



Full wwPDB EM Validation Report ⓘ

Nov 7, 2022 – 05:16 AM EST

PDB ID : 6NCL
EMDB ID : EMD-0436
Title : Near-atomic structure of icosahedrally averaged PBCV-1 capsid
Authors : Fang, Q.; Rossmann, M.G.
Deposited on : 2018-12-11
Resolution : 3.50 Å (reported)

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

We welcome your comments at 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>.

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

EMDB validation analysis : 0.0.1.dev43
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) : 2.31.2

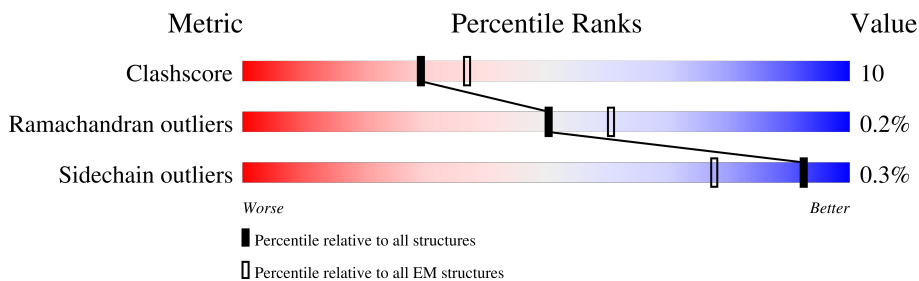
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.50 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.
















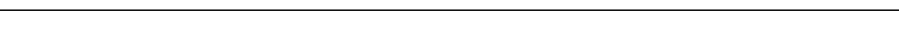
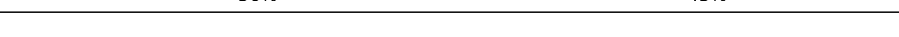
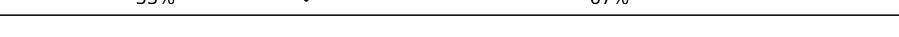



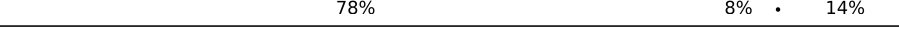

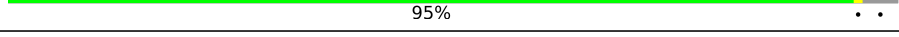
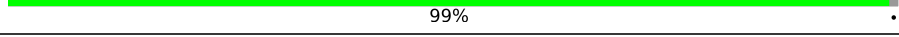
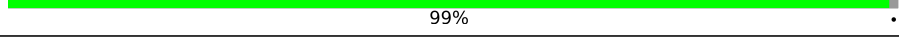
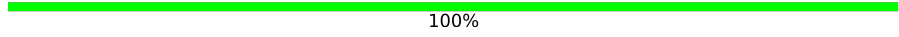
Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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 ≥ 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	a0	352	
2	a1	210	
3	a2	289	
3	a3	289	
4	a4	256	
5	a5	216	
6	a6	170	
7	a7	151	
8	a8	146	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
9	a9	207	 23% 77%
9	b0	207	 26% 71%
9	b1	207	 24% 74%
9	b2	207	 25% 75%
9	b3	207	 24% 75%
9	b4	207	 23% 75%
9	b5	207	 25% 72%
9	b7	207	 24% 75%
9	b8	207	 27% 72%
9	c0	207	 24% 75%
9	c1	207	 23% 75%
9	l5	207	 27% 72%
10	b6	576	 80% 18%
11	c2	181	 56% 43%
11	c3	181	 33% 67%
11	c4	181	 30% 68%
11	c5	181	 31% 68%
12	c6	171	 81% 18%
12	c7	171	 78% 8% 14%
12	c8	171	 68% 32%
13	c9	173	 95% 4% 1%
14	d0	437	 99%
14	d1	437	 99%
14	d2	437	 100%
14	d3	437	 99%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
14	d4	437	99%
14	d5	437	100%
14	d6	437	100%
14	d7	437	100%
14	d8	437	100%
14	d9	437	100%
14	e0	437	99%
14	e1	437	99%
14	e2	437	99%
14	e3	437	99%
14	e4	437	99%
14	e5	437	100%
14	e6	437	100%
14	e7	437	99%
14	e8	437	100%
14	e9	437	99%
14	f0	437	99%
14	f1	437	100%
14	f2	437	99%
14	f3	437	100%
14	f4	437	99%
14	f5	437	99%
14	f6	437	100%
14	f7	437	99%
14	f8	437	99%


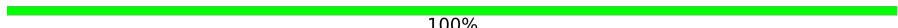
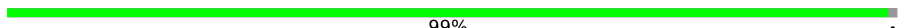
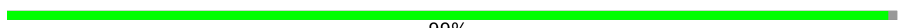
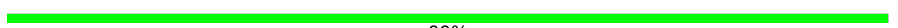








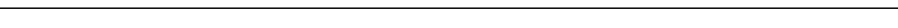

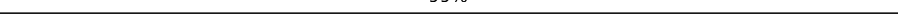
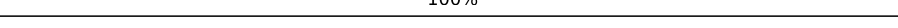
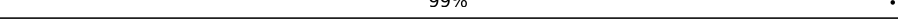
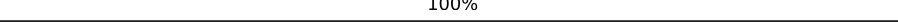
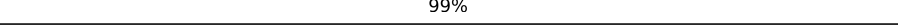
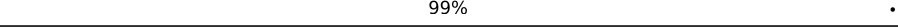
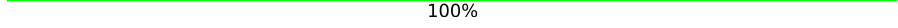

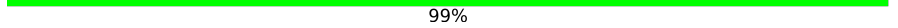
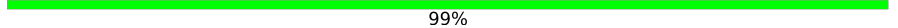
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
14	f9	437	99%
14	g0	437	99%
14	g1	437	100%
14	g2	437	99%
14	g3	437	99%
14	g4	437	99%
14	g5	437	99%
14	g6	437	100%
14	g7	437	99%
14	g8	437	100%
14	g9	437	100%
14	h0	437	100%
14	h1	437	100%
14	h2	437	99%
14	h3	437	99%
14	h4	437	99%
14	h5	437	99%
14	h6	437	99%
14	h7	437	100%
14	h8	437	100%
14	h9	437	100%
14	i0	437	100%
14	i1	437	99%
14	i2	437	99%
14	i3	437	99%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
14	i4	437	 100%
14	i5	437	 100%
14	i6	437	 99%
14	i7	437	 99%
14	i8	437	 99%
14	i9	437	 100%
14	j0	437	 99%
14	j1	437	 100%
14	j2	437	 99%
14	j3	437	 99%
14	j4	437	 99%
14	j5	437	 99%
14	j6	437	 99%
14	j7	437	 100%
14	j8	437	 99%
14	j9	437	 100%
14	k0	437	 99%
14	k1	437	 100%
14	k2	437	 99%
14	k3	437	 99%
14	k4	437	 100%
14	k5	437	 100%
14	k6	437	 99%
14	k7	437	 99%
14	k8	437	 99%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
14	k9	437	 100%
14	l0	437	 100%
14	l1	437	 99%
14	l2	437	 99%
14	l3	437	 100%
15	l4	98	 67%  33%

2 Entry composition [i](#)

There are 15 unique types of molecules in this entry. The entry contains 305842 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 P14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	a0	97	733	463	122	145	3	0	0

- Molecule 2 is a protein called P9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	a1	107	718	445	122	146	5	0	0

- Molecule 3 is a protein called P10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	a2	94	650	411	110	125	4	0	0
3	a3	74	485	308	86	88	3	0	0

- Molecule 4 is a protein called P7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	a4	153	1088	689	192	197	10	0	0

- Molecule 5 is a protein called P6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	a5	189	1326	878	210	236	2	0	0

- Molecule 6 is a protein called P1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	a6	167	1192	756	203	229	4	0	0

- Molecule 7 is a protein called P12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	a7	78	543	357	88	95	3	0	0

- Molecule 8 is a protein called P5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	a8	142	988	638	168	180	2	0	0

