Full wwPDB EM Validation Report ⓘ

Nov 20, 2022 – 04:00 pm GMT

PDB ID	:	2YGD
EMDB ID	:	EMD-1894
Title	:	Molecular architectures of the 24meric eye lens chaperone alphaB- crystallin elucidated by a triple hybrid approach
Authors	:	Braun, N.; Zacharias, M.; Peschek, J.; Kastenmueller, A.; Zou, J.; Hanzlik, M.; Haslbeck, M.; Rappsilber, J.; Buchner, J.; Weinkauf, S.
Deposited on	:	2011-04-13
Resolution	:	9.40 Å(reported)
Based on initial model	:	2KLR

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:

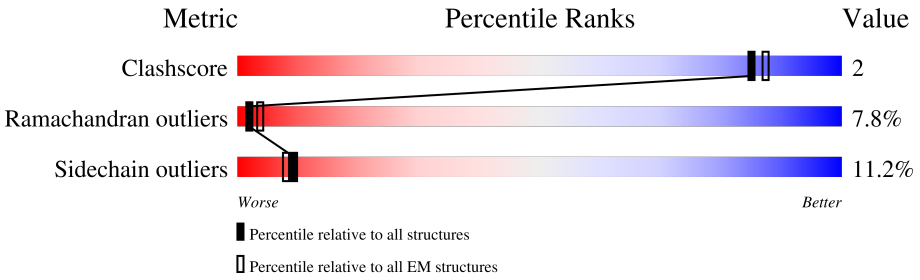
EMDB validation analysis	:	0.0.1.dev43
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

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 9.40 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 <=5% The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion < 40%). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	175	9% 74% 19% 6% •
1	B	175	10% 75% 19% • •
1	C	175	9% 74% 19% 5% •
1	D	175	8% 74% 22% • •
1	E	175	9% 73% 20% 6% •
1	F	175	9% 74% 21% • •
1	G	175	8% 74% 21% 5% •
1	H	175	10% 75% 21% • •

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Mol	Chain	Length	Quality of chain
1	I	175	7% 72% 22% 5%
1	J	175	9% 74% 21%
1	K	175	9% 74% 20% 6%
1	L	175	10% 75% 21%
1	M	175	9% 74% 19% 6%
1	N	175	9% 75% 19%
1	O	175	9% 75% 18% 6%
1	P	175	9% 74% 21%
1	Q	175	9% 73% 21% 6%
1	R	175	9% 74% 22%
1	S	175	8% 74% 21% 5%
1	T	175	10% 75% 21%
1	U	175	9% 72% 22% 5%
1	V	175	10% 74% 21%
1	W	175	9% 74% 20% 6%
1	X	175	10% 75% 21%

2 Entry composition (i)

There is only 1 type of molecule in this entry. The entry contains 34296 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 ALPHA-CRYSTALLIN B CHAIN.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	A	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	B	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	C	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	D	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	E	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	F	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	G	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	H	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	I	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	J	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	K	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	L	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	M	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	N	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	O	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	P	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	Q	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		

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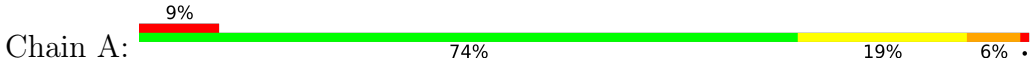
Mol	Chain	Residues	Atoms					AltConf	Trace
1	R	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	S	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	T	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	U	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	V	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	W	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		
1	X	175	Total	C	N	O	S	0	0
			1429	916	252	259	2		

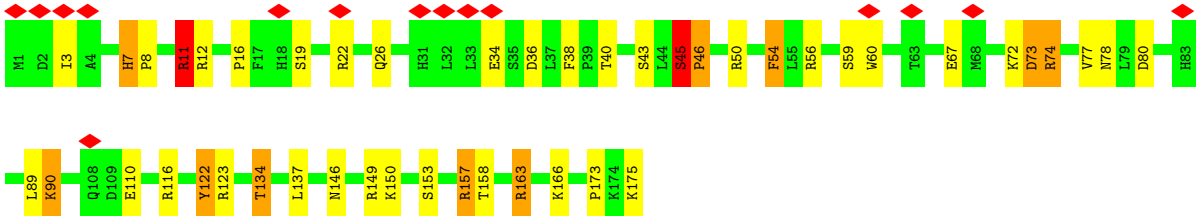
3 Residue-property plots (i)

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 and atom inclusion in map density. 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. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). 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: ALPHA-CRYSTALLIN B CHAIN

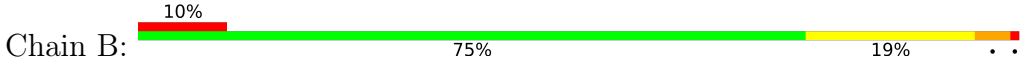
Chain A:

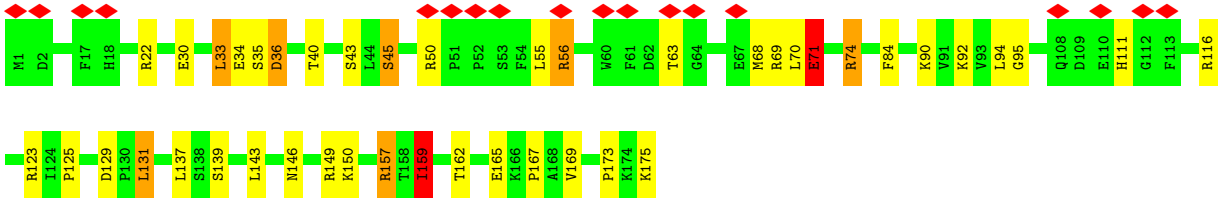




• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

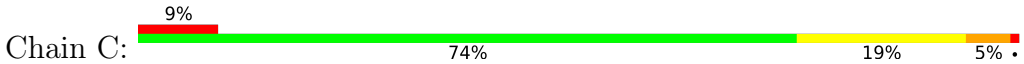
Chain B:

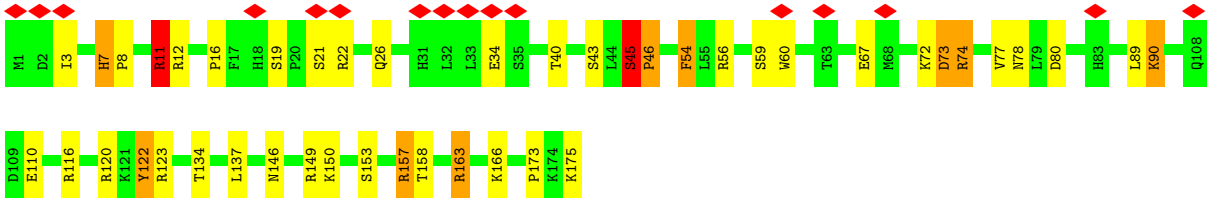




• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

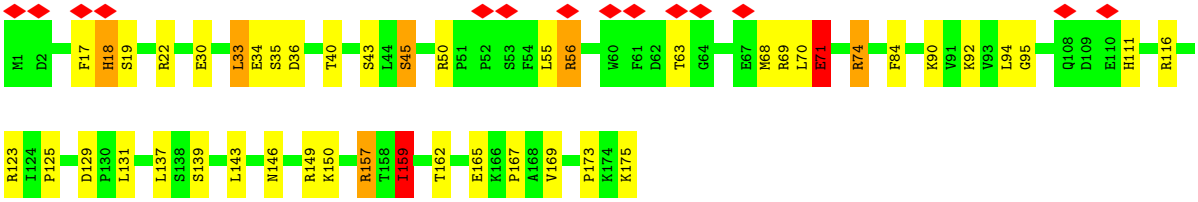
Chain C:



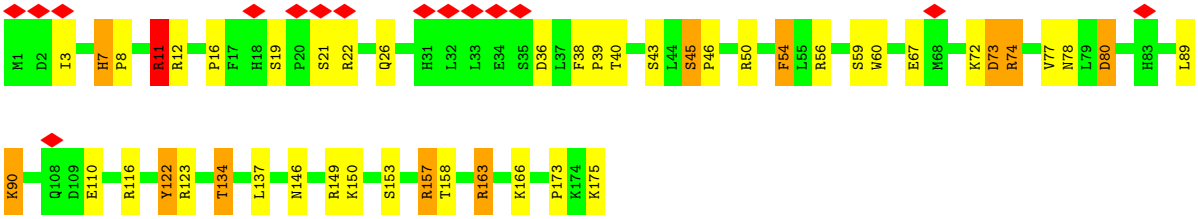


• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

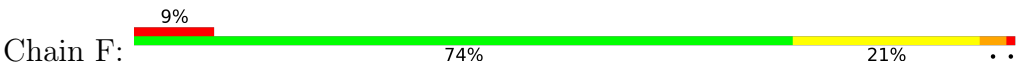
Chain D:

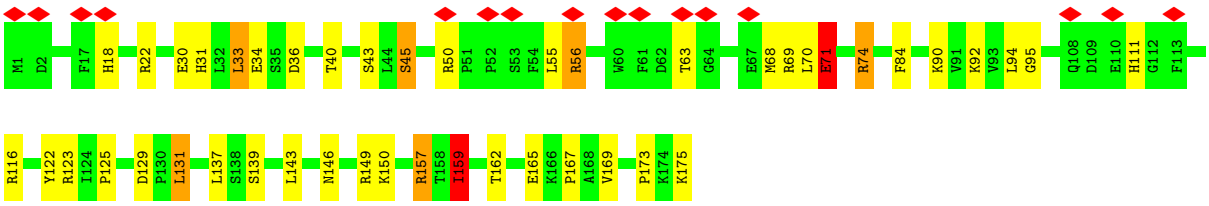


• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

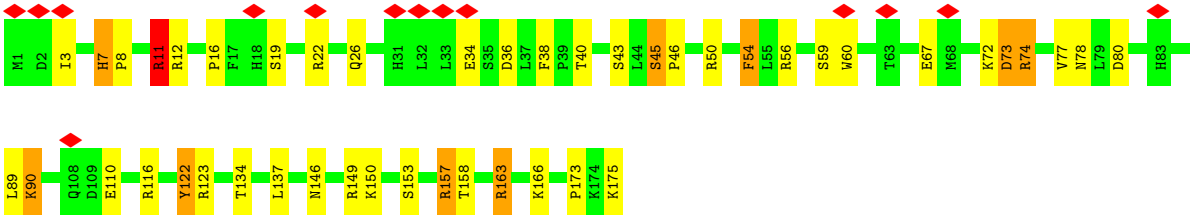


• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

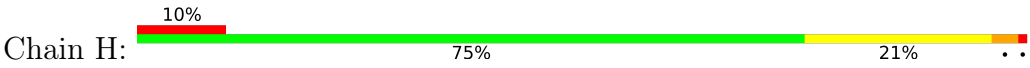


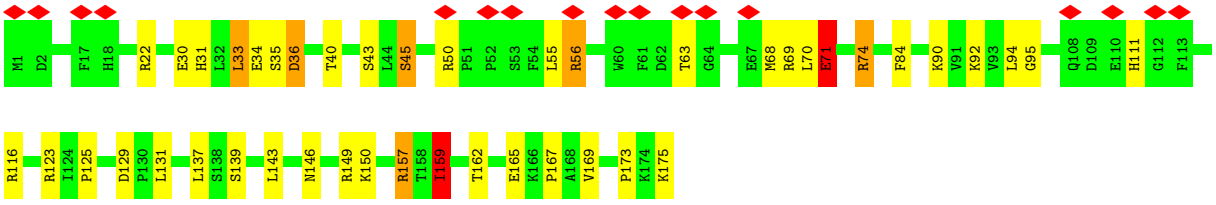


• Molecule 1: ALPHA-CRYSTALLIN B CHAIN



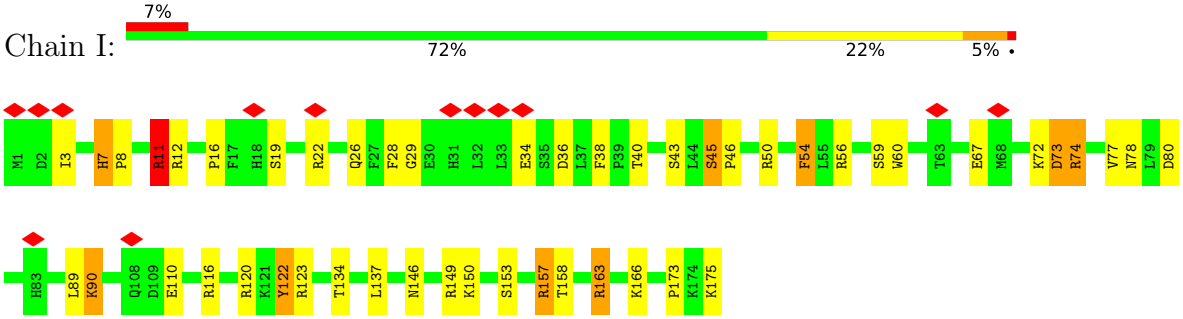
• Molecule 1: ALPHA-CRYSTALLIN B CHAIN





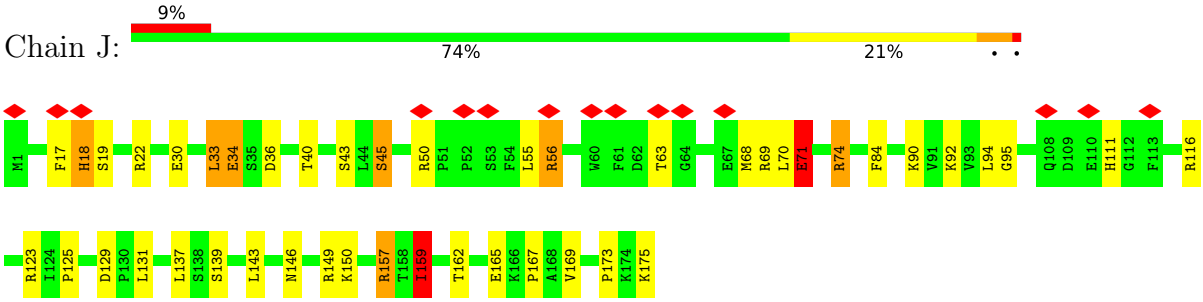
• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

Chain I:



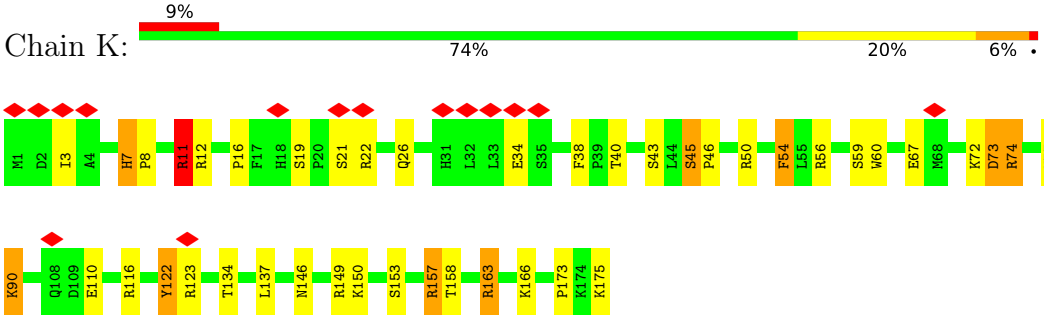
• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

Chain J:



