Full wwPDB EM Validation Report ⓘ

Mar 26, 2026 – 11:44 AM UTC

PDB ID	:	9MW9 / pdb_00009mw9
EMDB ID	:	EMD-48698
Title	:	Cryo-EM structure of CRISPR-associated cA4 bound Cat1 Trigonal filament assembly
Authors	:	Majumder, P.; Patel, D.J.
Deposited on	:	2025-01-17
Resolution	:	3.00 Å(reported)

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

We welcome your comments at *validation@mail.wwpdb.org*
A user guide is available at
https://www.wwpdb.org/validation/2017/EMValidationReportHelp
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at
http://www.wwpdb.org/validation/2017/FAQs#types.

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

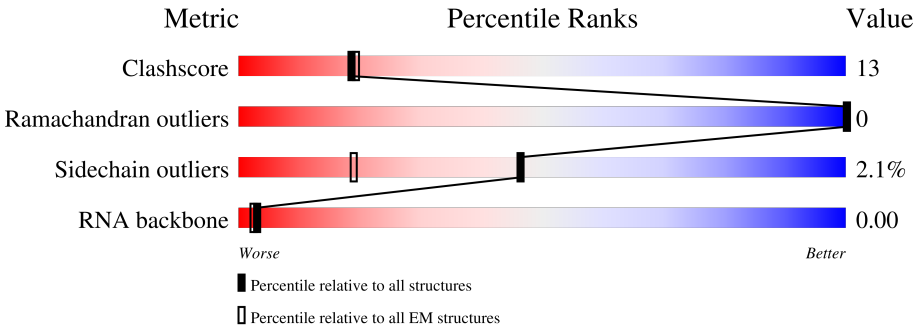
EMDB validation analysis	:	0.0.1.dev132
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

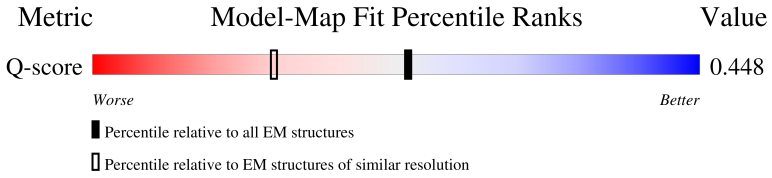
1 Overall quality at a glance

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

The reported resolution of this entry is 3.00 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.





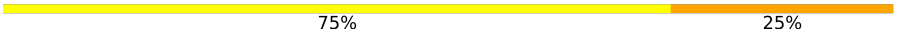
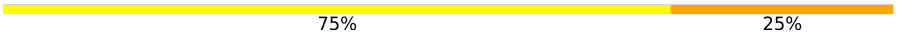
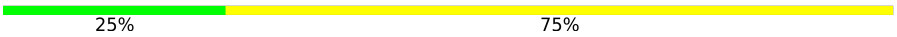
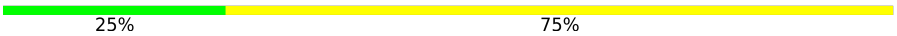
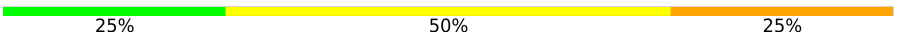
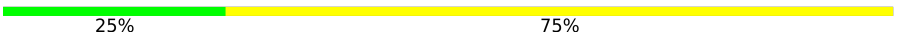
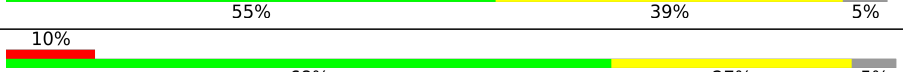
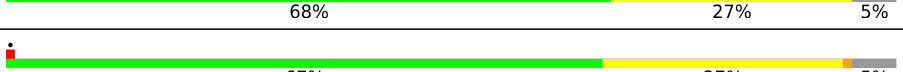
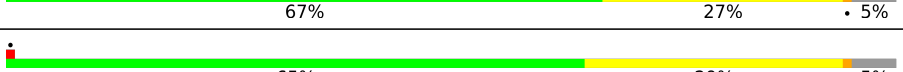
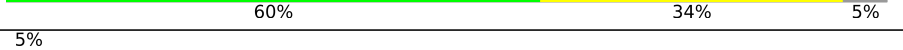
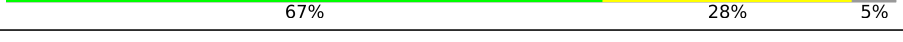
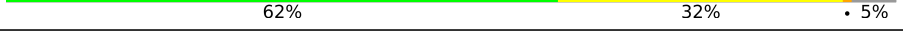
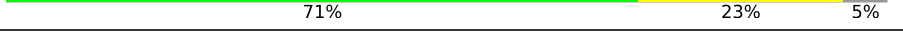
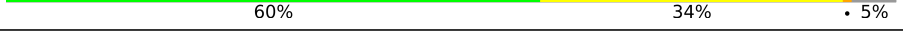
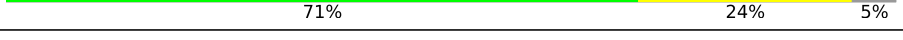
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	14081 (2.50 - 3.50)

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	4	25% 50% 25%
1	b	4	50% 50%
1	c	4	25% 25% 50%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
1	d	4	
1	e	4	
1	f	4	
1	g	4	
1	h	4	
1	i	4	
1	j	4	
1	k	4	
2	A	263	
2	B	263	
2	C	263	
2	D	263	
2	E	263	
2	F	263	
2	G	263	
2	H	263	
2	I	263	
2	J	263	
2	K	263	
2	L	263	
2	M	263	
2	N	263	
2	O	263	
2	P	263	
2	Q	263	

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
2	R	263	11% 68% 26% 5%
2	S	263	63% 32% 5%
2	T	263	12% 70% 24% 5%
2	U	263	67% 27% 5%
2	V	263	6% 66% 28% 5%

2 Entry composition (i)

There are 2 unique types of molecules in this entry. The entry contains 45452 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 RNA chain called RNA (5'-R(P*AP*AP*AP*A)-3').

Mol	Chain	Residues	Atoms					AltConf	Trace
1	e	4	Total	C	N	O	P	0	0
			88	40	20	24	4		
1	f	4	Total	C	N	O	P	0	0
			88	40	20	24	4		
1	g	4	Total	C	N	O	P	0	0
			88	40	20	24	4		
1	h	4	Total	C	N	O	P	0	0
			88	40	20	24	4		
1	i	4	Total	C	N	O	P	0	0
			88	40	20	24	4		
1	j	4	Total	C	N	O	P	0	0
			88	40	20	24	4		
1	k	4	Total	C	N	O	P	0	0
			88	40	20	24	4		
1	c	4	Total	C	N	O	P	0	0
			88	40	20	24	4		
1	d	4	Total	C	N	O	P	0	0
			88	40	20	24	4		
1	a	4	Total	C	N	O	P	0	0
			88	40	20	24	4		
1	b	4	Total	C	N	O	P	0	0
			88	40	20	24	4		

- Molecule 2 is a protein called Cat1 (CRISPR-associated TIR 1).

Mol	Chain	Residues	Atoms					AltConf	Trace
2	G	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	H	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	E	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	F	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		

Continued on next page...

Continued from previous page...

Mol	Chain	Residues	Atoms					AltConf	Trace
2	A	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	B	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	C	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	D	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	I	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	J	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	K	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	L	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	M	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	N	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	O	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	P	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	Q	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	R	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	U	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	V	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	S	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		
2	T	249	Total	C	N	O	S	0	0
			2022	1316	340	361	5		

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: RNA (5'-R(P*AP*AP*AP*A)-3')

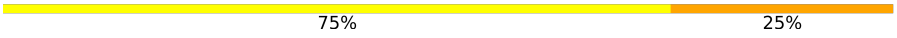
Chain e:

- Molecule 1: RNA (5'-R(P*AP*AP*AP*A)-3')

Chain f:

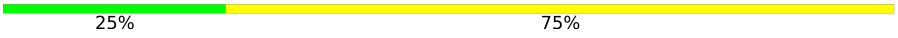
- Molecule 1: RNA (5'-R(P*AP*AP*AP*A)-3')

Chain g:



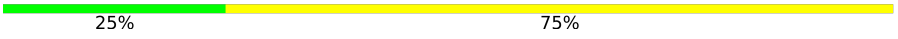
- Molecule 1: RNA (5'-R(P*AP*AP*AP*A)-3')

Chain h:



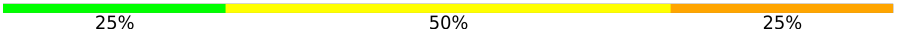
- Molecule 1: RNA (5'-R(P*AP*AP*AP*A)-3')

Chain i:



- Molecule 1: RNA (5'-R(P*AP*AP*AP*A)-3')

Chain j:



• Molecule 1: RNA (5'-R(P*AP*AP*AP*A)-3')

Chain k:

• Molecule 1: RNA (5'-R(P*AP*AP*AP*A)-3')

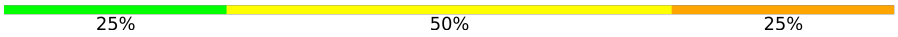
Chain c:

• Molecule 1: RNA (5'-R(P*AP*AP*AP*A)-3')

Chain d:

• Molecule 1: RNA (5'-R(P*AP*AP*AP*A)-3')

Chain a:

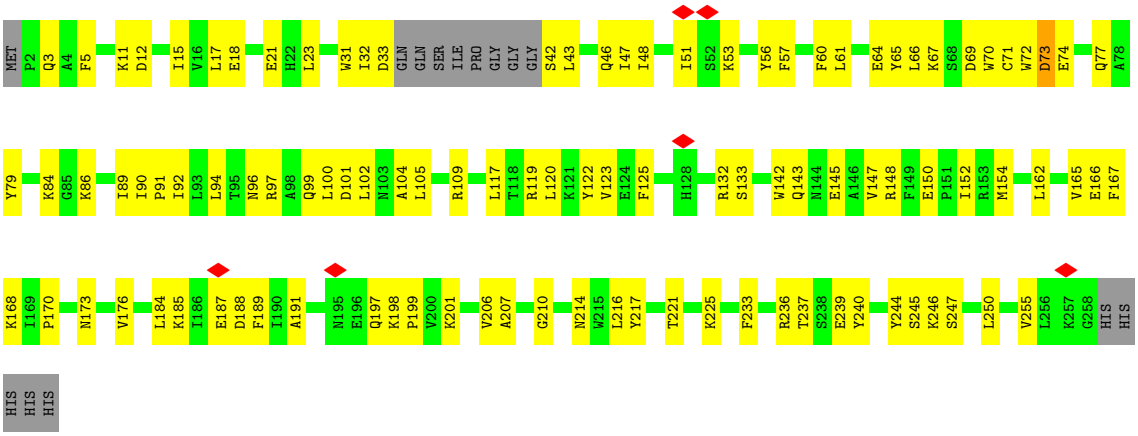


• Molecule 1: RNA (5'-R(P*AP*AP*AP*A)-3')

Chain b:

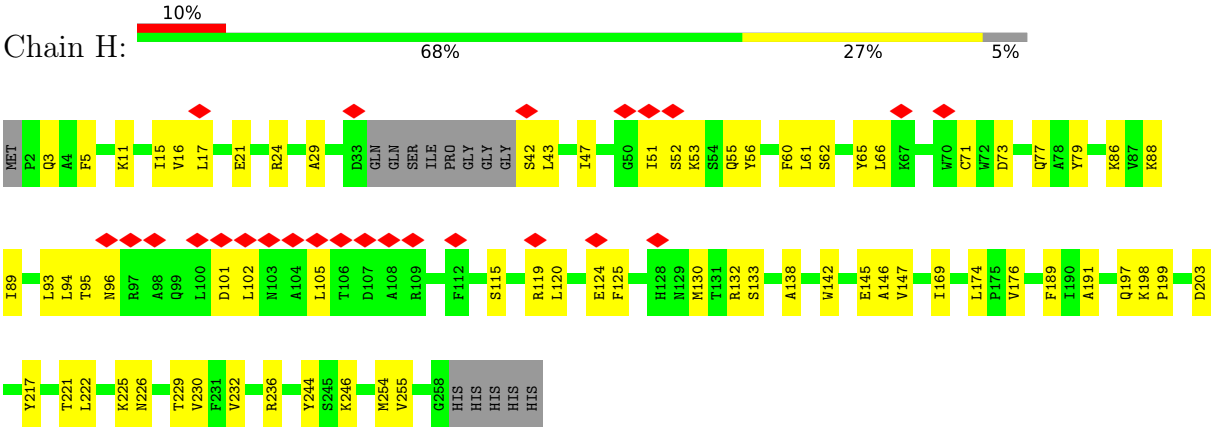
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain G:



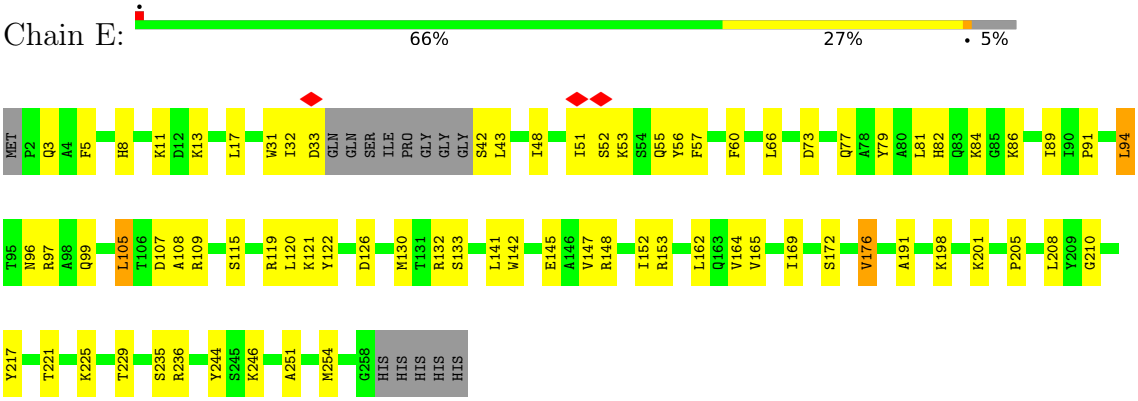
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain H:



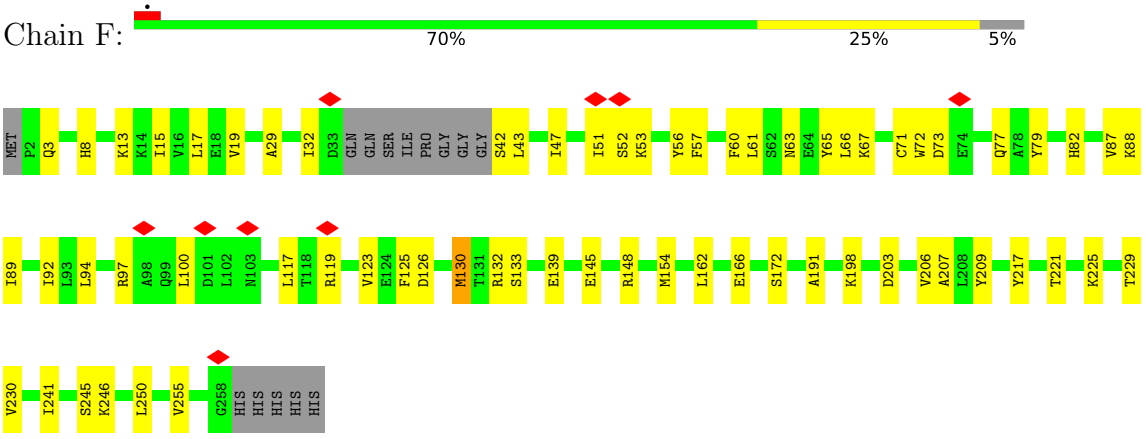
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain E:



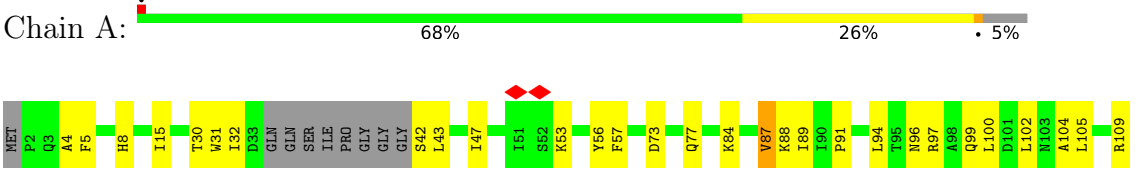
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

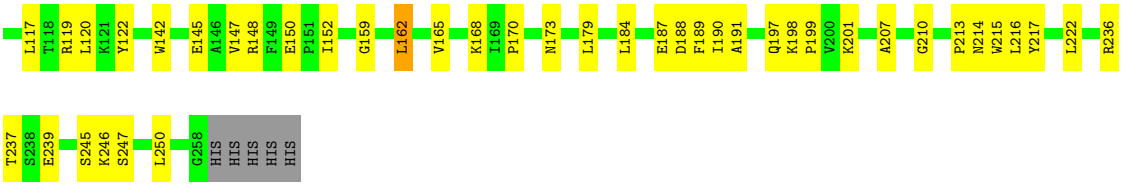
Chain F:



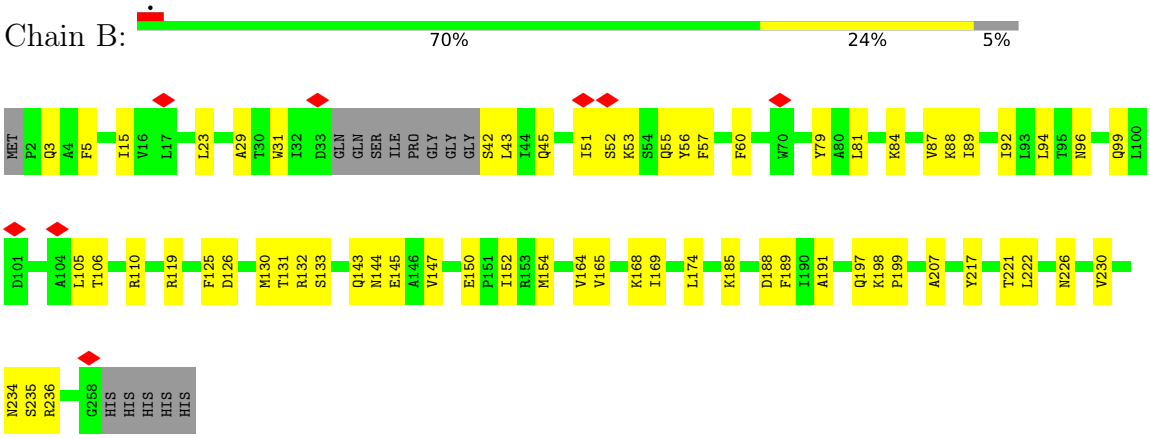
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain A:

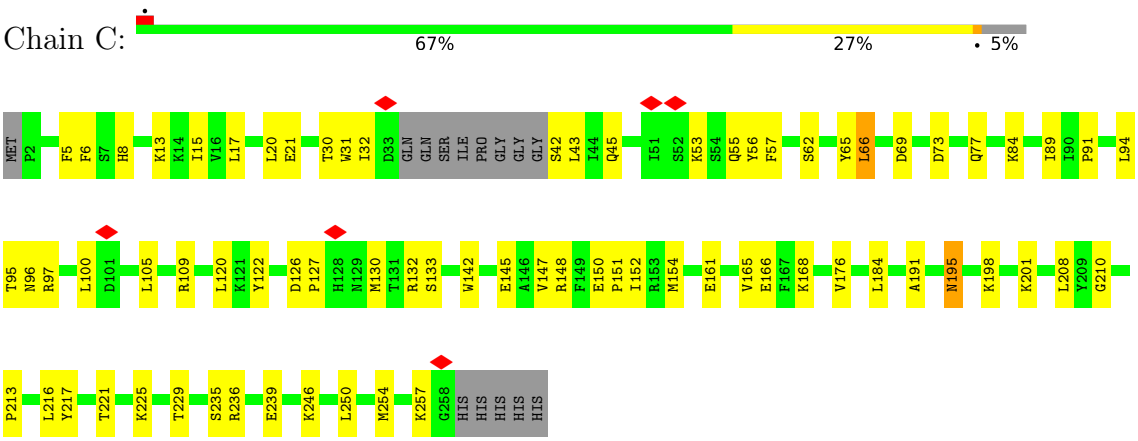




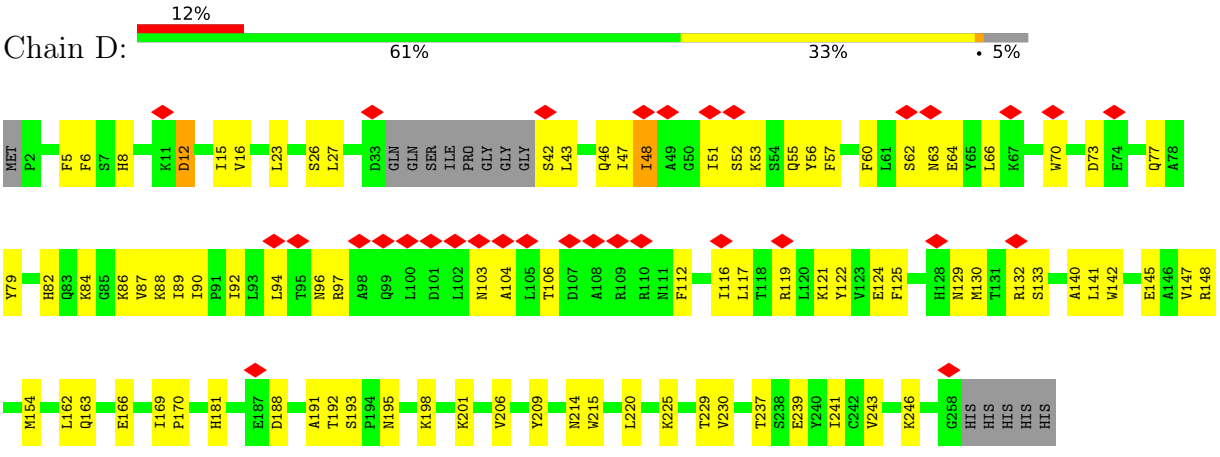
• Molecule 2: Cat1 (CRISPR-associated TIR 1)



• Molecule 2: Cat1 (CRISPR-associated TIR 1)

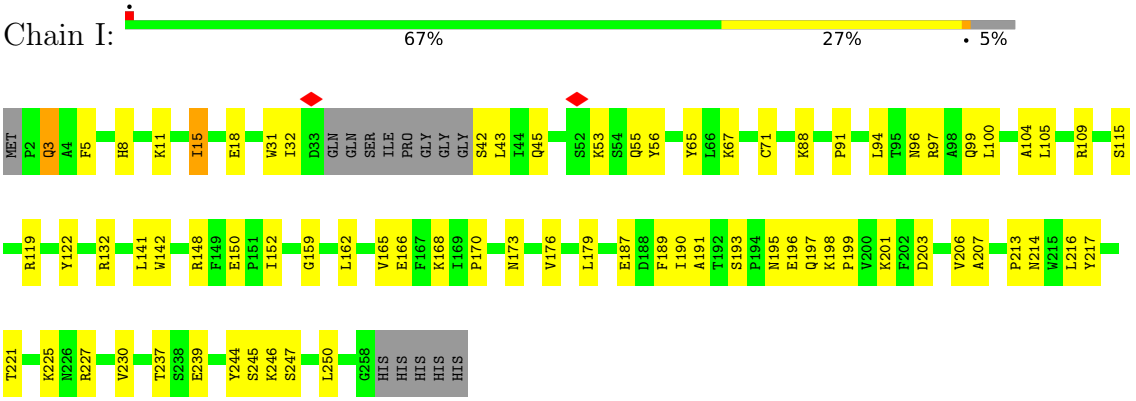


• Molecule 2: Cat1 (CRISPR-associated TIR 1)



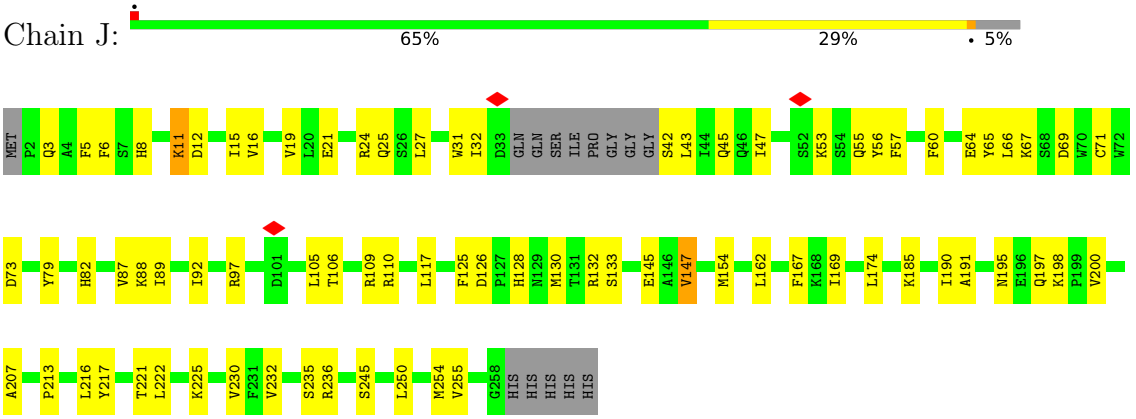
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain I:



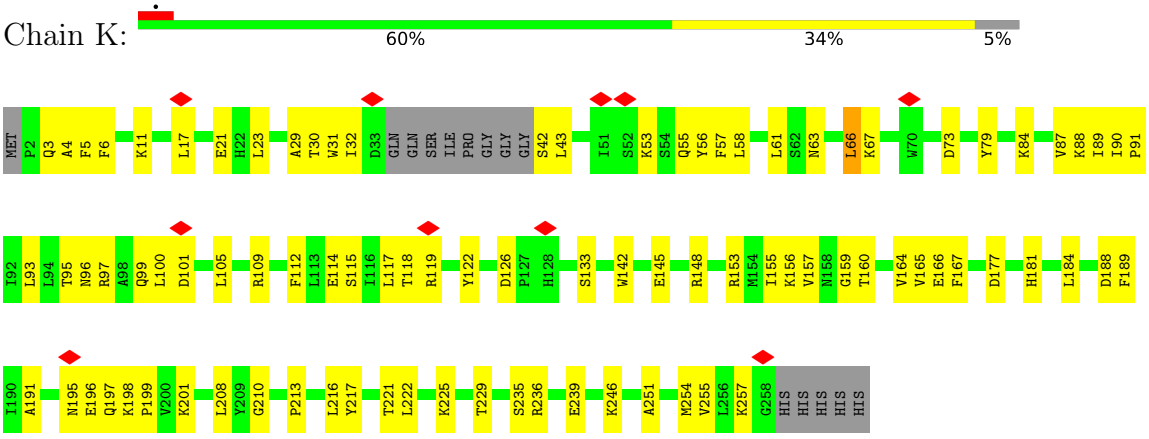
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain J:



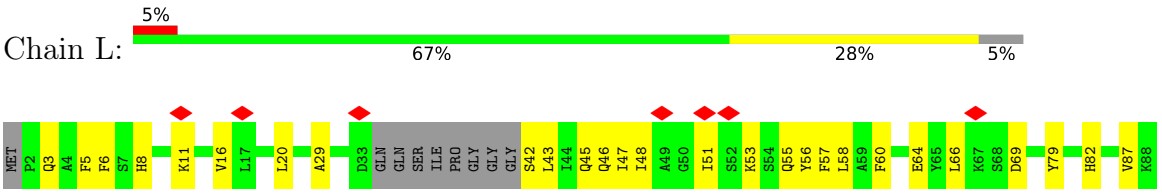
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

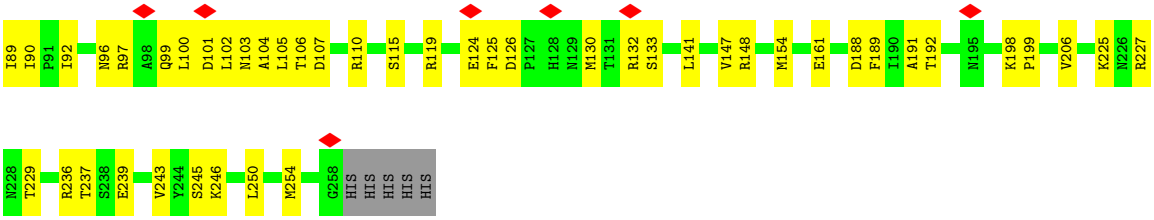
Chain K:



• Molecule 2: Cat1 (CRISPR-associated TIR 1)

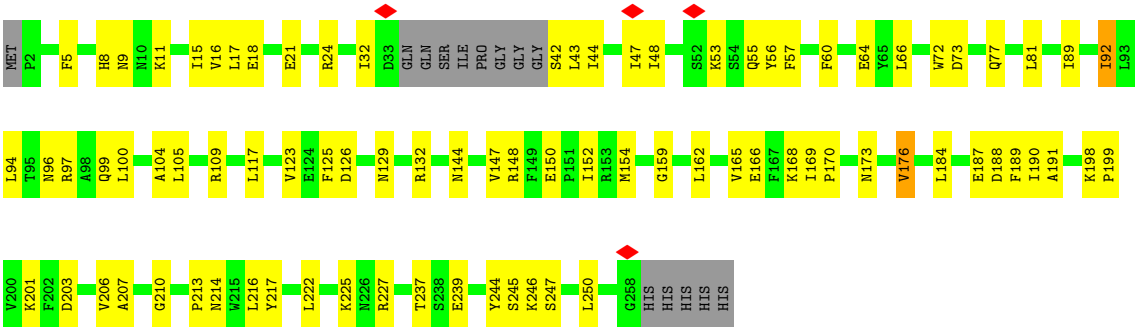
Chain L:





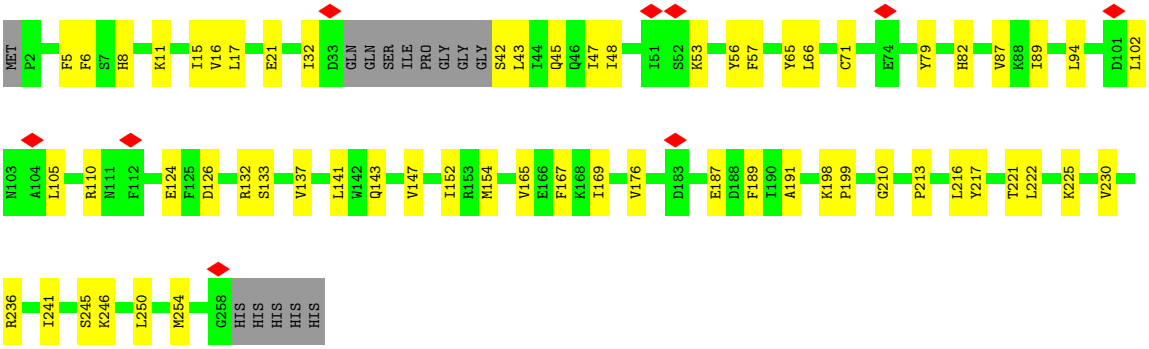
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain M:



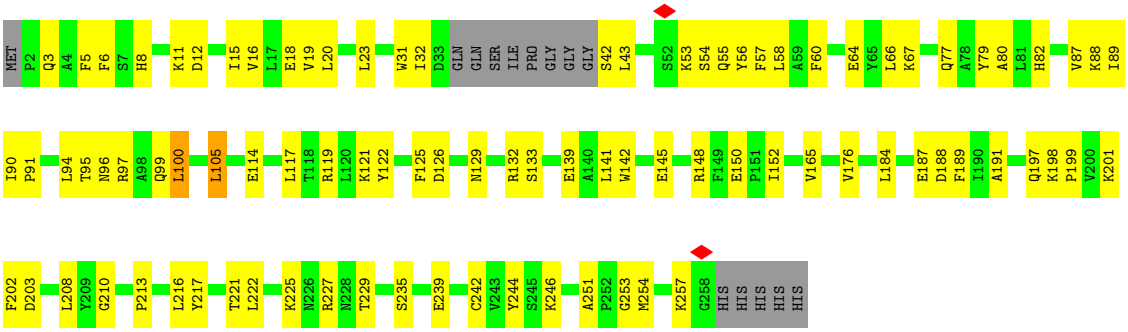
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain N:



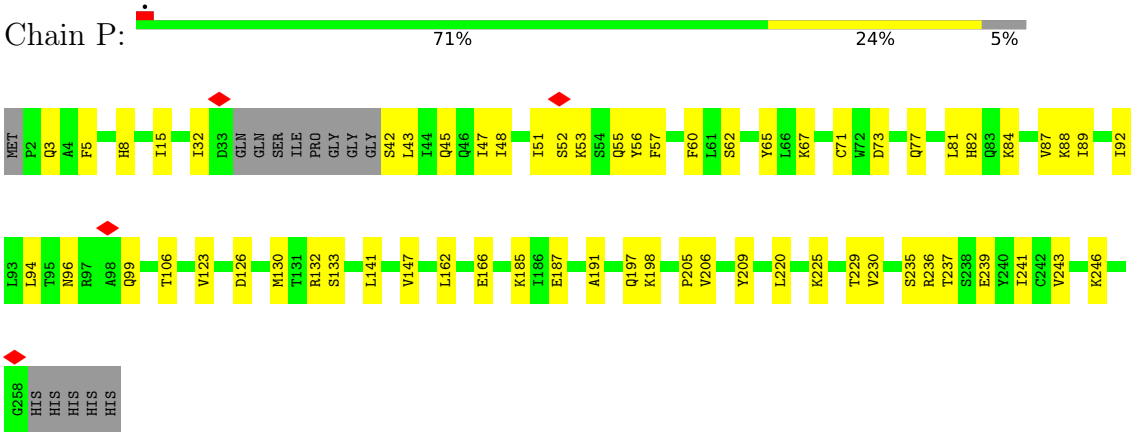
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain O:



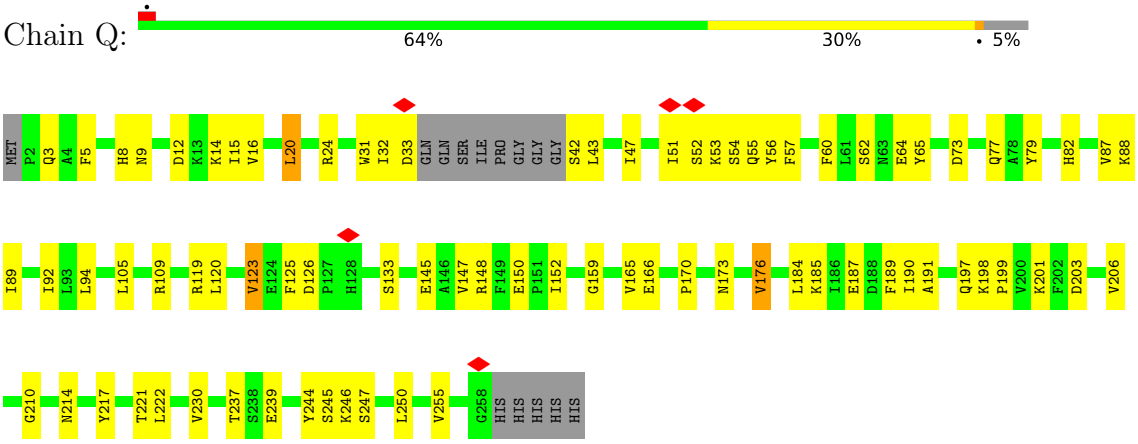
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain P:



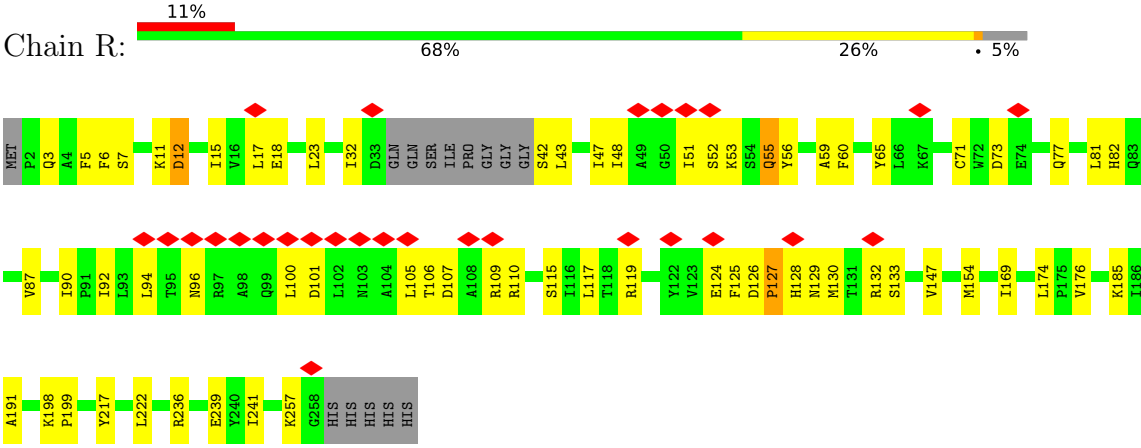
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain Q:



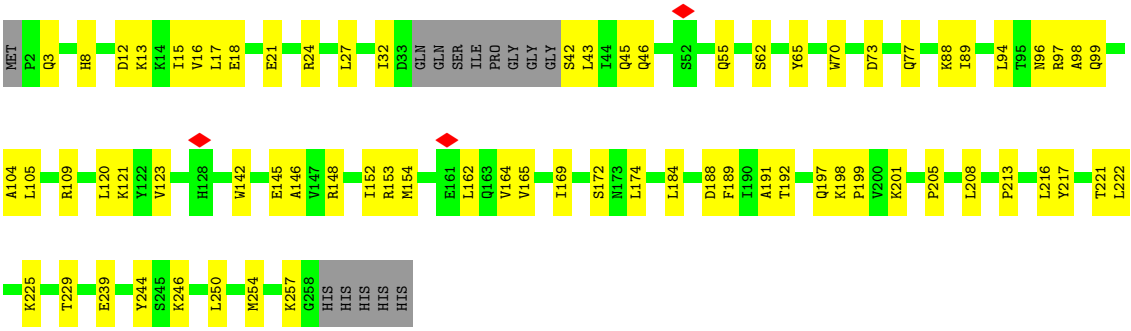
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain R:



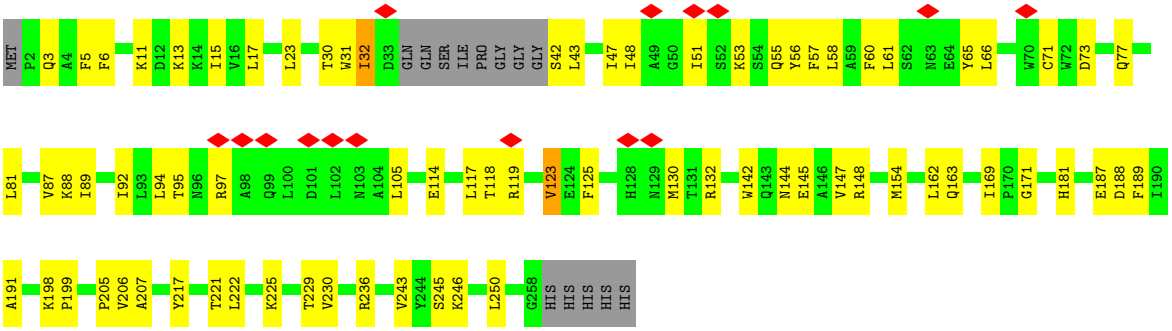
• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain U:



• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain V:

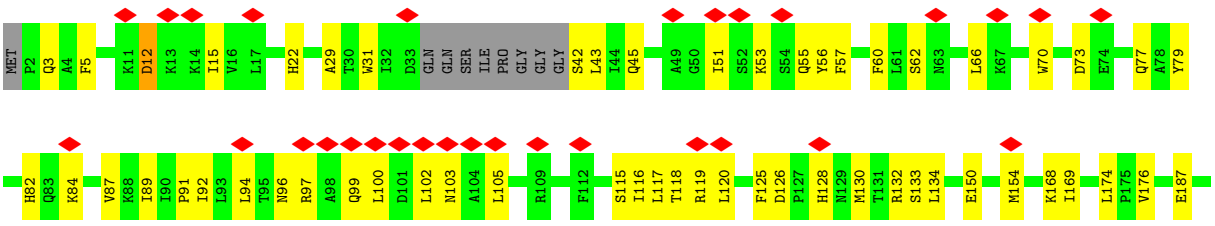


• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain S:

• Molecule 2: Cat1 (CRISPR-associated TIR 1)

Chain T:



A191
K198
D203
Y217
T221
K225
V230
S235
R236
V255
G258
HIS
HIS
HIS
HIS
HIS

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	84493	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	NONE	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	45.03	Depositor
Minimum defocus (nm)	800	Depositor
Maximum defocus (nm)	2000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	0.806	Depositor
Minimum map value	-0.282	Depositor
Average map value	0.005	Depositor
Map value standard deviation	0.033	Depositor
Recommended contour level	0.154	Depositor
Map size (Å)	373.76, 373.76, 373.76	wwPDB
Map dimensions	512, 512, 512	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.73, 0.73, 0.73	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	0.11	0/99	0.15	0/152
1	b	0.09	0/99	0.12	0/152
1	c	0.08	0/99	0.09	0/152
1	d	0.10	0/99	0.12	0/152
1	e	0.10	0/99	0.12	0/152
1	f	0.11	0/99	0.14	0/152
1	g	0.11	0/99	0.12	0/152
1	h	0.10	0/99	0.12	0/152
1	i	0.08	0/99	0.11	0/152
1	j	0.09	0/99	0.11	0/152
1	k	0.08	0/99	0.11	0/152
2	A	0.14	0/2074	0.40	0/2815
2	B	0.12	0/2074	0.34	0/2815
2	C	0.14	0/2074	0.41	0/2815
2	D	0.13	0/2074	0.34	0/2815
2	E	0.14	0/2074	0.37	0/2815
2	F	0.12	0/2074	0.30	0/2815
2	G	0.15	0/2074	0.44	0/2815
2	H	0.12	0/2074	0.36	0/2815
2	I	0.14	0/2074	0.40	0/2815
2	J	0.13	0/2074	0.35	0/2815
2	K	0.16	0/2074	0.44	0/2815
2	L	0.13	0/2074	0.38	0/2815
2	M	0.15	0/2074	0.42	0/2815
2	N	0.13	0/2074	0.36	0/2815
2	O	0.16	0/2074	0.47	0/2815
2	P	0.12	0/2074	0.31	0/2815
2	Q	0.14	0/2074	0.40	0/2815
2	R	0.32	2/2074 (0.1%)	0.51	3/2815 (0.1%)
2	S	0.14	0/2074	0.38	0/2815
2	T	0.14	0/2074	0.40	0/2815
2	U	0.14	0/2074	0.40	0/2815
2	V	0.13	0/2074	0.37	0/2815
All	All	0.15	2/46717 (0.0%)	0.39	3/63602 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	R	127	PRO	CG-CD	-9.82	1.17	1.50
2	R	127	PRO	N-CD	6.36	1.56	1.47

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
2	R	127	PRO	CA-N-CD	-12.32	94.75	112.00
2	R	127	PRO	N-CD-CG	-11.98	85.22	103.20
2	R	127	PRO	CA-CB-CG	-6.76	91.65	104.50

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	a	88	0	45	1	0
1	b	88	0	45	3	0
1	c	88	0	45	2	0
1	d	88	0	45	2	0
1	e	88	0	45	3	0
1	f	88	0	45	0	0
1	g	88	0	45	2	0
1	h	88	0	45	0	0
1	i	88	0	45	0	0
1	j	88	0	45	1	0
1	k	88	0	45	0	0
2	A	2022	0	2032	53	0
2	B	2022	0	2032	49	0
2	C	2022	0	2032	59	0
2	D	2022	0	2032	59	0
2	E	2022	0	2032	51	0
2	F	2022	0	2032	44	0
2	G	2022	0	2032	83	0
2	H	2022	0	2032	50	0

Continued on next page...

Continued from previous page...

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
2	I	2022	0	2032	48	0
2	J	2022	0	2032	57	0
2	K	2022	0	2032	72	0
2	L	2022	0	2032	45	0
2	M	2022	0	2032	72	0
2	N	2022	0	2032	48	0
2	O	2022	0	2032	69	0
2	P	2022	0	2032	41	0
2	Q	2022	0	2032	67	0
2	R	2022	0	2032	55	0
2	S	2022	0	2032	55	0
2	T	2022	0	2032	53	0
2	U	2022	0	2032	57	0
2	V	2022	0	2032	53	0
All	All	45452	0	45199	1174	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 13.

All (1174) 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)
2:D:142:TRP:HB3	2:D:148:ARG:HG2	1.56	0.86
2:Q:92:ILE:HD11	2:Q:125:PHE:HB2	1.57	0.84
2:K:229:THR:HG22	2:K:246:LYS:H	1.44	0.83
2:O:229:THR:HG22	2:O:246:LYS:H	1.42	0.82
2:E:229:THR:HG22	2:E:246:LYS:H	1.46	0.80
2:C:229:THR:HG22	2:C:246:LYS:H	1.47	0.79
2:F:92:ILE:HD11	2:F:125:PHE:HB2	1.64	0.78
2:M:5:PHE:HE2	2:M:47:ILE:HD12	1.49	0.77
2:D:92:ILE:HD11	2:D:125:PHE:HB2	1.67	0.76
2:M:92:ILE:HD11	2:M:125:PHE:HB2	1.68	0.76
2:I:221:THR:HG23	2:I:230:VAL:HG11	1.69	0.74
2:O:150:GLU:OE1	2:O:150:GLU:N	2.21	0.73
2:T:97:ARG:NE	2:T:97:ARG:O	2.20	0.73
2:L:97:ARG:O	2:L:97:ARG:NE	2.20	0.73
2:L:47:ILE:HD12	2:L:87:VAL:HG21	1.69	0.73
2:O:126:ASP:OD1	2:O:132:ARG:NH2	2.21	0.73
2:R:187:GLU:N	2:R:187:GLU:OE1	2.20	0.73
2:G:143:GLN:OE1	2:G:143:GLN:N	2.22	0.72
2:K:55:GLN:HB3	2:K:87:VAL:HG23	1.72	0.72

