



## Full wwPDB EM Validation Report ⓘ

Oct 13, 2024 – 07:53 am BST

PDB ID : 8Q6T  
EMDB ID : EMD-18198  
Title : Helical reconstruction of the relaxed thick filament from FIB milled left ventricular mouse myofibrils  
Authors : Tamborrini, D.; Raunser, S.  
Deposited on : 2023-08-14  
Resolution : 18.00 Å(reported)  
Based on initial model : .

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev113  
MolProbity : 4.02b-467  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.39

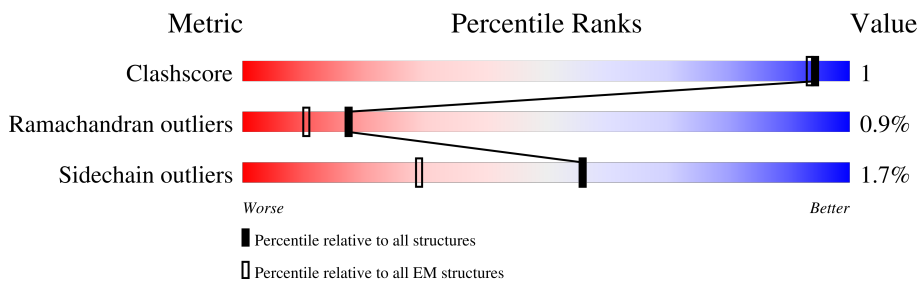
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 18.00 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	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . 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	1935	
1	B	1935	
1	H	1935	
1	N	1935	
1	O	1935	
1	Q	1935	
2	C	152	
2	D	152	

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Mol	Chain	Length	Quality of chain
2	J	152	 5% 95% 5%
2	K	152	 93% 6%
2	R	152	 94% 6%
2	S	152	 11% 95%
3	E	160	 16% 94% 5%
3	F	160	 12% 94% 5%
3	L	160	 8% 92% 7%
3	M	160	 96%
3	T	160	 12% 93% 6%
3	U	160	 92% 7%
4	G	400	 96%
4	V	400	 94% 6%
5	I	1079	 97%
5	P	1079	 95%

## 2 Entry composition [i](#)

There are 5 unique types of molecules in this entry. The entry contains 131418 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 Myosin-7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1926	Total	C	N	O	S	0	0
			15571	9670	2761	3076	64		
1	B	1926	Total	C	N	O	S	0	0
			15571	9670	2761	3076	64		
1	H	1930	Total	C	N	O	S	0	0
			15600	9690	2765	3080	65		
1	N	1930	Total	C	N	O	S	0	0
			15600	9690	2765	3080	65		
1	O	1926	Total	C	N	O	S	0	0
			15571	9670	2761	3076	64		
1	Q	1926	Total	C	N	O	S	0	0
			15571	9670	2761	3076	64		

- Molecule 2 is a protein called Myosin light chain 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	C	152	Total	C	N	O	S	0	0
			1206	758	200	239	9		
2	D	152	Total	C	N	O	S	0	0
			1206	758	200	239	9		
2	J	152	Total	C	N	O	S	0	0
			1206	758	200	239	9		
2	K	152	Total	C	N	O	S	0	0
			1206	758	200	239	9		
2	R	152	Total	C	N	O	S	0	0
			1206	758	200	239	9		
2	S	152	Total	C	N	O	S	0	0
			1206	758	200	239	9		

- Molecule 3 is a protein called Myosin regulatory light chain 2, ventricular/cardiac muscle isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	E	160	Total	C	N	O	S	0	0
			1283	811	211	255	6		
3	F	160	Total	C	N	O	S	0	0
			1283	811	211	255	6		
3	L	160	Total	C	N	O	S	0	0
			1283	811	211	255	6		
3	M	160	Total	C	N	O	S	0	0
			1283	811	211	255	6		
3	T	160	Total	C	N	O	S	0	0
			1283	811	211	255	6		
3	U	160	Total	C	N	O	S	0	0
			1283	811	211	255	6		

- Molecule 4 is a protein called Myosin binding protein C, cardiac.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	G	400	Total	C	N	O	S	0	0
			3151	2002	556	579	14		
4	V	400	Total	C	N	O	S	0	0
			3151	2002	556	579	14		

- Molecule 5 is a protein called Titin.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	I	1079	Total	C	N	O	S	0	0
			8349	5261	1424	1637	27		
5	P	1079	Total	C	N	O	S	0	0
			8349	5261	1424	1637	27		

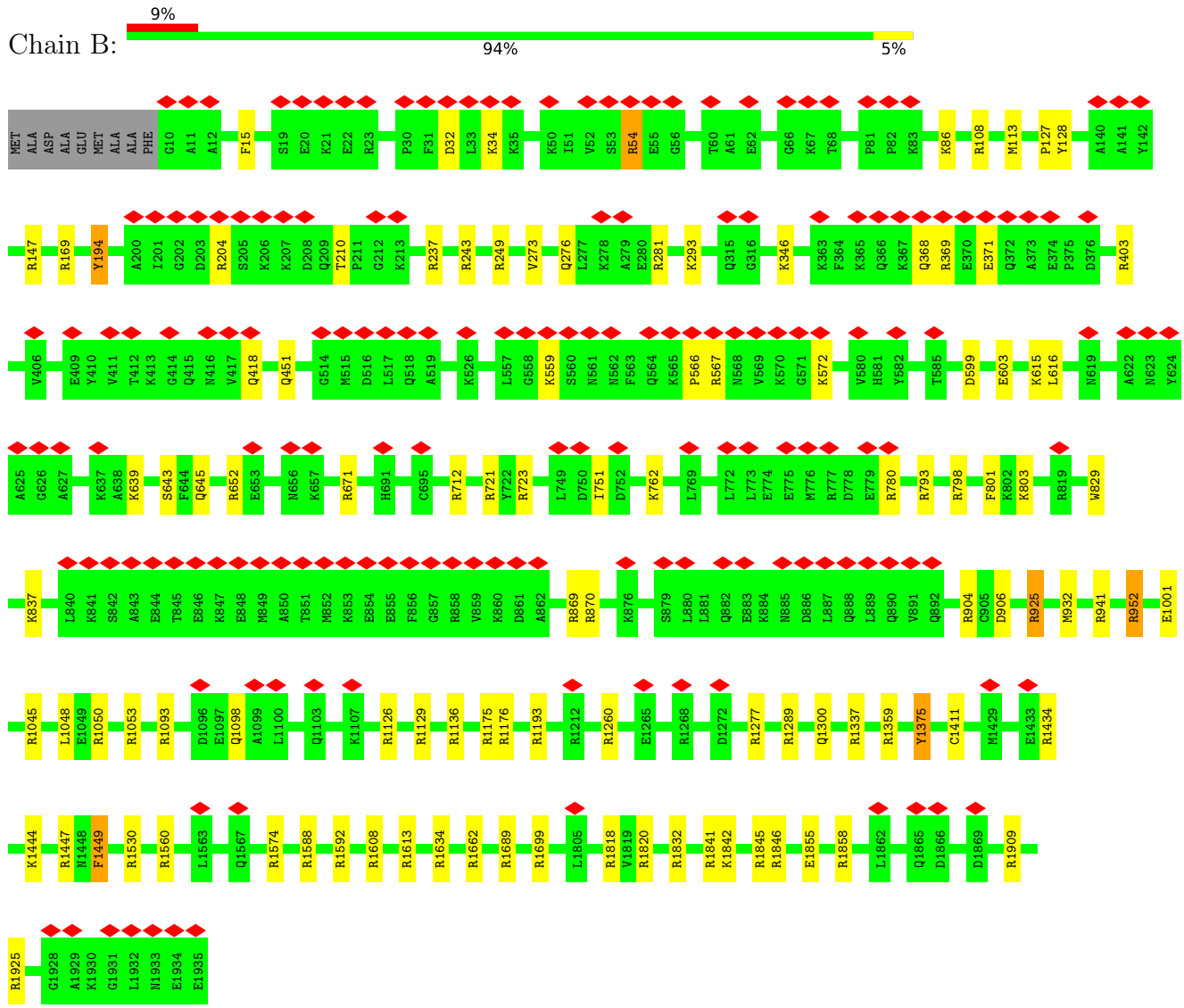
### 3 Residue-property plots [i](#)

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.

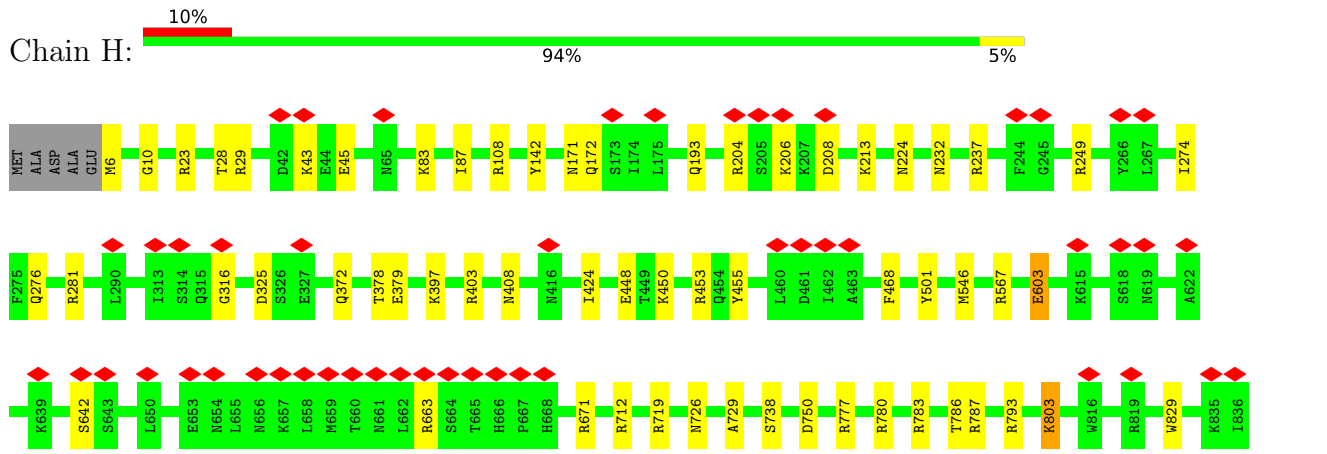
- Molecule 1: Myosin-7

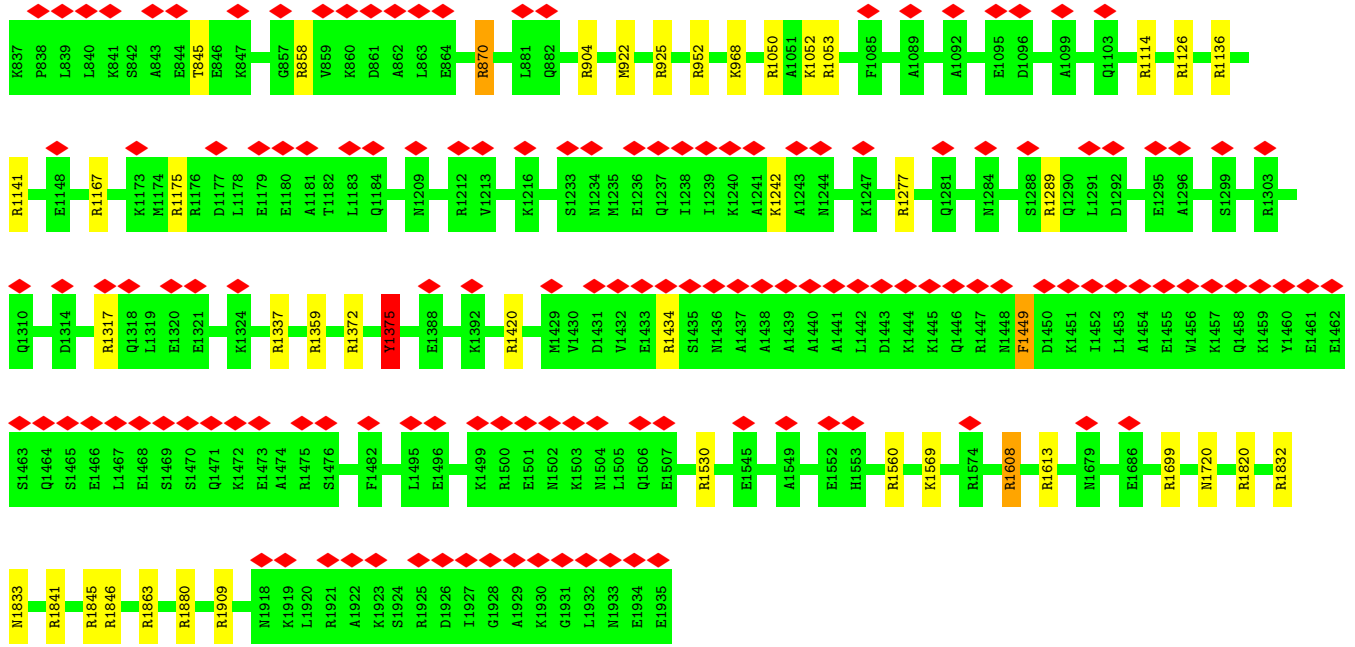


• Molecule 1: Myosin-7



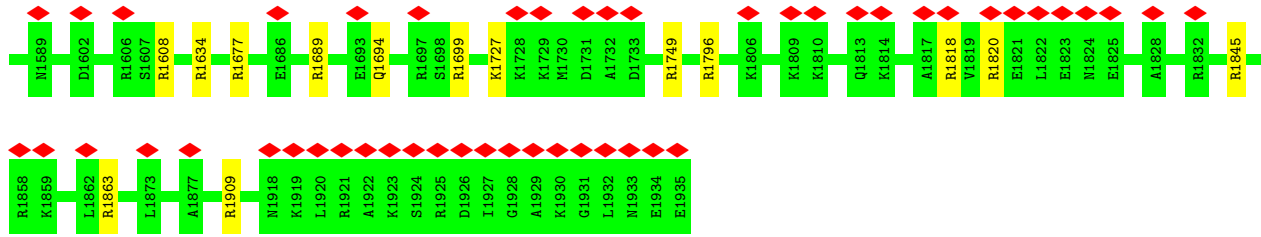
• Molecule 1: Myosin-7



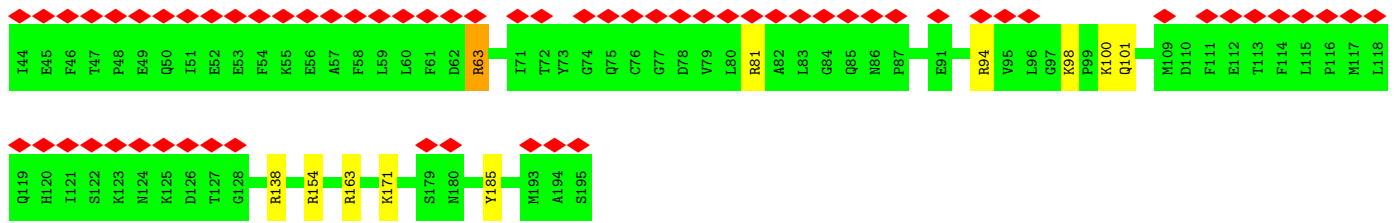
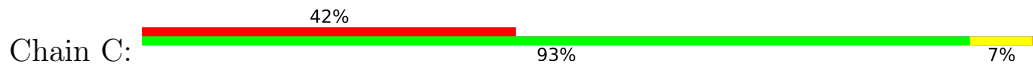




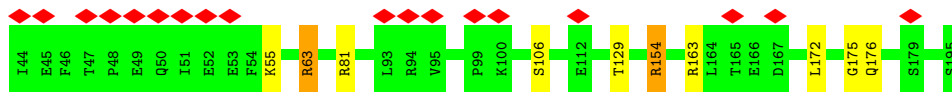




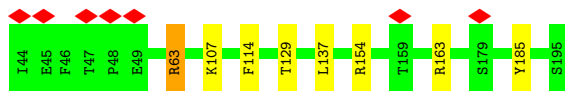
• Molecule 2: Myosin light chain 3



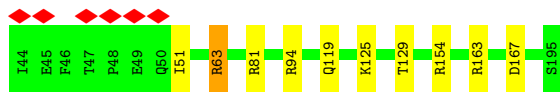
• Molecule 2: Myosin light chain 3



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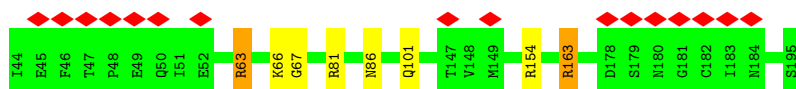
• Molecule 2: Myosin light chain 3



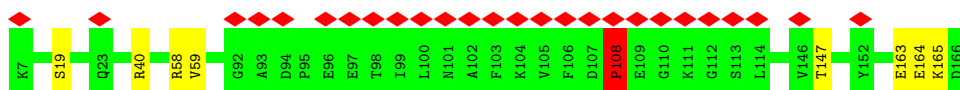
• Molecule 2: Myosin light chain 3



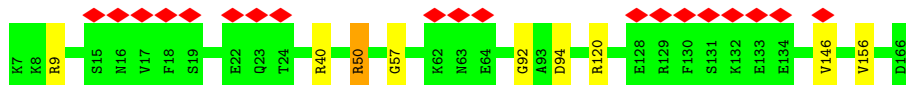
• Molecule 2: Myosin light chain 3



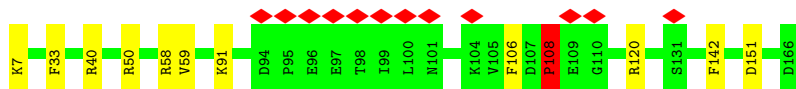
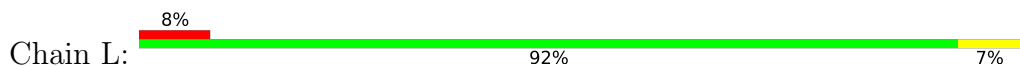
- Molecule 3: Myosin regulatory light chain 2, ventricular/cardiac muscle isoform