- Molecule 9 is a protein called P11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	a9	47	311	200	53	57	1	0	0
9	b0	59	398	248	70	79	1	0	0
9	b1	54	368	238	64	66		0	0
9	b2	51	350	227	59	63	1	0	0
9	b3	51	335	216	56	62	1	0	0
9	b4	52	350	228	61	60	1	0	0
9	b5	57	367	237	64	64	2	0	0
9	b7	52	375	244	63	67	1	0	0
9	b8	57	379	244	66	69		0	0
9	c0	51	338	214	59	64	1	0	0
9	c1	51	335	213	59	61	2	0	0
9	l5	58	392	253	67	72		0	0

- Molecule 10 is a protein called P2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	b6	475	3210	2016	587	603	4	0	0

- Molecule 11 is a protein called P4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	c2	103	603	369	110	123	1	0	0
11	c3	60	389	242	69	78		0	0
11	c4	58	369	230	65	74		0	0
11	c5	58	396	252	72	72		0	0

- Molecule 12 is a protein called P3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	c6	141	951	602	170	177	2	0	0
12	c7	147	1004	648	172	180	4	0	0
12	c8	116	813	519	141	149	4	0	0

- Molecule 13 is a protein called P8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	c9	166	1191	776	198	214	3	0	0

- Molecule 14 is a protein called Major capsid protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	d0	432	3369	2142	570	649	8	0	0
14	d1	434	3382	2149	573	652	8	0	0
14	d2	435	3387	2152	574	653	8	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	d3	434	Total 3382	C 2149	N 573	O 652	S 8	0	0
14	d4	434	Total 3382	C 2149	N 573	O 652	S 8	0	0
14	d5	435	Total 3383	C 2150	N 574	O 651	S 8	0	0
14	d6	435	Total 3387	C 2152	N 574	O 653	S 8	0	0
14	d7	435	Total 3381	C 2149	N 571	O 653	S 8	0	0
14	d8	435	Total 3390	C 2153	N 575	O 654	S 8	0	0
14	d9	436	Total 3395	C 2156	N 576	O 655	S 8	0	0
14	e0	435	Total 3390	C 2153	N 575	O 654	S 8	0	0
14	e1	434	Total 3382	C 2149	N 573	O 652	S 8	0	0
14	e2	434	Total 3382	C 2149	N 573	O 652	S 8	0	0
14	e3	435	Total 3387	C 2152	N 574	O 653	S 8	0	0
14	e4	434	Total 3382	C 2149	N 573	O 652	S 8	0	0
14	e5	435	Total 3390	C 2153	N 575	O 654	S 8	0	0
14	e6	436	Total 3395	C 2156	N 576	O 655	S 8	0	0
14	e7	435	Total 3390	C 2153	N 575	O 654	S 8	0	0
14	e8	435	Total 3390	C 2153	N 575	O 654	S 8	0	0
14	e9	435	Total 3387	C 2152	N 574	O 653	S 8	0	0
14	f0	434	Total 3375	C 2143	N 573	O 651	S 8	0	0
14	f1	435	Total 3387	C 2152	N 574	O 653	S 8	0	0
14	f2	436	Total 3395	C 2156	N 576	O 655	S 8	0	0
14	f3	435	Total 3383	C 2147	N 575	O 653	S 8	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
14	f4	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	f5	434	Total	C	N	O	S	0	0
			3376	2146	570	652	8		
14	f6	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	f7	434	Total	C	N	O	S	0	0
			3372	2142	572	650	8		
14	f8	433	Total	C	N	O	S	0	0
			3378	2147	572	651	8		
14	f9	434	Total	C	N	O	S	0	0
			3379	2145	574	652	8		
14	g0	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	g1	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	g2	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	g3	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	g4	435	Total	C	N	O	S	0	0
			3390	2153	575	654	8		
14	g5	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	g6	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	g7	434	Total	C	N	O	S	0	0
			3376	2146	570	652	8		
14	g8	436	Total	C	N	O	S	0	0
			3395	2156	576	655	8		
14	g9	435	Total	C	N	O	S	0	0
			3390	2153	575	654	8		
14	h0	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	h1	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	h2	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	h3	435	Total	C	N	O	S	0	0
			3390	2153	575	654	8		
14	h4	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
14	h5	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	h6	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	h7	436	Total	C	N	O	S	0	0
			3395	2156	576	655	8		
14	h8	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	h9	435	Total	C	N	O	S	0	0
			3381	2149	571	653	8		
14	i0	435	Total	C	N	O	S	0	0
			3390	2153	575	654	8		
14	i1	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	i2	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	i3	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	i4	435	Total	C	N	O	S	0	0
			3384	2150	572	654	8		
14	i5	436	Total	C	N	O	S	0	0
			3395	2156	576	655	8		
14	i6	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	i7	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	i8	436	Total	C	N	O	S	0	0
			3388	2150	576	654	8		
14	i9	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	j0	436	Total	C	N	O	S	0	0
			3392	2155	576	653	8		
14	j1	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	j2	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	j3	435	Total	C	N	O	S	0	0
			3387	2152	575	652	8		
14	j4	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	j5	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
14	j6	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	j7	436	Total	C	N	O	S	0	0
			3395	2156	576	655	8		
14	j8	435	Total	C	N	O	S	0	0
			3390	2153	575	654	8		
14	j9	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	k0	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	k1	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	k2	435	Total	C	N	O	S	0	0
			3387	2152	574	653	8		
14	k3	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	k4	436	Total	C	N	O	S	0	0
			3395	2156	576	655	8		
14	k5	436	Total	C	N	O	S	0	0
			3395	2156	576	655	8		
14	k6	435	Total	C	N	O	S	0	0
			3391	2153	575	655	8		
14	k7	435	Total	C	N	O	S	0	0
			3387	2151	574	654	8		
14	k8	435	Total	C	N	O	S	0	0
			3391	2153	575	655	8		
14	k9	435	Total	C	N	O	S	0	0
			3381	2149	571	653	8		
14	l0	435	Total	C	N	O	S	0	0
			3391	2153	575	655	8		
14	l1	435	Total	C	N	O	S	0	0
			3391	2153	575	655	8		
14	l2	434	Total	C	N	O	S	0	0
			3382	2149	573	652	8		
14	l3	436	Total	C	N	O	S	0	0
			3396	2156	576	656	8		

- Molecule 15 is a protein called P13.

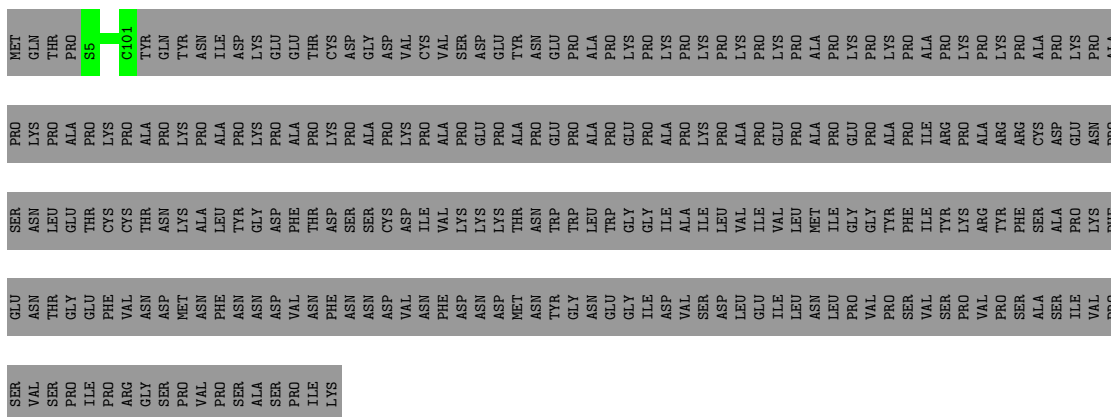
Mol	Chain	Residues	Atoms					AltConf	Trace
15	l4	66	Total	C	N	O	S	0	0
			487	313	82	90	2		

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.