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:79:TYR:OH	2:O:119:ARG:NH2	2.23	0.71
2:G:99:GLN:OE1	2:G:99:GLN:N	2.22	0.71
2:Q:15:ILE:HG21	2:Q:94:LEU:HD11	1.73	0.71
2:D:130:MET:HE3	2:D:130:MET:HA	1.73	0.70
2:E:42:SER:OG	2:E:43:LEU:N	2.25	0.70
2:U:3:GLN:HB2	2:U:55:GLN:HG3	1.74	0.70
2:T:126:ASP:OD1	2:T:132:ARG:NH2	2.24	0.70
2:R:92:ILE:HD11	2:R:125:PHE:HB2	1.74	0.70
2:V:92:ILE:HD11	2:V:125:PHE:HB2	1.74	0.70
2:T:221:THR:HG23	2:T:230:VAL:HG11	1.73	0.69
2:F:221:THR:HB	2:F:230:VAL:HG11	1.74	0.69
2:K:96:ASN:HB3	2:K:99:GLN:HE22	1.56	0.69
2:M:99:GLN:OE1	2:M:99:GLN:N	2.25	0.69
2:J:235:SER:O	2:P:246:LYS:NZ	2.27	0.68
2:T:15:ILE:HG21	2:T:94:LEU:HD11	1.76	0.68
2:A:148:ARG:HH12	2:A:170:PRO:HG3	1.58	0.68
2:H:221:THR:HG23	2:H:230:VAL:HG11	1.75	0.68
2:C:5:PHE:HB2	2:C:55:GLN:HE21	1.59	0.68
2:C:161:GLU:OE1	2:C:161:GLU:N	2.22	0.68
2:D:47:ILE:HD12	2:D:87:VAL:HG21	1.76	0.68
2:M:18:GLU:HA	2:M:21:GLU:HG3	1.75	0.68
2:Q:42:SER:OG	2:Q:43:LEU:N	2.23	0.68
2:U:15:ILE:HG21	2:U:94:LEU:HD11	1.76	0.68
2:J:42:SER:OG	2:J:43:LEU:N	2.26	0.68
2:O:99:GLN:OE1	2:O:99:GLN:N	2.21	0.68
2:Q:3:GLN:HB2	2:Q:55:GLN:HB3	1.74	0.68
2:F:15:ILE:HG21	2:F:94:LEU:HD11	1.75	0.67
2:K:42:SER:OG	2:K:43:LEU:N	2.27	0.67
2:U:229:THR:HG22	2:U:246:LYS:H	1.60	0.67
2:H:42:SER:OG	2:H:43:LEU:N	2.27	0.67
2:V:154:MET:HE3	2:V:154:MET:HA	1.74	0.67
2:K:142:TRP:HB3	2:K:148:ARG:HD2	1.75	0.67
2:B:81:LEU:HA	2:B:84:LYS:HE2	1.75	0.67
2:M:42:SER:OG	2:M:43:LEU:N	2.25	0.67
2:T:92:ILE:HD11	2:T:125:PHE:HB2	1.76	0.67
2:T:66:LEU:HB3	2:T:105:LEU:HD21	1.78	0.66
2:I:15:ILE:HG21	2:I:94:LEU:HD11	1.76	0.66
2:J:221:THR:HG23	2:J:230:VAL:HG11	1.77	0.66
2:P:42:SER:OG	2:P:43:LEU:N	2.24	0.66
2:E:56:TYR:OH	2:E:145:GLU:OE1	2.14	0.66
2:U:3:GLN:N	2:U:3:GLN:OE1	2.28	0.66

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:56:TYR:OH	2:C:145:GLU:OE1	2.14	0.66
2:D:147:VAL:HG12	2:D:169:ILE:HG23	1.77	0.66
2:S:24:ARG:NH1	2:S:197:GLN:OE1	2.29	0.66
2:N:47:ILE:HD12	2:N:87:VAL:HG21	1.76	0.66
2:F:42:SER:OG	2:F:43:LEU:N	2.28	0.66
2:R:47:ILE:HG21	2:R:81:LEU:HD11	1.78	0.66
2:S:96:ASN:OD1	2:S:97:ARG:N	2.28	0.66
2:J:56:TYR:OH	2:J:145:GLU:OE1	2.13	0.66
2:D:12:ASP:OD1	2:D:12:ASP:N	2.26	0.66
2:A:214:ASN:HD22	2:B:217:TYR:HE2	1.42	0.65
2:P:237:THR:OG1	2:P:239:GLU:OE2	2.13	0.65
2:G:56:TYR:OH	2:G:145:GLU:OE2	2.14	0.65
2:A:15:ILE:HG21	2:A:94:LEU:HD11	1.76	0.65
2:M:56:TYR:HE2	2:M:144:ASN:HD21	1.41	0.65
2:Q:214:ASN:HD22	2:R:217:TYR:HE2	1.43	0.65
2:V:246:LYS:NZ	2:T:235:SER:O	2.25	0.65
2:K:56:TYR:OH	2:K:145:GLU:OE2	2.14	0.65
2:S:42:SER:OG	2:S:43:LEU:N	2.27	0.65
2:G:15:ILE:HG21	2:G:94:LEU:HD11	1.79	0.65
2:C:5:PHE:HB2	2:C:55:GLN:NE2	2.11	0.65
2:U:142:TRP:HB3	2:U:148:ARG:HD3	1.79	0.65
2:V:65:TYR:HE2	2:V:71:CYS:HB3	1.62	0.65
2:M:96:ASN:H	2:M:99:GLN:HE22	1.45	0.65
2:O:3:GLN:HB3	2:O:31:TRP:HE1	1.61	0.65
2:A:42:SER:OG	2:A:43:LEU:N	2.26	0.65
2:E:142:TRP:HB3	2:E:148:ARG:HD2	1.78	0.64
2:K:4:ALA:HB3	2:K:30:THR:HA	1.78	0.64
2:V:15:ILE:HG21	2:V:94:LEU:HD11	1.77	0.64
2:K:126:ASP:OD1	2:K:133:SER:OG	2.15	0.64
2:N:15:ILE:HG21	2:N:94:LEU:HD11	1.79	0.64
2:R:12:ASP:OD2	2:R:12:ASP:N	2.23	0.64
2:L:130:MET:HA	2:L:130:MET:HE3	1.78	0.64
2:B:56:TYR:OH	2:B:145:GLU:OE1	2.14	0.64
2:A:96:ASN:H	2:A:99:GLN:HE22	1.45	0.64
2:L:107:ASP:HA	2:L:110:ARG:HD2	1.80	0.64
2:O:42:SER:OG	2:O:43:LEU:N	2.24	0.64
2:V:187:GLU:N	2:V:187:GLU:OE2	2.28	0.64
2:B:79:TYR:OH	2:B:119:ARG:NH2	2.29	0.64
2:I:45:GLN:OE1	2:I:45:GLN:N	2.30	0.63
2:M:18:GLU:N	2:M:18:GLU:OE1	2.31	0.63
2:M:187:GLU:OE1	2:M:187:GLU:N	2.23	0.63

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:U:18:GLU:N	2:U:18:GLU:OE2	2.31	0.63
2:S:245:SER:OG	2:S:250:LEU:O	2.16	0.63
2:G:61:LEU:HA	2:G:65:TYR:HD1	1.62	0.63
2:K:177:ASP:OD1	2:K:181:HIS:NE2	2.31	0.63
2:U:188:ASP:O	2:U:198:LYS:NZ	2.28	0.63
2:T:42:SER:OG	2:T:43:LEU:N	2.29	0.63
2:G:185:LYS:HE3	2:G:187:GLU:HB2	1.79	0.63
2:K:4:ALA:N	2:K:29:ALA:O	2.32	0.63
2:O:11:LYS:HE2	2:O:11:LYS:N	2.14	0.63
2:H:86:LYS:O	2:H:86:LYS:NZ	2.32	0.63
2:F:63:ASN:O	2:F:67:LYS:NZ	2.31	0.63
2:G:188:ASP:O	2:G:198:LYS:NZ	2.26	0.63
2:K:91:PRO:HD2	2:K:122:TYR:HA	1.80	0.63
2:Q:24:ARG:NH1	2:Q:197:GLN:OE1	2.32	0.62
2:M:162:LEU:HD11	2:M:207:ALA:HB2	1.79	0.62
2:B:92:ILE:HD11	2:B:125:PHE:HB2	1.81	0.62
2:U:17:LEU:O	2:U:21:GLU:N	2.31	0.62
2:G:210:GLY:O	2:G:217:TYR:OH	2.18	0.62
2:L:132:ARG:O	2:L:132:ARG:NH1	2.32	0.62
2:V:60:PHE:HA	2:V:92:ILE:HG23	1.80	0.62
2:Q:148:ARG:HG3	2:Q:148:ARG:HH11	1.64	0.62
2:H:130:MET:HE3	2:H:130:MET:HA	1.80	0.62
2:D:15:ILE:HG21	2:D:94:LEU:HD11	1.81	0.62
2:M:148:ARG:HH12	2:M:170:PRO:HG3	1.64	0.62
2:S:15:ILE:HG21	2:S:94:LEU:HD11	1.80	0.62
2:F:56:TYR:OH	2:F:145:GLU:OE1	2.18	0.62
2:F:60:PHE:HA	2:F:92:ILE:HG23	1.82	0.62
2:D:42:SER:OG	2:D:43:LEU:N	2.28	0.62
2:I:237:THR:OG1	2:I:239:GLU:OE2	2.17	0.62
2:L:245:SER:OG	2:L:250:LEU:O	2.16	0.62
2:B:42:SER:OG	2:B:43:LEU:N	2.30	0.62
2:M:188:ASP:O	2:M:198:LYS:NZ	2.25	0.61
2:V:53:LYS:HE2	2:V:56:TYR:HE2	1.65	0.61
2:J:24:ARG:NH1	2:J:197:GLN:OE1	2.32	0.61
2:O:66:LEU:HB3	2:O:105:LEU:HD21	1.82	0.61
2:T:126:ASP:HB2	2:T:128:HIS:CE1	2.35	0.61
2:G:79:TYR:OH	2:G:119:ARG:NH2	2.34	0.61
2:G:176:VAL:HG13	2:H:255:VAL:HG11	1.81	0.61
2:A:5:PHE:HE1	2:A:31:TRP:HE3	1.46	0.61
2:O:188:ASP:O	2:O:198:LYS:NZ	2.26	0.61
2:T:154:MET:HE3	2:T:154:MET:HA	1.82	0.61