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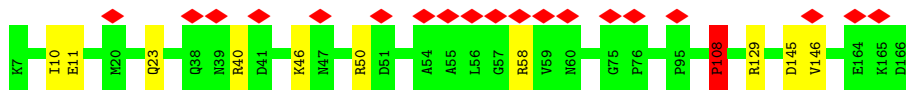
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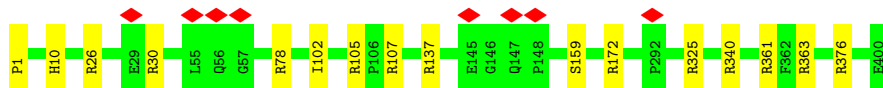


- Molecule 3: Myosin regulatory light chain 2, ventricular/cardiac muscle isoform

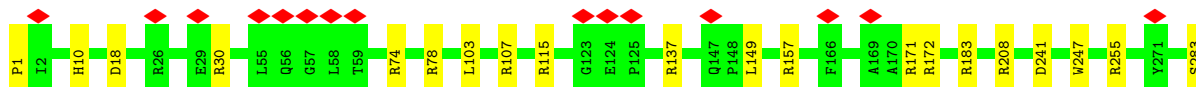




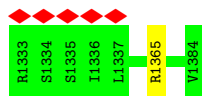
- Molecule 4: Myosin binding protein C, cardiac



- Molecule 4: Myosin binding protein C, cardiac

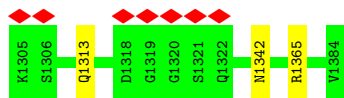


- Molecule 5: Titin



- Molecule 5: Titin





## 4 Experimental information

Property	Value	Source
EM reconstruction method	SUBTOMOGRAM AVERAGING	Depositor
Imposed symmetry	HELICAL, twist=0°, rise=430 Å, axial sym=C3	Depositor
Number of subtomograms used	1589	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 ( $e^-/\text{Å}^2$ )	140	Depositor
Minimum defocus (nm)	3000	Depositor
Maximum defocus (nm)	6000	Depositor
Magnification	81000	Depositor
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	13.522	Depositor
Minimum map value	0.000	Depositor
Average map value	0.028	Depositor
Map value standard deviation	0.387	Depositor
Recommended contour level	2.41	Depositor
Map size (Å)	2168.76, 2168.76, 2168.76	wwPDB
Map dimensions	372, 372, 372	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	5.83, 5.83, 5.83	Depositor

## 5 Model quality i

### 5.1 Standard geometry i

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	A	1.24	13/15751 (0.1%)	0.95	66/21093 (0.3%)
1	B	1.14	13/15751 (0.1%)	0.97	69/21093 (0.3%)
1	H	1.24	13/15781 (0.1%)	0.95	64/21133 (0.3%)
1	N	1.24	13/15781 (0.1%)	0.94	65/21133 (0.3%)
1	O	1.14	12/15751 (0.1%)	0.97	81/21093 (0.4%)
1	Q	1.14	12/15751 (0.1%)	0.95	69/21093 (0.3%)
2	C	0.70	0/1225	0.97	5/1643 (0.3%)
2	D	0.71	0/1225	0.98	4/1643 (0.2%)
2	J	0.71	0/1225	0.93	2/1643 (0.1%)
2	K	0.72	0/1225	0.98	5/1643 (0.3%)
2	R	0.71	0/1225	0.94	4/1643 (0.2%)
2	S	0.72	0/1225	0.95	3/1643 (0.2%)
3	E	1.69	5/1306 (0.4%)	0.94	1/1752 (0.1%)
3	F	0.74	0/1306	0.99	4/1752 (0.2%)
3	L	1.70	5/1306 (0.4%)	0.93	2/1752 (0.1%)
3	M	0.74	0/1306	0.95	3/1752 (0.2%)
3	T	1.70	5/1306 (0.4%)	0.93	4/1752 (0.2%)
3	U	0.73	0/1306	0.96	2/1752 (0.1%)
4	G	0.72	0/3233	1.01	11/4398 (0.3%)
4	V	0.72	0/3233	1.02	15/4398 (0.3%)
5	I	0.70	0/8525	0.96	23/11602 (0.2%)
5	P	0.70	0/8525	0.98	28/11602 (0.2%)
All	All	1.11	91/133268 (0.1%)	0.96	530/179008 (0.3%)

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	1
1	B	0	2
1	H	0	2

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Mol	Chain	#Chirality outliers	#Planarity outliers
1	O	0	1
1	Q	0	5
2	S	0	1
3	L	0	1
5	I	0	1
5	P	0	1
All	All	0	15

All (91) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	H	1375	TYR	CD2-CE2	75.26	2.52	1.39
1	O	1375	TYR	CD2-CE2	75.22	2.52	1.39
1	A	1375	TYR	CD2-CE2	75.14	2.52	1.39
1	B	1375	TYR	CD2-CE2	75.09	2.52	1.39
1	N	1375	TYR	CD2-CE2	75.08	2.52	1.39
1	Q	1375	TYR	CD1-CE1	75.03	2.52	1.39
1	N	803	LYS	CD-CE	59.51	3.00	1.51
1	A	803	LYS	CD-CE	59.47	3.00	1.51
1	H	803	LYS	CD-CE	59.40	2.99	1.51
1	A	1449	PHE	CD1-CE1	56.63	2.52	1.39
1	Q	1449	PHE	CD1-CE1	56.56	2.52	1.39
1	O	1449	PHE	CD1-CE1	56.38	2.52	1.39
1	N	1449	PHE	CD2-CE2	56.33	2.51	1.39
1	H	1449	PHE	CD2-CE2	56.32	2.51	1.39
1	B	1449	PHE	CD2-CE2	56.24	2.51	1.39
3	T	108	PRO	N-CD	33.32	1.94	1.47
3	L	108	PRO	N-CD	32.17	1.92	1.47
3	E	108	PRO	N-CD	32.12	1.92	1.47
3	L	108	PRO	N-CA	29.00	1.96	1.47
3	T	108	PRO	N-CA	28.90	1.96	1.47
3	E	108	PRO	N-CA	28.77	1.96	1.47
3	T	108	PRO	CA-CB	27.50	2.08	1.53
3	E	108	PRO	CA-CB	27.47	2.08	1.53
3	L	108	PRO	CA-CB	27.41	2.08	1.53
1	H	1375	TYR	CE2-CZ	26.05	1.72	1.38
1	A	1375	TYR	CE2-CZ	26.05	1.72	1.38
1	O	1375	TYR	CE2-CZ	26.01	1.72	1.38
1	Q	1375	TYR	CE1-CZ	25.95	1.72	1.38
1	B	1375	TYR	CE2-CZ	25.94	1.72	1.38
1	N	1375	TYR	CE2-CZ	25.82	1.72	1.38
1	H	1375	TYR	CG-CD2	25.47	1.72	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	B	1375	TYR	CG-CD2	25.46	1.72	1.39
1	N	1375	TYR	CG-CD2	25.43	1.72	1.39
1	O	1375	TYR	CG-CD2	25.27	1.72	1.39
1	A	1375	TYR	CG-CD2	25.16	1.71	1.39
1	Q	1375	TYR	CG-CD1	25.04	1.71	1.39
1	Q	1375	TYR	CE2-CZ	24.58	1.70	1.38
1	N	1375	TYR	CE1-CZ	24.54	1.70	1.38
1	A	1375	TYR	CE1-CZ	24.34	1.70	1.38
1	O	1375	TYR	CE1-CZ	24.27	1.70	1.38
1	H	1375	TYR	CE1-CZ	24.25	1.70	1.38
1	B	1375	TYR	CE1-CZ	24.18	1.70	1.38
1	B	1375	TYR	CG-CD1	23.71	1.70	1.39
1	N	1375	TYR	CG-CD1	23.69	1.70	1.39
1	Q	1375	TYR	CG-CD2	23.61	1.69	1.39
1	H	1375	TYR	CG-CD1	23.53	1.69	1.39
1	A	1375	TYR	CG-CD1	23.40	1.69	1.39
1	O	1375	TYR	CG-CD1	23.34	1.69	1.39
1	N	1449	PHE	CG-CD2	22.17	1.72	1.38
1	H	1449	PHE	CG-CD2	22.12	1.72	1.38
1	A	1449	PHE	CG-CD1	22.04	1.71	1.38
1	B	1449	PHE	CG-CD2	22.00	1.71	1.38
1	O	1449	PHE	CG-CD1	21.91	1.71	1.38
1	Q	1449	PHE	CG-CD1	21.89	1.71	1.38
1	H	1449	PHE	CG-CD1	20.88	1.70	1.38
1	B	1449	PHE	CG-CD1	20.88	1.70	1.38
1	N	1449	PHE	CG-CD1	20.82	1.70	1.38
1	A	1449	PHE	CG-CD2	20.82	1.70	1.38
1	Q	1449	PHE	CG-CD2	20.80	1.70	1.38
1	Q	1375	TYR	CD2-CE2	20.76	1.70	1.39
1	O	1449	PHE	CG-CD2	20.73	1.69	1.38
1	N	1375	TYR	CD1-CE1	20.65	1.70	1.39
1	A	1375	TYR	CD1-CE1	20.56	1.70	1.39
1	O	1375	TYR	CD1-CE1	20.50	1.70	1.39
1	B	1375	TYR	CD1-CE1	20.46	1.70	1.39
1	H	1375	TYR	CD1-CE1	20.37	1.69	1.39
1	O	1449	PHE	CE1-CZ	18.16	1.71	1.37
1	A	1449	PHE	CE1-CZ	18.11	1.71	1.37
1	Q	1449	PHE	CE1-CZ	18.08	1.71	1.37
1	N	1449	PHE	CE2-CZ	18.07	1.71	1.37
1	B	1449	PHE	CE2-CZ	17.95	1.71	1.37
1	H	1449	PHE	CE2-CZ	17.95	1.71	1.37
3	E	108	PRO	CG-CD	17.59	2.08	1.50

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	L	108	PRO	CG-CD	17.50	2.08	1.50
1	Q	1449	PHE	CE2-CZ	17.20	1.70	1.37
1	N	1449	PHE	CE1-CZ	17.15	1.70	1.37
1	B	1449	PHE	CE1-CZ	17.11	1.69	1.37
1	A	1449	PHE	CE2-CZ	17.11	1.69	1.37
1	O	1449	PHE	CE2-CZ	17.10	1.69	1.37
1	H	1449	PHE	CE1-CZ	17.09	1.69	1.37
3	T	108	PRO	CG-CD	16.76	2.06	1.50
1	A	1449	PHE	CD2-CE2	15.69	1.70	1.39
1	H	1449	PHE	CD1-CE1	15.69	1.70	1.39
1	Q	1449	PHE	CD2-CE2	15.69	1.70	1.39
1	B	1449	PHE	CD1-CE1	15.66	1.70	1.39
1	O	1449	PHE	CD2-CE2	15.64	1.70	1.39
1	N	1449	PHE	CD1-CE1	15.52	1.70	1.39
3	T	108	PRO	CB-CG	11.37	2.06	1.50
3	L	108	PRO	CB-CG	11.35	2.06	1.50
3	E	108	PRO	CB-CG	11.29	2.06	1.50
1	B	1855	GLU	CD-OE2	-5.64	1.19	1.25