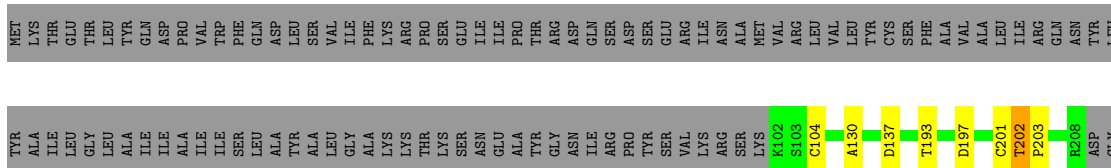
- Molecule 1: P14

Chain a0:  28% 72%



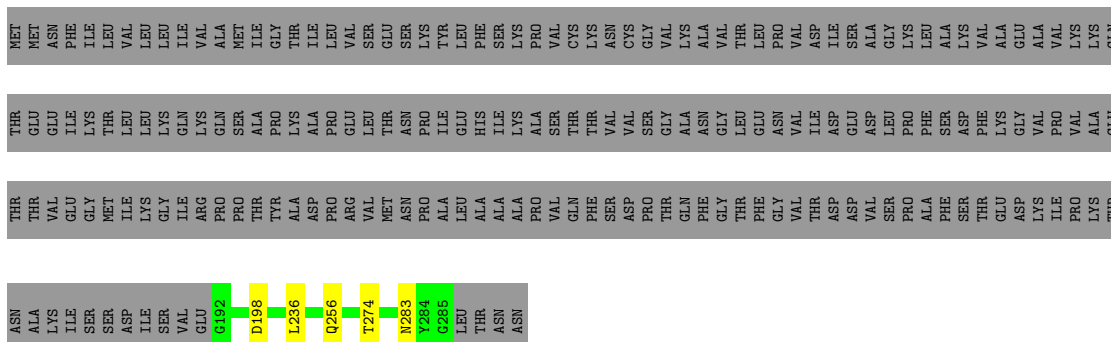
- Molecule 2: P9

Chain a1:  47% 49%



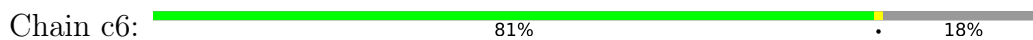
- Molecule 3: P10

Chain a2:  31% 67%



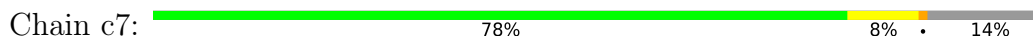
CYS
PRO
LYS
THR
ALA
LEU
ALA

• Molecule 12: P3



MET
ALA
MET
LYS
THR
GLN
ARG
LYS
GLU
ASN
ASN
VAL
VAL
LEU
PHE
GLN
ASN
ASN
VAL
VAL
LYS
LYS
PRO
ARG
GLU
ILE
PRO
LEU
VAL
ASP
ASN
P27
T95
T162
A167
TYR
GLY
ASN
PRO

• Molecule 12: P3



MET
ALA
MET
LYS
THR
GLN
ARG
LYS
GLU
ASN
ASN
VAL
VAL
LEU
PHE
GLN
ASN
ASN
VAL
VAL
LYS
LYS
PRO
ARG
GLU
ILE
P22
P27
T43
I50
L63
M56
V69
V70
V71
E82
R101
A150
T154
S155
T162
L166
A167
Y168
GLY
ASN
PRO

• Molecule 12: P3



MET
ALA
MET
LYS
THR
GLN
ARG
LYS
GLU
ASN
ASN
VAL
VAL
LEU
PHE
GLN
ASN
ASN
VAL
VAL
LYS
LYS
PRO
ARG
GLU
ILE
PRO
LEU
VAL
ASP
ASN
PRO
PHE
SER
THR
TYR
PRO
TYR
LYS
HIS
VAL
ILE
THR
GLU
THR
GLN
PRO
THR
THR
GLN
ALA
LYS
ASN
GLN
A49
Q164
GLN
LEU
ALA
TYR
GLY
ASN
PRO