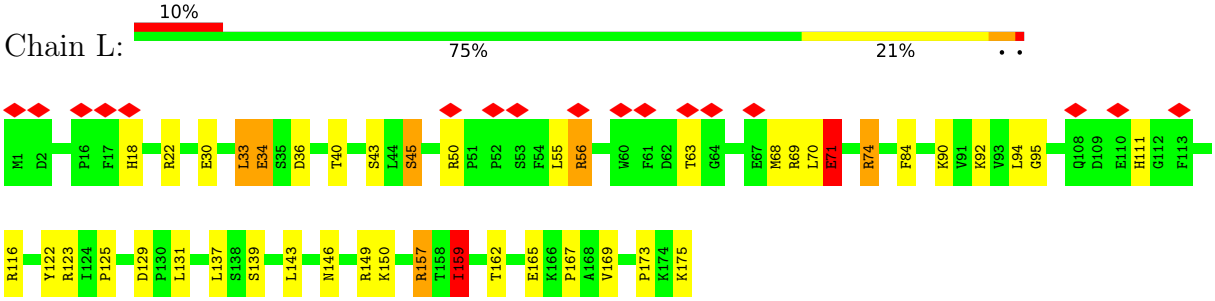
• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

Chain K:



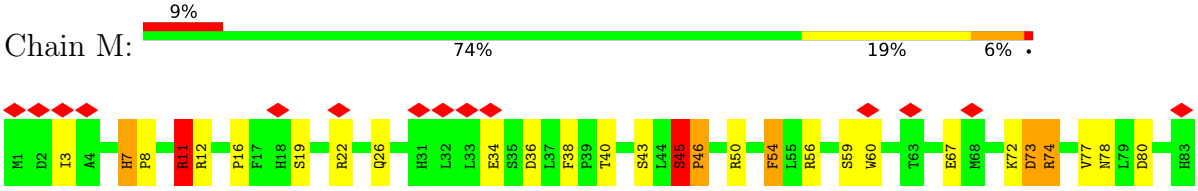
• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

Chain L:

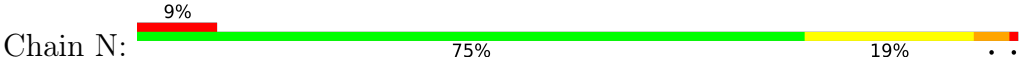


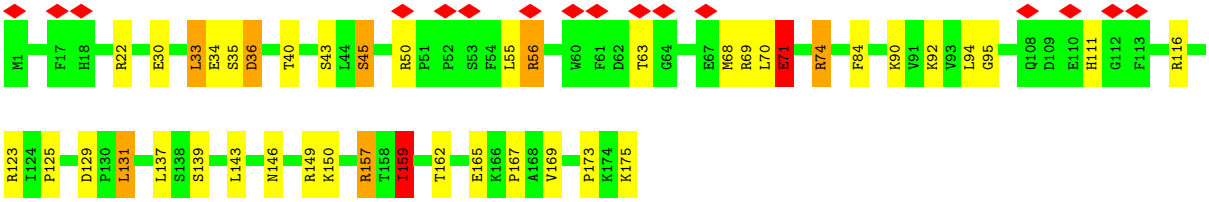
• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

Chain M:

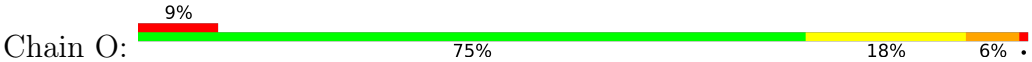


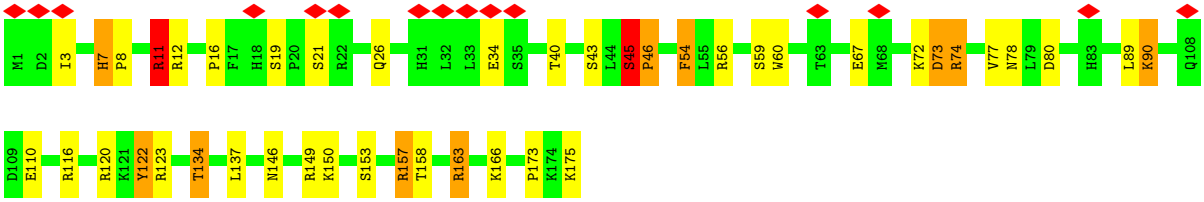
• Molecule 1: ALPHA-CRYSTALLIN B CHAIN



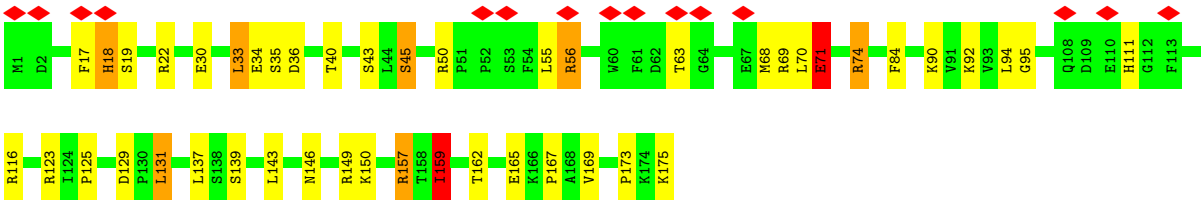


• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

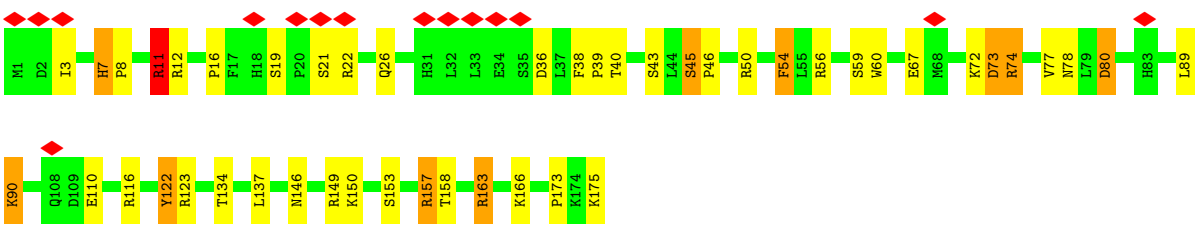




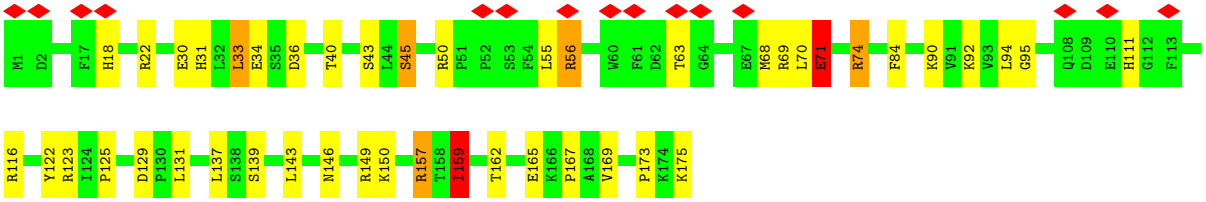
• Molecule 1: ALPHA-CRYSTALLIN B CHAIN



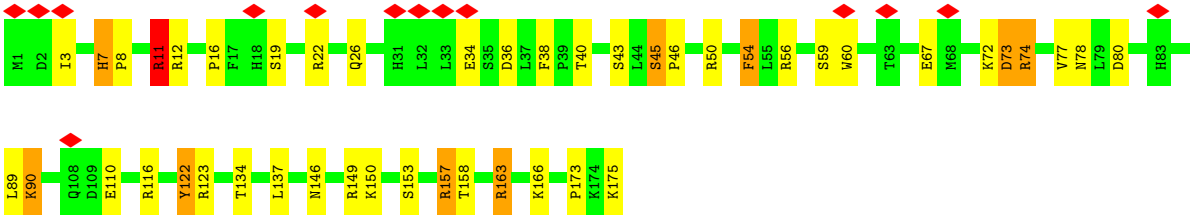
• Molecule 1: ALPHA-CRYSTALLIN B CHAIN



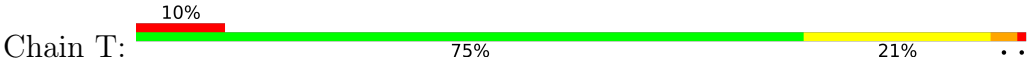
• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

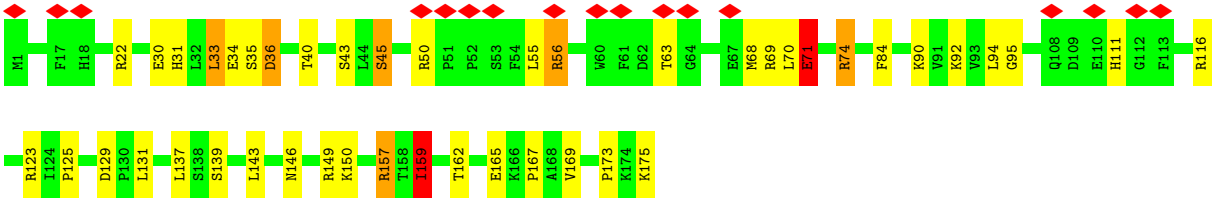


• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

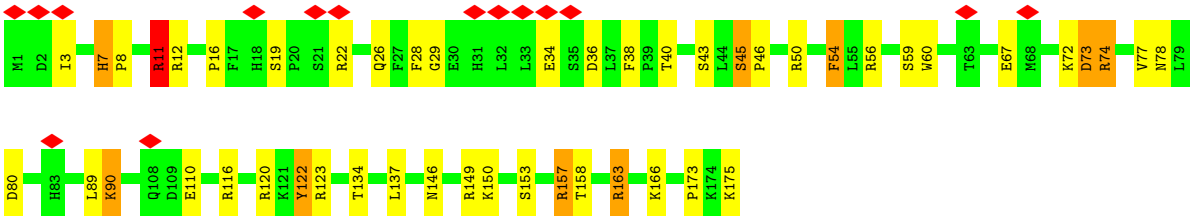


• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

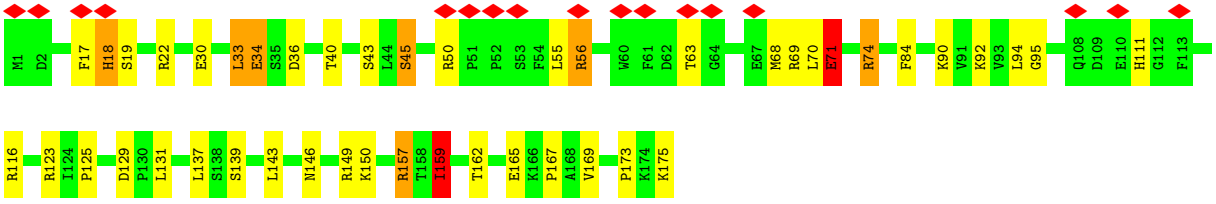




• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

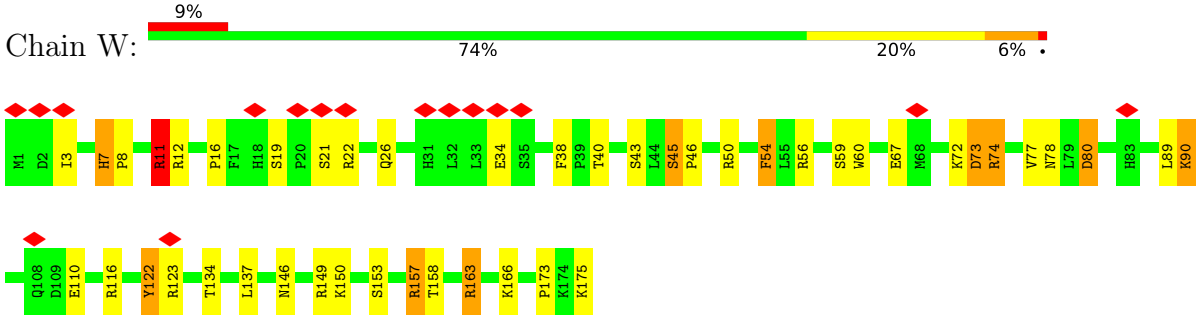


• Molecule 1: ALPHA-CRYSTALLIN B CHAIN



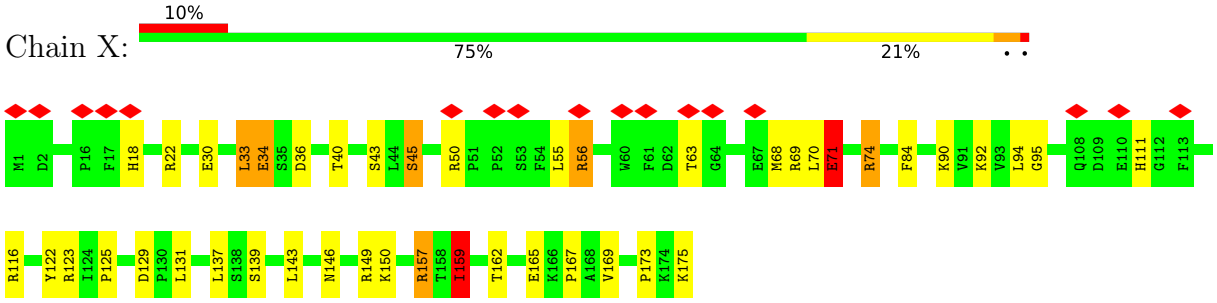
• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

Chain W:



• Molecule 1: ALPHA-CRYSTALLIN B CHAIN

Chain X:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	17560	Depositor
Resolution determination method	Not provided	
CTF correction method	EACH MICROGRAPH, PHASE FLIPPING	Depositor
Microscope	JEOL 2010HT	Depositor
Voltage (kV)	120	Depositor
Electron dose ($e^-/Å^2$)	10	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	1500	Depositor
Magnification	47000	Depositor
Image detector	Not provided	
Maximum map value	0.080	Depositor
Minimum map value	0.000	Depositor
Average map value	0.005	Depositor
Map value standard deviation	0.007	Depositor
Recommended contour level	0.004	Depositor
Map size (Å)	230.4, 230.4, 230.4	wwPDB
Map dimensions	128, 128, 128	wwPDB
Map angles (°)	90, 90, 90	wwPDB
Pixel spacing (Å)	1.8, 1.8, 1.8	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	A	0.66	0/1474	1.29	16/1997 (0.8%)
1	B	0.68	0/1474	1.26	12/1997 (0.6%)
1	C	0.67	0/1474	1.29	14/1997 (0.7%)
1	D	0.68	0/1474	1.25	12/1997 (0.6%)
1	E	0.67	0/1474	1.29	16/1997 (0.8%)
1	F	0.68	0/1474	1.26	12/1997 (0.6%)
1	G	0.67	0/1474	1.29	18/1997 (0.9%)
1	H	0.68	0/1474	1.26	12/1997 (0.6%)
1	I	0.66	0/1474	1.29	16/1997 (0.8%)
1	J	0.68	0/1474	1.26	12/1997 (0.6%)
1	K	0.67	0/1474	1.29	15/1997 (0.8%)
1	L	0.68	0/1474	1.25	11/1997 (0.6%)
1	M	0.66	0/1474	1.29	15/1997 (0.8%)
1	N	0.68	0/1474	1.26	12/1997 (0.6%)
1	O	0.66	0/1474	1.29	13/1997 (0.7%)
1	P	0.68	0/1474	1.25	12/1997 (0.6%)
1	Q	0.67	0/1474	1.29	16/1997 (0.8%)
1	R	0.68	0/1474	1.26	12/1997 (0.6%)
1	S	0.67	0/1474	1.29	18/1997 (0.9%)
1	T	0.68	0/1474	1.26	12/1997 (0.6%)
1	U	0.66	0/1474	1.29	16/1997 (0.8%)
1	V	0.68	0/1474	1.26	12/1997 (0.6%)
1	W	0.67	0/1474	1.29	15/1997 (0.8%)
1	X	0.68	0/1474	1.25	12/1997 (0.6%)
All	All	0.67	0/35376	1.27	331/47928 (0.7%)

Chiral center outliers are detected by calculating the chiral volume of a chiral center and verifying if the center is modelled as a planar moiety or with the opposite hand.A planarity outlier is detected by checking planarity of atoms in a peptide group, atoms in a mainchain group or atoms of a sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	10

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Mol	Chain	#Chirality outliers	#Planarity outliers
1	B	0	3
1	C	0	9
1	D	0	3
1	E	0	10
1	F	0	3
1	G	0	10
1	H	0	3
1	I	0	10
1	J	0	2
1	K	0	10
1	L	0	3
1	M	0	10
1	N	0	3
1	O	0	9
1	P	0	3
1	Q	0	10
1	R	0	3
1	S	0	10
1	T	0	3
1	U	0	10
1	V	0	2
1	W	0	10
1	X	0	3
All	All	0	152

There are no bond length outliers.