All (530) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	1375	TYR	CG-CD2-CE2	-12.56	111.25	121.30
1	O	1375	TYR	CG-CD2-CE2	-12.49	111.31	121.30
1	A	1375	TYR	CG-CD2-CE2	-12.47	111.32	121.30
1	B	1375	TYR	CG-CD2-CE2	-12.47	111.33	121.30
1	N	1375	TYR	CG-CD2-CE2	-12.43	111.36	121.30
1	Q	1375	TYR	CG-CD1-CE1	-12.21	111.53	121.30
1	O	712	ARG	NE-CZ-NH2	11.03	125.81	120.30
1	O	1909	ARG	NE-CZ-NH2	10.59	125.60	120.30
1	B	712	ARG	NE-CZ-NH2	10.54	125.57	120.30
1	H	1909	ARG	NE-CZ-NH2	10.10	125.35	120.30
1	B	281	ARG	NE-CZ-NH2	9.96	125.28	120.30
2	D	81	ARG	NE-CZ-NH2	9.85	125.22	120.30
1	B	108	ARG	NE-CZ-NH2	9.81	125.21	120.30
1	H	1141	ARG	NE-CZ-NH2	9.71	125.15	120.30
1	H	237	ARG	NE-CZ-NH2	9.70	125.15	120.30
1	A	1375	TYR	CZ-CE2-CD2	-9.66	111.11	119.80
1	O	1375	TYR	CZ-CE2-CD2	-9.63	111.13	119.80
1	H	1375	TYR	CZ-CE2-CD2	-9.62	111.14	119.80
1	B	1375	TYR	CZ-CE2-CD2	-9.53	111.22	119.80
1	Q	1375	TYR	CD1-CE1-CZ	-9.49	111.26	119.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	N	1375	TYR	CZ-CE2-CD2	-9.45	111.29	119.80
1	Q	1909	ARG	NE-CZ-NH2	9.14	124.87	120.30
1	O	1167	ARG	NE-CZ-NH2	8.94	124.77	120.30
1	O	281	ARG	NE-CZ-NH2	8.88	124.74	120.30
1	Q	952	ARG	NE-CZ-NH2	8.83	124.72	120.30
1	A	1909	ARG	NE-CZ-NH2	8.73	124.66	120.30
5	P	856	ARG	NE-CZ-NH2	8.71	124.66	120.30
1	N	803	LYS	CD-CE-NZ	8.68	131.67	111.70
1	O	237	ARG	NE-CZ-NH2	8.66	124.63	120.30
1	A	1449	PHE	CG-CD1-CE1	-8.64	111.30	120.80
1	H	803	LYS	CD-CE-NZ	8.59	131.47	111.70
1	Q	1449	PHE	CG-CD1-CE1	-8.59	111.36	120.80
1	B	1449	PHE	CG-CD2-CE2	-8.58	111.36	120.80
1	H	1449	PHE	CG-CD2-CE2	-8.57	111.37	120.80
1	N	1449	PHE	CG-CD2-CE2	-8.57	111.38	120.80
1	H	1126	ARG	NE-CZ-NH2	8.55	124.58	120.30
1	O	1449	PHE	CG-CD1-CE1	-8.53	111.41	120.80
1	A	803	LYS	CD-CE-NZ	8.51	131.27	111.70
1	B	1375	TYR	CD1-CE1-CZ	8.50	127.45	119.80
1	H	1375	TYR	CD1-CE1-CZ	8.49	127.44	119.80
1	O	1375	TYR	CD1-CE1-CZ	8.47	127.43	119.80
1	A	1375	TYR	CD1-CE1-CZ	8.47	127.42	119.80
1	N	1375	TYR	CD1-CE1-CZ	8.44	127.40	119.80
1	Q	1375	TYR	CZ-CE2-CD2	8.38	127.34	119.80
1	Q	1167	ARG	NE-CZ-NH2	8.35	124.47	120.30
1	H	1167	ARG	NE-CZ-NH2	8.30	124.45	120.30
1	B	1818	ARG	NE-CZ-NH2	8.30	124.45	120.30
1	B	1530	ARG	NE-CZ-NH2	8.27	124.44	120.30
1	N	1167	ARG	NE-CZ-NH2	8.27	124.44	120.30
1	B	798	ARG	NE-CZ-NH2	8.26	124.43	120.30
3	U	58	ARG	NE-CZ-NH2	8.22	124.41	120.30
1	B	652	ARG	NE-CZ-NH2	8.21	124.41	120.30
1	N	870	ARG	NE-CZ-NH2	8.13	124.37	120.30
1	A	1193	ARG	NE-CZ-NH2	8.12	124.36	120.30
5	P	321	ARG	NE-CZ-NH2	8.10	124.35	120.30
2	K	163	ARG	NE-CZ-NH2	8.08	124.34	120.30
3	F	120	ARG	NE-CZ-NH2	8.06	124.33	120.30
5	I	321	ARG	NE-CZ-NH2	8.05	124.33	120.30
1	N	249	ARG	NE-CZ-NH2	8.03	124.32	120.30
1	H	1375	TYR	CG-CD1-CE1	8.00	127.70	121.30
1	O	1375	TYR	CG-CD1-CE1	7.96	127.67	121.30
1	B	1375	TYR	CG-CD1-CE1	7.93	127.65	121.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	N	671	ARG	NE-CZ-NH2	7.91	124.26	120.30
1	Q	1375	TYR	CG-CD2-CE2	7.90	127.62	121.30
1	O	869	ARG	NE-CZ-NH2	7.88	124.24	120.30
1	Q	712	ARG	NE-CZ-NH2	7.82	124.21	120.30
1	H	1530	ARG	NE-CZ-NH2	7.81	124.21	120.30
1	N	1375	TYR	CG-CD1-CE1	7.80	127.54	121.30
1	H	249	ARG	NE-CZ-NH2	7.76	124.18	120.30
1	A	243	ARG	NE-CZ-NH2	7.76	124.18	120.30
1	A	1375	TYR	CG-CD1-CE1	7.76	127.51	121.30
1	N	721	ARG	NE-CZ-NH2	7.76	124.18	120.30
1	Q	652	ARG	NE-CZ-NH2	7.74	124.17	120.30
1	A	1697	ARG	NE-CZ-NH2	7.73	124.16	120.30
1	N	1689	ARG	NE-CZ-NH2	7.73	124.16	120.30
1	A	787	ARG	NE-CZ-NH2	7.68	124.14	120.30
5	P	353	ARG	NE-CZ-NH2	7.68	124.14	120.30
1	O	721	ARG	NE-CZ-NH2	7.67	124.14	120.30
1	A	1175	ARG	NE-CZ-NH2	7.67	124.13	120.30
5	P	1145	ARG	NE-CZ-NH2	7.66	124.13	120.30
1	A	1677	ARG	NE-CZ-NH2	7.60	124.10	120.30
1	O	143	ARG	NE-CZ-NH2	7.58	124.09	120.30
1	A	803	LYS	CG-CD-CE	7.50	134.40	111.90
1	A	1372	ARG	NE-CZ-NH2	7.50	124.05	120.30
1	Q	1129	ARG	NE-CZ-NH2	7.49	124.04	120.30
1	H	403	ARG	NE-CZ-NH2	7.45	124.03	120.30
1	O	453	ARG	NE-CZ-NH2	7.44	124.02	120.30
1	H	1434	ARG	NE-CZ-NH2	7.43	124.02	120.30
1	A	369	ARG	NE-CZ-NH2	7.43	124.02	120.30
1	H	803	LYS	CG-CD-CE	7.42	134.14	111.90
1	Q	272	ARG	NE-CZ-NH2	7.36	123.98	120.30
1	O	1449	PHE	CD1-CE1-CZ	-7.35	111.28	120.10
1	A	1449	PHE	CD1-CE1-CZ	-7.33	111.30	120.10
4	V	137	ARG	NE-CZ-NH2	7.32	123.96	120.30
1	N	1050	ARG	NE-CZ-NH2	7.32	123.96	120.30
1	O	29	ARG	NE-CZ-NH2	7.31	123.95	120.30
1	N	803	LYS	CG-CD-CE	7.30	133.81	111.90
1	Q	1449	PHE	CD1-CE1-CZ	-7.30	111.34	120.10
1	O	204	ARG	NE-CZ-NH2	7.30	123.95	120.30
1	Q	1689	ARG	NE-CZ-NH2	7.29	123.95	120.30
1	H	108	ARG	NE-CZ-NH2	7.27	123.94	120.30
1	B	1845	ARG	NE-CZ-NH2	7.27	123.93	120.30
1	N	1449	PHE	CZ-CE2-CD2	-7.26	111.39	120.10
4	G	107	ARG	NE-CZ-NH2	7.26	123.93	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	1175	ARG	NE-CZ-NH2	7.25	123.92	120.30
1	B	1592	ARG	NE-CZ-NH2	7.25	123.92	120.30
1	B	204	ARG	NE-CZ-NH2	7.23	123.92	120.30
2	S	81	ARG	NE-CZ-NH2	7.22	123.91	120.30
5	I	459	ARG	NE-CZ-NH2	7.21	123.90	120.30
1	Q	1317	ARG	NE-CZ-NH2	7.18	123.89	120.30
1	A	1317	ARG	NE-CZ-NH2	7.17	123.88	120.30
1	B	1449	PHE	CZ-CE2-CD2	-7.17	111.50	120.10
1	H	1449	PHE	CZ-CE2-CD2	-7.17	111.50	120.10
1	H	281	ARG	NE-CZ-NH2	7.15	123.87	120.30
1	Q	281	ARG	NE-CZ-NH2	7.14	123.87	120.30
1	A	147	ARG	NE-CZ-NH2	7.11	123.86	120.30
1	B	1689	ARG	NE-CZ-NH2	7.11	123.85	120.30
2	R	138	ARG	NE-CZ-NH2	7.11	123.85	120.30
1	B	925	ARG	NE-CZ-NH2	7.10	123.85	120.30
5	I	1164	ARG	NE-CZ-NH2	7.10	123.85	120.30
1	Q	1749	ARG	NE-CZ-NH2	7.09	123.85	120.30
1	H	663	ARG	NE-CZ-NH2	7.09	123.85	120.30
1	N	1909	ARG	NE-CZ-NH2	7.09	123.84	120.30
1	B	1832	ARG	NE-CZ-NH2	7.07	123.83	120.30
1	H	1375	TYR	CB-CG-CD1	-7.06	116.76	121.00
5	P	478	ARG	NE-CZ-NH2	7.06	123.83	120.30
1	H	719	ARG	NE-CZ-NH2	7.05	123.82	120.30
1	N	1317	ARG	NE-CZ-NH2	7.01	123.80	120.30
1	Q	29	ARG	NE-CZ-NH2	7.01	123.80	120.30
1	Q	17	ARG	NE-CZ-NH2	7.00	123.80	120.30
1	A	249	ARG	NE-CZ-NH2	6.99	123.79	120.30
1	O	925	ARG	NE-CZ-NH2	6.98	123.79	120.30
1	B	721	ARG	NE-CZ-NH2	6.96	123.78	120.30
1	N	29	ARG	NE-CZ-NH2	6.95	123.78	120.30
1	Q	1699	ARG	NE-CZ-NH2	6.94	123.77	120.30
2	C	81	ARG	NE-CZ-NH2	6.93	123.76	120.30
1	Q	925	ARG	NE-CZ-NH2	6.92	123.76	120.30
1	A	272	ARG	NE-CZ-NH2	6.91	123.75	120.30
4	G	340	ARG	NE-CZ-NH2	6.91	123.75	120.30
1	O	1136	ARG	NE-CZ-NH2	6.91	123.75	120.30
1	A	721	ARG	NE-CZ-NH2	6.89	123.75	120.30
1	Q	1093	ARG	NE-CZ-NH2	6.88	123.74	120.30
1	O	1560	ARG	NE-CZ-NH2	6.87	123.73	120.30
1	B	249	ARG	NE-CZ-NH2	6.85	123.73	120.30
1	B	169	ARG	NE-CZ-NH2	6.85	123.72	120.30
1	N	780	ARG	NE-CZ-NH2	6.84	123.72	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	S	163	ARG	NE-CZ-NH2	6.83	123.72	120.30
1	Q	1344	ARG	NE-CZ-NH2	6.83	123.72	120.30
1	N	1863	ARG	NE-CZ-NH2	6.83	123.71	120.30
1	B	870	ARG	NE-CZ-NH2	6.82	123.71	120.30
1	O	904	ARG	NE-CZ-NH2	6.80	123.70	120.30
1	O	1050	ARG	NE-CZ-NH2	6.77	123.69	120.30
1	Q	1303	ARG	NE-CZ-NH2	6.77	123.68	120.30
1	B	1193	ARG	NE-CZ-NH2	6.76	123.68	120.30
1	Q	1050	ARG	NE-CZ-NH2	6.75	123.68	120.30
1	O	1141	ARG	NE-CZ-NH2	6.75	123.68	120.30
1	N	1193	ARG	NE-CZ-NH2	6.75	123.67	120.30
1	O	1634	ARG	NE-CZ-NH2	6.74	123.67	120.30
1	A	1129	ARG	NE-CZ-NH2	6.74	123.67	120.30
1	O	739	ARG	NE-CZ-NH2	6.73	123.67	120.30
1	A	1699	ARG	NE-CZ-NH2	6.73	123.67	120.30
1	N	703	ARG	NE-CZ-NH2	6.73	123.67	120.30
2	D	63	ARG	NE-CZ-NH2	6.72	123.66	120.30
1	H	870	ARG	NE-CZ-NH2	6.71	123.66	120.30
1	N	108	ARG	NE-CZ-NH2	6.71	123.66	120.30
1	Q	1114	ARG	NE-CZ-NH2	6.71	123.65	120.30
1	N	1372	ARG	NE-CZ-NH2	6.69	123.65	120.30
1	H	712	ARG	NE-CZ-NH2	6.69	123.64	120.30
4	G	376	ARG	NE-CZ-NH2	6.68	123.64	120.30
1	Q	1045	ARG	NE-CZ-NH2	6.67	123.63	120.30
1	O	1359	ARG	NE-CZ-NH2	6.65	123.63	120.30
1	H	671	ARG	NE-CZ-NH2	6.64	123.62	120.30
4	V	172	ARG	NE-CZ-NH2	6.64	123.62	120.30
1	O	1289	ARG	NE-CZ-NH2	6.63	123.62	120.30
1	H	787	ARG	NE-CZ-NH2	6.63	123.61	120.30
5	I	1232	ARG	NE-CZ-NH2	6.63	123.61	120.30
1	H	1613	ARG	NE-CZ-NH2	6.62	123.61	120.30
1	O	1372	ARG	NE-CZ-NH2	6.62	123.61	120.30
5	P	440	PRO	CA-N-CD	-6.62	102.23	111.50
1	H	1699	ARG	NE-CZ-NH2	6.62	123.61	120.30
1	Q	1608	ARG	NE-CZ-NH2	6.61	123.61	120.30
1	O	1592	ARG	NE-CZ-NH2	6.60	123.60	120.30
1	N	904	ARG	NE-CZ-NH2	6.59	123.59	120.30
1	H	453	ARG	NE-CZ-NH2	6.58	123.59	120.30
1	B	147	ARG	NE-CZ-NH2	6.58	123.59	120.30
2	R	63	ARG	NE-CZ-NH2	6.58	123.59	120.30
1	N	442	ARG	NE-CZ-NH2	6.58	123.59	120.30
1	A	1141	ARG	NE-CZ-NH2	6.57	123.58	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	819	ARG	NE-CZ-NH2	6.54	123.57	120.30
1	N	694	ARG	NE-CZ-NH2	6.54	123.57	120.30
1	N	1126	ARG	NE-CZ-NH2	6.54	123.57	120.30
1	N	652	ARG	NE-CZ-NH2	6.53	123.57	120.30
1	B	1634	ARG	NE-CZ-NH2	6.53	123.56	120.30
1	Q	108	ARG	NE-CZ-NH2	6.51	123.56	120.30
4	G	137	ARG	NE-CZ-NH2	6.51	123.56	120.30
1	B	369	ARG	NE-CZ-NH2	6.51	123.56	120.30
4	G	26	ARG	NE-CZ-NH2	6.51	123.55	120.30
1	O	1574	ARG	NE-CZ-NH2	6.50	123.55	120.30
2	C	63	ARG	NE-CZ-NH2	6.48	123.54	120.30
1	N	808	ARG	NE-CZ-NH2	6.48	123.54	120.30
1	B	1574	ARG	NE-CZ-NH2	6.47	123.54	120.30
1	H	1317	ARG	NE-CZ-NH2	6.47	123.54	120.30
1	B	904	ARG	NE-CZ-NH2	6.47	123.53	120.30
1	B	1129	ARG	NE-CZ-NH2	6.46	123.53	120.30
1	H	1420	ARG	NE-CZ-NH2	6.46	123.53	120.30
1	O	272	ARG	NE-CZ-NH2	6.46	123.53	120.30
1	A	723	ARG	NE-CZ-NH2	6.46	123.53	120.30
2	S	154	ARG	NE-CZ-NH2	6.45	123.53	120.30
1	A	1053	ARG	NE-CZ-NH2	6.45	123.53	120.30
1	B	1608	ARG	NE-CZ-NH2	6.44	123.52	120.30
4	V	107	ARG	NE-CZ-NH2	6.44	123.52	120.30
1	N	1289	ARG	NE-CZ-NH2	6.43	123.52	120.30
4	G	361	ARG	NE-CZ-NH2	6.41	123.50	120.30
2	K	154	ARG	NE-CZ-NH2	6.39	123.50	120.30
1	N	237	ARG	NE-CZ-NH2	6.38	123.49	120.30
3	T	58	ARG	NE-CZ-NH2	6.38	123.49	120.30
3	M	40	ARG	NE-CZ-NH2	6.37	123.48	120.30
1	N	1141	ARG	NE-CZ-NH2	6.37	123.48	120.30
1	A	1344	ARG	NE-CZ-NH2	6.36	123.48	120.30
2	J	63	ARG	NE-CZ-NH2	6.35	123.47	120.30
5	I	839	ARG	NE-CZ-NH2	6.34	123.47	120.30
1	B	1699	ARG	NE-CZ-NH2	6.32	123.46	120.30
1	Q	808	ARG	NE-CZ-NH2	6.31	123.45	120.30
1	O	1832	ARG	NE-CZ-NH2	6.31	123.45	120.30
1	O	1434	ARG	NE-CZ-NH2	6.30	123.45	120.30
1	B	1289	ARG	NE-CZ-NH2	6.28	123.44	120.30
4	V	1	PRO	CA-N-CD	-6.28	102.71	111.50
1	B	1662	ARG	NE-CZ-NH2	6.28	123.44	120.30
1	B	1909	ARG	NE-CZ-NH2	6.28	123.44	120.30
1	B	793	ARG	NE-CZ-NH2	6.27	123.44	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	N	1608	ARG	NE-CZ-NH2	6.26	123.43	120.30
3	T	50	ARG	NE-CZ-NH2	6.25	123.43	120.30
1	O	808	ARG	NE-CZ-NH2	6.24	123.42	120.30
1	A	777	ARG	NE-CZ-NH2	6.24	123.42	120.30
5	I	806	ARG	NE-CZ-NH2	6.23	123.41	120.30
4	V	363	ARG	NE-CZ-NH2	6.23	123.41	120.30
4	G	1	PRO	CA-N-CD	-6.21	102.80	111.50
1	Q	1420	ARG	NE-CZ-NH2	6.21	123.40	120.30
1	H	1449	PHE	CG-CD1-CE1	6.21	127.62	120.80
1	O	1858	ARG	NE-CZ-NH2	6.21	123.40	120.30
4	V	208	ARG	NE-CZ-NH2	6.21	123.40	120.30
1	Q	1141	ARG	NE-CZ-NH2	6.20	123.40	120.30
1	B	1277	ARG	NE-CZ-NH2	6.20	123.40	120.30
1	A	1818	ARG	NE-CZ-NH2	6.20	123.40	120.30
1	Q	870	ARG	NE-CZ-NH2	6.20	123.40	120.30
1	B	567	ARG	NE-CZ-NH2	6.20	123.40	120.30
1	N	1175	ARG	NE-CZ-NH2	6.19	123.39	120.30
1	O	1093	ARG	NE-CZ-NH2	6.19	123.39	120.30
2	R	81	ARG	NE-CZ-NH2	6.18	123.39	120.30
1	N	1449	PHE	CD1-CE1-CZ	6.18	127.52	120.10
5	P	606	ARG	NE-CZ-NH2	6.17	123.39	120.30
1	B	54	ARG	NE-CZ-NH2	6.17	123.39	120.30
1	H	783	ARG	NE-CZ-NH2	6.17	123.38	120.30
1	N	787	ARG	NE-CZ-NH2	6.17	123.38	120.30
1	A	1449	PHE	CZ-CE2-CD2	6.17	127.50	120.10
1	H	1880	ARG	NE-CZ-NH2	6.16	123.38	120.30
1	N	1449	PHE	CG-CD1-CE1	6.16	127.57	120.80
1	N	1832	ARG	NE-CZ-NH2	6.15	123.37	120.30
1	B	1449	PHE	CD1-CE1-CZ	6.14	127.47	120.10
1	O	1317	ARG	NE-CZ-NH2	6.14	123.37	120.30
1	H	1175	ARG	NE-CZ-NH2	6.14	123.37	120.30
1	O	1449	PHE	CZ-CE2-CD2	6.14	127.47	120.10
5	P	899	ARG	NE-CZ-NH2	6.13	123.37	120.30
1	A	1574	ARG	NE-CZ-NH2	6.13	123.37	120.30
