	38/230 (16%)	38 (100%)	0	0	100	100
4	Z	35/230 (15%)	35 (100%)	0	0	100	100
4	a	35/230 (15%)	35 (100%)	0	0	100	100
4	h	38/230 (16%)	38 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
4	i	35/230 (15%)	35 (100%)	0	0	100	100
4	j	35/230 (15%)	35 (100%)	0	0	100	100
4	l	35/230 (15%)	35 (100%)	0	0	100	100
4	n	38/230 (16%)	38 (100%)	0	0	100	100
4	p	35/230 (15%)	35 (100%)	0	0	100	100
All	All	7023/10475 (67%)	6946 (99%)	77 (1%)	0	100	100

There are no Ramachandran outliers to report.

### 5.3.2 Protein sidechains [i](#)

In the following table, the Percentiles column shows the percent sidechain outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the sidechain conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	283/286 (99%)	283 (100%)	0	100	100
1	B	283/286 (99%)	283 (100%)	0	100	100
1	C	283/286 (99%)	283 (100%)	0	100	100
1	J	283/286 (99%)	283 (100%)	0	100	100
1	K	283/286 (99%)	283 (100%)	0	100	100
1	L	283/286 (99%)	283 (100%)	0	100	100
1	S	283/286 (99%)	283 (100%)	0	100	100
1	T	283/286 (99%)	283 (100%)	0	100	100
1	U	283/286 (99%)	283 (100%)	0	100	100
1	b	283/286 (99%)	283 (100%)	0	100	100
1	c	283/286 (99%)	283 (100%)	0	100	100
1	d	283/286 (99%)	283 (100%)	0	100	100
1	k	283/286 (99%)	283 (100%)	0	100	100
1	m	283/286 (99%)	283 (100%)	0	100	100
1	o	283/286 (99%)	283 (100%)	0	100	100
2	D	128/154 (83%)	128 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	E	132/154 (86%)	132 (100%)	0	100	100
2	N	127/154 (82%)	127 (100%)	0	100	100
2	O	130/154 (84%)	130 (100%)	0	100	100
2	V	128/154 (83%)	128 (100%)	0	100	100
2	W	132/154 (86%)	132 (100%)	0	100	100
2	f	127/154 (82%)	127 (100%)	0	100	100
2	g	130/154 (84%)	130 (100%)	0	100	100
3	F	148/163 (91%)	148 (100%)	0	100	100
3	M	148/163 (91%)	148 (100%)	0	100	100
3	X	148/163 (91%)	148 (100%)	0	100	100
3	e	148/163 (91%)	148 (100%)	0	100	100
4	G	38/210 (18%)	38 (100%)	0	100	100
4	H	35/210 (17%)	35 (100%)	0	100	100
4	I	35/210 (17%)	35 (100%)	0	100	100
4	P	38/210 (18%)	38 (100%)	0	100	100
4	Q	35/210 (17%)	35 (100%)	0	100	100
4	R	35/210 (17%)	35 (100%)	0	100	100
4	Y	38/210 (18%)	38 (100%)	0	100	100
4	Z	35/210 (17%)	35 (100%)	0	100	100
4	a	35/210 (17%)	35 (100%)	0	100	100
4	h	38/210 (18%)	38 (100%)	0	100	100
4	i	35/210 (17%)	35 (100%)	0	100	100
4	j	35/210 (17%)	35 (100%)	0	100	100
4	l	35/210 (17%)	35 (100%)	0	100	100
4	n	38/210 (18%)	38 (100%)	0	100	100
4	p	35/210 (17%)	35 (100%)	0	100	100
All	All	6411/9324 (69%)	6411 (100%)	0	100	100

There are no protein residues with a non-rotameric sidechain to report.

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (4) such sidechains are listed below:

Mol	Chain	Res	Type
1	C	85	GLN
1	S	132	HIS
1	U	85	GLN
2	f	180	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

## 5.4 Non-standard residues in protein, DNA, RNA chains [i](#)

There are no non-standard protein/DNA/RNA residues in this entry.

## 5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

## 5.6 Ligand geometry [i](#)

There are no ligands in this entry.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

## 6 Map visualisation

This section contains visualisations of the EMDB entry EMD-17672. These allow visual inspection of the internal detail of the map and identification of artifacts.

Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

### 6.1 Orthogonal projections

This section was not generated.

### 6.2 Central slices

This section was not generated.

### 6.3 Largest variance slices

This section was not generated.

### 6.4 Orthogonal standard-deviation projections (False-color)

This section was not generated.

### 6.5 Orthogonal surface views

This section was not generated.

### 6.6 Mask visualisation

This section was not generated. No masks/segmentation were deposited.



## 7 Map analysis

This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution

This section was not generated.

### 7.2 Volume estimate versus contour level

This section was not generated.

### 7.3 Rotationally averaged power spectrum

This section was not generated. The rotationally averaged power spectrum had issues being displayed.

## 8 Fourier-Shell correlation

This section was not generated. No FSC curve or half-maps provided.

## 9 Map-model fit

This section was not generated.