All (331) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	D	69	ARG	NE-CZ-NH2	-9.75	115.43	120.30
1	H	69	ARG	NE-CZ-NH2	-9.71	115.44	120.30
1	V	69	ARG	NE-CZ-NH2	-9.71	115.44	120.30
1	J	69	ARG	NE-CZ-NH2	-9.69	115.45	120.30
1	X	69	ARG	NE-CZ-NH2	-9.67	115.47	120.30
1	F	69	ARG	NE-CZ-NH2	-9.65	115.47	120.30
1	R	69	ARG	NE-CZ-NH2	-9.65	115.47	120.30
1	T	69	ARG	NE-CZ-NH2	-9.61	115.49	120.30
1	P	69	ARG	NE-CZ-NH2	-9.59	115.50	120.30
1	L	69	ARG	NE-CZ-NH2	-9.59	115.50	120.30
1	N	69	ARG	NE-CZ-NH2	-9.57	115.51	120.30
1	L	149	ARG	NE-CZ-NH1	9.56	125.08	120.30
1	B	69	ARG	NE-CZ-NH2	-9.52	115.54	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	R	149	ARG	NE-CZ-NH1	9.51	125.06	120.30
1	F	149	ARG	NE-CZ-NH1	9.45	125.02	120.30
1	X	149	ARG	NE-CZ-NH1	9.44	125.02	120.30
1	H	149	ARG	NE-CZ-NH1	9.34	124.97	120.30
1	J	149	ARG	NE-CZ-NH1	9.32	124.96	120.30
1	D	149	ARG	NE-CZ-NH1	9.32	124.96	120.30
1	V	149	ARG	NE-CZ-NH1	9.31	124.96	120.30
1	N	149	ARG	NE-CZ-NH1	9.25	124.92	120.30
1	P	149	ARG	NE-CZ-NH1	9.23	124.92	120.30
1	B	149	ARG	NE-CZ-NH1	9.22	124.91	120.30
1	G	157	ARG	NE-CZ-NH1	9.20	124.90	120.30
1	S	157	ARG	NE-CZ-NH1	9.20	124.90	120.30
1	C	157	ARG	NE-CZ-NH1	9.16	124.88	120.30
1	O	157	ARG	NE-CZ-NH1	9.16	124.88	120.30
1	U	157	ARG	NE-CZ-NH1	9.15	124.88	120.30
1	A	157	ARG	NE-CZ-NH1	9.14	124.87	120.30
1	M	157	ARG	NE-CZ-NH1	9.13	124.87	120.30
1	E	157	ARG	NE-CZ-NH1	9.09	124.85	120.30
1	W	157	ARG	NE-CZ-NH1	9.08	124.84	120.30
1	Q	157	ARG	NE-CZ-NH1	9.07	124.83	120.30
1	T	149	ARG	NE-CZ-NH1	9.07	124.83	120.30
1	I	157	ARG	NE-CZ-NH1	9.05	124.82	120.30
1	K	157	ARG	NE-CZ-NH1	9.01	124.81	120.30
1	B	157	ARG	NE-CZ-NH1	8.95	124.78	120.30
1	V	157	ARG	NE-CZ-NH1	8.89	124.74	120.30
1	N	157	ARG	NE-CZ-NH1	8.87	124.74	120.30
1	D	157	ARG	NE-CZ-NH1	8.83	124.72	120.30
1	P	157	ARG	NE-CZ-NH1	8.82	124.71	120.30
1	T	157	ARG	NE-CZ-NH1	8.82	124.71	120.30
1	H	157	ARG	NE-CZ-NH1	8.79	124.69	120.30
1	F	157	ARG	NE-CZ-NH1	8.77	124.68	120.30
1	J	69	ARG	NE-CZ-NH1	8.76	124.68	120.30
1	J	157	ARG	NE-CZ-NH1	8.76	124.68	120.30
1	X	157	ARG	NE-CZ-NH1	8.73	124.66	120.30
1	L	157	ARG	NE-CZ-NH1	8.72	124.66	120.30
1	R	157	ARG	NE-CZ-NH1	8.70	124.65	120.30
1	V	69	ARG	NE-CZ-NH1	8.67	124.63	120.30
1	X	69	ARG	NE-CZ-NH1	8.65	124.62	120.30
1	D	69	ARG	NE-CZ-NH1	8.64	124.62	120.30
1	R	69	ARG	NE-CZ-NH1	8.64	124.62	120.30
1	T	69	ARG	NE-CZ-NH1	8.63	124.62	120.30
1	P	69	ARG	NE-CZ-NH1	8.62	124.61	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	F	69	ARG	NE-CZ-NH1	8.61	124.60	120.30
1	H	69	ARG	NE-CZ-NH1	8.57	124.58	120.30
1	N	69	ARG	NE-CZ-NH1	8.56	124.58	120.30
1	B	69	ARG	NE-CZ-NH1	8.50	124.55	120.30
1	L	69	ARG	NE-CZ-NH1	8.49	124.54	120.30
1	U	116	ARG	NE-CZ-NH2	-8.28	116.16	120.30
1	O	116	ARG	NE-CZ-NH2	-8.26	116.17	120.30
1	C	116	ARG	NE-CZ-NH2	-8.17	116.21	120.30
1	I	116	ARG	NE-CZ-NH2	-8.07	116.26	120.30
1	E	116	ARG	NE-CZ-NH2	-8.06	116.27	120.30
1	A	116	ARG	NE-CZ-NH2	-8.03	116.28	120.30
1	W	116	ARG	NE-CZ-NH2	-8.02	116.29	120.30
1	C	123	ARG	NE-CZ-NH2	-8.01	116.30	120.30
1	G	116	ARG	NE-CZ-NH2	-8.00	116.30	120.30
1	Q	116	ARG	NE-CZ-NH2	-7.98	116.31	120.30
1	M	116	ARG	NE-CZ-NH2	-7.97	116.31	120.30
1	U	123	ARG	NE-CZ-NH2	-7.97	116.31	120.30
1	K	123	ARG	NE-CZ-NH2	-7.97	116.32	120.30
1	S	116	ARG	NE-CZ-NH2	-7.96	116.32	120.30
1	I	123	ARG	NE-CZ-NH2	-7.95	116.32	120.30
1	K	116	ARG	NE-CZ-NH2	-7.92	116.34	120.30
1	O	123	ARG	NE-CZ-NH2	-7.90	116.35	120.30
1	M	123	ARG	NE-CZ-NH2	-7.86	116.37	120.30
1	A	123	ARG	NE-CZ-NH2	-7.82	116.39	120.30
1	E	123	ARG	NE-CZ-NH2	-7.82	116.39	120.30
1	W	123	ARG	NE-CZ-NH2	-7.81	116.39	120.30
1	G	123	ARG	NE-CZ-NH2	-7.80	116.40	120.30
1	S	123	ARG	NE-CZ-NH2	-7.80	116.40	120.30
1	Q	123	ARG	NE-CZ-NH2	-7.78	116.41	120.30
1	E	56	ARG	NE-CZ-NH2	-7.53	116.54	120.30
1	C	56	ARG	NE-CZ-NH2	-7.52	116.54	120.30
1	O	56	ARG	NE-CZ-NH2	-7.45	116.57	120.30
1	A	56	ARG	NE-CZ-NH2	-7.45	116.58	120.30
1	M	56	ARG	NE-CZ-NH2	-7.45	116.58	120.30
1	W	56	ARG	NE-CZ-NH2	-7.44	116.58	120.30
1	G	56	ARG	NE-CZ-NH2	-7.43	116.58	120.30
1	Q	56	ARG	NE-CZ-NH2	-7.42	116.59	120.30
1	I	56	ARG	NE-CZ-NH2	-7.42	116.59	120.30
1	U	56	ARG	NE-CZ-NH2	-7.42	116.59	120.30
1	K	56	ARG	NE-CZ-NH2	-7.41	116.60	120.30
1	G	149	ARG	NE-CZ-NH1	7.36	123.98	120.30
1	Q	149	ARG	NE-CZ-NH1	7.35	123.98	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	L	116	ARG	NE-CZ-NH2	-7.34	116.63	120.30
1	X	116	ARG	NE-CZ-NH2	-7.34	116.63	120.30
1	K	149	ARG	NE-CZ-NH1	7.33	123.96	120.30
1	R	116	ARG	NE-CZ-NH2	-7.33	116.64	120.30
1	S	56	ARG	NE-CZ-NH2	-7.30	116.65	120.30
1	W	149	ARG	NE-CZ-NH1	7.29	123.94	120.30
1	C	149	ARG	NE-CZ-NH1	7.27	123.93	120.30
1	I	149	ARG	NE-CZ-NH1	7.26	123.93	120.30
1	U	149	ARG	NE-CZ-NH1	7.26	123.93	120.30
1	A	149	ARG	NE-CZ-NH1	7.26	123.93	120.30
1	M	149	ARG	NE-CZ-NH1	7.26	123.93	120.30
1	O	149	ARG	NE-CZ-NH1	7.26	123.93	120.30
1	D	116	ARG	NE-CZ-NH2	-7.25	116.67	120.30
1	P	116	ARG	NE-CZ-NH2	-7.25	116.67	120.30
1	M	50	ARG	NE-CZ-NH1	7.25	123.92	120.30
1	V	116	ARG	NE-CZ-NH2	-7.23	116.69	120.30
1	E	149	ARG	NE-CZ-NH1	7.22	123.91	120.30
1	F	116	ARG	NE-CZ-NH2	-7.21	116.69	120.30
1	S	149	ARG	NE-CZ-NH1	7.17	123.89	120.30
1	J	116	ARG	NE-CZ-NH2	-7.15	116.72	120.30
1	L	74	ARG	NE-CZ-NH1	7.14	123.87	120.30
1	A	50	ARG	NE-CZ-NH1	7.14	123.87	120.30
1	T	116	ARG	NE-CZ-NH2	-7.12	116.74	120.30
1	H	116	ARG	NE-CZ-NH2	-7.12	116.74	120.30
1	D	74	ARG	NE-CZ-NH1	7.09	123.85	120.30
1	J	74	ARG	NE-CZ-NH1	7.08	123.84	120.30
1	R	74	ARG	NE-CZ-NH1	7.07	123.84	120.30
1	B	74	ARG	NE-CZ-NH1	7.07	123.84	120.30
1	H	74	ARG	NE-CZ-NH1	7.06	123.83	120.30
1	X	74	ARG	NE-CZ-NH1	7.06	123.83	120.30
1	V	74	ARG	NE-CZ-NH1	7.05	123.83	120.30
1	T	74	ARG	NE-CZ-NH1	7.05	123.83	120.30
1	P	74	ARG	NE-CZ-NH1	7.04	123.82	120.30
1	K	50	ARG	NE-CZ-NH1	7.02	123.81	120.30
1	S	163	ARG	NE-CZ-NH1	7.02	123.81	120.30
1	W	50	ARG	NE-CZ-NH1	7.02	123.81	120.30
1	B	116	ARG	NE-CZ-NH2	-7.02	116.79	120.30
1	N	116	ARG	NE-CZ-NH2	-7.02	116.79	120.30
1	G	116	ARG	NE-CZ-NH1	7.01	123.81	120.30
1	W	163	ARG	NE-CZ-NH1	7.01	123.81	120.30
1	Q	163	ARG	NE-CZ-NH1	7.01	123.80	120.30
1	A	116	ARG	NE-CZ-NH1	7.00	123.80	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	N	50	ARG	NE-CZ-NH1	6.99	123.80	120.30
1	B	50	ARG	NE-CZ-NH1	6.98	123.79	120.30
1	N	74	ARG	NE-CZ-NH1	6.97	123.79	120.30
1	F	74	ARG	NE-CZ-NH1	6.96	123.78	120.30
1	G	163	ARG	NE-CZ-NH1	6.96	123.78	120.30
1	K	163	ARG	NE-CZ-NH1	6.95	123.77	120.30
1	O	163	ARG	NE-CZ-NH1	6.94	123.77	120.30
1	H	50	ARG	NE-CZ-NH1	6.93	123.76	120.30
1	M	116	ARG	NE-CZ-NH1	6.92	123.76	120.30
1	A	163	ARG	NE-CZ-NH1	6.92	123.76	120.30
1	R	50	ARG	NE-CZ-NH1	6.92	123.76	120.30
1	I	163	ARG	NE-CZ-NH1	6.91	123.76	120.30
1	P	50	ARG	NE-CZ-NH1	6.91	123.75	120.30
1	U	163	ARG	NE-CZ-NH1	6.91	123.75	120.30
1	X	50	ARG	NE-CZ-NH1	6.91	123.75	120.30
1	S	116	ARG	NE-CZ-NH1	6.91	123.75	120.30
1	J	50	ARG	NE-CZ-NH1	6.88	123.74	120.30
1	E	163	ARG	NE-CZ-NH1	6.87	123.74	120.30
1	M	163	ARG	NE-CZ-NH1	6.87	123.73	120.30
1	T	50	ARG	NE-CZ-NH1	6.84	123.72	120.30
1	V	50	ARG	NE-CZ-NH1	6.84	123.72	120.30
1	F	50	ARG	NE-CZ-NH1	6.83	123.72	120.30
1	D	50	ARG	NE-CZ-NH1	6.83	123.71	120.30
1	L	50	ARG	NE-CZ-NH1	6.82	123.71	120.30
1	C	163	ARG	NE-CZ-NH1	6.81	123.71	120.30
1	F	123	ARG	NE-CZ-NH2	-6.81	116.90	120.30
1	R	22	ARG	NE-CZ-NH1	6.79	123.69	120.30
1	F	22	ARG	NE-CZ-NH1	6.77	123.69	120.30
1	L	123	ARG	NE-CZ-NH2	-6.77	116.92	120.30
1	P	123	ARG	NE-CZ-NH2	-6.75	116.93	120.30
1	J	123	ARG	NE-CZ-NH2	-6.72	116.94	120.30
1	V	123	ARG	NE-CZ-NH2	-6.72	116.94	120.30
1	Q	50	ARG	NE-CZ-NH1	6.71	123.66	120.30
1	R	123	ARG	NE-CZ-NH2	-6.70	116.95	120.30
1	Q	116	ARG	NE-CZ-NH1	6.69	123.64	120.30
1	D	123	ARG	NE-CZ-NH2	-6.68	116.96	120.30
1	W	116	ARG	NE-CZ-NH1	6.67	123.64	120.30
1	E	116	ARG	NE-CZ-NH1	6.67	123.63	120.30
1	L	56	ARG	NE-CZ-NH1	6.66	123.63	120.30
1	B	123	ARG	NE-CZ-NH2	-6.66	116.97	120.30
1	N	123	ARG	NE-CZ-NH2	-6.66	116.97	120.30
1	G	50	ARG	NE-CZ-NH1	6.64	123.62	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	X	22	ARG	NE-CZ-NH1	6.63	123.62	120.30
1	N	56	ARG	NE-CZ-NH1	6.63	123.61	120.30
1	T	123	ARG	NE-CZ-NH2	-6.62	116.99	120.30
1	B	56	ARG	NE-CZ-NH1	6.62	123.61	120.30
1	H	22	ARG	NE-CZ-NH1	6.61	123.61	120.30
1	H	123	ARG	NE-CZ-NH2	-6.61	117.00	120.30
1	X	56	ARG	NE-CZ-NH1	6.60	123.60	120.30
1	S	122	TYR	CB-CG-CD2	-6.60	117.04	121.00
1	T	56	ARG	NE-CZ-NH1	6.60	123.60	120.30
1	H	56	ARG	NE-CZ-NH1	6.59	123.60	120.30
1	S	50	ARG	NE-CZ-NH1	6.59	123.59	120.30
1	X	123	ARG	NE-CZ-NH2	-6.58	117.01	120.30
1	A	122	TYR	CB-CG-CD2	-6.57	117.06	121.00
1	K	116	ARG	NE-CZ-NH1	6.57	123.58	120.30
1	D	56	ARG	NE-CZ-NH1	6.57	123.58	120.30
1	J	56	ARG	NE-CZ-NH1	6.56	123.58	120.30
1	G	122	TYR	CB-CG-CD2	-6.56	117.06	121.00
1	F	56	ARG	NE-CZ-NH1	6.56	123.58	120.30
1	E	50	ARG	NE-CZ-NH1	6.55	123.57	120.30
1	R	56	ARG	NE-CZ-NH1	6.52	123.56	120.30
1	P	56	ARG	NE-CZ-NH1	6.51	123.56	120.30
1	T	22	ARG	NE-CZ-NH1	6.50	123.55	120.30
1	V	56	ARG	NE-CZ-NH1	6.48	123.54	120.30
1	M	122	TYR	CB-CG-CD2	-6.47	117.12	121.00
1	L	22	ARG	NE-CZ-NH1	6.46	123.53	120.30
1	N	22	ARG	NE-CZ-NH1	6.41	123.50	120.30
1	B	22	ARG	NE-CZ-NH1	6.31	123.46	120.30
1	D	22	ARG	NE-CZ-NH1	6.26	123.43	120.30
1	J	22	ARG	NE-CZ-NH1	6.22	123.41	120.30
1	P	22	ARG	NE-CZ-NH1	6.21	123.41	120.30
1	V	22	ARG	NE-CZ-NH1	6.21	123.40	120.30
1	K	123	ARG	NE-CZ-NH1	6.11	123.35	120.30
1	A	123	ARG	NE-CZ-NH1	6.09	123.35	120.30
1	O	116	ARG	NE-CZ-NH1	6.09	123.34	120.30
1	I	122	TYR	CB-CG-CD2	-6.07	117.36	121.00
1	C	123	ARG	NE-CZ-NH1	6.04	123.32	120.30
1	G	123	ARG	NE-CZ-NH1	6.03	123.31	120.30
1	S	123	ARG	NE-CZ-NH1	6.03	123.31	120.30
1	I	123	ARG	NE-CZ-NH1	6.02	123.31	120.30
1	W	123	ARG	NE-CZ-NH1	6.01	123.31	120.30
1	Q	36	ASP	CB-CG-OD2	-6.01	112.89	118.30
1	E	36	ASP	CB-CG-OD2	-6.01	112.89	118.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	O	122	TYR	CB-CG-CD2	-6.01	117.40	121.00
1	U	116	ARG	NE-CZ-NH1	6.00	123.30	120.30
1	Q	123	ARG	NE-CZ-NH1	6.00	123.30	120.30
1	E	12	ARG	NE-CZ-NH1	5.98	123.29	120.30
1	Q	12	ARG	NE-CZ-NH1	5.98	123.29	120.30
1	U	123	ARG	NE-CZ-NH1	5.98	123.29	120.30
1	C	122	TYR	CB-CG-CD2	-5.97	117.42	121.00
1	O	123	ARG	NE-CZ-NH1	5.97	123.29	120.30
1	C	116	ARG	NE-CZ-NH1	5.97	123.28	120.30
1	U	122	TYR	CB-CG-CD2	-5.97	117.42	121.00
1	M	123	ARG	NE-CZ-NH1	5.96	123.28	120.30
1	E	123	ARG	NE-CZ-NH1	5.94	123.27	120.30
1	I	12	ARG	NE-CZ-NH1	5.93	123.27	120.30
1	K	12	ARG	NE-CZ-NH1	5.93	123.26	120.30
1	A	12	ARG	NE-CZ-NH1	5.92	123.26	120.30
1	M	12	ARG	NE-CZ-NH1	5.92	123.26	120.30
1	U	120	ARG	NE-CZ-NH1	5.91	123.26	120.30
1	O	120	ARG	NE-CZ-NH1	5.91	123.26	120.30
1	C	120	ARG	NE-CZ-NH1	5.91	123.25	120.30
1	I	116	ARG	NE-CZ-NH1	5.88	123.24	120.30
1	U	12	ARG	NE-CZ-NH1	5.88	123.24	120.30
1	G	12	ARG	NE-CZ-NH1	5.83	123.22	120.30
1	I	120	ARG	NE-CZ-NH1	5.83	123.22	120.30
1	W	12	ARG	NE-CZ-NH1	5.82	123.21	120.30
1	S	12	ARG	NE-CZ-NH1	5.81	123.20	120.30
1	O	12	ARG	NE-CZ-NH1	5.76	123.18	120.30
1	C	12	ARG	NE-CZ-NH1	5.71	123.15	120.30
1	G	54	PHE	CB-CG-CD2	-5.59	116.88	120.80
1	A	11	ARG	NE-CZ-NH1	5.57	123.09	120.30
1	S	54	PHE	CB-CG-CD2	-5.55	116.91	120.80
1	Q	54	PHE	CB-CG-CD2	-5.54	116.92	120.80
1	W	54	PHE	CB-CG-CD2	-5.54	116.92	120.80
1	W	122	TYR	CB-CG-CD2	-5.54	117.67	121.00
1	I	36	ASP	CB-CG-OD2	-5.54	113.32	118.30
1	A	54	PHE	CB-CG-CD2	-5.52	116.93	120.80
1	T	116	ARG	NE-CZ-NH1	5.52	123.06	120.30
1	Q	122	TYR	CB-CG-CD2	-5.51	117.69	121.00
1	A	22	ARG	NE-CZ-NH1	5.51	123.06	120.30
1	M	11	ARG	NE-CZ-NH1	5.51	123.06	120.30
1	M	22	ARG	NE-CZ-NH1	5.51	123.06	120.30
1	E	122	TYR	CB-CG-CD2	-5.51	117.69	121.00
1	P	123	ARG	NE-CZ-NH1	5.51	123.05	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	E	54	PHE	CB-CG-CD2	-5.50	116.95	120.80
1	U	36	ASP	CB-CG-OD2	-5.50	113.35	118.30
1	O	54	PHE	CB-CG-CD2	-5.50	116.95	120.80
1	H	116	ARG	NE-CZ-NH1	5.49	123.05	120.30
1	U	54	PHE	CB-CG-CD2	-5.49	116.96	120.80
1	G	22	ARG	NE-CZ-NH1	5.47	123.04	120.30
1	B	116	ARG	NE-CZ-NH1	5.47	123.03	120.30
1	S	11	ARG	NE-CZ-NH1	5.47	123.03	120.30
1	G	11	ARG	NE-CZ-NH1	5.46	123.03	120.30
1	K	122	TYR	CB-CG-CD2	-5.45	117.73	121.00
1	K	54	PHE	CB-CG-CD2	-5.45	116.99	120.80
1	M	54	PHE	CB-CG-CD2	-5.45	116.99	120.80
1	J	123	ARG	NE-CZ-NH1	5.43	123.01	120.30
1	K	116	ARG	CD-NE-CZ	5.42	131.19	123.60
1	C	54	PHE	CB-CG-CD2	-5.42	117.01	120.80
1	S	22	ARG	NE-CZ-NH1	5.40	123.00	120.30
1	I	54	PHE	CB-CG-CD2	-5.38	117.03	120.80
1	E	116	ARG	CD-NE-CZ	5.38	131.13	123.60
1	Q	116	ARG	CD-NE-CZ	5.37	131.11	123.60
1	W	116	ARG	CD-NE-CZ	5.36	131.11	123.60
1	V	123	ARG	NE-CZ-NH1	5.36	122.98	120.30
1	N	116	ARG	NE-CZ-NH1	5.35	122.98	120.30
1	R	123	ARG	NE-CZ-NH1	5.35	122.97	120.30
1	K	22	ARG	NE-CZ-NH1	5.33	122.97	120.30
1	W	22	ARG	NE-CZ-NH1	5.33	122.97	120.30
1	L	123	ARG	NE-CZ-NH1	5.32	122.96	120.30
1	B	123	ARG	NE-CZ-NH1	5.31	122.96	120.30
1	M	116	ARG	CD-NE-CZ	5.31	131.04	123.60
1	S	116	ARG	CD-NE-CZ	5.31	131.03	123.60
1	D	123	ARG	NE-CZ-NH1	5.31	122.95	120.30
1	E	22	ARG	NE-CZ-NH1	5.30	122.95	120.30
1	F	123	ARG	NE-CZ-NH1	5.29	122.95	120.30
1	A	116	ARG	CD-NE-CZ	5.29	131.01	123.60
1	S	36	ASP	CB-CG-OD1	-5.28	113.55	118.30
1	G	36	ASP	CB-CG-OD1	-5.28	113.55	118.30
1	J	116	ARG	NE-CZ-NH1	5.28	122.94	120.30
1	G	116	ARG	CD-NE-CZ	5.28	130.99	123.60
1	T	123	ARG	NE-CZ-NH1	5.27	122.94	120.30
1	E	11	ARG	NE-CZ-NH1	5.26	122.93	120.30
1	N	123	ARG	NE-CZ-NH1	5.25	122.93	120.30
1	P	116	ARG	NE-CZ-NH1	5.25	122.93	120.30
1	V	116	ARG	NE-CZ-NH1	5.24	122.92	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
1	Q	22	ARG	NE-CZ-NH1	5.23	122.92	120.30
1	H	123	ARG	NE-CZ-NH1	5.22	122.91	120.30
1	D	116	ARG	NE-CZ-NH1	5.21	122.91	120.30
1	O	11	ARG	NE-CZ-NH1	5.20	122.90	120.30
1	X	123	ARG	NE-CZ-NH1	5.19	122.89	120.30
1	I	22	ARG	NE-CZ-NH1	5.16	122.88	120.30
1	U	11	ARG	NE-CZ-NH1	5.16	122.88	120.30
1	A	122	TYR	CB-CG-CD1	5.14	124.08	121.00
1	Q	11	ARG	NE-CZ-NH1	5.12	122.86	120.30
1	F	116	ARG	NE-CZ-NH1	5.11	122.85	120.30
1	K	11	ARG	NE-CZ-NH1	5.10	122.85	120.30
1	I	11	ARG	NE-CZ-NH1	5.09	122.85	120.30
1	G	122	TYR	CB-CG-CD1	5.09	124.06	121.00
1	U	22	ARG	NE-CZ-NH1	5.09	122.84	120.30
1	X	116	ARG	NE-CZ-NH1	5.08	122.84	120.30
1	R	116	ARG	NE-CZ-NH1	5.07	122.83	120.30
1	W	11	ARG	NE-CZ-NH1	5.05	122.82	120.30
1	C	11	ARG	NE-CZ-NH1	5.05	122.82	120.30
1	S	54	PHE	CB-CG-CD1	5.01	124.31	120.80
1	G	54	PHE	CB-CG-CD1	5.01	124.31	120.80
1	S	122	TYR	CB-CG-CD1	5.01	124.01	121.00
1	U	50	ARG	NE-CZ-NH1	5.01	122.81	120.30
1	C	22	ARG	NE-CZ-NH1	5.01	122.80	120.30
1	I	50	ARG	NE-CZ-NH1	5.01	122.80	120.30