• Molecule 13: P8



MET
GLU
THR
ILE
G5
F140
S141
R170
ASN
ALA
SER

• Molecule 14: Major capsid protein



MET
ALA
GLY
C4
M156
GLN
T158
A436
ASN

• Molecule 14: Major capsid protein



MET
ALA
G3
A436
ASN

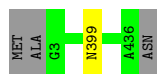
• Molecule 14: Major capsid protein



MET
A2
A436
ASN

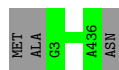
- Molecule 14: Major capsid protein

Chain d3:  99%



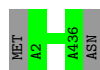
- Molecule 14: Major capsid protein

Chain d4:  99%



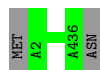
- Molecule 14: Major capsid protein

Chain d5:  100%



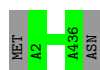
- Molecule 14: Major capsid protein

Chain d6:  100%



- Molecule 14: Major capsid protein

Chain d7:  100%



- Molecule 14: Major capsid protein

Chain d8:  100%



- Molecule 14: Major capsid protein

Chain d9:  100%



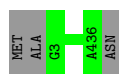
- Molecule 14: Major capsid protein

Chain e0:  99%



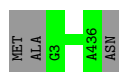
● Molecule 14: Major capsid protein

Chain e1:  99%



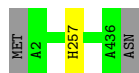
● Molecule 14: Major capsid protein

Chain e2:  99%



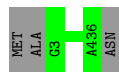
● Molecule 14: Major capsid protein

Chain e3:  99%



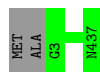
● Molecule 14: Major capsid protein

Chain e4:  99%



● Molecule 14: Major capsid protein

Chain e5:  100%



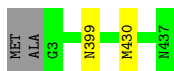
● Molecule 14: Major capsid protein

Chain e6:  100%



● Molecule 14: Major capsid protein

Chain e7:  99%



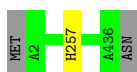
- Molecule 14: Major capsid protein

Chain e8:  100%



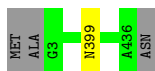
- Molecule 14: Major capsid protein

Chain e9:  99%



- Molecule 14: Major capsid protein

Chain f0:  99%



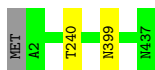
- Molecule 14: Major capsid protein

Chain f1:  100%



- Molecule 14: Major capsid protein

Chain f2:  99%



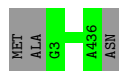
- Molecule 14: Major capsid protein

Chain f3:  100%



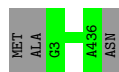
- Molecule 14: Major capsid protein

Chain f4:  99%



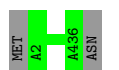
• Molecule 14: Major capsid protein

Chain f5:  99%



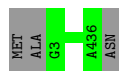
• Molecule 14: Major capsid protein

Chain f6:  100%



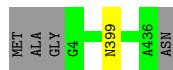
• Molecule 14: Major capsid protein

Chain f7:  99%



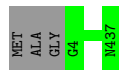
• Molecule 14: Major capsid protein

Chain f8:  99%



• Molecule 14: Major capsid protein

Chain f9:  99%



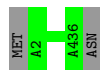
• Molecule 14: Major capsid protein

Chain g0:  99%



• Molecule 14: Major capsid protein

Chain g1:  100%



- Molecule 14: Major capsid protein

Chain g2:  99%



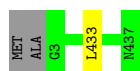
- Molecule 14: Major capsid protein

Chain g3:  99%



- Molecule 14: Major capsid protein

Chain g4:  99%



- Molecule 14: Major capsid protein

Chain g5:  99%



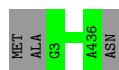
- Molecule 14: Major capsid protein

Chain g6:  100%



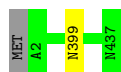
- Molecule 14: Major capsid protein

Chain g7:  99%



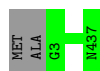
- Molecule 14: Major capsid protein

Chain g8:  100%



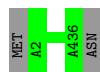
- Molecule 14: Major capsid protein

Chain g9:  100%



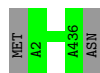
- Molecule 14: Major capsid protein

Chain h0:  100%



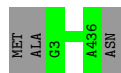
- Molecule 14: Major capsid protein

Chain h1:  100%



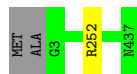
- Molecule 14: Major capsid protein

Chain h2:  99%



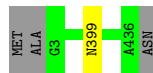
- Molecule 14: Major capsid protein

Chain h3:  99%



- Molecule 14: Major capsid protein

Chain h4:  99%



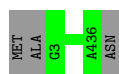
- Molecule 14: Major capsid protein

Chain h5:  99%



• Molecule 14: Major capsid protein

Chain h6:  99%



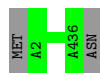
• Molecule 14: Major capsid protein

Chain h7:  100%



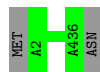
• Molecule 14: Major capsid protein

Chain h8:  100%



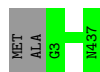
• Molecule 14: Major capsid protein

Chain h9:  100%



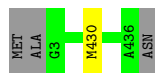
• Molecule 14: Major capsid protein

Chain i0:  100%



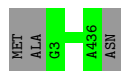
• Molecule 14: Major capsid protein

Chain i1:  99%



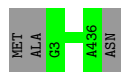
• Molecule 14: Major capsid protein

Chain i2:  99%



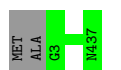
● Molecule 14: Major capsid protein

Chain i3:  99%



● Molecule 14: Major capsid protein

Chain i4:  100%



● Molecule 14: Major capsid protein

Chain i5:  100%



● Molecule 14: Major capsid protein

Chain i6:  99%



● Molecule 14: Major capsid protein

Chain i7:  99%



● Molecule 14: Major capsid protein

Chain i8:  99%



● Molecule 14: Major capsid protein

Chain i9:  100%



• Molecule 14: Major capsid protein

Chain j0:  99%



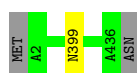
• Molecule 14: Major capsid protein

Chain j1:  100%



• Molecule 14: Major capsid protein

Chain j2:  99%



• Molecule 14: Major capsid protein

Chain j3:  99%



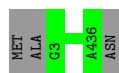
• Molecule 14: Major capsid protein

Chain j4:  99%



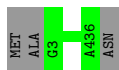
• Molecule 14: Major capsid protein

Chain j5:  99%



• Molecule 14: Major capsid protein

Chain j6:  99%



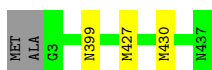
- Molecule 14: Major capsid protein

Chain j7:  100%



- Molecule 14: Major capsid protein

Chain j8:  99%



- Molecule 14: Major capsid protein

Chain j9:  100%



- Molecule 14: Major capsid protein

Chain k0:  99%



- Molecule 14: Major capsid protein

Chain k1:  100%



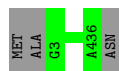
- Molecule 14: Major capsid protein

Chain k2:  99%



- Molecule 14: Major capsid protein

Chain k3:  99%



- Molecule 14: Major capsid protein

Chain k4:  100%



- Molecule 14: Major capsid protein

Chain k5:  100%



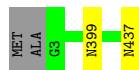
- Molecule 14: Major capsid protein

Chain k6:  99%



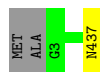
- Molecule 14: Major capsid protein

Chain k7:  99%



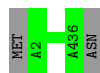
- Molecule 14: Major capsid protein

Chain k8:  99%



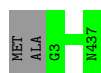
- Molecule 14: Major capsid protein

Chain k9:  100%



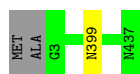
- Molecule 14: Major capsid protein

Chain 10:  100%



- Molecule 14: Major capsid protein

Chain 11:  99%



- Molecule 14: Major capsid protein

Chain 12:  99%



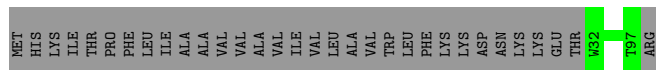
- Molecule 14: Major capsid protein

Chain 13:  100%



- Molecule 15: P13

Chain 14:  67%  33%



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, I	Depositor
Number of particles used	13000	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 ($e^-/\text{\AA}^2$)	24.4	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor

5 Model quality

5.1 Standard geometry

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	a0	0.82	0/741	0.75	0/1006
2	a1	0.60	2/734 (0.3%)	0.80	0/1011
3	a2	0.48	0/667	0.79	0/920
3	a3	0.30	0/497	0.58	0/688
4	a4	0.90	2/1124 (0.2%)	0.92	0/1543
5	a5	0.38	0/1365	0.65	0/1883
6	a6	0.80	0/1220	0.88	0/1677
7	a7	0.89	1/559 (0.2%)	1.03	0/771
8	a8	0.83	0/1014	1.00	0/1402
9	a9	0.48	0/320	0.74	0/446
9	b0	0.39	0/408	0.71	0/567
9	b1	0.46	0/379	0.70	0/526
9	b2	0.46	0/360	0.68	0/500
9	b3	0.39	0/345	0.73	0/481
9	b4	0.41	0/360	0.68	0/500
9	b5	0.52	0/377	0.76	0/523
9	b7	0.42	0/386	0.66	0/533
9	b8	0.41	0/391	0.66	0/543
9	c0	0.49	0/346	0.65	0/480
9	c1	0.41	0/344	0.74	0/476
9	l5	0.42	0/404	0.69	0/559
10	b6	0.37	0/3289	0.65	0/4533
11	c2	0.44	0/608	0.74	0/838
11	c3	0.37	0/393	0.78	0/538
11	c4	0.45	0/374	0.74	0/515
11	c5	0.45	0/403	0.80	0/550
12	c6	0.41	0/972	0.66	0/1332
12	c7	0.50	0/1030	0.84	0/1417
12	c8	0.33	0/830	0.60	0/1133
13	c9	0.89	0/1218	0.90	0/1663
14	d0	0.96	0/3446	0.88	0/4697
14	d1	0.94	0/3460	0.87	0/4717
14	d2	0.97	0/3465	0.87	0/4724
14	d3	0.98	0/3460	0.89	0/4717

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
14	d4	1.00	0/3460	0.89	0/4717
14	d5	1.02	0/3461	0.90	0/4719
14	d6	0.98	0/3465	0.89	0/4724
14	d7	0.92	0/3459	0.89	0/4717
14	d8	1.01	0/3468	0.88	0/4728
14	d9	0.99	0/3473	0.90	0/4735
14	e0	0.98	0/3468	0.89	0/4728
14	e1	0.96	0/3460	0.88	0/4717
14	e2	1.00	0/3460	0.90	0/4717
14	e3	0.95	0/3465	0.89	0/4724
14	e4	0.96	0/3460	0.88	0/4717
14	e5	0.99	0/3468	0.89	0/4728
14	e6	0.97	0/3473	0.89	0/4735
14	e7	0.98	0/3468	0.90	0/4728
14	e8	0.99	0/3468	0.90	0/4728
14	e9	1.01	0/3465	0.89	0/4724
14	f0	0.95	0/3452	0.90	0/4706
14	f1	0.99	0/3465	0.88	0/4724
14	f2	0.97	0/3473	0.88	0/4735
14	f3	1.00	0/3460	0.89	0/4717
14	f4	0.97	0/3460	0.87	0/4717
14	f5	0.98	0/3454	0.88	0/4710
14	f6	0.97	0/3465	0.90	0/4724
14	f7	0.99	0/3449	0.89	0/4702
14	f8	0.97	0/3456	0.89	0/4712
14	f9	0.99	0/3456	0.90	0/4712
14	g0	1.00	0/3465	0.91	0/4724
14	g1	0.96	0/3465	0.88	0/4724
14	g2	1.00	0/3460	0.91	0/4717
14	g3	1.00	0/3460	0.89	0/4717
14	g4	0.96	0/3468	0.87	0/4728
14	g5	0.95	0/3465	0.88	0/4724
14	g6	0.94	0/3465	0.88	0/4724
14	g7	0.98	0/3454	0.90	0/4710
14	g8	0.94	0/3473	0.87	0/4735
14	g9	1.00	0/3468	0.90	0/4728
14	h0	0.95	0/3465	0.89	0/4724
14	h1	0.94	0/3465	0.87	0/4724
14	h2	0.97	0/3460	0.88	0/4717
14	h3	0.98	0/3468	0.89	0/4728
14	h4	0.98	0/3460	0.90	0/4717
14	h5	0.94	0/3460	0.88	0/4717
14	h6	1.00	0/3460	0.89	0/4717