1	O	54	ARG	NE-CZ-NH2	6.13	123.36	120.30
1	Q	1449	PHE	CG-CD2-CE2	6.13	127.54	120.80
1	Q	1796	ARG	NE-CZ-NH2	6.13	123.36	120.30
1	B	1053	ARG	NE-CZ-NH2	6.13	123.36	120.30
1	Q	1449	PHE	CZ-CE2-CD2	6.12	127.45	120.10
4	V	183	ARG	NE-CZ-NH2	6.12	123.36	120.30
1	O	1449	PHE	CG-CD2-CE2	6.10	127.51	120.80
1	A	1449	PHE	CG-CD2-CE2	6.10	127.51	120.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	N	308	TYR	CB-CG-CD2	-6.10	117.34	121.00
2	D	154	ARG	NE-CZ-NH2	6.09	123.34	120.30
1	H	1449	PHE	CD1-CE1-CZ	6.08	127.40	120.10
1	N	1420	ARG	NE-CZ-NH2	6.08	123.34	120.30
1	B	1359	ARG	NE-CZ-NH2	6.08	123.34	120.30
1	H	501	TYR	CB-CG-CD2	-6.08	117.35	121.00
1	N	798	ARG	NE-CZ-NH2	6.07	123.34	120.30
3	F	9	ARG	NE-CZ-NH2	6.07	123.34	120.30
1	B	237	ARG	NE-CZ-NH2	6.07	123.33	120.30
1	H	925	ARG	NE-CZ-NH2	6.07	123.33	120.30
1	O	777	ARG	NE-CZ-NH2	6.06	123.33	120.30
1	B	1449	PHE	CG-CD1-CE1	6.06	127.46	120.80
1	O	870	ARG	NE-CZ-NH2	6.04	123.32	120.30
4	V	376	ARG	NE-CZ-NH2	6.03	123.32	120.30
5	I	1145	ARG	NE-CZ-NH2	6.02	123.31	120.30
1	B	671	ARG	NE-CZ-NH2	6.01	123.30	120.30
1	O	1344	ARG	NE-CZ-NH2	6.01	123.31	120.30
1	Q	1820	ARG	NE-CZ-NH2	6.01	123.31	120.30
1	N	1699	ARG	NE-CZ-NH2	6.00	123.30	120.30
5	P	880	ARG	NE-CZ-NH2	6.00	123.30	120.30
1	Q	1175	ARG	NE-CZ-NH2	6.00	123.30	120.30
1	Q	1530	ARG	NE-CZ-NH2	5.98	123.29	120.30
1	H	1359	ARG	NE-CZ-NH2	5.98	123.29	120.30
1	N	1093	ARG	NE-CZ-NH2	5.98	123.29	120.30
1	O	369	ARG	NE-CZ-NH2	5.97	123.29	120.30
4	V	115	ARG	NE-CZ-NH2	5.97	123.29	120.30
5	I	913	ARG	NE-CZ-NH2	5.96	123.28	120.30
1	B	941	ARG	NE-CZ-NH2	5.96	123.28	120.30
5	P	1081	ARG	NE-CZ-NH2	5.96	123.28	120.30
1	O	108	ARG	NE-CZ-NH2	5.95	123.28	120.30
1	N	1574	ARG	NE-CZ-NH2	5.95	123.27	120.30
1	O	706	ARG	NE-CZ-NH2	5.94	123.27	120.30
1	H	1372	ARG	NE-CZ-NH2	5.92	123.26	120.30
1	A	1880	ARG	NE-CZ-NH2	5.91	123.26	120.30
5	P	547	ARG	NE-CZ-NH2	5.89	123.25	120.30
1	B	1260	ARG	NE-CZ-NH2	5.88	123.24	120.30
5	I	1192	ARG	NE-CZ-NH2	5.88	123.24	120.30
5	P	680	ARG	NE-CZ-NH2	5.88	123.24	120.30
1	H	904	ARG	NE-CZ-NH2	5.88	123.24	120.30
1	N	1749	ARG	NE-CZ-NH2	5.86	123.23	120.30
1	Q	1337	ARG	NE-CZ-NH2	5.86	123.23	120.30
2	K	81	ARG	NE-CZ-NH2	5.85	123.22	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	Q	1149	ARG	NE-CZ-NH2	5.84	123.22	120.30
3	E	40	ARG	NE-CZ-NH2	5.83	123.22	120.30
1	Q	1475	ARG	NE-CZ-NH2	5.82	123.21	120.30
2	C	154	ARG	NE-CZ-NH2	5.81	123.20	120.30
1	B	1136	ARG	NE-CZ-NH2	5.80	123.20	120.30
1	Q	869	ARG	NE-CZ-NH2	5.80	123.20	120.30
5	P	700	ARG	NE-CZ-NH2	5.80	123.20	120.30
1	B	952	ARG	NE-CZ-NH2	5.79	123.19	120.30
1	N	712	ARG	NE-CZ-NH2	5.78	123.19	120.30
1	B	1337	ARG	NE-CZ-NH2	5.78	123.19	120.30
1	O	1126	ARG	NE-CZ-NH2	5.77	123.19	120.30
1	A	1303	ARG	NE-CZ-NH2	5.76	123.18	120.30
1	B	1925	ARG	NE-CZ-NH2	5.76	123.18	120.30
1	H	204	ARG	NE-CZ-NH2	5.76	123.18	120.30
1	H	952	ARG	NE-CZ-NH2	5.76	123.18	120.30
1	Q	721	ARG	NE-CZ-NH2	5.76	123.18	120.30
5	I	404	ARG	NE-CZ-NH2	5.75	123.17	120.30
1	Q	204	ARG	NE-CZ-NH2	5.74	123.17	120.30
5	I	1265	ARG	NE-CZ-NH2	5.74	123.17	120.30
5	P	721	ARG	NE-CZ-NH2	5.72	123.16	120.30
1	Q	1250	ARG	NE-CZ-NH2	5.72	123.16	120.30
1	B	1045	ARG	NE-CZ-NH2	5.72	123.16	120.30
1	Q	249	ARG	NE-CZ-NH2	5.72	123.16	120.30
1	O	249	ARG	NE-CZ-NH2	5.71	123.16	120.30
1	N	308	TYR	CA-CB-CG	5.71	124.25	113.40
1	O	703	ARG	NE-CZ-NH2	5.71	123.16	120.30
1	B	712	ARG	NE-CZ-NH1	-5.70	117.45	120.30
1	A	1608	ARG	NE-CZ-NH2	5.70	123.15	120.30
3	M	129	ARG	NE-CZ-NH2	5.69	123.15	120.30
1	Q	1677	ARG	NE-CZ-NH2	5.69	123.15	120.30
1	N	1846	ARG	NE-CZ-NH2	5.69	123.14	120.30
1	B	1588	ARG	NE-CZ-NH2	5.69	123.14	120.30
3	T	129	ARG	NE-CZ-NH2	5.69	123.14	120.30
4	G	363	ARG	NE-CZ-NH2	5.68	123.14	120.30
5	P	875	ARG	NE-CZ-NH2	5.67	123.14	120.30
1	A	793	ARG	NE-CZ-NH2	5.67	123.14	120.30
1	H	1114	ARG	NE-CZ-NH2	5.67	123.13	120.30
1	Q	442	ARG	NE-CZ-NH2	5.66	123.13	120.30
1	A	1277	ARG	NE-CZ-NH2	5.66	123.13	120.30
1	A	1420	ARG	NE-CZ-NH2	5.66	123.13	120.30
1	B	243	ARG	NE-CZ-NH2	5.66	123.13	120.30
2	D	163	ARG	NE-CZ-NH2	5.66	123.13	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	H	780	ARG	NE-CZ-NH2	5.65	123.12	120.30
5	P	1232	ARG	NE-CZ-NH2	5.63	123.12	120.30
5	I	1365	ARG	NE-CZ-NH2	5.62	123.11	120.30
1	Q	807	ARG	NE-CZ-NH2	5.62	123.11	120.30
1	A	1858	ARG	NE-CZ-NH2	5.62	123.11	120.30
1	B	1093	ARG	NE-CZ-NH2	5.62	123.11	120.30
1	O	793	ARG	NE-CZ-NH2	5.61	123.11	120.30
3	T	40	ARG	NE-CZ-NH2	5.61	123.11	120.30
3	F	40	ARG	NE-CZ-NH2	5.61	123.11	120.30
1	Q	1634	ARG	NE-CZ-NH2	5.61	123.10	120.30
1	Q	1289	ARG	NE-CZ-NH2	5.61	123.10	120.30
5	I	580	ARG	NE-CZ-NH2	5.60	123.10	120.30
2	J	154	ARG	NE-CZ-NH2	5.58	123.09	120.30
1	Q	719	ARG	NE-CZ-NH2	5.58	123.09	120.30
2	C	138	ARG	NE-CZ-NH2	5.57	123.09	120.30
1	A	739	ARG	NE-CZ-NH2	5.57	123.08	120.30
1	A	1382	ARG	NE-CZ-NH2	5.57	123.08	120.30
1	N	54	ARG	NE-CZ-NH2	5.57	123.08	120.30
1	O	23	ARG	NE-CZ-NH2	5.56	123.08	120.30
1	Q	787	ARG	NE-CZ-NH2	5.54	123.07	120.30
2	K	63	ARG	NE-CZ-NH2	5.54	123.07	120.30
1	N	941	ARG	NE-CZ-NH2	5.54	123.07	120.30
1	O	1126	ARG	NE-CZ-NH1	-5.53	117.53	120.30
5	P	976	ARG	NE-CZ-NH2	5.52	123.06	120.30
1	Q	706	ARG	NE-CZ-NH2	5.52	123.06	120.30
1	Q	1447	ARG	NE-CZ-NH2	5.52	123.06	120.30
5	P	1265	ARG	NE-CZ-NH2	5.51	123.06	120.30
1	O	1045	ARG	NE-CZ-NH2	5.50	123.05	120.30
1	O	1588	ARG	NE-CZ-NH2	5.50	123.05	120.30
1	N	819	ARG	NE-CZ-NH2	5.50	123.05	120.30
1	A	1268	ARG	NE-CZ-NH2	5.50	123.05	120.30
1	H	1277	ARG	NE-CZ-NH2	5.50	123.05	120.30
3	L	120	ARG	NE-CZ-NH2	5.49	123.05	120.30
1	O	403	ARG	NE-CZ-NH2	5.49	123.05	120.30
1	N	308	TYR	CB-CG-CD1	5.49	124.29	121.00
1	A	243	ARG	NH1-CZ-NH2	-5.49	113.36	119.40
4	V	255	ARG	NE-CZ-NH2	5.48	123.04	120.30
1	A	1167	ARG	NE-CZ-NH2	5.48	123.04	120.30
5	P	819	ARG	NE-CZ-NH2	5.46	123.03	120.30
2	K	94	ARG	NE-CZ-NH2	5.46	123.03	120.30
1	H	567	ARG	NE-CZ-NH2	5.45	123.03	120.30
1	N	952	ARG	NE-CZ-NH2	5.45	123.03	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	17	ARG	NE-CZ-NH2	5.45	123.02	120.30
1	H	142	TYR	CB-CG-CD2	-5.45	117.73	121.00
1	Q	54	ARG	NE-CZ-NH2	5.45	123.02	120.30
1	A	1289	ARG	NE-CZ-NH2	5.43	123.02	120.30
5	P	580	ARG	NE-CZ-NH2	5.43	123.02	120.30
1	H	1136	ARG	NE-CZ-NH2	5.42	123.01	120.30
1	H	1608	ARG	NE-CZ-NH2	5.42	123.01	120.30
5	I	782	ARG	NE-CZ-NH2	5.42	123.01	120.30
1	O	190	ARG	NE-CZ-NH2	5.42	123.01	120.30
5	P	1365	ARG	NE-CZ-NH2	5.42	123.01	120.30
1	B	1846	ARG	NE-CZ-NH2	5.41	123.01	120.30
1	H	1832	ARG	NE-CZ-NH2	5.41	123.01	120.30
1	O	1268	ARG	NE-CZ-NH2	5.41	123.00	120.30
1	O	281	ARG	NE-CZ-NH1	-5.41	117.60	120.30
5	I	646	ARG	NE-CZ-NH2	5.40	123.00	120.30
1	O	1846	ARG	NE-CZ-NH2	5.40	123.00	120.30
1	A	501	TYR	CB-CG-CD2	-5.39	117.76	121.00
1	N	719	ARG	NE-CZ-NH2	5.39	123.00	120.30
1	O	798	ARG	NE-CZ-NH2	5.39	123.00	120.30
1	O	780	ARG	NE-CZ-NH2	5.39	122.99	120.30
1	A	1375	TYR	CB-CG-CD1	-5.38	117.77	121.00
1	A	780	ARG	NE-CZ-NH2	5.38	122.99	120.30
1	O	819	ARG	NE-CZ-NH2	5.38	122.99	120.30
1	Q	281	ARG	CD-NE-CZ	5.37	131.12	123.60
1	B	1176	ARG	NE-CZ-NH2	5.36	122.98	120.30
1	A	1530	ARG	NE-CZ-NH2	5.36	122.98	120.30
1	A	671	ARG	NE-CZ-NH2	5.36	122.98	120.30
1	H	1820	ARG	NE-CZ-NH2	5.36	122.98	120.30
1	Q	715	TYR	CB-CG-CD2	-5.35	117.79	121.00
1	Q	703	ARG	NE-CZ-NH2	5.35	122.98	120.30
1	H	1841	ARG	NE-CZ-NH2	5.35	122.97	120.30
1	A	1250	ARG	NE-CZ-NH2	5.34	122.97	120.30
1	A	952	ARG	NE-CZ-NH2	5.34	122.97	120.30
1	N	272	ARG	NE-CZ-NH2	5.34	122.97	120.30
1	O	1818	ARG	NE-CZ-NH2	5.33	122.96	120.30
1	A	281	ARG	NE-CZ-NH2	5.33	122.96	120.30
5	P	551	ARG	NE-CZ-NH2	5.32	122.96	120.30
1	Q	1818	ARG	NE-CZ-NH2	5.32	122.96	120.30
1	O	719	ARG	NE-CZ-NH2	5.32	122.96	120.30
1	Q	147	ARG	NE-CZ-NH2	5.31	122.96	120.30
1	A	1114	ARG	NE-CZ-NH2	5.31	122.96	120.30
5	I	976	ARG	NE-CZ-NH2	5.30	122.95	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
5	P	459	ARG	NE-CZ-NH2	5.30	122.95	120.30
1	Q	858	ARG	NE-CZ-NH2	5.30	122.95	120.30
1	B	1820	ARG	NE-CZ-NH2	5.30	122.95	120.30
1	N	1447	ARG	NE-CZ-NH2	5.30	122.95	120.30
1	H	1053	ARG	NE-CZ-NH2	5.29	122.95	120.30
1	O	1880	ARG	NE-CZ-NH2	5.29	122.94	120.30
5	I	353	ARG	NE-CZ-NH2	5.29	122.94	120.30
3	U	40	ARG	NE-CZ-NH2	5.28	122.94	120.30
1	N	1344	ARG	NE-CZ-NH2	5.27	122.94	120.30
1	N	29	ARG	CD-NE-CZ	5.27	130.98	123.60
1	O	1475	ARG	NE-CZ-NH2	5.27	122.94	120.30
1	H	1337	ARG	NE-CZ-NH2	5.27	122.94	120.30
1	A	706	ARG	NE-CZ-NH2	5.27	122.93	120.30
1	O	1841	ARG	NE-CZ-NH2	5.26	122.93	120.30
1	Q	1845	ARG	NE-CZ-NH2	5.24	122.92	120.30
4	V	171	ARG	NE-CZ-NH2	5.24	122.92	120.30
1	N	1129	ARG	NE-CZ-NH2	5.24	122.92	120.30
5	I	381	ARG	NE-CZ-NH2	5.23	122.91	120.30
1	O	1530	ARG	NE-CZ-NH2	5.22	122.91	120.30
1	Q	1375	TYR	CB-CG-CD2	-5.21	117.88	121.00
1	B	1447	ARG	NE-CZ-NH2	5.20	122.90	120.30
1	H	29	ARG	NE-CZ-NH2	5.20	122.90	120.30
1	O	1114	ARG	NE-CZ-NH2	5.20	122.90	120.30
1	Q	453	ARG	NE-CZ-NH2	5.19	122.89	120.30
5	I	547	ARG	NE-CZ-NH2	5.18	122.89	120.30
4	G	105	ARG	NE-CZ-NH2	5.18	122.89	120.30
1	H	1289	ARG	NE-CZ-NH2	5.18	122.89	120.30
5	P	1072	ARG	NE-CZ-NH2	5.18	122.89	120.30
1	O	1277	ARG	NE-CZ-NH2	5.17	122.89	120.30
1	Q	1500	ARG	NE-CZ-NH2	5.17	122.89	120.30
1	O	588	TYR	CB-CG-CD2	-5.17	117.90	121.00
1	O	147	ARG	NE-CZ-NH2	5.17	122.88	120.30
1	A	1841	ARG	NE-CZ-NH2	5.16	122.88	120.30
1	B	1434	ARG	NE-CZ-NH2	5.16	122.88	120.30
2	C	94	ARG	NE-CZ-NH2	5.16	122.88	120.30
1	O	1337	ARG	NE-CZ-NH2	5.16	122.88	120.30
3	L	50	ARG	NE-CZ-NH2	5.16	122.88	120.30
5	P	353	ARG	NE-CZ-NH1	-5.15	117.72	120.30
1	H	23	ARG	NE-CZ-NH2	5.15	122.88	120.30
1	O	1608	ARG	NE-CZ-NH2	5.14	122.87	120.30
1	A	1662	ARG	NE-CZ-NH2	5.14	122.87	120.30
5	P	652	ARG	NE-CZ-NH2	5.14	122.87	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	B	1050	ARG	NE-CZ-NH2	5.14	122.87	120.30
1	H	793	ARG	NE-CZ-NH2	5.14	122.87	120.30
1	B	1126	ARG	NE-CZ-NH2	5.12	122.86	120.30
4	G	172	ARG	NE-CZ-NH2	5.12	122.86	120.30
1	A	1699	ARG	NE-CZ-NH1	-5.12	117.74	120.30
5	I	1072	ARG	NE-CZ-NH2	5.11	122.86	120.30
1	Q	694	ARG	NE-CZ-NH2	5.11	122.86	120.30
1	O	1500	ARG	NE-CZ-NH2	5.11	122.86	120.30
1	N	1818	ARG	NE-CZ-NH2	5.11	122.85	120.30
1	O	1093	ARG	NE-CZ-NH1	-5.10	117.75	120.30
1	N	1382	ARG	NE-CZ-NH2	5.10	122.85	120.30
3	F	50	ARG	NE-CZ-NH2	5.10	122.85	120.30
5	P	404	ARG	NE-CZ-NH2	5.10	122.85	120.30
1	O	1250	ARG	NE-CZ-NH2	5.09	122.85	120.30
1	A	143	ARG	NE-CZ-NH2	5.09	122.84	120.30
1	O	787	ARG	NE-CZ-NH2	5.09	122.84	120.30
5	P	1200	ARG	NE-CZ-NH2	5.09	122.84	120.30
1	N	453	ARG	NE-CZ-NH2	5.08	122.84	120.30
1	N	777	ARG	NE-CZ-NH2	5.08	122.84	120.30
4	V	78	ARG	NE-CZ-NH2	5.08	122.84	120.30
1	O	1689	ARG	NE-CZ-NH2	5.08	122.84	120.30
4	G	78	ARG	NE-CZ-NH2	5.08	122.84	120.30
5	I	478	ARG	NE-CZ-NH2	5.08	122.84	120.30
1	B	1841	ARG	NE-CZ-NH2	5.07	122.84	120.30
1	O	1375	TYR	CB-CG-CD1	-5.07	117.95	121.00
4	V	325	ARG	NE-CZ-NH2	5.07	122.84	120.30
1	A	1846	ARG	NE-CZ-NH2	5.07	122.83	120.30
1	H	1560	ARG	NE-CZ-NH2	5.07	122.83	120.30
2	R	163	ARG	NE-CZ-NH2	5.06	122.83	120.30
5	I	880	ARG	NE-CZ-NH2	5.05	122.83	120.30
1	A	798	ARG	NE-CZ-NH2	5.05	122.82	120.30
1	A	29	ARG	NE-CZ-NH2	5.04	122.82	120.30
1	H	1863	ARG	NE-CZ-NH2	5.03	122.82	120.30
1	O	108	ARG	NE-CZ-NH1	-5.03	117.78	120.30
1	B	780	ARG	NE-CZ-NH2	5.03	122.81	120.30
1	B	1613	ARG	NE-CZ-NH2	5.03	122.81	120.30
1	B	1858	ARG	NE-CZ-NH2	5.02	122.81	120.30
1	H	1845	ARG	NE-CZ-NH2	5.02	122.81	120.30
5	I	943	ARG	NE-CZ-NH2	5.02	122.81	120.30
1	N	1277	ARG	NE-CZ-NH2	5.02	122.81	120.30
1	B	1560	ARG	NE-CZ-NH2	5.01	122.81	120.30
1	H	858	ARG	NE-CZ-NH2	5.01	122.81	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	M	58	ARG	NE-CZ-NH2	5.01	122.81	120.30
4	V	157	ARG	NE-CZ-NH2	5.01	122.81	120.30
4	V	74	ARG	NE-CZ-NH2	5.01	122.81	120.30
1	Q	1863	ARG	NE-CZ-NH2	5.01	122.80	120.30
1	H	1846	ARG	NE-CZ-NH2	5.01	122.80	120.30
1	A	1749	ARG	NE-CZ-NH2	5.00	122.80	120.30