There are no chirality outliers.

All (152) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	11	ARG	Sidechain
1	A	134	THR	Peptide
1	A	150	LYS	Peptide
1	A	157	ARG	Peptide
1	A	38	PHE	Peptide
1	A	45	SER	Peptide
1	A	46	PRO	Peptide
1	A	72	LYS	Peptide
1	A	74	ARG	Peptide
1	A	80	ASP	Peptide
1	B	165	GLU	Peptide
1	B	35	SER	Peptide
1	B	43	SER	Peptide

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Mol	Chain	Res	Type	Group
1	C	11	ARG	Sidechain
1	C	134	THR	Peptide
1	C	150	LYS	Peptide
1	C	157	ARG	Peptide
1	C	45	SER	Peptide
1	C	46	PRO	Peptide
1	C	72	LYS	Peptide
1	C	74	ARG	Peptide
1	C	80	ASP	Peptide
1	D	165	GLU	Peptide
1	D	35	SER	Peptide
1	D	43	SER	Peptide
1	E	11	ARG	Sidechain
1	E	134	THR	Peptide
1	E	150	LYS	Peptide
1	E	157	ARG	Peptide
1	E	38	PHE	Peptide
1	E	45	SER	Peptide
1	E	46	PRO	Peptide
1	E	72	LYS	Peptide
1	E	74	ARG	Peptide
1	E	80	ASP	Peptide
1	F	122	TYR	Sidechain
1	F	165	GLU	Peptide
1	F	43	SER	Peptide
1	G	11	ARG	Sidechain
1	G	134	THR	Peptide
1	G	150	LYS	Peptide
1	G	157	ARG	Peptide
1	G	38	PHE	Peptide
1	G	45	SER	Peptide
1	G	46	PRO	Peptide
1	G	72	LYS	Peptide
1	G	74	ARG	Peptide
1	G	80	ASP	Peptide
1	H	165	GLU	Peptide
1	H	35	SER	Peptide
1	H	43	SER	Peptide
1	I	11	ARG	Sidechain
1	I	134	THR	Peptide
1	I	150	LYS	Peptide
1	I	157	ARG	Peptide

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Mol	Chain	Res	Type	Group
1	I	38	PHE	Peptide
1	I	45	SER	Peptide
1	I	46	PRO	Peptide
1	I	72	LYS	Peptide
1	I	74	ARG	Peptide
1	I	80	ASP	Peptide
1	J	165	GLU	Peptide
1	J	43	SER	Peptide
1	K	11	ARG	Sidechain
1	K	134	THR	Peptide
1	K	150	LYS	Peptide
1	K	157	ARG	Peptide
1	K	38	PHE	Peptide
1	K	45	SER	Peptide
1	K	46	PRO	Peptide
1	K	72	LYS	Peptide
1	K	74	ARG	Peptide
1	K	80	ASP	Peptide
1	L	122	TYR	Sidechain
1	L	165	GLU	Peptide
1	L	43	SER	Peptide
1	M	11	ARG	Sidechain
1	M	134	THR	Peptide
1	M	150	LYS	Peptide
1	M	157	ARG	Peptide
1	M	38	PHE	Peptide
1	M	45	SER	Peptide
1	M	46	PRO	Peptide
1	M	72	LYS	Peptide
1	M	74	ARG	Peptide
1	M	80	ASP	Peptide
1	N	165	GLU	Peptide
1	N	35	SER	Peptide
1	N	43	SER	Peptide
1	O	11	ARG	Sidechain
1	O	134	THR	Peptide
1	O	150	LYS	Peptide
1	O	157	ARG	Peptide
1	O	45	SER	Peptide
1	O	46	PRO	Peptide
1	O	72	LYS	Peptide
1	O	74	ARG	Peptide