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
14	h7	0.96	0/3473	0.89	0/4735
14	h8	0.96	0/3465	0.88	0/4724
14	h9	0.96	0/3459	0.88	0/4717
14	i0	1.00	0/3468	0.89	0/4728
14	i1	0.98	0/3460	0.88	0/4717
14	i2	1.01	0/3460	0.89	0/4717
14	i3	0.99	0/3460	0.91	0/4717
14	i4	0.98	0/3462	0.89	0/4721
14	i5	0.98	0/3473	0.88	0/4735
14	i6	0.94	0/3460	0.89	0/4717
14	i7	0.95	0/3460	0.87	0/4717
14	i8	0.96	0/3465	0.87	0/4724
14	i9	0.97	0/3465	0.88	0/4724
14	j0	0.98	0/3470	0.89	0/4731
14	j1	0.95	0/3465	0.87	0/4724
14	j2	1.02	0/3465	0.89	0/4724
14	j3	0.98	0/3465	0.89	0/4724
14	j4	0.99	0/3460	0.89	0/4717
14	j5	1.00	0/3460	0.88	0/4717
14	j6	1.03	0/3460	0.89	0/4717
14	j7	1.00	0/3473	0.89	0/4735
14	j8	0.95	0/3468	0.88	0/4728
14	j9	0.98	0/3465	0.90	0/4724
14	k0	0.97	0/3460	0.89	0/4717
14	k1	0.97	0/3465	0.88	0/4724
14	k2	0.96	0/3465	0.90	0/4724
14	k3	1.01	0/3460	0.90	0/4717
14	k4	1.00	0/3473	0.89	0/4735
14	k5	0.97	0/3473	0.88	0/4735
14	k6	0.97	0/3469	0.89	0/4728
14	k7	0.97	0/3465	0.88	0/4723
14	k8	0.97	0/3469	0.89	0/4728
14	k9	0.99	0/3459	0.88	0/4717
14	l0	0.98	0/3469	0.88	0/4728
14	l1	1.01	0/3469	0.90	0/4728
14	l2	0.97	0/3460	0.88	0/4717
14	l3	0.99	0/3474	0.89	0/4735
15	l4	0.84	0/501	0.82	0/684
All	All	0.96	5/312913 (0.0%)	0.88	0/426903

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	a1	197	ASP	C-N	8.48	1.50	1.34
7	a7	120	CYS	CB-SG	7.78	1.95	1.82
2	a1	202	THR	C-N	7.76	1.49	1.34
4	a4	134	CYS	CB-SG	-6.38	1.71	1.82
4	a4	120	CYS	CB-SG	-5.84	1.72	1.81

There are no bond angle outliers.

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	a0	733	0	706	0	0
2	a1	718	0	588	0	0
3	a2	650	0	564	0	0
3	a3	485	0	425	0	0
4	a4	1088	0	874	0	0
5	a5	1326	0	1193	0	0
6	a6	1192	0	1133	0	0
7	a7	543	0	455	0	0
8	a8	988	0	900	0	0
9	a9	311	0	257	0	0
9	b0	398	0	325	0	0
9	b1	368	0	314	0	0
9	b2	350	0	314	0	0
9	b3	335	0	275	0	0
9	b4	350	0	299	0	0
9	b5	367	0	296	0	0
9	b7	375	0	345	0	0
9	b8	379	0	301	0	0
9	c0	338	0	292	0	0
9	c1	335	0	285	0	0
9	l5	392	0	325	0	0
10	b6	3210	0	2777	0	0
11	c2	603	0	404	0	0
11	c3	389	0	308	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
11	c4	369	0	262	0	0
11	c5	396	0	327	0	0
12	c6	951	0	834	0	0
12	c7	1004	0	875	0	0
12	c8	813	0	754	0	0
13	c9	1191	0	1134	0	0
14	d0	3369	0	3266	0	0
14	d1	3382	0	3278	0	0
14	d2	3387	0	3283	0	0
14	d3	3382	0	3278	0	0
14	d4	3382	0	3278	0	0
14	d5	3383	0	3279	0	0
14	d6	3387	0	3283	0	0
14	d7	3381	0	3272	0	0
14	d8	3390	0	3284	0	0
14	d9	3395	0	3289	0	0
14	e0	3390	0	3284	0	0
14	e1	3382	0	3278	0	0
14	e2	3382	0	3278	0	0
14	e3	3387	0	3283	0	0
14	e4	3382	0	3278	0	0
14	e5	3390	0	3284	0	0
14	e6	3395	0	3289	0	0
14	e7	3390	0	3284	0	0
14	e8	3390	0	3284	0	0
14	e9	3387	0	3283	0	0
14	f0	3375	0	3271	0	0
14	f1	3387	0	3280	0	0
14	f2	3395	0	3289	0	0
14	f3	3383	0	3277	0	0
14	f4	3382	0	3278	0	0
14	f5	3376	0	3267	0	0
14	f6	3387	0	3283	0	0
14	f7	3372	0	3267	0	0
14	f8	3378	0	3275	0	0
14	f9	3379	0	3274	0	0
14	g0	3387	0	3280	0	0
14	g1	3387	0	3283	0	0
14	g2	3382	0	3278	0	0
14	g3	3382	0	3278	0	0
14	g4	3390	0	3284	0	0
14	g5	3387	0	3283	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
14	g6	3387	0	3283	0	0
14	g7	3376	0	3267	0	0
14	g8	3395	0	3289	0	0
14	g9	3390	0	3284	0	0
14	h0	3387	0	3283	0	0
14	h1	3387	0	3283	0	0
14	h2	3382	0	3278	0	0
14	h3	3390	0	3284	0	0
14	h4	3382	0	3278	0	0
14	h5	3382	0	3278	0	0
14	h6	3382	0	3278	0	0
14	h7	3395	0	3289	0	0
14	h8	3387	0	3283	0	0
14	h9	3381	0	3272	0	0
14	i0	3390	0	3284	0	0
14	i1	3382	0	3278	0	0
14	i2	3382	0	3278	0	0
14	i3	3382	0	3278	0	0
14	i4	3384	0	3273	0	0
14	i5	3395	0	3289	0	0
14	i6	3382	0	3278	0	0
14	i7	3382	0	3278	0	0
14	i8	3388	0	3282	0	0
14	i9	3387	0	3283	0	0
14	j0	3392	0	3287	0	0
14	j1	3387	0	3283	0	0
14	j2	3387	0	3283	0	0
14	j3	3387	0	3282	0	0
14	j4	3382	0	3278	0	0
14	j5	3382	0	3278	0	0
14	j6	3382	0	3278	0	0
14	j7	3395	0	3289	0	0
14	j8	3390	0	3284	0	0
14	j9	3387	0	3283	0	0
14	k0	3382	0	3278	0	0
14	k1	3387	0	3283	0	0
14	k2	3387	0	3283	0	0
14	k3	3382	0	3278	0	0
14	k4	3395	0	3289	0	0
14	k5	3395	0	3289	0	0
14	k6	3391	0	3284	0	0
14	k7	3387	0	3278	0	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
14	k8	3391	0	3284	0	0
14	k9	3381	0	3272	0	0
14	l0	3391	0	3284	0	0
14	l1	3391	0	3284	0	0
14	l2	3382	0	3278	0	0
14	l3	3396	0	3289	0	0
15	l4	487	0	428	0	0
All	All	305842	0	294139	0	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 10.

There are no clashes within the asymmetric unit.

There are no symmetry-related clashes.