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:73:ASP:OD1	2:G:73:ASP:N	2.34	0.61
2:V:130:MET:HA	2:V:130:MET:HE3	1.81	0.61
2:V:245:SER:OG	2:V:250:LEU:O	2.15	0.61
2:H:24:ARG:NH1	2:H:197:GLN:OE1	2.34	0.61
2:U:46:GLN:OE1	2:U:46:GLN:N	2.29	0.61
2:G:3:GLN:HG3	2:G:31:TRP:HE1	1.66	0.61
2:V:132:ARG:O	2:V:132:ARG:NH1	2.34	0.61
1:e:3:A:O2'	2:L:236:ARG:NH2	2.30	0.61
2:I:173:ASN:HB2	2:J:236:ARG:HH12	1.64	0.61
2:I:176:VAL:HG13	2:J:255:VAL:HG11	1.81	0.61
2:T:12:ASP:OD1	2:T:12:ASP:N	2.30	0.61
2:C:53:LYS:HE2	2:C:56:TYR:HE2	1.65	0.60
2:I:245:SER:OG	2:I:250:LEU:O	2.18	0.60
2:N:66:LEU:HB3	2:N:105:LEU:HD21	1.83	0.60
2:Q:56:TYR:OH	2:Q:145:GLU:OE1	2.17	0.60
2:N:42:SER:OG	2:N:43:LEU:N	2.27	0.60
2:A:119:ARG:HB3	2:A:119:ARG:NH1	2.15	0.60
2:N:187:GLU:OE1	2:N:187:GLU:N	2.26	0.60
2:H:145:GLU:HG2	2:H:146:ALA:N	2.17	0.60
2:I:97:ARG:HA	2:I:100:LEU:HD23	1.82	0.60
2:V:6:PHE:HB2	2:V:32:ILE:HD13	1.81	0.60
2:M:47:ILE:HG22	2:M:48:ILE:HG13	1.84	0.60
2:C:6:PHE:HB2	2:C:32:ILE:HD13	1.82	0.60
2:M:150:GLU:HG3	2:M:166:GLU:HG3	1.84	0.60
2:O:77:GLN:N	2:O:77:GLN:OE1	2.32	0.60
2:L:92:ILE:HD11	2:L:125:PHE:HB2	1.84	0.60
2:L:237:THR:OG1	2:L:239:GLU:OE2	2.17	0.60
2:O:251:ALA:H	2:O:254:MET:HE3	1.66	0.60
2:P:130:MET:HE2	2:P:130:MET:HA	1.82	0.60
2:U:42:SER:OG	2:U:43:LEU:N	2.33	0.60
2:V:66:LEU:HB2	2:V:105:LEU:HD21	1.83	0.60
2:E:107:ASP:OD1	2:E:108:ALA:N	2.33	0.59
2:J:126:ASP:OD1	2:J:132:ARG:NH2	2.35	0.59
2:D:229:THR:HG22	2:D:246:LYS:H	1.67	0.59
2:I:132:ARG:O	2:I:132:ARG:NH1	2.35	0.59
2:O:53:LYS:HE2	2:O:56:TYR:HE2	1.67	0.59
2:V:47:ILE:HD12	2:V:48:ILE:HG13	1.83	0.59
2:S:96:ASN:HB3	2:S:99:GLN:HE22	1.67	0.59
2:I:104:ALA:O	2:S:159:GLY:N	2.34	0.59
2:G:214:ASN:HD22	2:H:217:TYR:HE2	1.50	0.59
2:K:66:LEU:HD12	2:K:67:LYS:HD3	1.83	0.59