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Mol	Chain	Res	Type	Group
1	O	80	ASP	Peptide
1	P	165	GLU	Peptide
1	P	35	SER	Peptide
1	P	43	SER	Peptide
1	Q	11	ARG	Sidechain
1	Q	134	THR	Peptide
1	Q	150	LYS	Peptide
1	Q	157	ARG	Peptide
1	Q	38	PHE	Peptide
1	Q	45	SER	Peptide
1	Q	46	PRO	Peptide
1	Q	72	LYS	Peptide
1	Q	74	ARG	Peptide
1	Q	80	ASP	Peptide
1	R	122	TYR	Sidechain
1	R	165	GLU	Peptide
1	R	43	SER	Peptide
1	S	11	ARG	Sidechain
1	S	134	THR	Peptide
1	S	150	LYS	Peptide
1	S	157	ARG	Peptide
1	S	38	PHE	Peptide
1	S	45	SER	Peptide
1	S	46	PRO	Peptide
1	S	72	LYS	Peptide
1	S	74	ARG	Peptide
1	S	80	ASP	Peptide
1	T	165	GLU	Peptide
1	T	35	SER	Peptide
1	T	43	SER	Peptide
1	U	11	ARG	Sidechain
1	U	134	THR	Peptide
1	U	150	LYS	Peptide
1	U	157	ARG	Peptide
1	U	38	PHE	Peptide
1	U	45	SER	Peptide
1	U	46	PRO	Peptide
1	U	72	LYS	Peptide
1	U	74	ARG	Peptide
1	U	80	ASP	Peptide
1	V	165	GLU	Peptide
1	V	43	SER	Peptide

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Mol	Chain	Res	Type	Group
1	W	11	ARG	Sidechain
1	W	134	THR	Peptide
1	W	150	LYS	Peptide
1	W	157	ARG	Peptide
1	W	38	PHE	Peptide
1	W	45	SER	Peptide
1	W	46	PRO	Peptide
1	W	72	LYS	Peptide
1	W	74	ARG	Peptide
1	W	80	ASP	Peptide
1	X	122	TYR	Sidechain
1	X	165	GLU	Peptide
1	X	43	SER	Peptide

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	A	1429	0	1407	10	0
1	B	1429	0	1407	11	0
1	C	1429	0	1407	6	0
1	D	1429	0	1407	11	0
1	E	1429	0	1407	7	0
1	F	1429	0	1407	12	0
1	G	1429	0	1407	7	0
1	H	1429	0	1407	10	0
1	I	1429	0	1407	6	0
1	J	1429	0	1407	12	0
1	K	1429	0	1407	5	0
1	L	1429	0	1407	9	0
1	M	1429	0	1407	10	0
1	N	1429	0	1407	12	0
1	O	1429	0	1407	7	0
1	P	1429	0	1407	12	0
1	Q	1429	0	1407	6	0
1	R	1429	0	1407	12	0
1	S	1429	0	1407	7	0
1	T	1429	0	1407	9	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	U	1429	0	1407	6	0
1	V	1429	0	1407	12	0
1	W	1429	0	1407	5	0
1	X	1429	0	1407	9	0
All	All	34296	0	33768	151	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 2.

All (151) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:F:33:LEU:HD12	1:F:33:LEU:H	1.60	0.66
1:R:33:LEU:H	1:R:33:LEU:HD12	1.60	0.66
1:C:122:TYR:CE2	1:F:111:HIS:HB3	2.39	0.58
1:O:122:TYR:CE2	1:R:111:HIS:HB3	2.39	0.58
1:I:122:TYR:CE2	1:L:111:HIS:HB3	2.39	0.58
1:U:122:TYR:CE2	1:X:111:HIS:HB3	2.39	0.58
1:H:71:GLU:H	1:H:167:PRO:CD	2.20	0.55
1:T:71:GLU:H	1:T:167:PRO:CD	2.20	0.55
1:D:71:GLU:H	1:D:167:PRO:CD	2.20	0.55
1:P:71:GLU:H	1:P:167:PRO:CD	2.20	0.55
1:B:71:GLU:H	1:B:167:PRO:CD	2.20	0.54
1:N:71:GLU:H	1:N:167:PRO:CD	2.20	0.54
1:L:71:GLU:H	1:L:167:PRO:CD	2.20	0.54
1:J:71:GLU:H	1:J:167:PRO:CD	2.20	0.53
1:F:71:GLU:H	1:F:167:PRO:CD	2.20	0.53
1:R:71:GLU:H	1:R:167:PRO:CD	2.20	0.53
1:X:71:GLU:H	1:X:167:PRO:CD	2.20	0.53
1:V:71:GLU:H	1:V:167:PRO:CD	2.20	0.53
1:N:33:LEU:H	1:N:33:LEU:HD12	1.75	0.52
1:B:33:LEU:HD12	1:B:33:LEU:H	1.75	0.52
1:K:90:LYS:HE3	1:L:94:LEU:HD13	1.93	0.51
1:A:90:LYS:HE3	1:B:94:LEU:HD13	1.93	0.51
1:M:90:LYS:HE3	1:N:94:LEU:HD13	1.93	0.51
1:W:90:LYS:HE3	1:X:94:LEU:HD13	1.93	0.51
1:C:90:LYS:HE3	1:D:94:LEU:HD13	1.93	0.51
1:O:90:LYS:HE3	1:P:94:LEU:HD13	1.93	0.51
1:B:111:HIS:HB3	1:E:122:TYR:CE2	2.47	0.50
1:T:111:HIS:HB3	1:W:122:TYR:CE2	2.47	0.50
1:G:90:LYS:HE3	1:H:94:LEU:HD13	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:111:HIS:HB3	1:K:122:TYR:CE2	2.47	0.50
1:N:111:HIS:HB3	1:Q:122:TYR:CE2	2.47	0.50
1:S:90:LYS:HE3	1:T:94:LEU:HD13	1.93	0.50
1:E:90:LYS:HE3	1:F:94:LEU:HD13	1.92	0.50
1:I:90:LYS:HE3	1:J:94:LEU:HD13	1.93	0.50
1:U:90:LYS:HE3	1:V:94:LEU:HD13	1.93	0.50
1:A:90:LYS:HE3	1:B:94:LEU:CD1	2.42	0.50
1:W:90:LYS:HE3	1:X:94:LEU:CD1	2.42	0.50
1:C:90:LYS:HE3	1:D:94:LEU:CD1	2.42	0.50
1:M:90:LYS:HE3	1:N:94:LEU:CD1	2.42	0.50
1:O:90:LYS:HE3	1:P:94:LEU:CD1	2.42	0.50
1:Q:90:LYS:HE3	1:R:94:LEU:HD13	1.93	0.50
1:K:90:LYS:HE3	1:L:94:LEU:CD1	2.42	0.49
1:E:90:LYS:HE3	1:F:94:LEU:CD1	2.41	0.49
1:Q:90:LYS:HE3	1:R:94:LEU:CD1	2.42	0.49
1:C:7:HIS:H	1:C:8:PRO:CD	2.25	0.49
1:O:7:HIS:H	1:O:8:PRO:CD	2.25	0.49
1:G:90:LYS:HE3	1:H:94:LEU:CD1	2.42	0.49
1:S:90:LYS:HE3	1:T:94:LEU:CD1	2.42	0.49
1:U:90:LYS:HE3	1:V:94:LEU:CD1	2.42	0.49
1:I:90:LYS:HE3	1:J:94:LEU:CD1	2.42	0.49
1:S:7:HIS:H	1:S:8:PRO:CD	2.26	0.49
1:T:33:LEU:HD12	1:T:33:LEU:H	1.78	0.49
1:H:33:LEU:HD12	1:H:33:LEU:H	1.78	0.49
1:A:7:HIS:H	1:A:8:PRO:CD	2.26	0.48
1:G:7:HIS:H	1:G:8:PRO:CD	2.26	0.48
1:M:7:HIS:H	1:M:8:PRO:CD	2.26	0.48
1:K:7:HIS:H	1:K:8:PRO:CD	2.27	0.47
1:W:7:HIS:H	1:W:8:PRO:CD	2.27	0.47
1:Q:7:HIS:H	1:Q:8:PRO:CD	2.27	0.47
1:E:7:HIS:H	1:E:8:PRO:CD	2.27	0.47
1:S:77:VAL:HG11	1:S:122:TYR:CE2	2.50	0.47
1:G:77:VAL:HG11	1:G:122:TYR:CE2	2.50	0.47
1:J:159:ILE:HD12	1:J:159:ILE:H	1.80	0.47
1:B:33:LEU:HD13	1:J:33:LEU:HD21	1.97	0.47
1:I:7:HIS:H	1:I:8:PRO:CD	2.27	0.47
1:N:33:LEU:HD13	1:V:33:LEU:HD21	1.97	0.47
1:T:159:ILE:H	1:T:159:ILE:HD12	1.80	0.47
1:V:159:ILE:HD12	1:V:159:ILE:H	1.80	0.47
1:D:159:ILE:HD12	1:D:159:ILE:H	1.80	0.47
1:P:159:ILE:H	1:P:159:ILE:HD12	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:U:7:HIS:H	1:U:8:PRO:CD	2.27	0.47
1:H:159:ILE:HD12	1:H:159:ILE:H	1.80	0.46
1:A:77:VAL:HG11	1:A:122:TYR:CE2	2.50	0.46
1:M:77:VAL:HG11	1:M:122:TYR:CE2	2.50	0.46
1:R:159:ILE:HD12	1:R:159:ILE:H	1.80	0.46
1:B:33:LEU:CD2	1:R:33:LEU:HD13	2.46	0.46
1:F:33:LEU:HD13	1:N:33:LEU:CD2	2.46	0.46
1:F:159:ILE:H	1:F:159:ILE:HD12	1.81	0.46
1:C:77:VAL:HG11	1:C:122:TYR:CE2	2.51	0.46
1:I:77:VAL:HG11	1:I:122:TYR:CE2	2.51	0.46
1:O:77:VAL:HG11	1:O:122:TYR:CE2	2.51	0.46
1:U:77:VAL:HG11	1:U:122:TYR:CE2	2.51	0.46
1:D:125:PRO:O	1:D:150:LYS:HE2	2.17	0.45
1:L:125:PRO:O	1:L:150:LYS:HE2	2.17	0.45
1:N:159:ILE:HD12	1:N:159:ILE:H	1.80	0.45
1:P:125:PRO:O	1:P:150:LYS:HE2	2.17	0.45
1:N:125:PRO:O	1:N:150:LYS:HE2	2.17	0.45
1:X:125:PRO:O	1:X:150:LYS:HE2	2.17	0.45
1:X:159:ILE:H	1:X:159:ILE:HD12	1.80	0.45
1:B:125:PRO:O	1:B:150:LYS:HE2	2.17	0.45
1:H:125:PRO:O	1:H:150:LYS:HE2	2.17	0.45
1:L:159:ILE:H	1:L:159:ILE:HD12	1.80	0.45
1:T:125:PRO:O	1:T:150:LYS:HE2	2.17	0.45
1:B:159:ILE:HD12	1:B:159:ILE:H	1.81	0.45
1:J:125:PRO:O	1:J:150:LYS:HE2	2.17	0.44
1:V:125:PRO:O	1:V:150:LYS:HE2	2.17	0.44
1:R:125:PRO:O	1:R:150:LYS:HE2	2.17	0.44
1:F:125:PRO:O	1:F:150:LYS:HE2	2.17	0.44
1:G:122:TYR:CE2	1:J:111:HIS:HB3	2.53	0.44
1:S:122:TYR:CE2	1:V:111:HIS:HB3	2.53	0.44
1:M:45:SER:HB3	1:M:46:PRO:CD	2.47	0.44
1:A:45:SER:HB3	1:A:46:PRO:CD	2.47	0.43
1:D:33:LEU:HD21	1:H:33:LEU:HD13	2.00	0.43
1:P:33:LEU:HD21	1:T:33:LEU:HD13	2.00	0.43
1:A:122:TYR:CE2	1:D:111:HIS:HB3	2.53	0.43
1:B:33:LEU:HD22	1:R:33:LEU:HD13	2.00	0.43
1:F:33:LEU:HD13	1:N:33:LEU:HD22	2.00	0.43
1:M:122:TYR:CE2	1:P:111:HIS:HB3	2.53	0.43
1:F:33:LEU:H	1:F:33:LEU:CD1	2.25	0.43
1:Q:77:VAL:HG11	1:Q:122:TYR:CE2	2.54	0.43
1:E:77:VAL:HG11	1:E:122:TYR:CE2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:R:33:LEU:H	1:R:33:LEU:CD1	2.25	0.42
1:H:31:HIS:CD2	1:X:34:GLU:HG3	2.54	0.42
1:L:33:LEU:HD12	1:L:33:LEU:H	1.84	0.42
1:L:34:GLU:HG3	1:T:31:HIS:CD2	2.54	0.42
1:K:77:VAL:HG11	1:K:122:TYR:CE2	2.54	0.42
1:X:33:LEU:H	1:X:33:LEU:HD12	1.84	0.42
1:A:122:TYR:CE2	1:D:111:HIS:CB	3.03	0.42
1:J:34:GLU:HG3	1:R:31:HIS:CD2	2.55	0.42
1:W:77:VAL:HG11	1:W:122:TYR:CE2	2.54	0.42
1:M:122:TYR:CE2	1:P:111:HIS:CB	3.03	0.42
1:C:45:SER:HB3	1:C:46:PRO:CD	2.49	0.42
1:F:31:HIS:CD2	1:V:34:GLU:HG3	2.55	0.42
1:O:45:SER:HB3	1:O:46:PRO:CD	2.49	0.42
1:G:122:TYR:CE2	1:J:111:HIS:CB	3.03	0.41
1:S:122:TYR:CE2	1:V:111:HIS:CB	3.03	0.41
1:J:71:GLU:H	1:J:167:PRO:HD2	1.85	0.41
1:D:71:GLU:H	1:D:167:PRO:HD2	1.85	0.41
1:L:71:GLU:H	1:L:167:PRO:HD2	1.85	0.41
1:V:71:GLU:H	1:V:167:PRO:HD2	1.85	0.41
1:P:71:GLU:H	1:P:167:PRO:HD2	1.85	0.41
1:R:71:GLU:H	1:R:167:PRO:HD2	1.85	0.41
1:X:71:GLU:H	1:X:167:PRO:HD2	1.85	0.41
1:A:122:TYR:CD2	1:D:111:HIS:HB3	2.56	0.41
1:E:39:PRO:HD3	1:M:36:ASP:HB2	2.03	0.41
1:H:71:GLU:H	1:H:167:PRO:HD2	1.85	0.41
1:U:28:PHE:CG	1:U:29:GLY:N	2.89	0.41
1:A:36:ASP:HB2	1:Q:39:PRO:HD3	2.03	0.40
1:I:28:PHE:CG	1:I:29:GLY:N	2.89	0.40
1:M:122:TYR:CD2	1:P:111:HIS:HB3	2.56	0.40
1:G:122:TYR:CD2	1:J:111:HIS:HB3	2.56	0.40
1:J:17:PHE:CG	1:J:18:HIS:N	2.90	0.40
1:S:122:TYR:CD2	1:V:111:HIS:HB3	2.56	0.40
1:A:134:THR:HB	1:B:131:LEU:HA	2.04	0.40
1:M:134:THR:HB	1:N:131:LEU:HA	2.04	0.40
1:V:17:PHE:CG	1:V:18:HIS:N	2.90	0.40
1:D:17:PHE:CG	1:D:18:HIS:N	2.90	0.40
1:O:134:THR:HB	1:P:131:LEU:HA	2.04	0.40
1:P:17:PHE:CG	1:P:18:HIS:N	2.90	0.40
1:E:134:THR:HB	1:F:131:LEU:HA	2.04	0.40
1:N:71:GLU:H	1:N:167:PRO:HD2	1.85	0.40