There are no chirality outliers.

All (15) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	1375	TYR	Sidechain
1	B	194	TYR	Sidechain
1	B	925	ARG	Sidechain
1	H	1375	TYR	Sidechain
1	H	1608	ARG	Sidechain
5	I	1192	ARG	Sidechain
3	L	40	ARG	Sidechain
1	O	103	TYR	Sidechain
5	P	378	TYR	Sidechain
1	Q	1375	TYR	Sidechain
1	Q	272	ARG	Sidechain
1	Q	432	TYR	Sidechain
1	Q	442	ARG	Sidechain
1	Q	833	TYR	Sidechain
2	S	63	ARG	Sidechain

## 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	15571	0	15684	85	0
1	B	15571	0	15684	52	0
1	H	15600	0	15711	83	0
1	N	15600	0	15712	87	0
1	O	15571	0	15683	57	0
1	Q	15571	0	15684	54	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	C	1206	0	1182	0	0
2	D	1206	0	1182	0	0
2	J	1206	0	1182	0	0
2	K	1206	0	1182	0	0
2	R	1206	0	1182	0	0
2	S	1206	0	1182	0	0
3	E	1283	0	1245	37	0
3	F	1283	0	1245	0	0
3	L	1283	0	1245	35	0
3	M	1283	0	1245	0	0
3	T	1283	0	1245	38	0
3	U	1283	0	1245	0	0
4	G	3151	0	3155	0	0
4	V	3151	0	3155	0	0
5	I	8349	0	8362	0	0
5	P	8349	0	8362	0	0
All	All	131418	0	131754	282	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 1.

All (282) 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:A:1375:TYR:CE2	1:B:1375:TYR:CE2	2.12	1.38
1:A:1375:TYR:CD2	1:B:1375:TYR:CE2	2.12	1.38
1:A:1449:PHE:CD1	1:B:1449:PHE:CD2	2.12	1.38
1:A:1375:TYR:CE2	1:B:1375:TYR:CD2	2.12	1.38
1:A:1375:TYR:CD2	1:B:1375:TYR:CD2	2.12	1.38
1:A:1449:PHE:CE1	1:B:1449:PHE:CD2	2.12	1.38
1:A:1449:PHE:CE1	1:B:1449:PHE:CE2	2.12	1.37
1:H:1449:PHE:CD2	1:O:1449:PHE:CD1	2.12	1.37
1:H:1449:PHE:CE2	1:O:1449:PHE:CE1	2.12	1.37
1:N:1375:TYR:CE2	1:Q:1375:TYR:CD1	2.12	1.37
1:N:1449:PHE:CE2	1:Q:1449:PHE:CD1	2.12	1.37
1:H:1375:TYR:CE2	1:O:1375:TYR:CD2	2.12	1.37
1:H:1375:TYR:CE2	1:O:1375:TYR:CE2	2.12	1.37
1:N:1375:TYR:CD2	1:Q:1375:TYR:CD1	2.12	1.37
1:N:1449:PHE:CD2	1:Q:1449:PHE:CD1	2.12	1.37
1:H:1449:PHE:CD2	1:O:1449:PHE:CE1	2.12	1.36
1:H:1375:TYR:CD2	1:O:1375:TYR:CD2	2.12	1.36

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:1449:PHE:CE2	1:O:1449:PHE:CD1	2.12	1.36
1:N:1449:PHE:CE2	1:Q:1449:PHE:CE1	2.12	1.36
1:H:1375:TYR:CD2	1:O:1375:TYR:CE2	2.12	1.36
1:A:1449:PHE:CD1	1:B:1449:PHE:CE2	2.12	1.35
1:N:1375:TYR:CD2	1:Q:1375:TYR:CE1	2.12	1.35
1:N:1375:TYR:CE2	1:Q:1375:TYR:CE1	2.12	1.35
1:N:1449:PHE:CD2	1:Q:1449:PHE:CE1	2.12	1.34
3:T:108:PRO:CD	3:T:108:PRO:CG	2.06	1.34
3:L:108:PRO:CB	3:L:108:PRO:CG	2.06	1.32
3:L:108:PRO:CG	3:L:108:PRO:CD	2.08	1.32
3:E:108:PRO:CA	3:E:108:PRO:CB	2.08	1.31
3:T:108:PRO:CB	3:T:108:PRO:CA	2.08	1.31
3:T:108:PRO:CG	3:T:108:PRO:CB	2.06	1.31
3:L:108:PRO:CB	3:L:108:PRO:CA	2.08	1.31
3:E:108:PRO:CB	3:E:108:PRO:CG	2.06	1.30
3:E:108:PRO:N	3:E:108:PRO:CD	1.92	1.30
3:E:108:PRO:CG	3:E:108:PRO:CD	2.08	1.30
3:L:108:PRO:CD	3:L:108:PRO:N	1.92	1.30
3:E:108:PRO:CA	3:E:108:PRO:N	1.96	1.29
3:T:108:PRO:CD	3:T:108:PRO:N	1.94	1.29
3:T:108:PRO:CA	3:T:108:PRO:N	1.96	1.29
3:L:108:PRO:CA	3:L:108:PRO:N	1.96	1.28
1:A:1375:TYR:CG	1:B:1375:TYR:CE2	2.30	1.20
1:A:1449:PHE:CE1	1:B:1449:PHE:CG	2.30	1.20
1:H:1375:TYR:CG	1:O:1375:TYR:CE2	2.30	1.20
1:A:1449:PHE:CG	1:B:1449:PHE:CE2	2.30	1.19
1:H:1375:TYR:CZ	1:O:1375:TYR:CE2	2.31	1.19
1:N:1449:PHE:CE2	1:Q:1449:PHE:CG	2.30	1.19
1:N:1449:PHE:CG	1:Q:1449:PHE:CE1	2.30	1.19
1:A:1449:PHE:CE1	1:B:1449:PHE:CZ	2.31	1.19
1:H:1449:PHE:CZ	1:O:1449:PHE:CD1	2.31	1.19
1:N:1375:TYR:CZ	1:Q:1375:TYR:CE1	2.31	1.19
1:A:1375:TYR:CD2	1:B:1375:TYR:CZ	2.31	1.19
1:H:1375:TYR:CD2	1:O:1375:TYR:CG	2.31	1.19
1:H:1449:PHE:CG	1:O:1449:PHE:CD1	2.31	1.19
1:N:1375:TYR:CD2	1:Q:1375:TYR:CZ	2.31	1.19
1:A:1375:TYR:CE2	1:B:1375:TYR:CZ	2.31	1.19
1:A:1449:PHE:CZ	1:B:1449:PHE:CE2	2.31	1.19
1:H:1449:PHE:CG	1:O:1449:PHE:CE1	2.31	1.19
1:N:1449:PHE:CE2	1:Q:1449:PHE:CZ	2.31	1.19
1:A:1375:TYR:CD2	1:B:1375:TYR:CG	2.31	1.19

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:1375:TYR:CD2	1:O:1375:TYR:CZ	2.31	1.19
1:H:1375:TYR:CZ	1:O:1375:TYR:CD2	2.31	1.19
1:H:1375:TYR:CE2	1:O:1375:TYR:CG	2.30	1.18
1:H:1449:PHE:CE2	1:O:1449:PHE:CZ	2.31	1.18
1:N:1375:TYR:CE2	1:Q:1375:TYR:CG	2.30	1.18
1:N:1375:TYR:CD2	1:Q:1375:TYR:CG	2.31	1.18
1:H:1449:PHE:CD2	1:O:1449:PHE:CG	2.31	1.18
1:H:1449:PHE:CD2	1:O:1449:PHE:CZ	2.31	1.18
1:H:1449:PHE:CE2	1:O:1449:PHE:CG	2.30	1.18
1:N:1375:TYR:CZ	1:Q:1375:TYR:CD1	2.30	1.18
1:N:1375:TYR:CG	1:Q:1375:TYR:CD1	2.31	1.18
1:H:1375:TYR:CE2	1:O:1375:TYR:CZ	2.31	1.18
1:A:1375:TYR:CZ	1:B:1375:TYR:CD2	2.31	1.18
1:A:1449:PHE:CD1	1:B:1449:PHE:CG	2.31	1.18
1:A:1449:PHE:CZ	1:B:1449:PHE:CD2	2.31	1.18
1:N:1449:PHE:CD2	1:Q:1449:PHE:CG	2.31	1.18
1:A:1375:TYR:CG	1:B:1375:TYR:CD2	2.31	1.17
1:A:1375:TYR:CZ	1:B:1375:TYR:CE2	2.30	1.17
1:N:1375:TYR:CG	1:Q:1375:TYR:CE1	2.31	1.17
1:N:1375:TYR:CE2	1:Q:1375:TYR:CZ	2.31	1.17
1:N:1449:PHE:CD2	1:Q:1449:PHE:CZ	2.31	1.17
1:N:1449:PHE:CZ	1:Q:1449:PHE:CD1	2.31	1.17
1:A:1375:TYR:CE2	1:B:1375:TYR:CG	2.31	1.17
1:A:1449:PHE:CD1	1:B:1449:PHE:CZ	2.31	1.17
1:H:1375:TYR:CG	1:O:1375:TYR:CD2	2.31	1.17
1:N:1449:PHE:CG	1:Q:1449:PHE:CD1	2.31	1.17
1:N:1449:PHE:CZ	1:Q:1449:PHE:CE1	2.31	1.17
1:A:1449:PHE:CG	1:B:1449:PHE:CD2	2.31	1.17
1:H:1449:PHE:CZ	1:O:1449:PHE:CE1	2.31	1.16
1:N:1449:PHE:CE2	1:Q:1449:PHE:CD2	2.35	1.15
1:A:1449:PHE:CD2	1:B:1449:PHE:CD2	2.35	1.15
1:A:1375:TYR:CE2	1:B:1375:TYR:CD1	2.35	1.15
1:A:1375:TYR:CD2	1:B:1375:TYR:CE1	2.35	1.15
1:A:1375:TYR:CD1	1:B:1375:TYR:CD2	2.35	1.15
1:A:1449:PHE:CE1	1:B:1449:PHE:CE1	2.35	1.15
1:A:1449:PHE:CD2	1:B:1449:PHE:CE2	2.35	1.15
1:H:1449:PHE:CD2	1:O:1449:PHE:CE2	2.35	1.15
1:N:1375:TYR:CD1	1:Q:1375:TYR:CD1	2.35	1.15
1:N:1449:PHE:CE2	1:Q:1449:PHE:CE2	2.35	1.15
1:N:1449:PHE:CD1	1:Q:1449:PHE:CD1	2.35	1.15
1:H:1449:PHE:CE1	1:O:1449:PHE:CE1	2.35	1.15

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:N:1375:TYR:CD1	1:Q:1375:TYR:CE1	2.35	1.15
1:N:1449:PHE:CD2	1:Q:1449:PHE:CD2	2.35	1.15
1:N:1449:PHE:CD1	1:Q:1449:PHE:CE1	2.35	1.15
1:H:1375:TYR:CD1	1:O:1375:TYR:CD2	2.35	1.15
1:H:1449:PHE:CE1	1:O:1449:PHE:CD1	2.35	1.15
1:A:1375:TYR:CE1	1:B:1375:TYR:CD2	2.35	1.14
1:N:1375:TYR:CE1	1:Q:1375:TYR:CE1	2.35	1.14
1:A:803:LYS:CE	3:E:108:PRO:CA	2.25	1.14
1:A:1375:TYR:CE2	1:B:1375:TYR:CE1	2.35	1.14
1:A:1375:TYR:CD1	1:B:1375:TYR:CE2	2.35	1.14
1:A:1449:PHE:CD1	1:B:1449:PHE:CE1	2.35	1.14
1:H:1375:TYR:CE2	1:O:1375:TYR:CD1	2.35	1.14
1:H:1375:TYR:CD2	1:O:1375:TYR:CE1	2.35	1.14
1:H:1375:TYR:CE1	1:O:1375:TYR:CE2	2.35	1.14
1:H:1449:PHE:CD1	1:O:1449:PHE:CD1	2.34	1.14
1:N:1449:PHE:CD2	1:Q:1449:PHE:CE2	2.35	1.14
1:A:1449:PHE:CE2	1:B:1449:PHE:CE2	2.35	1.14
1:H:1375:TYR:CD2	1:O:1375:TYR:CD1	2.35	1.14
1:N:1375:TYR:CE1	1:Q:1375:TYR:CD1	2.35	1.14
1:N:1449:PHE:CE1	1:Q:1449:PHE:CE1	2.35	1.14
1:A:1449:PHE:CD1	1:B:1449:PHE:CD1	2.35	1.14
1:H:803:LYS:CD	3:L:108:PRO:CA	2.26	1.14
1:N:1375:TYR:CE2	1:Q:1375:TYR:CD2	2.35	1.14
1:N:1449:PHE:CE1	1:Q:1449:PHE:CD1	2.35	1.14
1:A:803:LYS:CD	3:E:108:PRO:CA	2.26	1.14
1:H:1449:PHE:CD2	1:O:1449:PHE:CD2	2.35	1.14
1:N:803:LYS:CE	3:T:108:PRO:CA	2.26	1.14
1:N:1375:TYR:CE2	1:Q:1375:TYR:CE2	2.35	1.14
1:A:1375:TYR:CD2	1:B:1375:TYR:CD1	2.35	1.13
1:A:1449:PHE:CE2	1:B:1449:PHE:CD2	2.35	1.13
1:H:803:LYS:CE	3:L:108:PRO:CB	2.26	1.13
1:H:1375:TYR:CE1	1:O:1375:TYR:CD2	2.35	1.13
1:H:1449:PHE:CE2	1:O:1449:PHE:CD2	2.35	1.13
1:H:1449:PHE:CD1	1:O:1449:PHE:CE1	2.35	1.13
1:N:803:LYS:CD	3:T:108:PRO:CA	2.26	1.13
1:A:803:LYS:CE	3:E:108:PRO:CB	2.26	1.13
1:H:803:LYS:CE	3:L:108:PRO:CA	2.25	1.13
1:N:1375:TYR:CD2	1:Q:1375:TYR:CE2	2.35	1.13
1:H:1375:TYR:CD1	1:O:1375:TYR:CE2	2.35	1.13
1:N:1375:TYR:CD2	1:Q:1375:TYR:CD2	2.35	1.13
1:A:1449:PHE:CE1	1:B:1449:PHE:CD1	2.35	1.13