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	a0	95/352 (27%)	93 (98%)	2 (2%)	0	100	100
2	a1	105/210 (50%)	85 (81%)	17 (16%)	3 (3%)	4	31
3	a2	92/289 (32%)	76 (83%)	14 (15%)	2 (2%)	6	37
3	a3	72/289 (25%)	60 (83%)	12 (17%)	0	100	100
4	a4	149/256 (58%)	130 (87%)	14 (9%)	5 (3%)	3	28
5	a5	187/216 (87%)	162 (87%)	24 (13%)	1 (0%)	29	68
6	a6	165/170 (97%)	155 (94%)	9 (6%)	1 (1%)	25	64
7	a7	76/151 (50%)	65 (86%)	7 (9%)	4 (5%)	2	17
8	a8	140/146 (96%)	126 (90%)	12 (9%)	2 (1%)	11	46
9	a9	45/207 (22%)	34 (76%)	11 (24%)	0	100	100
9	b0	57/207 (28%)	45 (79%)	10 (18%)	2 (4%)	3	27

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
9	b1	52/207 (25%)	43 (83%)	8 (15%)	1 (2%)	8	40
9	b2	49/207 (24%)	39 (80%)	10 (20%)	0	100	100
9	b3	49/207 (24%)	38 (78%)	9 (18%)	2 (4%)	3	23
9	b4	50/207 (24%)	40 (80%)	9 (18%)	1 (2%)	7	39
9	b5	55/207 (27%)	36 (66%)	16 (29%)	3 (6%)	2	17
9	b7	50/207 (24%)	45 (90%)	5 (10%)	0	100	100
9	b8	55/207 (27%)	47 (86%)	8 (14%)	0	100	100
9	c0	49/207 (24%)	41 (84%)	6 (12%)	2 (4%)	3	23
9	c1	49/207 (24%)	38 (78%)	7 (14%)	4 (8%)	1	9
9	l5	56/207 (27%)	42 (75%)	13 (23%)	1 (2%)	8	41
10	b6	473/576 (82%)	392 (83%)	77 (16%)	4 (1%)	19	58
11	c2	101/181 (56%)	76 (75%)	25 (25%)	0	100	100
11	c3	58/181 (32%)	40 (69%)	17 (29%)	1 (2%)	9	42
11	c4	56/181 (31%)	46 (82%)	8 (14%)	2 (4%)	3	26
11	c5	56/181 (31%)	42 (75%)	13 (23%)	1 (2%)	8	41
12	c6	139/171 (81%)	114 (82%)	24 (17%)	1 (1%)	22	61
12	c7	145/171 (85%)	111 (77%)	27 (19%)	7 (5%)	2	20
12	c8	114/171 (67%)	100 (88%)	14 (12%)	0	100	100
13	c9	164/173 (95%)	160 (98%)	2 (1%)	2 (1%)	13	50
14	d0	428/437 (98%)	419 (98%)	9 (2%)	0	100	100
14	d1	432/437 (99%)	422 (98%)	10 (2%)	0	100	100
14	d2	433/437 (99%)	425 (98%)	8 (2%)	0	100	100
14	d3	432/437 (99%)	424 (98%)	7 (2%)	1 (0%)	47	81
14	d4	432/437 (99%)	422 (98%)	10 (2%)	0	100	100
14	d5	433/437 (99%)	425 (98%)	8 (2%)	0	100	100
14	d6	433/437 (99%)	427 (99%)	6 (1%)	0	100	100
14	d7	433/437 (99%)	423 (98%)	10 (2%)	0	100	100
14	d8	433/437 (99%)	424 (98%)	9 (2%)	0	100	100
14	d9	434/437 (99%)	422 (97%)	12 (3%)	0	100	100
14	e0	433/437 (99%)	424 (98%)	8 (2%)	1 (0%)	47	81
14	e1	432/437 (99%)	424 (98%)	8 (2%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	e2	432/437 (99%)	419 (97%)	13 (3%)	0	100	100
14	e3	433/437 (99%)	426 (98%)	6 (1%)	1 (0%)	47	81
14	e4	432/437 (99%)	425 (98%)	7 (2%)	0	100	100
14	e5	433/437 (99%)	428 (99%)	5 (1%)	0	100	100
14	e6	434/437 (99%)	424 (98%)	10 (2%)	0	100	100
14	e7	433/437 (99%)	423 (98%)	10 (2%)	0	100	100
14	e8	433/437 (99%)	424 (98%)	9 (2%)	0	100	100
14	e9	433/437 (99%)	423 (98%)	9 (2%)	1 (0%)	47	81
14	f0	432/437 (99%)	424 (98%)	8 (2%)	0	100	100
14	f1	433/437 (99%)	426 (98%)	7 (2%)	0	100	100
14	f2	434/437 (99%)	426 (98%)	7 (2%)	1 (0%)	47	81
14	f3	433/437 (99%)	426 (98%)	7 (2%)	0	100	100
14	f4	432/437 (99%)	425 (98%)	7 (2%)	0	100	100
14	f5	432/437 (99%)	423 (98%)	9 (2%)	0	100	100
14	f6	433/437 (99%)	423 (98%)	10 (2%)	0	100	100
14	f7	432/437 (99%)	420 (97%)	12 (3%)	0	100	100
14	f8	431/437 (99%)	421 (98%)	10 (2%)	0	100	100
14	f9	432/437 (99%)	419 (97%)	13 (3%)	0	100	100
14	g0	433/437 (99%)	423 (98%)	10 (2%)	0	100	100
14	g1	433/437 (99%)	424 (98%)	9 (2%)	0	100	100
14	g2	432/437 (99%)	423 (98%)	8 (2%)	1 (0%)	47	81
14	g3	432/437 (99%)	421 (98%)	11 (2%)	0	100	100
14	g4	433/437 (99%)	423 (98%)	10 (2%)	0	100	100
14	g5	433/437 (99%)	426 (98%)	6 (1%)	1 (0%)	47	81
14	g6	433/437 (99%)	426 (98%)	7 (2%)	0	100	100
14	g7	432/437 (99%)	422 (98%)	10 (2%)	0	100	100
14	g8	434/437 (99%)	427 (98%)	7 (2%)	0	100	100
14	g9	433/437 (99%)	427 (99%)	6 (1%)	0	100	100
14	h0	433/437 (99%)	429 (99%)	4 (1%)	0	100	100
14	h1	433/437 (99%)	426 (98%)	7 (2%)	0	100	100
14	h2	432/437 (99%)	425 (98%)	7 (2%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	h3	433/437 (99%)	423 (98%)	10 (2%)	0	100	100
14	h4	432/437 (99%)	424 (98%)	8 (2%)	0	100	100
14	h5	432/437 (99%)	425 (98%)	7 (2%)	0	100	100
14	h6	432/437 (99%)	424 (98%)	8 (2%)	0	100	100
14	h7	434/437 (99%)	427 (98%)	7 (2%)	0	100	100
14	h8	433/437 (99%)	423 (98%)	10 (2%)	0	100	100
14	h9	433/437 (99%)	426 (98%)	7 (2%)	0	100	100
14	i0	433/437 (99%)	424 (98%)	9 (2%)	0	100	100
14	i1	432/437 (99%)	425 (98%)	7 (2%)	0	100	100
14	i2	432/437 (99%)	424 (98%)	8 (2%)	0	100	100
14	i3	432/437 (99%)	425 (98%)	7 (2%)	0	100	100
14	i4	433/437 (99%)	427 (99%)	6 (1%)	0	100	100
14	i5	434/437 (99%)	428 (99%)	6 (1%)	0	100	100
14	i6	432/437 (99%)	423 (98%)	9 (2%)	0	100	100
14	i7	432/437 (99%)	425 (98%)	7 (2%)	0	100	100
14	i8	434/437 (99%)	421 (97%)	11 (2%)	2 (0%)	29	68
14	i9	433/437 (99%)	425 (98%)	8 (2%)	0	100	100
14	j0	434/437 (99%)	426 (98%)	7 (2%)	1 (0%)	47	81
14	j1	433/437 (99%)	425 (98%)	8 (2%)	0	100	100
14	j2	433/437 (99%)	425 (98%)	8 (2%)	0	100	100
14	j3	433/437 (99%)	421 (97%)	12 (3%)	0	100	100
14	j4	432/437 (99%)	422 (98%)	10 (2%)	0	100	100
14	j5	432/437 (99%)	423 (98%)	9 (2%)	0	100	100
14	j6	432/437 (99%)	423 (98%)	9 (2%)	0	100	100
14	j7	434/437 (99%)	423 (98%)	11 (2%)	0	100	100
14	j8	433/437 (99%)	425 (98%)	8 (2%)	0	100	100
14	j9	433/437 (99%)	424 (98%)	9 (2%)	0	100	100
14	k0	432/437 (99%)	426 (99%)	5 (1%)	1 (0%)	47	81
14	k1	433/437 (99%)	427 (99%)	6 (1%)	0	100	100
14	k2	433/437 (99%)	424 (98%)	8 (2%)	1 (0%)	47	81
14	k3	432/437 (99%)	422 (98%)	10 (2%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
14	k4	434/437 (99%)	426 (98%)	8 (2%)	0	100	100
14	k5	434/437 (99%)	425 (98%)	9 (2%)	0	100	100
14	k6	433/437 (99%)	426 (98%)	7 (2%)	0	100	100
14	k7	433/437 (99%)	424 (98%)	9 (2%)	0	100	100
14	k8	433/437 (99%)	425 (98%)	8 (2%)	0	100	100
14	k9	433/437 (99%)	424 (98%)	9 (2%)	0	100	100
14	l0	433/437 (99%)	424 (98%)	9 (2%)	0	100	100
14	l1	433/437 (99%)	423 (98%)	10 (2%)	0	100	100
14	l2	432/437 (99%)	423 (98%)	9 (2%)	0	100	100
14	l3	434/437 (99%)	426 (98%)	8 (2%)	0	100	100
15	l4	64/98 (65%)	63 (98%)	1 (2%)	0	100	100
All	All	39415/43355 (91%)	38213 (97%)	1138 (3%)	64 (0%)	50	81