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	A	173/175 (99%)	130 (75%)	30 (17%)	13 (8%)	1	13
1	B	173/175 (99%)	128 (74%)	32 (18%)	13 (8%)	1	13
1	C	173/175 (99%)	131 (76%)	29 (17%)	13 (8%)	1	13
1	D	173/175 (99%)	125 (72%)	33 (19%)	15 (9%)	1	11
1	E	173/175 (99%)	132 (76%)	28 (16%)	13 (8%)	1	13
1	F	173/175 (99%)	127 (73%)	32 (18%)	14 (8%)	1	12
1	G	173/175 (99%)	129 (75%)	31 (18%)	13 (8%)	1	13
1	H	173/175 (99%)	130 (75%)	30 (17%)	13 (8%)	1	13
1	I	173/175 (99%)	131 (76%)	29 (17%)	13 (8%)	1	13
1	J	173/175 (99%)	124 (72%)	34 (20%)	15 (9%)	1	11
1	K	173/175 (99%)	132 (76%)	28 (16%)	13 (8%)	1	13
1	L	173/175 (99%)	128 (74%)	31 (18%)	14 (8%)	1	12
1	M	173/175 (99%)	130 (75%)	30 (17%)	13 (8%)	1	13
1	N	173/175 (99%)	128 (74%)	32 (18%)	13 (8%)	1	13
1	O	173/175 (99%)	131 (76%)	29 (17%)	13 (8%)	1	13
1	P	173/175 (99%)	125 (72%)	33 (19%)	15 (9%)	1	11
1	Q	173/175 (99%)	132 (76%)	28 (16%)	13 (8%)	1	13
1	R	173/175 (99%)	127 (73%)	32 (18%)	14 (8%)	1	12
1	S	173/175 (99%)	129 (75%)	31 (18%)	13 (8%)	1	13
1	T	173/175 (99%)	130 (75%)	30 (17%)	13 (8%)	1	13
1	U	173/175 (99%)	131 (76%)	29 (17%)	13 (8%)	1	13
1	V	173/175 (99%)	124 (72%)	34 (20%)	15 (9%)	1	11
1	W	173/175 (99%)	132 (76%)	28 (16%)	13 (8%)	1	13
1	X	173/175 (99%)	128 (74%)	31 (18%)	14 (8%)	1	12
All	All	4152/4200 (99%)	3094 (74%)	734 (18%)	324 (8%)	2	13

All (324) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	7	HIS
1	A	40	THR
1	A	45	SER
1	A	74	ARG
1	A	110	GLU
1	A	158	THR
1	B	36	ASP
1	B	40	THR
1	B	45	SER
1	B	70	LEU
1	C	40	THR
1	C	45	SER
1	C	74	ARG
1	C	110	GLU
1	C	158	THR
1	D	36	ASP
1	D	45	SER
1	D	70	LEU
1	E	40	THR
1	E	45	SER
1	E	74	ARG
1	E	110	GLU
1	E	158	THR
1	F	40	THR
1	F	45	SER
1	F	70	LEU
1	G	7	HIS
1	G	40	THR
1	G	45	SER
1	G	74	ARG
1	G	110	GLU
1	G	158	THR
1	H	36	ASP
1	H	40	THR
1	H	45	SER
1	H	70	LEU
1	I	40	THR
1	I	45	SER
1	I	74	ARG
1	I	110	GLU
1	I	158	THR
1	J	36	ASP

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Mol	Chain	Res	Type
1	J	45	SER
1	J	70	LEU
1	K	40	THR
1	K	45	SER
1	K	74	ARG
1	K	110	GLU
1	K	158	THR
1	L	36	ASP
1	L	40	THR
1	L	45	SER
1	L	70	LEU
1	M	7	HIS
1	M	40	THR
1	M	45	SER
1	M	74	ARG
1	M	110	GLU
1	M	158	THR
1	N	36	ASP
1	N	40	THR
1	N	45	SER
1	N	70	LEU
1	O	40	THR
1	O	45	SER
1	O	74	ARG
1	O	110	GLU
1	O	158	THR
1	P	36	ASP
1	P	45	SER
1	P	70	LEU
1	Q	40	THR
1	Q	45	SER
1	Q	74	ARG
1	Q	110	GLU
1	Q	158	THR
1	R	40	THR
1	R	45	SER
1	R	70	LEU
1	S	7	HIS
1	S	40	THR
1	S	45	SER
1	S	74	ARG
1	S	110	GLU

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Mol	Chain	Res	Type
1	S	158	THR
1	T	36	ASP
1	T	40	THR
1	T	45	SER
1	T	70	LEU
1	U	40	THR
1	U	45	SER
1	U	74	ARG
1	U	110	GLU
1	U	158	THR
1	V	36	ASP
1	V	45	SER
1	V	70	LEU
1	W	40	THR
1	W	45	SER
1	W	74	ARG
1	W	110	GLU
1	W	158	THR
1	X	36	ASP
1	X	40	THR
1	X	45	SER
1	X	70	LEU
1	A	3	ILE
1	A	73	ASP
1	B	68	MET
1	B	71	GLU
1	B	157	ARG
1	C	7	HIS
1	C	73	ASP
1	D	40	THR
1	D	68	MET
1	D	71	GLU
1	D	157	ARG
1	E	3	ILE
1	E	7	HIS
1	E	73	ASP
1	F	36	ASP
1	F	68	MET
1	F	71	GLU
1	F	157	ARG
1	G	3	ILE
1	G	43	SER

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Mol	Chain	Res	Type
1	G	73	ASP
1	H	68	MET
1	H	71	GLU
1	H	157	ARG
1	I	3	ILE
1	I	7	HIS
1	I	73	ASP
1	J	40	THR
1	J	68	MET
1	J	71	GLU
1	J	157	ARG
1	K	3	ILE
1	K	7	HIS
1	K	73	ASP
1	L	68	MET
1	L	71	GLU
1	L	157	ARG
1	M	3	ILE
1	M	73	ASP
1	N	68	MET
1	N	71	GLU
1	N	157	ARG
1	O	7	HIS
1	O	73	ASP
1	P	40	THR
1	P	68	MET
1	P	71	GLU
1	P	157	ARG
1	Q	3	ILE
1	Q	7	HIS
1	Q	73	ASP
1	R	36	ASP
1	R	68	MET
1	R	71	GLU
1	R	157	ARG
1	S	3	ILE
1	S	43	SER
1	S	73	ASP
1	T	68	MET
1	T	71	GLU
1	T	157	ARG
1	U	3	ILE

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Mol	Chain	Res	Type
1	U	7	HIS
1	U	73	ASP
1	V	40	THR
1	V	68	MET
1	V	71	GLU
1	V	157	ARG
1	W	3	ILE
1	W	7	HIS
1	W	73	ASP
1	X	68	MET
1	X	71	GLU
1	X	157	ARG
1	A	173	PRO
1	B	84	PHE
1	C	3	ILE
1	C	43	SER
1	C	173	PRO
1	D	18	HIS
1	D	84	PHE
1	E	173	PRO
1	F	18	HIS
1	F	84	PHE
1	G	173	PRO
1	H	84	PHE
1	I	173	PRO
1	J	18	HIS
1	J	84	PHE
1	K	173	PRO
1	L	18	HIS
1	L	84	PHE
1	M	173	PRO
1	N	84	PHE
1	O	3	ILE
1	O	43	SER
1	O	173	PRO
1	P	18	HIS
1	P	84	PHE
1	Q	173	PRO
1	R	18	HIS
1	R	84	PHE
1	S	173	PRO
1	T	84	PHE

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Mol	Chain	Res	Type
1	U	173	PRO
1	V	18	HIS
1	V	84	PHE
1	W	173	PRO
1	X	18	HIS
1	X	84	PHE
1	A	16	PRO
1	A	43	SER
1	A	166	LYS
1	B	95	GLY
1	B	131	LEU
1	C	16	PRO
1	C	166	LYS
1	D	95	GLY
1	D	131	LEU
1	E	16	PRO
1	E	43	SER
1	E	166	LYS
1	F	95	GLY
1	F	131	LEU
1	G	16	PRO
1	G	166	LYS
1	H	95	GLY
1	H	131	LEU
1	I	16	PRO
1	I	43	SER
1	I	166	LYS
1	J	95	GLY
1	J	131	LEU
1	K	16	PRO
1	K	166	LYS
1	L	95	GLY
1	L	131	LEU
1	M	16	PRO
1	M	43	SER
1	M	166	LYS
1	N	95	GLY
1	N	131	LEU
1	O	16	PRO
1	O	166	LYS
1	P	95	GLY
1	P	131	LEU

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Mol	Chain	Res	Type
1	Q	16	PRO
1	Q	43	SER
1	Q	166	LYS
1	R	95	GLY
1	R	131	LEU
1	S	16	PRO
1	S	166	LYS
1	T	95	GLY
1	T	131	LEU
1	U	16	PRO
1	U	43	SER
1	U	166	LYS
1	V	95	GLY
1	V	131	LEU
1	W	16	PRO
1	W	166	LYS
1	X	95	GLY
1	X	131	LEU
1	A	60	TRP
1	B	63	THR
1	B	173	PRO
1	C	60	TRP
1	D	63	THR
1	D	173	PRO
1	E	60	TRP
1	F	63	THR
1	F	173	PRO
1	G	60	TRP
1	H	63	THR
1	H	173	PRO
1	I	60	TRP
1	J	63	THR
1	J	173	PRO
1	K	43	SER
1	L	63	THR
1	L	173	PRO
1	M	60	TRP
1	N	63	THR
1	N	173	PRO
1	O	60	TRP
1	P	63	THR
1	P	173	PRO

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Mol	Chain	Res	Type
1	Q	60	TRP
1	R	63	THR
1	R	173	PRO
1	S	60	TRP
1	T	63	THR
1	T	173	PRO
1	U	60	TRP
1	V	63	THR
1	V	173	PRO
1	W	43	SER
1	W	60	TRP
1	X	63	THR
1	X	173	PRO
1	D	19	SER
1	J	19	SER
1	K	60	TRP
1	P	19	SER
1	V	19	SER
1	B	159	ILE
1	D	159	ILE
1	F	159	ILE
1	H	159	ILE
1	J	159	ILE
1	L	159	ILE
1	N	159	ILE
1	P	159	ILE
1	R	159	ILE
1	T	159	ILE
1	V	159	ILE
1	X	159	ILE

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	161/161 (100%)	145 (90%)	16 (10%)	8 26

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	B	161/161 (100%)	141 (88%)	20 (12%)	4	19
1	C	161/161 (100%)	144 (89%)	17 (11%)	6	24
1	D	161/161 (100%)	142 (88%)	19 (12%)	5	20
1	E	161/161 (100%)	144 (89%)	17 (11%)	6	24
1	F	161/161 (100%)	142 (88%)	19 (12%)	5	20
1	G	161/161 (100%)	145 (90%)	16 (10%)	8	26
1	H	161/161 (100%)	141 (88%)	20 (12%)	4	19
1	I	161/161 (100%)	145 (90%)	16 (10%)	8	26
1	J	161/161 (100%)	142 (88%)	19 (12%)	5	20
1	K	161/161 (100%)	143 (89%)	18 (11%)	6	22
1	L	161/161 (100%)	142 (88%)	19 (12%)	5	20
1	M	161/161 (100%)	145 (90%)	16 (10%)	8	26
1	N	161/161 (100%)	141 (88%)	20 (12%)	4	19
1	O	161/161 (100%)	144 (89%)	17 (11%)	6	24
1	P	161/161 (100%)	142 (88%)	19 (12%)	5	20
1	Q	161/161 (100%)	144 (89%)	17 (11%)	6	24
1	R	161/161 (100%)	142 (88%)	19 (12%)	5	20
1	S	161/161 (100%)	145 (90%)	16 (10%)	8	26
1	T	161/161 (100%)	141 (88%)	20 (12%)	4	19
1	U	161/161 (100%)	145 (90%)	16 (10%)	8	26
1	V	161/161 (100%)	142 (88%)	19 (12%)	5	20
1	W	161/161 (100%)	143 (89%)	18 (11%)	6	22
1	X	161/161 (100%)	142 (88%)	19 (12%)	5	20
All	All	3864/3864 (100%)	3432 (89%)	432 (11%)	9	22

All (432) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	11	ARG
1	A	19	SER
1	A	26	GLN
1	A	34	GLU
1	A	54	PHE
1	A	59	SER

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Mol	Chain	Res	Type
1	A	67	GLU
1	A	73	ASP
1	A	78	ASN
1	A	89	LEU
1	A	90	LYS
1	A	137	LEU
1	A	146	ASN
1	A	153	SER
1	A	163	ARG
1	A	175	LYS
1	B	30	GLU
1	B	33	LEU
1	B	34	GLU
1	B	36	ASP
1	B	45	SER
1	B	55	LEU
1	B	56	ARG
1	B	71	GLU
1	B	74	ARG
1	B	90	LYS
1	B	92	LYS
1	B	129	ASP
1	B	137	LEU
1	B	139	SER
1	B	143	LEU
1	B	146	ASN
1	B	159	ILE
1	B	162	THR
1	B	169	VAL
1	B	175	LYS
1	C	11	ARG
1	C	19	SER
1	C	21	SER
1	C	26	GLN
1	C	34	GLU
1	C	54	PHE
1	C	59	SER
1	C	67	GLU
1	C	73	ASP
1	C	78	ASN
1	C	89	LEU
1	C	90	LYS

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Mol	Chain	Res	Type
1	C	137	LEU
1	C	146	ASN
1	C	153	SER
1	C	163	ARG
1	C	175	LYS
1	D	30	GLU
1	D	33	LEU
1	D	34	GLU
1	D	45	SER
1	D	55	LEU
1	D	56	ARG
1	D	71	GLU
1	D	74	ARG
1	D	90	LYS
1	D	92	LYS
1	D	129	ASP
1	D	137	LEU
1	D	139	SER
1	D	143	LEU
1	D	146	ASN
1	D	159	ILE
1	D	162	THR
1	D	169	VAL
1	D	175	LYS
1	E	11	ARG
1	E	19	SER
1	E	21	SER
1	E	26	GLN
1	E	54	PHE
1	E	59	SER
1	E	67	GLU
1	E	73	ASP
1	E	78	ASN
1	E	80	ASP
1	E	89	LEU
1	E	90	LYS
1	E	137	LEU
1	E	146	ASN
1	E	153	SER
1	E	163	ARG
1	E	175	LYS
1	F	30	GLU

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Mol	Chain	Res	Type
1	F	33	LEU
1	F	34	GLU
1	F	45	SER
1	F	55	LEU
1	F	56	ARG
1	F	71	GLU
1	F	74	ARG
1	F	90	LYS
1	F	92	LYS
1	F	129	ASP
1	F	137	LEU
1	F	139	SER
1	F	143	LEU
1	F	146	ASN
1	F	159	ILE
1	F	162	THR
1	F	169	VAL
1	F	175	LYS
1	G	11	ARG
1	G	19	SER
1	G	26	GLN
1	G	34	GLU
1	G	54	PHE
1	G	59	SER
1	G	67	GLU
1	G	73	ASP
1	G	78	ASN
1	G	89	LEU
1	G	90	LYS
1	G	137	LEU
1	G	146	ASN
1	G	153	SER
1	G	163	ARG
1	G	175	LYS
1	H	30	GLU
1	H	33	LEU
1	H	34	GLU
1	H	36	ASP
1	H	45	SER
1	H	55	LEU
1	H	56	ARG
1	H	71	GLU