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:1449:PHE:CE2	1:O:1449:PHE:CE2	2.35	1.13
1:A:1375:TYR:CE1	1:B:1375:TYR:CE2	2.35	1.12
1:H:1375:TYR:CE2	1:O:1375:TYR:CE1	2.35	1.12
1:H:803:LYS:CD	3:L:108:PRO:CG	2.27	1.12
1:N:803:LYS:CE	3:T:108:PRO:CB	2.28	1.11
1:N:803:LYS:CE	3:T:108:PRO:CG	2.28	1.11
1:A:803:LYS:CD	3:E:108:PRO:CG	2.27	1.11
1:N:803:LYS:CD	3:T:108:PRO:CB	2.28	1.10
1:A:803:LYS:CE	3:E:108:PRO:CD	2.28	1.10
1:N:803:LYS:CE	3:T:108:PRO:CD	2.29	1.10
1:N:803:LYS:CD	3:T:108:PRO:CD	2.29	1.10
1:A:803:LYS:CD	3:E:108:PRO:CB	2.30	1.09
1:H:803:LYS:CE	3:L:108:PRO:CD	2.28	1.09
1:H:803:LYS:CD	3:L:108:PRO:CB	2.29	1.09
1:N:803:LYS:CD	3:T:108:PRO:CG	2.30	1.09
1:A:803:LYS:CD	3:E:108:PRO:CD	2.31	1.08
1:H:803:LYS:CD	3:L:108:PRO:CD	2.31	1.08
1:H:803:LYS:CE	3:L:108:PRO:CG	2.30	1.08
1:A:803:LYS:CE	3:E:108:PRO:CG	2.30	1.08
1:N:803:LYS:CE	3:T:108:PRO:N	2.26	0.99
1:B:1375:TYR:CE2	1:B:1375:TYR:CD2	2.52	0.98
1:O:1375:TYR:CD2	1:O:1375:TYR:CE2	2.52	0.98
1:A:1375:TYR:CE2	1:A:1375:TYR:CD2	2.52	0.98
1:H:1375:TYR:CE2	1:H:1375:TYR:CD2	2.52	0.98
1:A:1449:PHE:CD1	1:A:1449:PHE:CE1	2.52	0.98
1:Q:1449:PHE:CD1	1:Q:1449:PHE:CE1	2.52	0.98
1:O:1449:PHE:CD1	1:O:1449:PHE:CE1	2.52	0.98
1:H:1449:PHE:CD2	1:H:1449:PHE:CE2	2.51	0.97
1:A:803:LYS:CE	3:E:108:PRO:N	2.27	0.97
1:N:1375:TYR:CE2	1:N:1375:TYR:CD2	2.52	0.97
1:Q:1375:TYR:CD1	1:Q:1375:TYR:CE1	2.51	0.97
1:B:1449:PHE:CD2	1:B:1449:PHE:CE2	2.51	0.97
1:N:803:LYS:HE2	3:T:108:PRO:CD	1.92	0.97
1:N:803:LYS:HE3	3:T:108:PRO:CA	1.93	0.97
1:N:803:LYS:HD3	3:T:108:PRO:CG	1.94	0.97
1:N:1449:PHE:CE2	1:N:1449:PHE:CD2	2.51	0.97
1:H:803:LYS:CE	3:L:108:PRO:N	2.28	0.96
1:H:803:LYS:CD	3:L:108:PRO:N	2.29	0.96
1:N:803:LYS:CD	3:T:108:PRO:N	2.29	0.96
1:A:803:LYS:CD	3:E:108:PRO:N	2.29	0.95
1:A:803:LYS:HD2	3:E:108:PRO:CD	1.97	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:803:LYS:HD2	3:L:108:PRO:CD	1.95	0.94
1:N:803:LYS:HD2	3:T:108:PRO:CB	1.96	0.93
1:A:803:LYS:HE3	3:E:108:PRO:CB	1.96	0.93
1:H:803:LYS:HE3	3:L:108:PRO:CB	1.98	0.91
1:A:803:LYS:HE2	3:E:108:PRO:N	1.90	0.86
1:H:803:LYS:HE2	3:L:108:PRO:N	1.90	0.83
1:H:803:LYS:HD3	3:L:108:PRO:CA	2.09	0.83
1:A:803:LYS:HD3	3:E:108:PRO:N	1.97	0.79
1:H:803:LYS:HE3	3:L:108:PRO:CA	2.13	0.78
1:A:803:LYS:HD3	3:E:108:PRO:CA	2.13	0.78
1:H:803:LYS:HD3	3:L:108:PRO:N	1.99	0.78
1:N:803:LYS:HD2	3:T:108:PRO:CA	2.17	0.74
1:A:803:LYS:HE3	3:E:108:PRO:CA	2.16	0.74
1:N:803:LYS:HE2	3:T:108:PRO:HD2	1.71	0.73
1:N:803:LYS:HD3	3:T:108:PRO:HG3	1.72	0.71
1:A:803:LYS:CG	3:E:108:PRO:HB3	2.21	0.70
1:A:803:LYS:HD2	3:E:108:PRO:CG	2.20	0.70
1:H:803:LYS:CG	3:L:108:PRO:HB3	2.21	0.70
1:H:803:LYS:CG	3:L:108:PRO:CB	2.69	0.70
1:A:803:LYS:CG	3:E:108:PRO:CB	2.70	0.69
1:H:803:LYS:HD2	3:L:108:PRO:HD3	1.75	0.67
1:N:803:LYS:HE3	3:T:108:PRO:C	2.14	0.67
1:A:803:LYS:HE3	3:E:108:PRO:HB2	1.75	0.67
1:A:803:LYS:HD2	3:E:108:PRO:HD3	1.77	0.67
1:H:803:LYS:HE3	3:L:108:PRO:HB2	1.77	0.64
1:N:803:LYS:HD2	3:T:108:PRO:HB3	1.76	0.63
1:H:803:LYS:HD2	3:L:108:PRO:CG	2.24	0.63
1:A:803:LYS:HE2	3:E:108:PRO:CA	2.30	0.61
1:N:803:LYS:CD	3:T:108:PRO:HA	2.30	0.60
1:H:803:LYS:NZ	3:L:108:PRO:CG	2.65	0.59
1:N:803:LYS:HD3	3:T:108:PRO:CD	2.27	0.58
1:A:803:LYS:NZ	3:E:108:PRO:CG	2.66	0.58
1:O:96:LEU:HD13	1:O:96:LEU:H	1.68	0.58
1:H:803:LYS:HE2	3:L:108:PRO:CA	2.32	0.57
1:N:803:LYS:NZ	3:T:108:PRO:CB	2.69	0.55
1:N:803:LYS:CG	3:T:108:PRO:N	2.69	0.55
1:H:803:LYS:HD3	3:L:108:PRO:HA	1.86	0.55
1:N:803:LYS:HZ2	3:T:108:PRO:HB2	1.71	0.55
1:N:803:LYS:HE3	3:T:108:PRO:N	2.19	0.55
1:H:803:LYS:CD	3:L:108:PRO:HA	2.31	0.54
1:H:803:LYS:NZ	3:L:108:PRO:HG2	2.22	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:803:LYS:NZ	3:E:108:PRO:HG2	2.23	0.53
1:A:803:LYS:HG3	3:E:108:PRO:HB3	1.91	0.53
1:A:803:LYS:CD	3:E:108:PRO:HA	2.31	0.51
1:A:1449:PHE:CD2	1:B:1449:PHE:HE2	2.22	0.50
1:A:1449:PHE:HD1	1:B:1449:PHE:CD1	2.22	0.49
1:H:1375:TYR:CE1	1:O:1375:TYR:HD2	2.22	0.49
1:N:803:LYS:NZ	3:T:108:PRO:HB2	2.27	0.49
1:H:1449:PHE:HD2	1:O:1449:PHE:CD2	2.22	0.49
1:H:1449:PHE:HE2	1:O:1449:PHE:CD2	2.22	0.48
1:H:1375:TYR:HE2	1:O:1375:TYR:CD1	2.22	0.47
1:N:803:LYS:NZ	3:T:108:PRO:CG	2.76	0.47
1:A:1449:PHE:CE2	1:B:1449:PHE:HD2	2.23	0.47
1:N:1449:PHE:CD1	1:Q:1449:PHE:HD1	2.22	0.47
1:H:803:LYS:HE3	3:L:108:PRO:C	2.34	0.47
1:N:1449:PHE:HD2	1:Q:1449:PHE:CE2	2.22	0.47
1:H:1375:TYR:HE2	1:O:1375:TYR:CE1	2.23	0.47
1:H:803:LYS:CD	3:L:108:PRO:HG3	2.38	0.47
1:A:245:GLY:HA3	1:A:266:TYR:CD2	2.49	0.47
1:B:801:PHE:CE2	1:B:803:LYS:HE2	2.50	0.47
1:A:1375:TYR:CD1	1:B:1375:TYR:HD2	2.23	0.46
1:N:803:LYS:HZ3	3:T:108:PRO:HG2	1.80	0.46
1:H:1449:PHE:CE1	1:O:1449:PHE:HD1	2.22	0.46
1:A:803:LYS:HD3	3:E:108:PRO:HA	1.90	0.46
1:H:803:LYS:CE	3:L:108:PRO:C	2.84	0.46
1:H:1449:PHE:HE2	1:O:1449:PHE:CE2	2.22	0.46
1:H:1449:PHE:HD2	1:O:1449:PHE:CE2	2.22	0.45
1:H:1449:PHE:CD1	1:O:1449:PHE:HD1	2.22	0.45
1:N:1449:PHE:CE1	1:Q:1449:PHE:HD1	2.22	0.45
1:N:1375:TYR:HD2	1:Q:1375:TYR:CE2	2.22	0.45
1:N:1375:TYR:HE2	1:Q:1375:TYR:CE2	2.22	0.45
1:N:1449:PHE:CE1	1:Q:1449:PHE:HE1	2.23	0.44
1:A:1449:PHE:CD2	1:B:1449:PHE:HD2	2.22	0.44
1:N:1375:TYR:HE2	1:Q:1375:TYR:CD2	2.23	0.44
1:O:281:ARG:HH12	1:O:284:HIS:CE1	2.36	0.44
1:A:803:LYS:HE3	3:E:108:PRO:C	2.38	0.44
1:N:803:LYS:HE2	3:T:108:PRO:N	2.25	0.44
1:N:803:LYS:HG2	3:T:108:PRO:N	2.33	0.44
1:A:1449:PHE:CE2	1:B:1449:PHE:HE2	2.22	0.43
1:A:1375:TYR:HD2	1:B:1375:TYR:CD1	2.22	0.43
1:A:803:LYS:NZ	3:E:108:PRO:CD	2.82	0.43
1:H:803:LYS:HG3	3:L:108:PRO:HB3	1.97	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:H:1375:TYR:CD1	1:O:1375:TYR:HD2	2.22	0.43
1:A:803:LYS:CE	3:E:108:PRO:C	2.85	0.43
1:N:1375:TYR:CE1	1:Q:1375:TYR:HD1	2.22	0.43
1:A:1449:PHE:HE1	1:B:1449:PHE:CE1	2.23	0.43
3:T:10:ILE:HG22	3:T:11:GLU:H	1.85	0.42
1:O:706:ARG:HG3	1:O:707:LYS:H	1.84	0.42
1:N:1449:PHE:HE2	1:Q:1449:PHE:CE2	2.22	0.42
1:N:1449:PHE:CD1	1:Q:1449:PHE:HE1	2.22	0.41
1:O:1644:LYS:HE2	1:O:1644:LYS:HA	2.01	0.41
1:A:1449:PHE:HD1	1:B:1449:PHE:CE1	2.22	0.41
1:N:1375:TYR:CE1	1:Q:1375:TYR:HE1	2.23	0.41
1:N:803:LYS:CD	3:T:108:PRO:HD3	2.40	0.41
1:N:1375:TYR:CD1	1:Q:1375:TYR:HD1	2.22	0.41
1:H:1375:TYR:HD2	1:O:1375:TYR:CE1	2.23	0.41
1:A:803:LYS:CD	3:E:108:PRO:HG3	2.38	0.41
1:A:803:LYS:HZ3	3:E:108:PRO:HD2	1.87	0.40
1:N:803:LYS:CE	1:N:803:LYS:CD	3.00	0.40
1:A:803:LYS:CE	1:A:803:LYS:CD	2.99	0.40
1:N:803:LYS:CE	3:T:108:PRO:HG2	2.41	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	1924/1935 (99%)	1836 (95%)	75 (4%)	13 (1%)	19	57
1	B	1924/1935 (99%)	1810 (94%)	98 (5%)	16 (1%)	16	55
1	H	1928/1935 (100%)	1834 (95%)	78 (4%)	16 (1%)	16	55
1	N	1928/1935 (100%)	1854 (96%)	62 (3%)	12 (1%)	22	60
1	O	1924/1935 (99%)	1825 (95%)	86 (4%)	13 (1%)	19	57

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	Q	1924/1935 (99%)	1827 (95%)	81 (4%)	16 (1%)	16	55
2	C	150/152 (99%)	140 (93%)	6 (4%)	4 (3%)	4	25
2	D	150/152 (99%)	138 (92%)	8 (5%)	4 (3%)	4	25
2	J	150/152 (99%)	138 (92%)	10 (7%)	2 (1%)	10	43
2	K	150/152 (99%)	138 (92%)	12 (8%)	0	100	100
2	R	150/152 (99%)	133 (89%)	16 (11%)	1 (1%)	19	57
2	S	150/152 (99%)	136 (91%)	11 (7%)	3 (2%)	6	32
3	E	158/160 (99%)	139 (88%)	14 (9%)	5 (3%)	3	21
3	F	158/160 (99%)	134 (85%)	19 (12%)	5 (3%)	3	21
3	L	158/160 (99%)	141 (89%)	14 (9%)	3 (2%)	6	32
3	M	158/160 (99%)	137 (87%)	19 (12%)	2 (1%)	10	43
3	T	158/160 (99%)	138 (87%)	17 (11%)	3 (2%)	6	32
3	U	158/160 (99%)	139 (88%)	13 (8%)	6 (4%)	2	19
4	G	398/400 (100%)	371 (93%)	25 (6%)	2 (0%)	25	64
4	V	398/400 (100%)	376 (94%)	15 (4%)	7 (2%)	7	35
5	I	1077/1079 (100%)	1036 (96%)	35 (3%)	6 (1%)	22	60
5	P	1077/1079 (100%)	1035 (96%)	40 (4%)	2 (0%)	44	78
All	All	16350/16440 (100%)	15455 (94%)	754 (5%)	141 (1%)	17	52

All (141) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	605	VAL
1	B	451	GLN
3	E	163	GLU
3	F	92	GLY
1	N	575	ALA
1	O	210	THR
5	P	440	PRO
1	Q	211	PRO
4	V	18	ASP
1	A	238	ASN
1	A	455	TYR
1	A	785	ILE
1	B	15	PHE
1	B	128	TYR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	566	PRO
2	D	176	GLN
3	E	59	VAL
3	E	147	THR
1	H	274	ILE
1	H	642	SER
3	L	59	VAL
1	N	603	GLU
1	O	624	TYR
1	O	640	LYS
1	O	803	LYS
1	Q	86	LYS
1	Q	1476	SER
2	R	95	VAL
2	S	67	GLY
3	T	108	PRO
3	T	146	VAL
3	U	16	ASN
4	V	10	HIS
4	V	247	TRP
1	A	322	SER
1	B	273	VAL
1	B	639	LYS
2	C	100	LYS
1	H	455	TYR
1	H	738	SER
1	H	750	ASP
1	H	829	TRP
5	I	901	LEU
5	I	1286	GLU
5	I	1305	LYS
5	I	1306	SER
2	J	163	ARG
1	N	45	GLU
1	N	232	ASN
1	N	367	LYS
1	N	679	LYS
1	O	532	SER
1	O	614	LEU
1	O	713	ILE
1	Q	614	LEU
2	S	163	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	T	145	ASP
3	U	23	GLN
3	U	96	GLU
4	V	103	LEU
4	V	149	LEU
4	V	300	ILE
4	V	332	ASN
1	A	114	ILE
1	A	277	LEU
1	A	282	ASP
1	A	364	PHE
1	A	396	LEU
1	A	558	GLY
1	A	1476	SER
1	B	86	LYS
1	B	643	SER
2	C	101	GLN
2	C	163	ARG
2	D	106	SER
2	D	172	LEU
3	F	57	GLY
4	G	10	HIS
1	H	45	GLU
1	H	378	THR
1	H	603	GLU
1	H	729	ALA
5	I	321	ARG
2	J	107	LYS
3	L	33	PHE
3	M	20	MET
1	N	644	PHE
1	O	315	GLN
5	P	704	ALA
1	Q	315	GLN
1	Q	560	SER
1	Q	640	LYS
1	Q	644	PHE
1	B	32	ASP
1	B	34	LYS
1	B	293	LYS
1	B	371	GLU
1	B	603	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	751	ILE
1	H	28	THR
1	H	83	LYS
1	H	316	GLY
1	H	379	GLU
3	M	58	ARG
1	N	637	LYS
1	O	96	LEU
1	Q	256	GLY
1	Q	723	ARG
1	Q	803	LYS
1	A	207	LYS
1	B	599	ASP
2	D	175	GLY
3	E	19	SER
3	E	108	PRO
1	H	10	GLY
1	H	372	GLN
3	L	108	PRO
1	N	57	GLY
1	N	835	LYS
1	O	726	ASN
1	Q	768	GLY
3	U	143	PRO
2	C	98	LYS
3	F	156	VAL
4	G	102	ILE
1	Q	452	PRO
1	Q	824	VAL
3	U	94	ASP
3	F	94	ASP
3	F	146	VAL
5	I	999	GLU
2	S	86	ASN
1	N	785	ILE
1	O	629	ALA
1	O	641	GLY
1	Q	569	VAL
3	U	95	PRO
1	B	127	PRO
1	N	634	GLY
1	O	751	ILE