All (64) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
2	a1	203	PRO
3	a2	283	ASN
4	a4	199	TRP
9	b0	198	PRO
9	b1	192	MET
9	b5	175	TYR
9	c1	193	MET
9	c1	198	PRO
11	c4	7	ASP
11	c4	15	ASP
12	c7	71	VAL
12	c7	82	GLU
14	e0	25	THR
14	g5	364	GLN
2	a1	137	ASP
4	a4	142	MET
7	a7	114	LYS
10	b6	172	GLY
10	b6	173	ASP
9	c0	198	PRO
11	c3	22	THR
11	c5	34	ILE

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
14	e3	257	HIS
7	a7	116	ASN
7	a7	121	ASN
9	b3	198	PRO
10	b6	112	GLY
10	b6	171	PRO
9	c1	192	MET
12	c7	69	VAL
13	c9	141	SER
14	d3	399	ASN
4	a4	130	GLU
8	a8	7	ALA
12	c7	101	ARG
13	c9	140	PHE
14	f2	240	THR
14	i8	23	GLN
14	j0	434	ALA
2	a1	130	ALA
3	a2	256	GLN
4	a4	168	TRP
4	a4	251	GLN
5	a5	203	PHE
9	b5	174	ASN
12	c6	162	THR
12	c7	53	LEU
12	c7	150	ALA
14	i8	22	PRO
9	l5	140	ASP
6	a6	133	ILE
9	b3	197	ASP
9	b5	204	PRO
9	c0	197	ASP
9	c1	197	ASP
14	g2	257	HIS
14	e9	257	HIS
7	a7	125	VAL
8	a8	36	PRO
9	b4	204	PRO
12	c7	27	PRO
14	k2	257	HIS
9	b0	197	ASP
14	k0	257	HIS

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	a0	78/309 (25%)	78 (100%)	0	100	100
2	a1	64/179 (36%)	60 (94%)	4 (6%)	18	51
3	a2	60/249 (24%)	57 (95%)	3 (5%)	24	58
3	a3	42/249 (17%)	42 (100%)	0	100	100
4	a4	92/222 (41%)	89 (97%)	3 (3%)	38	68
5	a5	119/188 (63%)	117 (98%)	2 (2%)	60	82
6	a6	124/145 (86%)	124 (100%)	0	100	100
7	a7	45/139 (32%)	42 (93%)	3 (7%)	16	48
8	a8	87/125 (70%)	85 (98%)	2 (2%)	50	77
9	a9	25/181 (14%)	25 (100%)	0	100	100
9	b0	34/181 (19%)	31 (91%)	3 (9%)	10	38
9	b1	30/181 (17%)	27 (90%)	3 (10%)	7	32
9	b2	31/181 (17%)	31 (100%)	0	100	100
9	b3	26/181 (14%)	26 (100%)	0	100	100
9	b4	26/181 (14%)	23 (88%)	3 (12%)	5	26
9	b5	25/181 (14%)	23 (92%)	2 (8%)	12	41
9	b7	35/181 (19%)	33 (94%)	2 (6%)	20	53
9	b8	28/181 (16%)	27 (96%)	1 (4%)	35	66
9	c0	29/181 (16%)	29 (100%)	0	100	100
9	c1	27/181 (15%)	27 (100%)	0	100	100
9	l5	29/181 (16%)	28 (97%)	1 (3%)	37	68
10	b6	264/479 (55%)	256 (97%)	8 (3%)	41	71
11	c2	32/161 (20%)	31 (97%)	1 (3%)	40	70
11	c3	29/161 (18%)	29 (100%)	0	100	100
11	c4	24/161 (15%)	22 (92%)	2 (8%)	11	40
11	c5	31/161 (19%)	31 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
12	c6	78/144 (54%)	77 (99%)	1 (1%)	69	86
12	c7	81/144 (56%)	73 (90%)	8 (10%)	8	33
12	c8	73/144 (51%)	73 (100%)	0	100	100
13	c9	114/148 (77%)	114 (100%)	0	100	100
14	d0	355/358 (99%)	355 (100%)	0	100	100
14	d1	356/358 (99%)	356 (100%)	0	100	100
14	d2	356/358 (99%)	356 (100%)	0	100	100
14	d3	356/358 (99%)	356 (100%)	0	100	100
14	d4	356/358 (99%)	356 (100%)	0	100	100
14	d5	355/358 (99%)	355 (100%)	0	100	100
14	d6	356/358 (99%)	356 (100%)	0	100	100
14	d7	355/358 (99%)	355 (100%)	0	100	100
14	d8	357/358 (100%)	357 (100%)	0	100	100
14	d9	357/358 (100%)	357 (100%)	0	100	100
14	e0	357/358 (100%)	356 (100%)	1 (0%)	92	97
14	e1	356/358 (99%)	356 (100%)	0	100	100
14	e2	356/358 (99%)	356 (100%)	0	100	100
14	e3	356/358 (99%)	356 (100%)	0	100	100
14	e4	356/358 (99%)	356 (100%)	0	100	100
14	e5	357/358 (100%)	357 (100%)	0	100	100
14	e6	357/358 (100%)	356 (100%)	1 (0%)	92	97
14	e7	357/358 (100%)	355 (99%)	2 (1%)	86	94
14	e8	357/358 (100%)	357 (100%)	0	100	100
14	e9	356/358 (99%)	356 (100%)	0	100	100
14	f0	355/358 (99%)	354 (100%)	1 (0%)	92	97
14	f1	356/358 (99%)	356 (100%)	0	100	100
14	f2	357/358 (100%)	356 (100%)	1 (0%)	92	97
14	f3	356/358 (99%)	356 (100%)	0	100	100
14	f4	356/358 (99%)	356 (100%)	0	100	100
14	f5	355/358 (99%)	355 (100%)	0	100	100
14	f6	356/358 (99%)	356 (100%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
14	f7	354/358 (99%)	354 (100%)	0	100	100
14	f8	356/358 (99%)	355 (100%)	1 (0%)	92	97
14	f9	356/358 (99%)	356 (100%)	0	100	100
14	g0	356/358 (99%)	355 (100%)	1 (0%)	92	97
14	g1	356/358 (99%)	356 (100%)	0	100	100
14	g2	356/358 (99%)	356 (100%)	0	100	100
14	g3	356/358 (99%)	355 (100%)	1 (0%)	92	97
14	g4	357/358 (100%)	356 (100%)	1 (0%)	92	97
14	g5	356/358 (99%)	356 (100%)	0	100	100
14	g6	356/358 (99%)	356 (100%)	0	100	100
14	g7	355/358 (99%)	355 (100%)	0	100	100
14	g8	357/358 (100%)	356 (100%)	1 (0%)	92	97
14	g9	357/358 (100%)	357 (100%)	0	100	100
14	h0	356/358 (99%)	356 (100%)	0	100	100
14	h1	356/358 (99%)	356 (100%)	0	100	100
14	h2	356/358 (99%)	356 (100%)	0	100	100
14	h3	357/358 (100%)	356 (100%)	1 (0%)	92	97
14	h4	356/358 (99%)	355 (100%)	1 (0%)	92	97
14	h5	356/358 (99%)	356 (100%)	0	100	100
14	h6	356/358 (99%)	356 (100%)	0	100	100
14	h7	357/358 (100%)	357 (100%)	0	100	100
14	h8	356/358 (99%)	356 (100%)	0	100	100
14	h9	355/358 (99%)	355 (100%)	0	100	100
14	i0	357/358 (100%)	357 (100%)	0	100	100
14	i1	356/358 (99%)	355 (100%)	1 (0%)	92	97
14	i2	356/358 (99%)	356 (100%)	0	100	100
14	i3	356/358 (99%)	356 (100%)	0	100	100
14	i4	356/358 (99%)	356 (100%)	0	100	100
14	i5	357/358 (100%)	357 (100%)	0	100	100
14	i6	356/358 (99%)	355 (100%)	1 (0%)	92	97
14	i7	356/358 (99%)	354 (99%)	2 (1%)	86	94