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Mol	Chain	Res	Type
1	H	74	ARG
1	H	90	LYS
1	H	92	LYS
1	H	129	ASP
1	H	137	LEU
1	H	139	SER
1	H	143	LEU
1	H	146	ASN
1	H	159	ILE
1	H	162	THR
1	H	169	VAL
1	H	175	LYS
1	I	11	ARG
1	I	19	SER
1	I	26	GLN
1	I	34	GLU
1	I	54	PHE
1	I	59	SER
1	I	67	GLU
1	I	73	ASP
1	I	78	ASN
1	I	89	LEU
1	I	90	LYS
1	I	137	LEU
1	I	146	ASN
1	I	153	SER
1	I	163	ARG
1	I	175	LYS
1	J	30	GLU
1	J	33	LEU
1	J	34	GLU
1	J	45	SER
1	J	55	LEU
1	J	56	ARG
1	J	71	GLU
1	J	74	ARG
1	J	90	LYS
1	J	92	LYS
1	J	129	ASP
1	J	137	LEU
1	J	139	SER
1	J	143	LEU

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Mol	Chain	Res	Type
1	J	146	ASN
1	J	159	ILE
1	J	162	THR
1	J	169	VAL
1	J	175	LYS
1	K	11	ARG
1	K	19	SER
1	K	21	SER
1	K	26	GLN
1	K	34	GLU
1	K	54	PHE
1	K	59	SER
1	K	67	GLU
1	K	73	ASP
1	K	78	ASN
1	K	80	ASP
1	K	89	LEU
1	K	90	LYS
1	K	137	LEU
1	K	146	ASN
1	K	153	SER
1	K	163	ARG
1	K	175	LYS
1	L	30	GLU
1	L	33	LEU
1	L	34	GLU
1	L	45	SER
1	L	55	LEU
1	L	56	ARG
1	L	71	GLU
1	L	74	ARG
1	L	90	LYS
1	L	92	LYS
1	L	129	ASP
1	L	137	LEU
1	L	139	SER
1	L	143	LEU
1	L	146	ASN
1	L	159	ILE
1	L	162	THR
1	L	169	VAL
1	L	175	LYS

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Mol	Chain	Res	Type
1	M	11	ARG
1	M	19	SER
1	M	26	GLN
1	M	34	GLU
1	M	54	PHE
1	M	59	SER
1	M	67	GLU
1	M	73	ASP
1	M	78	ASN
1	M	89	LEU
1	M	90	LYS
1	M	137	LEU
1	M	146	ASN
1	M	153	SER
1	M	163	ARG
1	M	175	LYS
1	N	30	GLU
1	N	33	LEU
1	N	34	GLU
1	N	36	ASP
1	N	45	SER
1	N	55	LEU
1	N	56	ARG
1	N	71	GLU
1	N	74	ARG
1	N	90	LYS
1	N	92	LYS
1	N	129	ASP
1	N	137	LEU
1	N	139	SER
1	N	143	LEU
1	N	146	ASN
1	N	159	ILE
1	N	162	THR
1	N	169	VAL
1	N	175	LYS
1	O	11	ARG
1	O	19	SER
1	O	21	SER
1	O	26	GLN
1	O	34	GLU
1	O	54	PHE

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Mol	Chain	Res	Type
1	O	59	SER
1	O	67	GLU
1	O	73	ASP
1	O	78	ASN
1	O	89	LEU
1	O	90	LYS
1	O	137	LEU
1	O	146	ASN
1	O	153	SER
1	O	163	ARG
1	O	175	LYS
1	P	30	GLU
1	P	33	LEU
1	P	34	GLU
1	P	45	SER
1	P	55	LEU
1	P	56	ARG
1	P	71	GLU
1	P	74	ARG
1	P	90	LYS
1	P	92	LYS
1	P	129	ASP
1	P	137	LEU
1	P	139	SER
1	P	143	LEU
1	P	146	ASN
1	P	159	ILE
1	P	162	THR
1	P	169	VAL
1	P	175	LYS
1	Q	11	ARG
1	Q	19	SER
1	Q	21	SER
1	Q	26	GLN
1	Q	54	PHE
1	Q	59	SER
1	Q	67	GLU
1	Q	73	ASP
1	Q	78	ASN
1	Q	80	ASP
1	Q	89	LEU
1	Q	90	LYS

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Mol	Chain	Res	Type
1	Q	137	LEU
1	Q	146	ASN
1	Q	153	SER
1	Q	163	ARG
1	Q	175	LYS
1	R	30	GLU
1	R	33	LEU
1	R	34	GLU
1	R	45	SER
1	R	55	LEU
1	R	56	ARG
1	R	71	GLU
1	R	74	ARG
1	R	90	LYS
1	R	92	LYS
1	R	129	ASP
1	R	137	LEU
1	R	139	SER
1	R	143	LEU
1	R	146	ASN
1	R	159	ILE
1	R	162	THR
1	R	169	VAL
1	R	175	LYS
1	S	11	ARG
1	S	19	SER
1	S	26	GLN
1	S	34	GLU
1	S	54	PHE
1	S	59	SER
1	S	67	GLU
1	S	73	ASP
1	S	78	ASN
1	S	89	LEU
1	S	90	LYS
1	S	137	LEU
1	S	146	ASN
1	S	153	SER
1	S	163	ARG
1	S	175	LYS
1	T	30	GLU
1	T	33	LEU

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Mol	Chain	Res	Type
1	T	34	GLU
1	T	36	ASP
1	T	45	SER
1	T	55	LEU
1	T	56	ARG
1	T	71	GLU
1	T	74	ARG
1	T	90	LYS
1	T	92	LYS
1	T	129	ASP
1	T	137	LEU
1	T	139	SER
1	T	143	LEU
1	T	146	ASN
1	T	159	ILE
1	T	162	THR
1	T	169	VAL
1	T	175	LYS
1	U	11	ARG
1	U	19	SER
1	U	26	GLN
1	U	34	GLU
1	U	54	PHE
1	U	59	SER
1	U	67	GLU
1	U	73	ASP
1	U	78	ASN
1	U	89	LEU
1	U	90	LYS
1	U	137	LEU
1	U	146	ASN
1	U	153	SER
1	U	163	ARG
1	U	175	LYS
1	V	30	GLU
1	V	33	LEU
1	V	34	GLU
1	V	45	SER
1	V	55	LEU
1	V	56	ARG
1	V	71	GLU
1	V	74	ARG

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Mol	Chain	Res	Type
1	V	90	LYS
1	V	92	LYS
1	V	129	ASP
1	V	137	LEU
1	V	139	SER
1	V	143	LEU
1	V	146	ASN
1	V	159	ILE
1	V	162	THR
1	V	169	VAL
1	V	175	LYS
1	W	11	ARG
1	W	19	SER
1	W	21	SER
1	W	26	GLN
1	W	34	GLU
1	W	54	PHE
1	W	59	SER
1	W	67	GLU
1	W	73	ASP
1	W	78	ASN
1	W	80	ASP
1	W	89	LEU
1	W	90	LYS
1	W	137	LEU
1	W	146	ASN
1	W	153	SER
1	W	163	ARG
1	W	175	LYS
1	X	30	GLU
1	X	33	LEU
1	X	34	GLU
1	X	45	SER
1	X	55	LEU
1	X	56	ARG
1	X	71	GLU
1	X	74	ARG
1	X	90	LYS
1	X	92	LYS
1	X	129	ASP
1	X	137	LEU
1	X	139	SER

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Mol	Chain	Res	Type
1	X	143	LEU
1	X	146	ASN
1	X	159	ILE
1	X	162	THR
1	X	169	VAL
1	X	175	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. There are no such sidechains identified.

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-1894. 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

6.1.1 Primary map

X

Y

Z

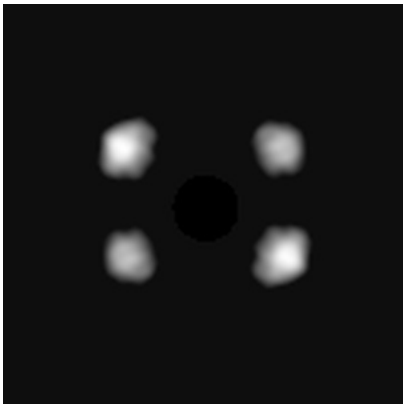
The images above show the map projected in three orthogonal directions.

6.2 Central slices

6.2.1 Primary map

X Index: 64

Y Index: 64

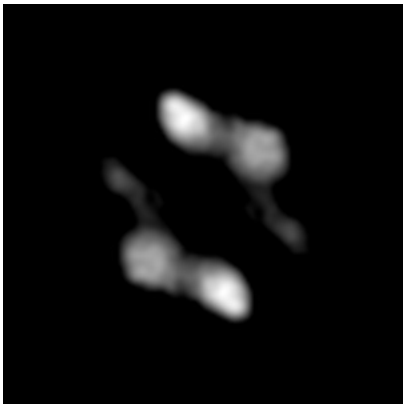


Z Index: 64

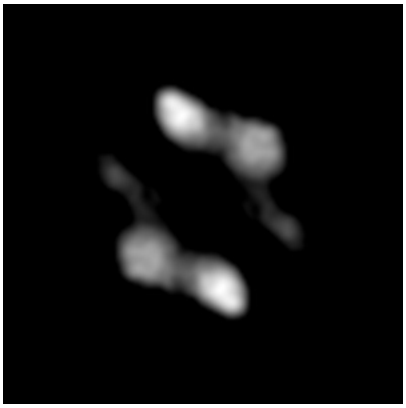
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

6.3.1 Primary map



X Index: 80



Y Index: 80

Z Index: 47

The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal surface views (i)

6.4.1 Primary map

X

Y

Z

The images above show the 3D surface view of the map at the recommended contour level 0.004. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

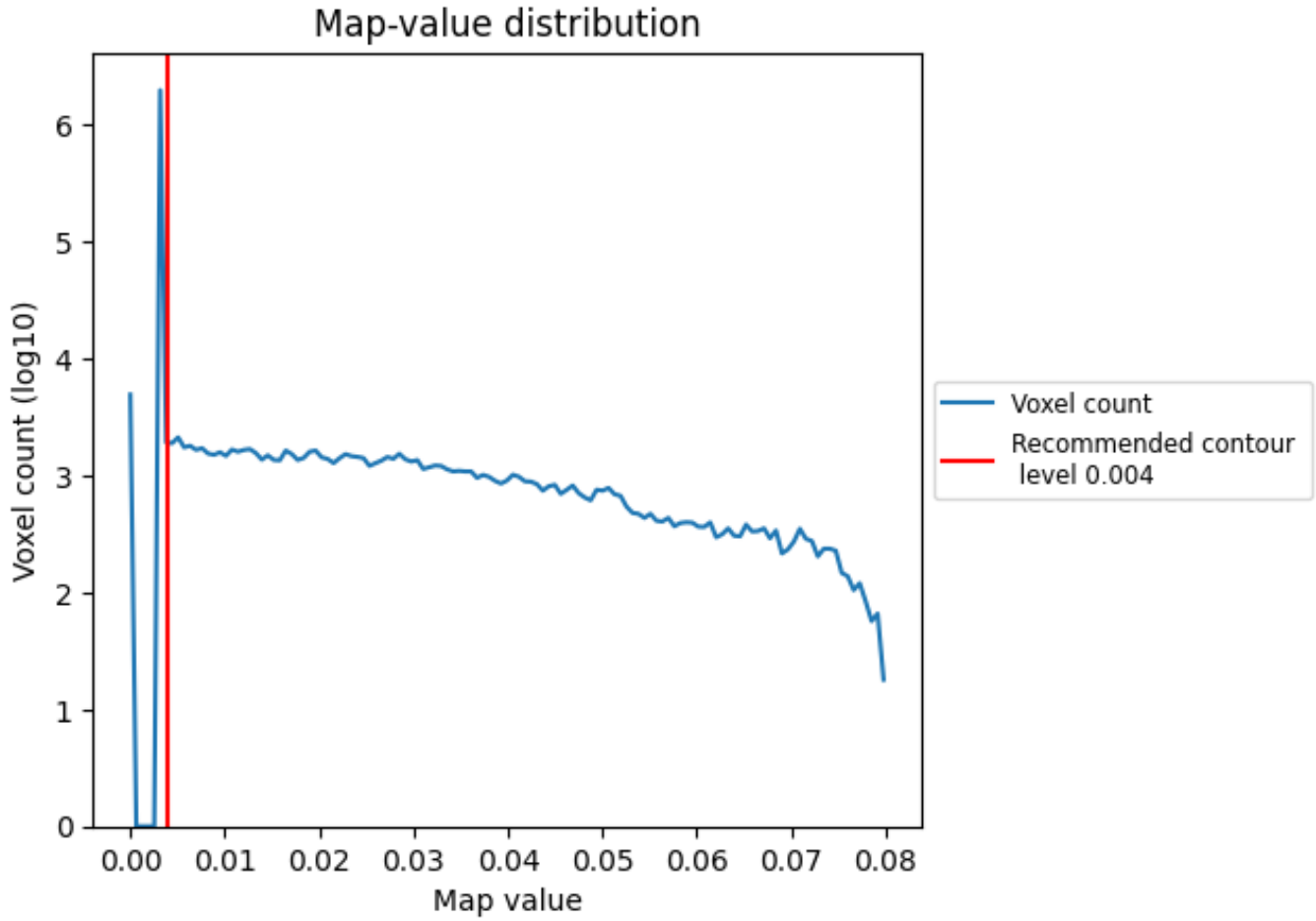
6.5 Mask visualisation (i)

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

7 Map analysis

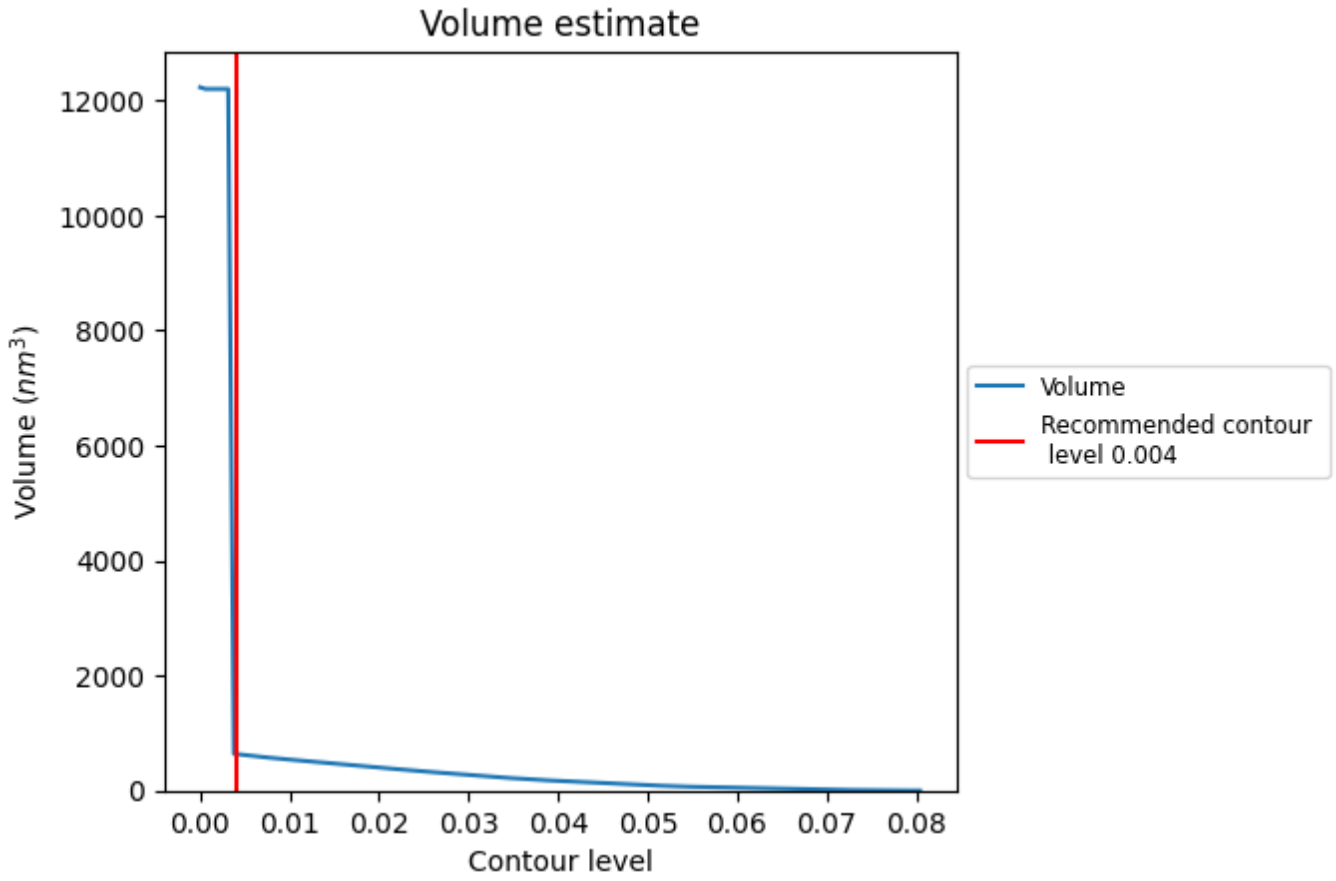
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



The map-value distribution is plotted in 128 intervals along the x-axis. The y-axis is logarithmic. A spike in this graph at zero usually indicates that the volume has been masked.