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Mol	Chain	Res	Type
1	Q	828	PRO

### 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	1688/1693 (100%)	1665 (99%)	23 (1%)	62 75
1	B	1688/1693 (100%)	1659 (98%)	29 (2%)	56 72
1	H	1690/1693 (100%)	1656 (98%)	34 (2%)	50 68
1	N	1690/1693 (100%)	1660 (98%)	30 (2%)	54 71
1	O	1688/1693 (100%)	1670 (99%)	18 (1%)	70 80
1	Q	1688/1693 (100%)	1661 (98%)	27 (2%)	58 73
2	C	131/131 (100%)	128 (98%)	3 (2%)	45 64
2	D	131/131 (100%)	127 (97%)	4 (3%)	35 54
2	J	131/131 (100%)	126 (96%)	5 (4%)	28 49
2	K	131/131 (100%)	125 (95%)	6 (5%)	23 44
2	R	131/131 (100%)	127 (97%)	4 (3%)	35 54
2	S	131/131 (100%)	128 (98%)	3 (2%)	45 64
3	E	139/139 (100%)	136 (98%)	3 (2%)	47 65
3	F	139/139 (100%)	138 (99%)	1 (1%)	81 87
3	L	139/139 (100%)	133 (96%)	6 (4%)	25 46
3	M	139/139 (100%)	135 (97%)	4 (3%)	37 56
3	T	139/139 (100%)	137 (99%)	2 (1%)	62 75
3	U	139/139 (100%)	134 (96%)	5 (4%)	30 50
4	G	344/344 (100%)	341 (99%)	3 (1%)	75 83
4	V	344/344 (100%)	339 (98%)	5 (2%)	60 75
5	I	928/928 (100%)	918 (99%)	10 (1%)	70 80
5	P	928/928 (100%)	907 (98%)	21 (2%)	45 64
All	All	14296/14322 (100%)	14050 (98%)	246 (2%)	56 72

All (246) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	34	LYS
1	A	67	LYS
1	A	239	ASP
1	A	315	GLN
1	A	363	LYS
1	A	504	GLU
1	A	518	GLN
1	A	588	TYR
1	A	706	ARG
1	A	715	TYR
1	A	732	GLU
1	A	791	GLN
1	A	808	ARG
1	A	814	ILE
1	A	826	ASN
1	A	870	ARG
1	A	952	ARG
1	A	1408	ASN
1	A	1446	GLN
1	A	1473	GLU
1	A	1574	ARG
1	A	1715	LEU
1	A	1842	LYS
1	B	54	ARG
1	B	113	MET
1	B	194	TYR
1	B	210	THR
1	B	276	GLN
1	B	346	LYS
1	B	368	GLN
1	B	403	ARG
1	B	418	GLN
1	B	559	LYS
1	B	572	LYS
1	B	615	LYS
1	B	616	LEU
1	B	645	GLN
1	B	723	ARG
1	B	762	LYS
1	B	829	TRP
1	B	837	LYS
1	B	869	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	B	906	ASP
1	B	932	MET
1	B	952	ARG
1	B	1001	GLU
1	B	1048	LEU
1	B	1098	GLN
1	B	1300	GLN
1	B	1411	CYS
1	B	1444	LYS
1	B	1842	LYS
2	C	63	ARG
2	C	171	LYS
2	C	185	TYR
2	D	55	LYS
2	D	63	ARG
2	D	129	THR
2	D	154	ARG
3	E	58	ARG
3	E	164	GLU
3	E	165	LYS
3	F	50	ARG
4	G	30	ARG
4	G	159	SER
4	G	325	ARG
1	H	6	MET
1	H	43	LYS
1	H	87	ILE
1	H	171	ASN
1	H	172	GLN
1	H	193	GLN
1	H	206	LYS
1	H	208	ASP
1	H	213	LYS
1	H	224	ASN
1	H	232	ASN
1	H	276	GLN
1	H	325	ASP
1	H	397	LYS
1	H	408	ASN
1	H	424	ILE
1	H	448	GLU
1	H	450	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	H	468	PHE
1	H	546	MET
1	H	603	GLU
1	H	726	ASN
1	H	777	ARG
1	H	786	THR
1	H	845	THR
1	H	870	ARG
1	H	922	MET
1	H	968	LYS
1	H	1050	ARG
1	H	1052	LYS
1	H	1242	LYS
1	H	1569	LYS
1	H	1720	ASN
1	H	1833	ASN
5	I	478	ARG
5	I	485	THR
5	I	665	ARG
5	I	715	LYS
5	I	862	THR
5	I	874	THR
5	I	934	LYS
5	I	1031	LYS
5	I	1304	THR
5	I	1305	LYS
2	J	63	ARG
2	J	114	PHE
2	J	129	THR
2	J	137	LEU
2	J	185	TYR
2	K	51	ILE
2	K	63	ARG
2	K	119	GLN
2	K	125	LYS
2	K	129	THR
2	K	167	ASP
3	L	7	LYS
3	L	58	ARG
3	L	91	LYS
3	L	106	PHE
3	L	142	PHE

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	L	151	ASP
3	M	10	ILE
3	M	40	ARG
3	M	47	ASN
3	M	94	ASP
1	N	28	THR
1	N	79	GLN
1	N	87	ILE
1	N	172	GLN
1	N	204	ARG
1	N	213	LYS
1	N	240	ASN
1	N	308	TYR
1	N	309	ASP
1	N	315	GLN
1	N	369	ARG
1	N	380	GLU
1	N	419	GLN
1	N	424	ILE
1	N	453	ARG
1	N	476	LEU
1	N	603	GLU
1	N	611	LYS
1	N	684	MET
1	N	726	ASN
1	N	775	GLU
1	N	784	ILE
1	N	845	THR
1	N	870	ARG
1	N	1277	ARG
1	N	1420	ARG
1	N	1575	LYS
1	N	1646	LEU
1	N	1809	LYS
1	N	1930	LYS
1	O	83	LYS
1	O	96	LEU
1	O	160	ASN
1	O	164	TYR
1	O	244	PHE
1	O	394	ASP
1	O	498	GLN

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	O	542	LYS
1	O	628	ASP
1	O	803	LYS
1	O	847	LYS
1	O	871	LYS
1	O	911	ASN
1	O	1040	GLN
1	O	1136	ARG
1	O	1390	LYS
1	O	1706	LEU
1	O	1749	ARG
5	P	320	THR
5	P	440	PRO
5	P	523	LYS
5	P	532	LEU
5	P	664	LEU
5	P	676	SER
5	P	715	LYS
5	P	874	THR
5	P	917	LYS
5	P	937	ASN
5	P	948	LYS
5	P	960	ASN
5	P	1040	GLN
5	P	1054	LYS
5	P	1094	LYS
5	P	1126	ARG
5	P	1128	GLN
5	P	1160	LYS
5	P	1287	TYR
5	P	1313	GLN
5	P	1342	ASN
1	Q	20	GLU
1	Q	80	ASN
1	Q	146	LYS
1	Q	203	ASP
1	Q	207	LYS
1	Q	211	PRO
1	Q	278	LYS
1	Q	362	MET
1	Q	380	GLU
1	Q	433	GLU

*Continued on next page...*

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	Q	504	GLU
1	Q	515	MET
1	Q	524	ILE
1	Q	635	LYS
1	Q	653	GLU
1	Q	715	TYR
1	Q	734	GLN
1	Q	853	LYS
1	Q	968	LYS
1	Q	1024	LYS
1	Q	1043	LYS
1	Q	1262	LYS
1	Q	1279	LYS
1	Q	1390	LYS
1	Q	1537	LYS
1	Q	1694	GLN
1	Q	1727	LYS
2	R	102	GLU
2	R	149	MET
2	R	172	LEU
2	R	191	HIS
2	S	63	ARG
2	S	66	LYS
2	S	101	GLN
3	T	23	GLN
3	T	46	LYS
3	U	33	PHE
3	U	41	ASP
3	U	46	LYS
3	U	58	ARG
3	U	165	LYS
4	V	30	ARG
4	V	241	ASP
4	V	283	SER
4	V	290	LYS
4	V	325	ARG

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

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	H	104	ASN
1	H	1720	ASN

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
1	H	1833	ASN
1	O	1486	ASN

### 5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

### 5.5 Carbohydrates [i](#)

There are no oligosaccharides 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.

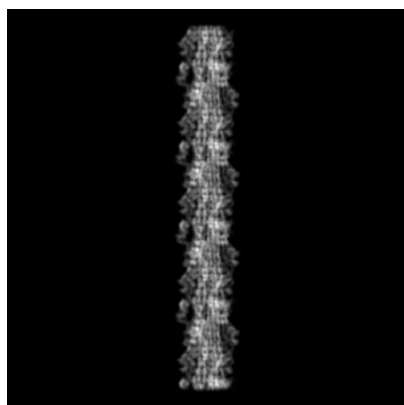
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-18198. These allow visual inspection of the internal detail of the map and identification of artifacts.

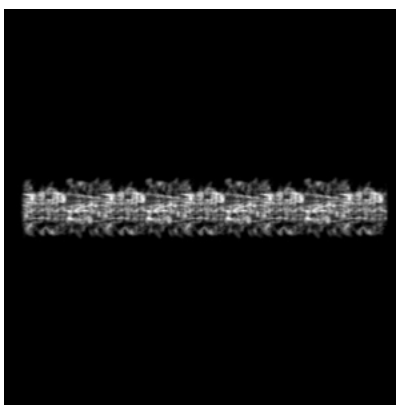
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

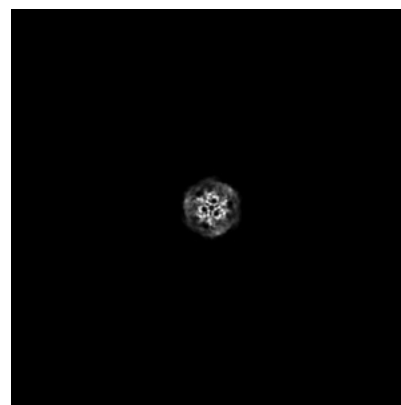
#### 6.1.1 Primary map



X



Y

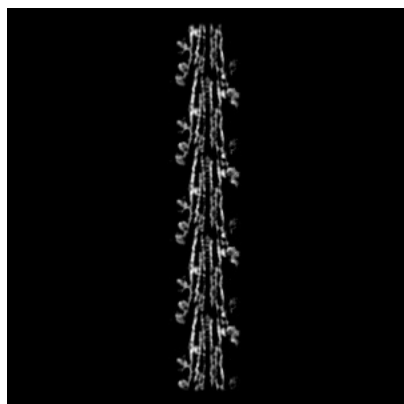


Z

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

### 6.2 Central slices [i](#)

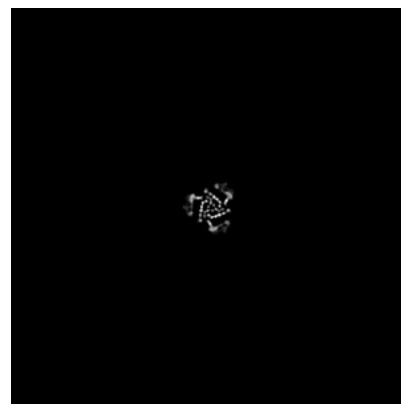
#### 6.2.1 Primary map



X Index: 186



Y Index: 186



Z Index: 186

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: 183



Y Index: 193

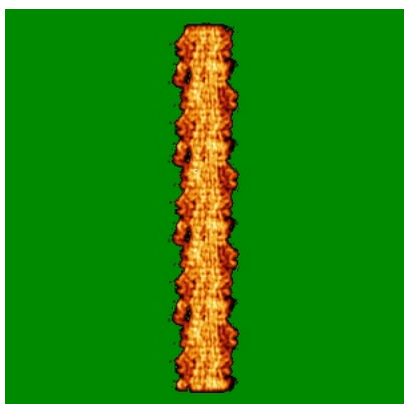


Z Index: 172

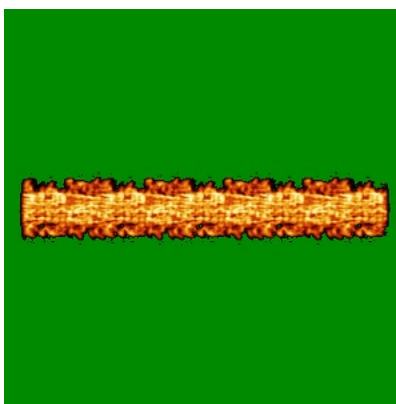
The images above show the largest variance slices of the map in three orthogonal directions.

## 6.4 Orthogonal standard-deviation projections (False-color) [\(i\)](#)

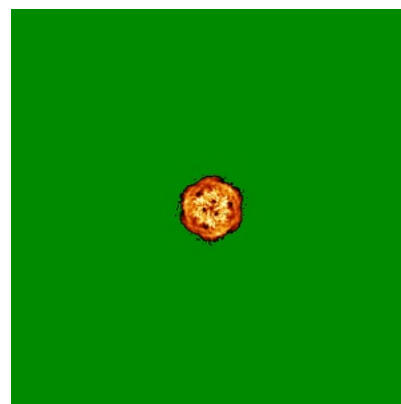
### 6.4.1 Primary map



X



Y

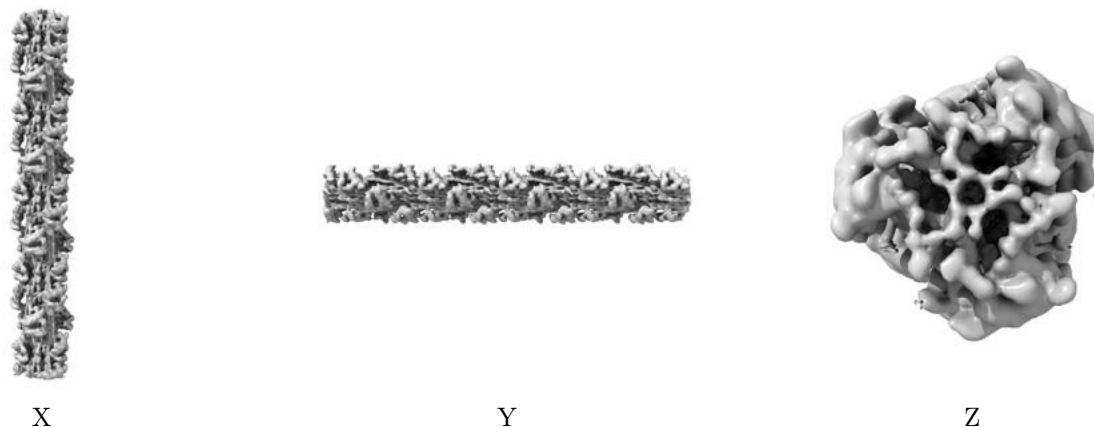


Z

The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 2.41. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

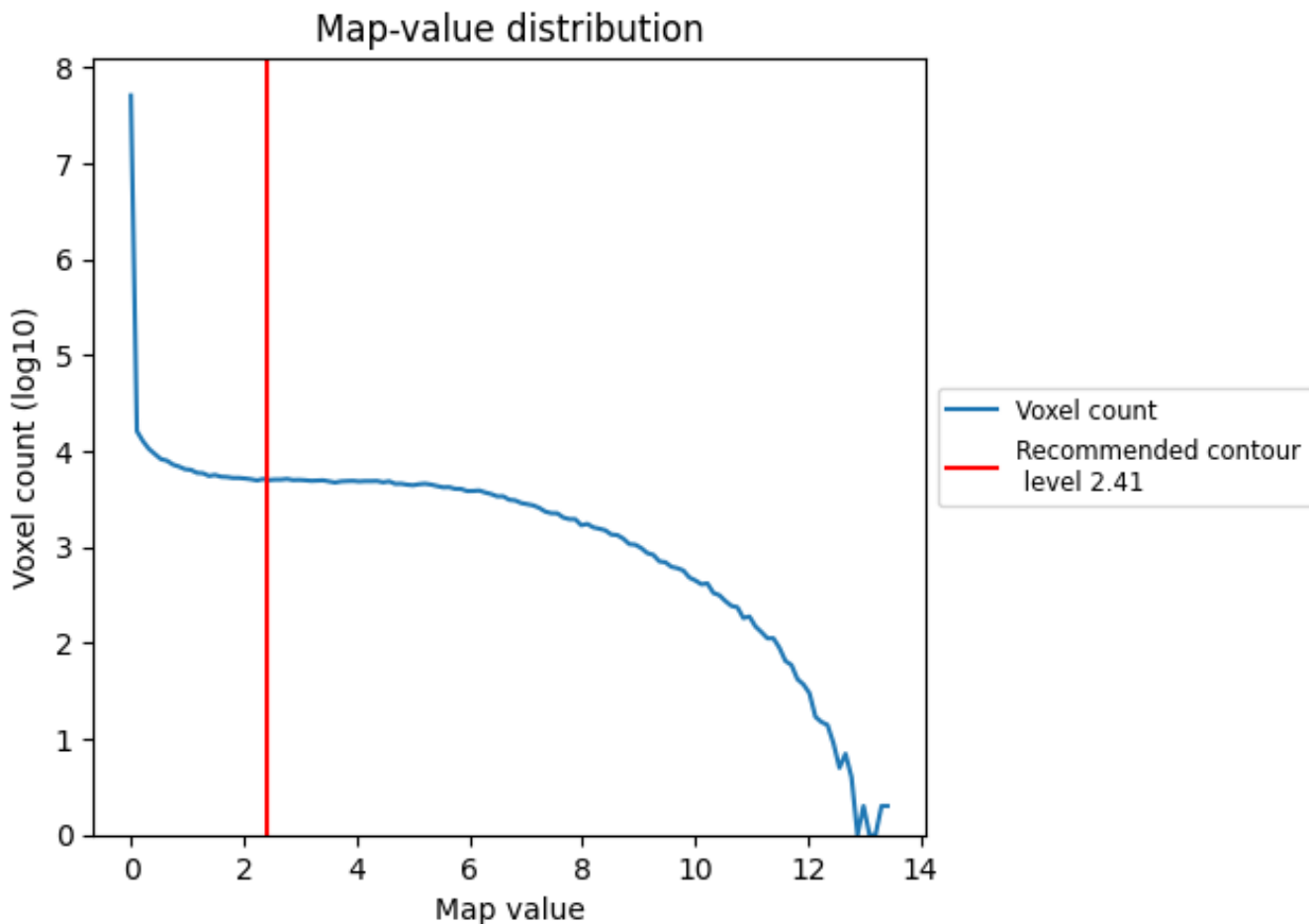
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