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
14	i8	356/358 (99%)	356 (100%)	0	100	100
14	i9	356/358 (99%)	356 (100%)	0	100	100
14	j0	356/358 (99%)	354 (99%)	2 (1%)	86	94
14	j1	356/358 (99%)	356 (100%)	0	100	100
14	j2	356/358 (99%)	355 (100%)	1 (0%)	92	97
14	j3	356/358 (99%)	354 (99%)	2 (1%)	86	94
14	j4	356/358 (99%)	355 (100%)	1 (0%)	92	97
14	j5	356/358 (99%)	356 (100%)	0	100	100
14	j6	356/358 (99%)	356 (100%)	0	100	100
14	j7	357/358 (100%)	356 (100%)	1 (0%)	92	97
14	j8	357/358 (100%)	354 (99%)	3 (1%)	81	91
14	j9	356/358 (99%)	356 (100%)	0	100	100
14	k0	356/358 (99%)	356 (100%)	0	100	100
14	k1	356/358 (99%)	356 (100%)	0	100	100
14	k2	356/358 (99%)	356 (100%)	0	100	100
14	k3	356/358 (99%)	356 (100%)	0	100	100
14	k4	357/358 (100%)	357 (100%)	0	100	100
14	k5	357/358 (100%)	356 (100%)	1 (0%)	92	97
14	k6	357/358 (100%)	355 (99%)	2 (1%)	86	94
14	k7	356/358 (99%)	354 (99%)	2 (1%)	86	94
14	k8	357/358 (100%)	356 (100%)	1 (0%)	92	97
14	k9	355/358 (99%)	355 (100%)	0	100	100
14	l0	357/358 (100%)	357 (100%)	0	100	100
14	l1	357/358 (100%)	356 (100%)	1 (0%)	92	97
14	l2	356/358 (99%)	355 (100%)	1 (0%)	92	97
14	l3	357/358 (100%)	357 (100%)	0	100	100
15	l4	42/79 (53%)	42 (100%)	0	100	100
All	All	31742/35831 (89%)	31655 (100%)	87 (0%)	92	97

All (87) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	a1	104	CYS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	a1	193	THR
2	a1	201	CYS
2	a1	202	THR
3	a2	198	ASP
3	a2	236	LEU
3	a2	274	THR
4	a4	109	VAL
4	a4	241	THR
4	a4	242	TRP
5	a5	52	THR
5	a5	54	THR
7	a7	110	LEU
7	a7	124	TRP
7	a7	125	VAL
8	a8	139	SER
8	a8	144	TYR
9	b0	188	VAL
9	b0	191	TRP
9	b0	192	MET
9	b1	158	THR
9	b1	160	TRP
9	b1	165	THR
9	b4	158	THR
9	b4	188	VAL
9	b4	191	TRP
9	b5	195	SER
9	b5	196	VAL
10	b6	182	VAL
10	b6	183	ASN
10	b6	244	THR
10	b6	281	LEU
10	b6	298	PRO
10	b6	300	GLU
10	b6	358	THR
10	b6	411	THR
9	b7	188	VAL
9	b7	191	TRP
9	b8	190	PRO
11	c2	70	THR
11	c4	17	HIS
11	c4	22	THR
12	c6	95	THR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
12	c7	43	THR
12	c7	50	ILE
12	c7	56	MET
12	c7	71	VAL
12	c7	154	THR
12	c7	155	SER
12	c7	162	THR
12	c7	166	LEU
14	e0	430	MET
14	e6	63	ASN
14	e7	399	ASN
14	e7	430	MET
14	f0	399	ASN
14	f2	399	ASN
14	f8	399	ASN
14	g0	252	ARG
14	g3	399	ASN
14	g4	433	LEU
14	g8	399	ASN
14	h3	252	ARG
14	h4	399	ASN
14	i1	430	MET
14	i6	399	ASN
14	i7	399	ASN
14	i7	435	TYR
14	j0	171	HIS
14	j0	433	LEU
14	j2	399	ASN
14	j3	11	TYR
14	j3	399	ASN
14	j4	252	ARG
14	j7	103	GLN
14	j8	399	ASN
14	j8	427	MET
14	j8	430	MET
14	k5	427	MET
14	k6	252	ARG
14	k6	399	ASN
14	k7	399	ASN
14	k7	437	ASN
14	k8	437	ASN
14	l1	399	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
14	l2	399	ASN
9	l5	141	PHE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (46) such sidechains are listed below:

Mol	Chain	Res	Type
2	a1	115	ASN
2	a1	153	ASN
2	a1	166	GLN
3	a2	237	ASN
3	a3	224	ASN
5	a5	176	ASN
9	a9	166	GLN
9	b0	148	ASN
9	b0	166	GLN
9	b1	172	ASN
9	b3	164	ASN
9	b3	166	GLN
10	b6	195	GLN
10	b6	215	HIS
10	b6	252	GLN
10	b6	257	ASN
10	b6	315	GLN
10	b6	338	ASN
10	b6	419	ASN
9	b7	199	ASN
11	c3	58	GLN
13	c9	42	HIS
14	d1	43	GLN
14	d1	63	ASN
14	d1	214	GLN
14	d8	256	ASN
14	e0	171	HIS
14	e0	254	ASN
14	e3	257	HIS
14	e6	63	ASN
14	e7	257	HIS
14	e9	14	GLN
14	f0	376	ASN
14	f3	14	GLN
14	f3	169	GLN
14	f5	14	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
14	f8	23	GLN
14	g1	63	ASN
14	g2	169	GLN
14	h6	323	GLN
14	h7	256	ASN
14	i6	221	GLN
14	i9	63	ASN
14	j7	103	GLN
14	j8	103	GLN
14	l2	14	GLN

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-0436. These allow visual inspection of the internal detail of the map and identification of artifacts.

No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

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 surface views

This section was not generated.

6.5 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.