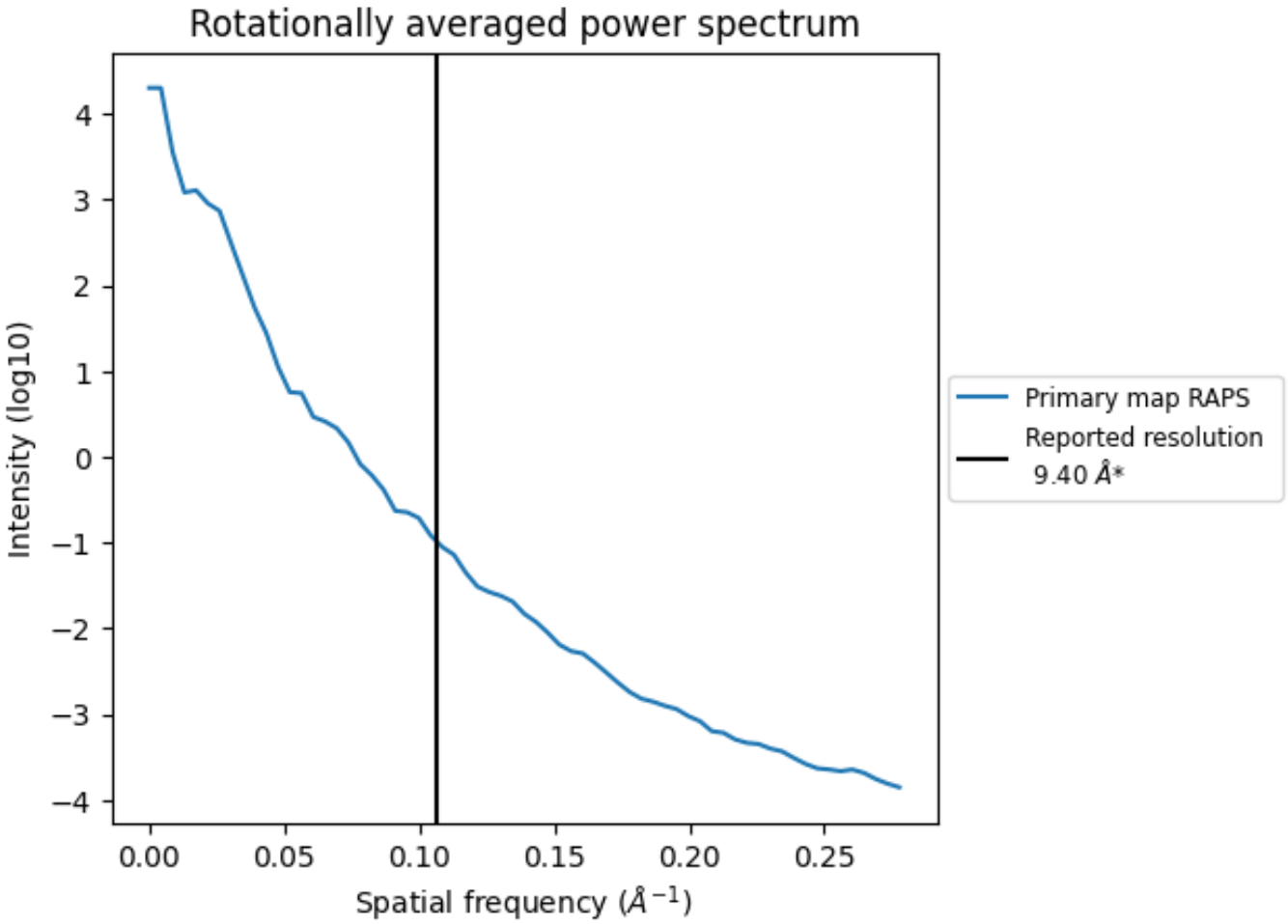
7.2 Volume estimate



The volume at the recommended contour level is 635 nm^3; this corresponds to an approximate mass of 574 kDa.

The volume estimate graph shows how the enclosed volume varies with the contour level. The recommended contour level is shown as a vertical line and the intersection between the line and the curve gives the volume of the enclosed surface at the given level.

7.3 Rotationally averaged power spectrum (i)



*Reported resolution corresponds to spatial frequency of 0.106 Å^{-1}

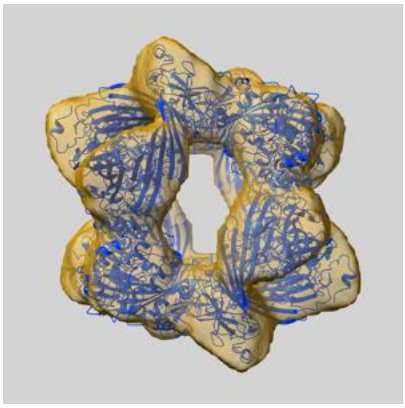
8 Fourier-Shell correlation (i)

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

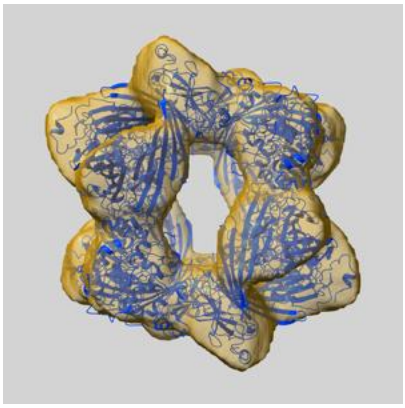
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-1894 and PDB model 2YGD. Per-residue inclusion information can be found in section 3 on page 6.

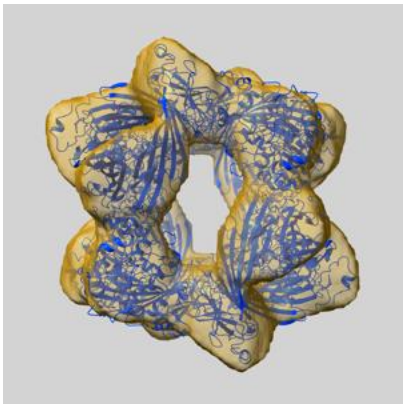
9.1 Map-model overlay



X



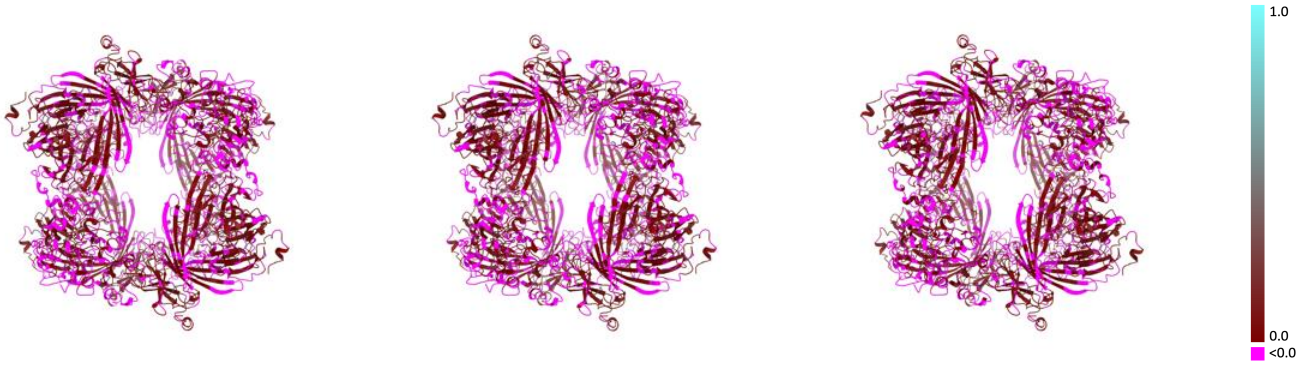
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.004 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

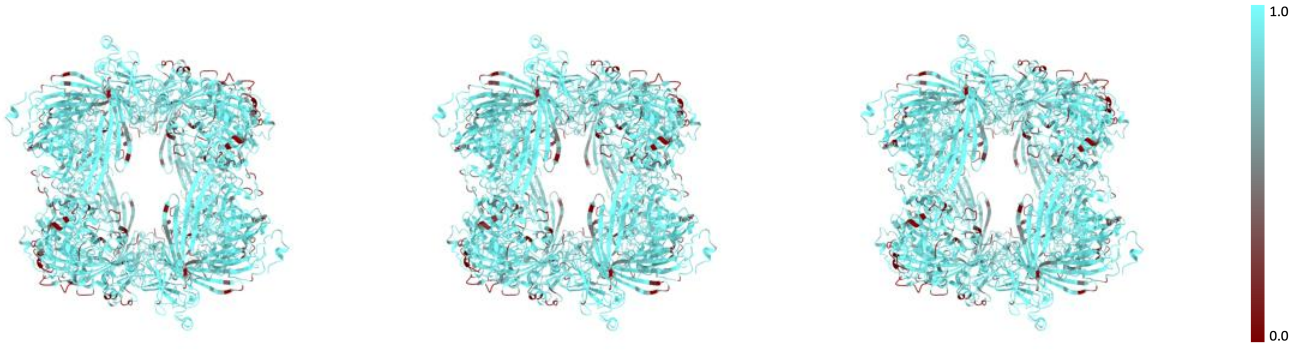
9.2 Q-score mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions at which atoms can be resolved. Low Q-score values may therefore be expected for many entries.

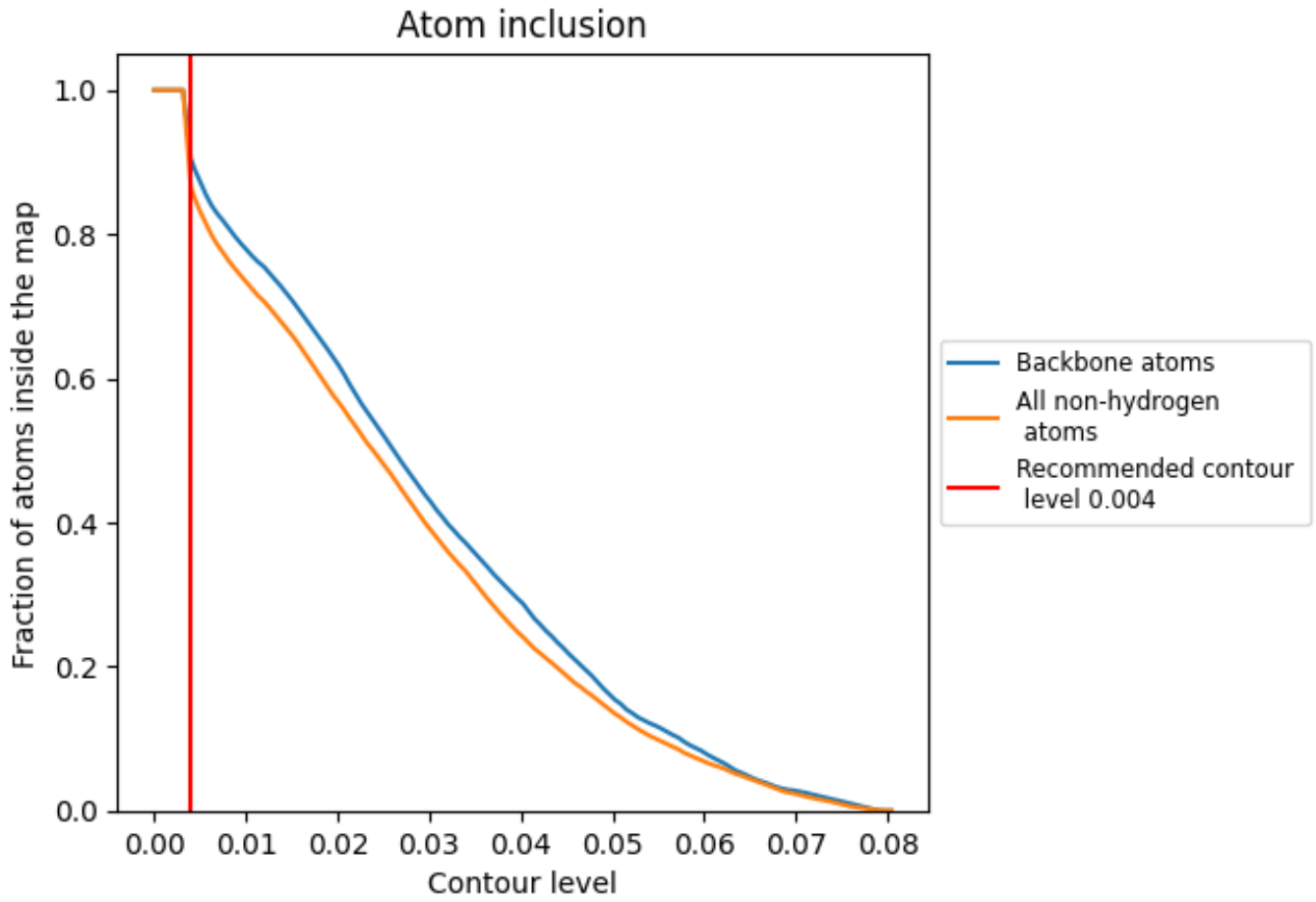
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.004).

9.4 Atom inclusion (i)



At the recommended contour level, 90% of all backbone atoms, 87% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.004) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8652	0.0110
A	0.8404	-0.0020
B	0.8733	0.0190
C	0.8504	0.0010
D	0.8876	0.0250
E	0.8568	-0.0010
F	0.8840	0.0270
G	0.8346	-0.0080
H	0.8747	0.0210
I	0.8540	-0.0030
J	0.8783	0.0280
K	0.8576	0.0080
L	0.8783	0.0190
M	0.8404	-0.0060
N	0.8797	0.0250
O	0.8576	-0.0030
P	0.8862	0.0290
Q	0.8576	0.0030
R	0.8890	0.0260
S	0.8411	-0.0050
T	0.8733	0.0230
U	0.8561	0.0050
V	0.8754	0.0210
W	0.8554	-0.0010
X	0.8840	0.0260