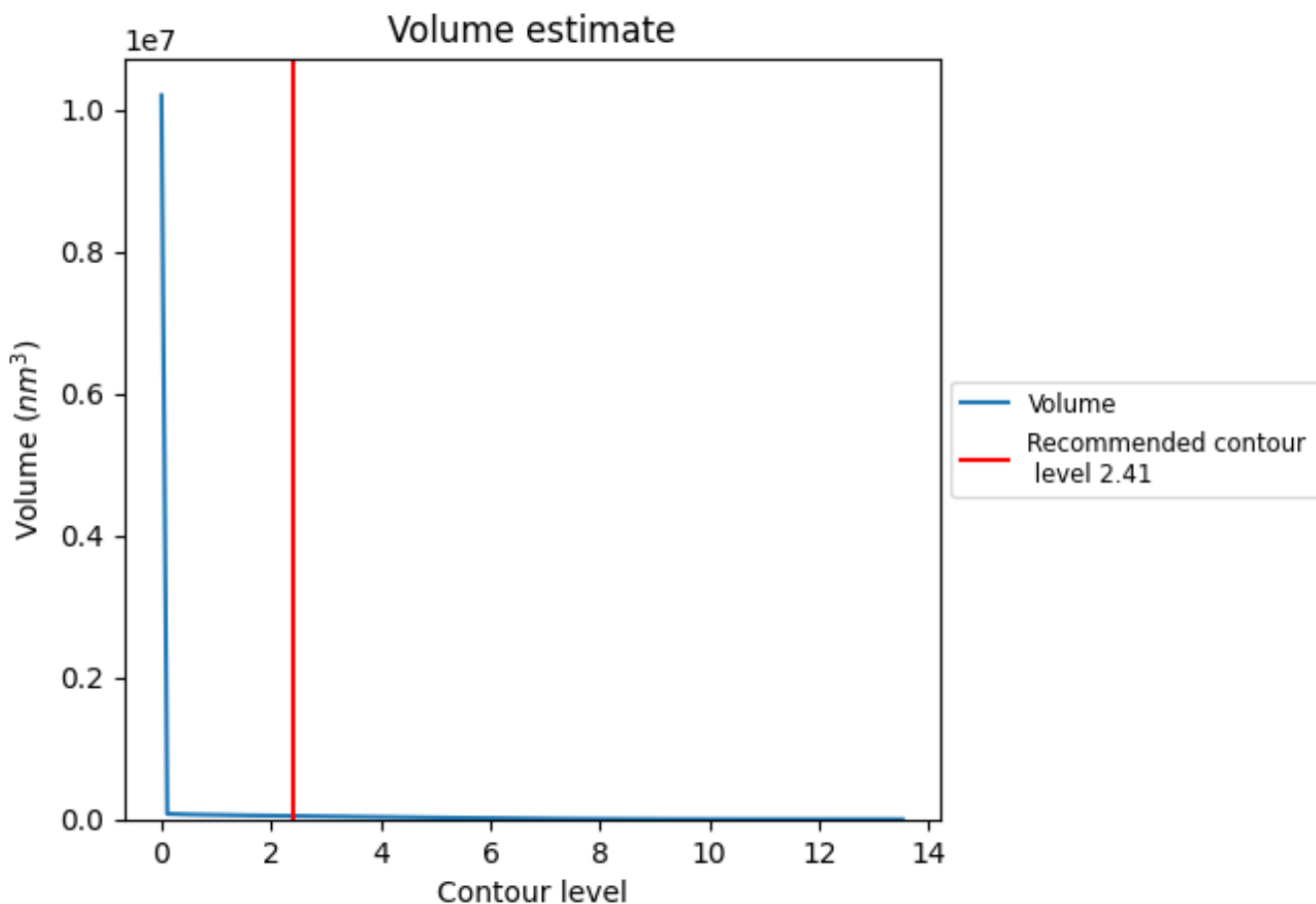
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



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 [i](#)

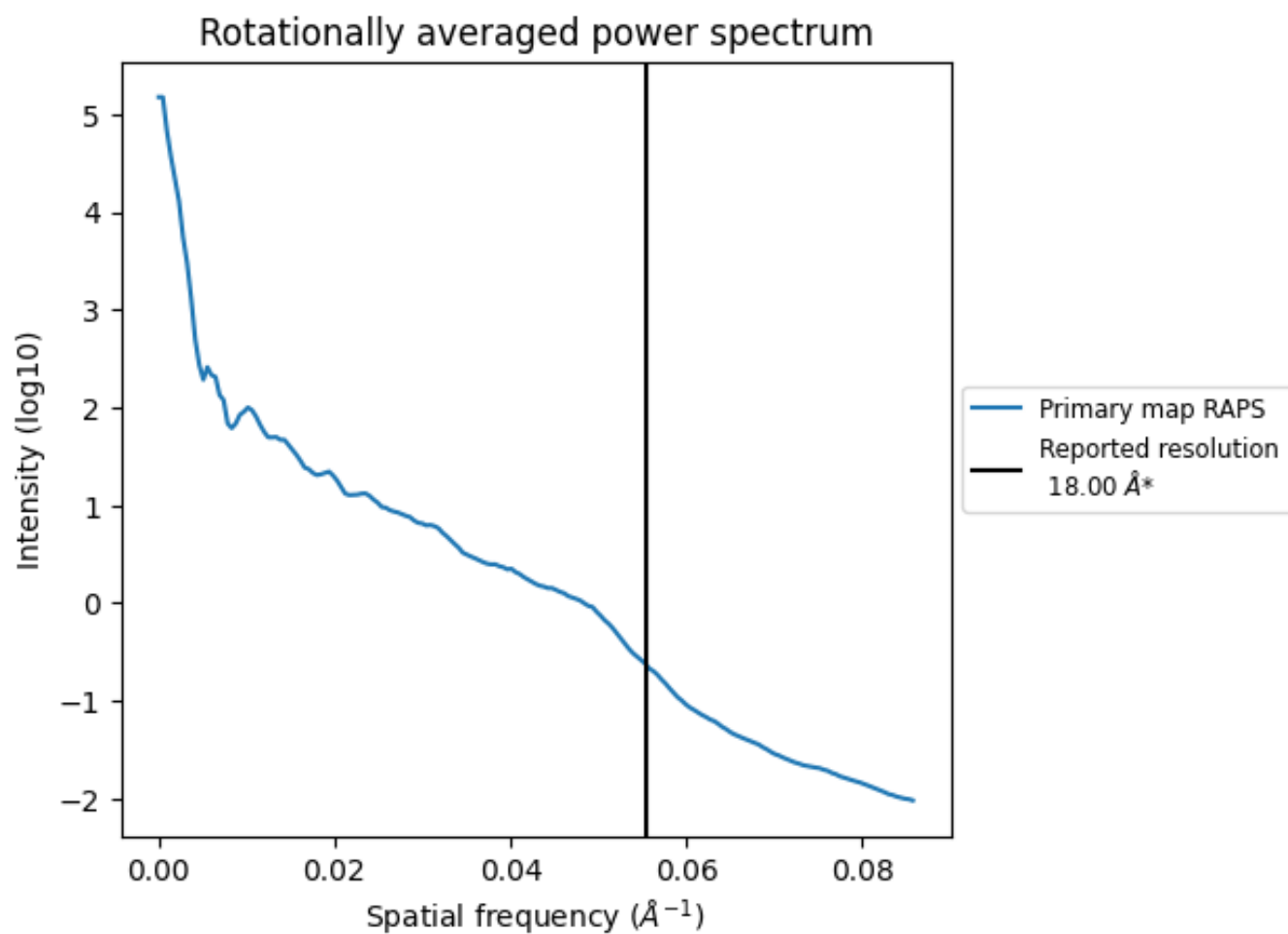


The volume at the recommended contour level is  $47100 \text{ nm}^3$ ; this corresponds to an approximate mass of 42547 kDa.

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 0.056 Å<sup>-1</sup>

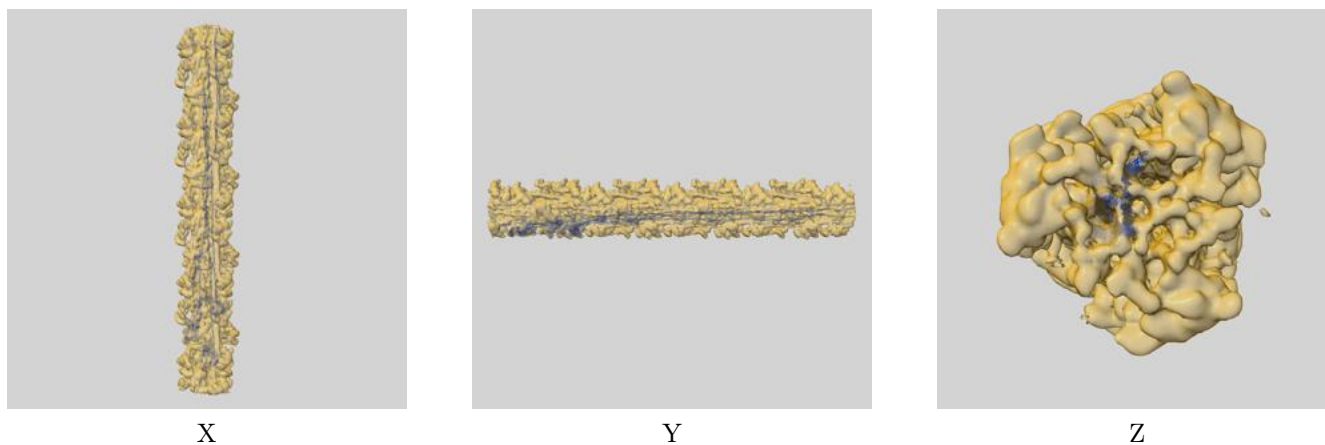
## 8 Fourier-Shell correlation

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

## 9 Map-model fit [i](#)

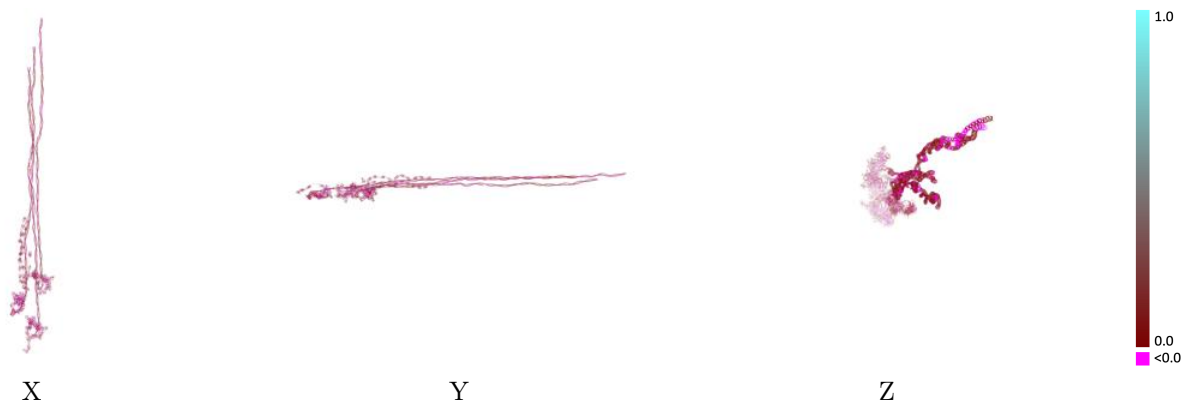
This section contains information regarding the fit between EMDB map EMD-18198 and PDB model 8Q6T. Per-residue inclusion information can be found in section 3 on page 6.

### 9.1 Map-model overlay [i](#)



The images above show the 3D surface view of the map at the recommended contour level 2.41 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 [\(i\)](#)



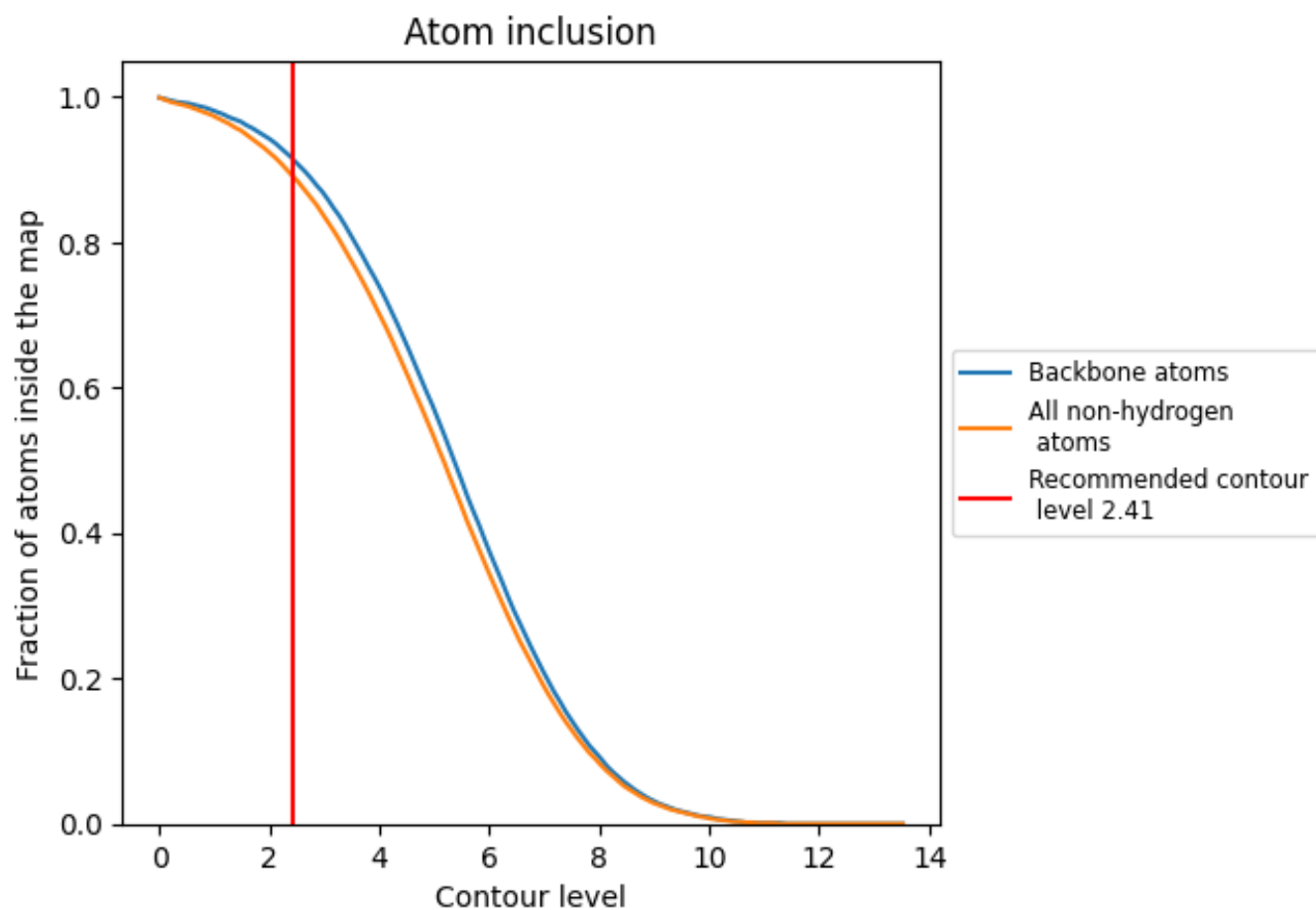
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 [\(i\)](#)



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 (2.41).















































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 92% of all backbone atoms, 89% 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 (2.41) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8920	 0.0560
A	 0.8380	 0.0430
B	 0.8820	 0.0610
C	 0.5730	 0.0040
D	 0.8670	 0.0470
E	 0.8080	 0.0530
F	 0.8500	 0.0420
G	 0.9600	 0.0610
H	 0.8710	 0.0520
I	 0.9420	 0.0690
J	 0.9500	 0.0670
K	 0.9330	 0.0530
L	 0.8900	 0.0650
M	 0.9450	 0.0550
N	 0.9010	 0.0600
O	 0.8910	 0.0610
P	 0.9560	 0.0590
Q	 0.9050	 0.0550
R	 0.9400	 0.0650
S	 0.8980	 0.0550
T	 0.8570	 0.0360
U	 0.9690	 0.0660
V	 0.9470	 0.0550