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:S:56:TYR:OH	2:S:145:GLU:OE1	2.17	0.59
2:R:42:SER:OG	2:R:43:LEU:N	2.32	0.59
2:T:130:MET:HE3	2:T:130:MET:HA	1.82	0.59
2:O:5:PHE:N	2:O:55:GLN:OE1	2.36	0.59
2:S:176:VAL:HG13	2:T:255:VAL:HG11	1.85	0.59
2:T:217:TYR:O	2:T:221:THR:OG1	2.19	0.59
2:I:214:ASN:HD22	2:J:217:TYR:HE2	1.50	0.59
2:G:42:SER:OG	2:G:43:LEU:N	2.25	0.59
2:A:246:LYS:NZ	2:C:235:SER:O	2.34	0.59
2:M:105:LEU:HB3	2:M:109:ARG:HB2	1.85	0.59
2:Q:126:ASP:OD1	2:Q:133:SER:OG	2.20	0.59
2:H:94:LEU:HD23	2:H:125:PHE:HD1	1.68	0.58
2:C:126:ASP:OD1	2:C:133:SER:OG	2.20	0.58
2:J:126:ASP:HB2	2:J:128:HIS:CE1	2.38	0.58
2:C:210:GLY:O	2:C:217:TYR:OH	2.19	0.58
2:M:245:SER:OG	2:M:250:LEU:O	2.21	0.58
2:S:69:ASP:OD2	2:S:70:TRP:N	2.37	0.58
2:G:60:PHE:HA	2:G:92:ILE:HB	1.86	0.58
2:M:47:ILE:HG12	2:M:81:LEU:HD21	1.86	0.58
2:N:42:SER:HB3	2:N:45:GLN:HE22	1.69	0.58
2:V:61:LEU:HA	2:V:65:TYR:HD1	1.68	0.58
2:G:96:ASN:H	2:G:99:GLN:HE22	1.51	0.58
2:U:42:SER:HB3	2:U:45:GLN:HE22	1.67	0.58
2:H:79:TYR:OH	2:H:119:ARG:NH2	2.35	0.58
2:C:5:PHE:CB	2:C:55:GLN:HE21	2.17	0.58
2:D:121:LYS:HD2	2:D:122:TYR:H	1.68	0.58
2:U:99:GLN:N	2:U:99:GLN:OE1	2.36	0.58
2:L:229:THR:HG22	2:L:246:LYS:H	1.67	0.58
2:V:230:VAL:HG23	2:V:243:VAL:HG23	1.86	0.58
2:D:121:LYS:HD2	2:D:122:TYR:N	2.19	0.58
2:K:251:ALA:H	2:K:254:MET:HE3	1.68	0.58
2:V:162:LEU:HD12	2:V:205:PRO:HB2	1.84	0.58
2:V:229:THR:HG22	2:V:246:LYS:H	1.68	0.58
2:J:47:ILE:HD12	2:J:87:VAL:HG21	1.86	0.57
2:J:185:LYS:N	2:J:185:LYS:HE2	2.19	0.57
2:V:65:TYR:CE2	2:V:71:CYS:HB3	2.39	0.57
2:T:3:GLN:HG3	2:T:31:TRP:HE1	1.69	0.57
2:E:99:GLN:CD	2:E:99:GLN:H	2.12	0.57
2:A:97:ARG:HE	2:A:117:LEU:HD13	1.69	0.57
2:D:96:ASN:ND2	2:D:124:GLU:OE2	2.37	0.57
2:D:237:THR:HG23	2:D:239:GLU:HG2	1.85	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:J:185:LYS:HE2	2:J:185:LYS:H	1.68	0.57
2:Q:3:GLN:N	2:Q:3:GLN:OE1	2.34	0.57
2:V:42:SER:OG	2:V:43:LEU:N	2.27	0.57
2:B:60:PHE:HA	2:B:92:ILE:HG23	1.87	0.57
2:K:184:LEU:O	2:K:184:LEU:HD13	2.04	0.57
2:G:3:GLN:N	2:G:3:GLN:OE1	2.38	0.57
2:G:73:ASP:O	2:G:77:GLN:HG3	2.05	0.57
2:G:91:PRO:HD2	2:G:122:TYR:HA	1.86	0.57
2:T:96:ASN:HB3	2:T:99:GLN:HE22	1.70	0.57
2:M:214:ASN:HD22	2:N:217:TYR:HE2	1.50	0.57
2:C:66:LEU:HD22	2:C:105:LEU:HD21	1.87	0.57
2:V:53:LYS:HE2	2:V:56:TYR:CE2	2.40	0.56
2:G:48:ILE:HG23	2:G:86:LYS:HZ1	1.70	0.56
2:E:81:LEU:HA	2:E:84:LYS:HD2	1.87	0.56
2:J:130:MET:HE3	2:J:130:MET:HA	1.88	0.56
2:K:99:GLN:H	2:K:99:GLN:CD	2.12	0.56
2:K:188:ASP:O	2:K:198:LYS:NZ	2.31	0.56
2:L:3:GLN:HA	2:L:29:ALA:HB3	1.88	0.56
1:j:3:A:O2'	2:V:236:ARG:NH2	2.37	0.56
2:G:246:LYS:NZ	2:E:235:SER:O	2.36	0.56
2:Q:105:LEU:HB3	2:Q:109:ARG:HB2	1.86	0.56
2:T:132:ARG:NH2	2:T:133:SER:OG	2.38	0.56
2:G:173:ASN:HB2	2:H:236:ARG:HH12	1.70	0.56
2:M:132:ARG:HH11	2:M:132:ARG:HB2	1.71	0.56
2:Q:237:THR:OG1	2:Q:239:GLU:OE2	2.21	0.56
2:A:237:THR:OG1	2:A:239:GLU:OE2	2.17	0.56
2:B:152:ILE:HD12	2:B:165:VAL:HG22	1.88	0.56
2:R:5:PHE:HB3	2:R:43:LEU:HD13	1.87	0.56
2:J:3:GLN:HB2	2:J:55:GLN:HB3	1.88	0.56
2:O:8:HIS:CE1	2:O:32:ILE:HD11	2.40	0.56
2:R:60:PHE:HA	2:R:92:ILE:HG23	1.87	0.56
2:F:229:THR:HG22	2:F:246:LYS:H	1.70	0.56
2:K:73:ASP:OD2	2:K:73:ASP:N	2.39	0.56
2:F:79:TYR:OH	2:F:119:ARG:NH2	2.39	0.56
2:K:17:LEU:O	2:K:21:GLU:N	2.34	0.56
2:G:189:PHE:HD1	2:G:199:PRO:HG2	1.71	0.56
2:S:152:ILE:HD12	2:S:165:VAL:HG22	1.88	0.56
1:a:3:A:O2'	2:A:236:ARG:NH2	2.39	0.56
2:A:162:LEU:HD11	2:A:207:ALA:HB2	1.87	0.56
2:A:56:TYR:OH	2:A:145:GLU:OE1	2.23	0.55
2:C:184:LEU:HD13	2:C:184:LEU:O	2.06	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:T:60:PHE:HA	2:T:92:ILE:HG23	1.87	0.55
2:F:47:ILE:HD12	2:F:87:VAL:HG21	1.89	0.55
2:B:126:ASP:OD1	2:B:133:SER:OG	2.24	0.55
2:D:84:LYS:HD3	2:D:84:LYS:N	2.22	0.55
2:P:162:LEU:HD12	2:P:205:PRO:HB2	1.87	0.55
2:G:245:SER:OG	2:G:250:LEU:O	2.24	0.55
2:F:245:SER:OG	2:F:250:LEU:O	2.17	0.55
2:A:91:PRO:HD2	2:A:122:TYR:HA	1.88	0.55
2:P:15:ILE:HG21	2:P:94:LEU:HD11	1.88	0.55
2:E:115:SER:O	2:E:119:ARG:NH1	2.40	0.55
2:B:130:MET:HA	2:B:130:MET:HE3	1.88	0.55
2:C:176:VAL:HG12	2:D:241:ILE:HD11	1.87	0.55
2:E:126:ASP:OD1	2:E:133:SER:OG	2.25	0.55
2:A:53:LYS:HE2	2:A:56:TYR:HE2	1.71	0.55
2:O:53:LYS:HE2	2:O:56:TYR:CE2	2.41	0.55
2:E:176:VAL:HG13	2:F:241:ILE:HD11	1.89	0.55
2:R:15:ILE:HG21	2:R:94:LEU:HD11	1.89	0.55
2:V:57:PHE:HB3	2:V:89:ILE:HG23	1.89	0.55
2:J:42:SER:HB3	2:J:45:GLN:HE22	1.71	0.55
2:M:148:ARG:NH1	2:M:170:PRO:HG3	2.22	0.55
2:M:189:PHE:HD1	2:M:199:PRO:HG2	1.72	0.55
2:Q:53:LYS:HE2	2:Q:56:TYR:CZ	2.41	0.55
2:Q:245:SER:OG	2:Q:250:LEU:O	2.25	0.55
2:S:5:PHE:N	2:S:55:GLN:OE1	2.39	0.55
2:G:65:TYR:CE2	2:G:71:CYS:HB3	2.41	0.55
2:G:191:ALA:HB2	2:G:198:LYS:HB2	1.89	0.55
2:A:191:ALA:HB2	2:A:198:LYS:HB2	1.89	0.55
2:C:55:GLN:OE1	2:C:56:TYR:N	2.40	0.55
2:M:92:ILE:HD13	2:M:123:VAL:HG13	1.88	0.55
2:E:191:ALA:HB2	2:E:198:LYS:HB2	1.88	0.55
2:M:42:SER:HA	2:O:121:LYS:HE2	1.87	0.55
2:P:126:ASP:OD1	2:P:133:SER:OG	2.25	0.55
2:A:173:ASN:HB2	2:B:236:ARG:HH12	1.72	0.54
2:D:166:GLU:HG2	2:D:209:TYR:HB3	1.89	0.54
2:R:105:LEU:HD11	2:R:109:ARG:HB3	1.89	0.54
2:E:5:PHE:N	2:E:55:GLN:OE1	2.40	0.54
2:F:132:ARG:O	2:F:132:ARG:NH1	2.40	0.54
2:O:142:TRP:O	2:O:148:ARG:NH1	2.40	0.54
1:g:3:A:O2'	2:P:236:ARG:NH2	2.36	0.54
2:A:245:SER:OG	2:A:250:LEU:O	2.24	0.54
2:K:66:LEU:HD22	2:K:105:LEU:HD21	1.88	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:53:LYS:HE2	2:A:56:TYR:CE2	2.42	0.54
2:D:116:ILE:HA	2:D:119:ARG:HH21	1.73	0.54
2:I:189:PHE:HD1	2:I:199:PRO:HG2	1.72	0.54
2:O:132:ARG:HH12	2:O:133:SER:HA	1.73	0.54
2:G:18:GLU:OE2	2:G:18:GLU:N	2.40	0.54
2:C:5:PHE:CD1	2:C:31:TRP:HB2	2.43	0.54
2:D:73:ASP:O	2:D:77:GLN:HG3	2.08	0.54
2:J:19:VAL:HG11	2:J:60:PHE:HZ	1.72	0.54
2:R:188:ASP:OD2	2:R:188:ASP:N	2.39	0.54
2:V:191:ALA:HB2	2:V:198:LYS:HB2	1.90	0.54
2:I:191:ALA:HB2	2:I:198:LYS:HB2	1.90	0.54
2:M:191:ALA:HB2	2:M:198:LYS:HB2	1.88	0.54
2:E:3:GLN:HG3	2:E:31:TRP:HE1	1.72	0.54
2:E:130:MET:HE2	2:E:130:MET:HA	1.90	0.54
2:B:221:THR:HB	2:B:230:VAL:HG11	1.89	0.54
2:B:3:GLN:N	2:B:3:GLN:OE1	2.41	0.54
2:D:56:TYR:OH	2:D:145:GLU:OE1	2.26	0.54
2:E:251:ALA:H	2:E:254:MET:HE3	1.73	0.54
2:C:42:SER:OG	2:C:43:LEU:N	2.26	0.54
2:N:8:HIS:CE1	2:N:32:ILE:HD11	2.43	0.54
2:A:187:GLU:HA	2:A:190:ILE:HD12	1.90	0.53
2:A:148:ARG:NH1	2:A:170:PRO:HG3	2.23	0.53
2:K:11:LYS:N	2:K:11:LYS:HE2	2.23	0.53
2:K:105:LEU:HB3	2:K:109:ARG:HB2	1.89	0.53
2:L:42:SER:OG	2:L:43:LEU:N	2.26	0.53
2:L:60:PHE:HA	2:L:92:ILE:HG23	1.89	0.53
2:S:91:PRO:HD2	2:S:122:TYR:HA	1.89	0.53
2:C:195:ASN:OD1	2:C:195:ASN:N	2.39	0.53
2:J:154:MET:N	2:J:154:MET:HE2	2.23	0.53
2:R:3:GLN:OE1	2:R:3:GLN:N	2.42	0.53
2:F:126:ASP:OD1	2:F:133:SER:OG	2.27	0.53
2:B:105:LEU:HD12	2:B:106:THR:H	1.74	0.53
2:L:57:PHE:HB3	2:L:89:ILE:HG23	1.90	0.53
2:L:90:ILE:HD12	2:L:90:ILE:O	2.08	0.53
2:Q:173:ASN:HB2	2:R:236:ARG:HH12	1.73	0.53
2:R:154:MET:HE3	2:R:154:MET:HA	1.91	0.53
2:O:225:LYS:HB3	2:P:225:LYS:HD3	1.89	0.53
2:U:24:ARG:HG3	2:U:199:PRO:HG3	1.90	0.53
2:A:147:VAL:HA	2:A:170:PRO:HD3	1.89	0.53
2:U:105:LEU:HB3	2:U:109:ARG:HB2	1.89	0.53
2:U:184:LEU:HD13	2:U:184:LEU:O	2.07	0.53

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:T:51:ILE:HD11	2:T:53:LYS:HB3	1.90	0.53
2:G:105:LEU:HB3	2:G:109:ARG:HB2	1.91	0.53
2:I:42:SER:OG	2:I:43:LEU:N	2.32	0.53
2:J:64:GLU:HA	2:J:67:LYS:HG2	1.91	0.53
2:J:126:ASP:OD1	2:J:133:SER:OG	2.27	0.53
2:M:97:ARG:HH21	2:M:117:LEU:HB3	1.74	0.53
2:P:47:ILE:HD12	2:P:87:VAL:HG21	1.90	0.53
2:A:99:GLN:OE1	2:A:99:GLN:N	2.30	0.53
2:M:8:HIS:CE1	2:M:32:ILE:HD11	2.44	0.53
2:N:124:GLU:HB3	2:N:132:ARG:HH22	1.74	0.53
2:B:105:LEU:O	2:B:110:ARG:NH2	2.42	0.53
2:I:91:PRO:HD2	2:I:122:TYR:HA	1.90	0.53
2:M:24:ARG:HG3	2:M:199:PRO:HG3	1.90	0.53
2:N:191:ALA:HB2	2:N:198:LYS:HB2	1.90	0.53
2:H:3:GLN:OE1	2:H:3:GLN:N	2.41	0.53
2:A:210:GLY:O	2:A:217:TYR:OH	2.20	0.53
2:N:147:VAL:HB	2:N:169:ILE:HD13	1.91	0.52
2:T:103:ASN:OD1	2:T:103:ASN:N	2.42	0.52
2:C:20:LEU:HD21	2:C:30:THR:HG21	1.90	0.52
2:Q:184:LEU:HD13	2:Q:184:LEU:O	2.10	0.52
2:K:55:GLN:OE1	2:K:56:TYR:N	2.43	0.52
2:J:69:ASP:OD1	2:J:109:ARG:NH2	2.41	0.52
2:L:55:GLN:HE22	2:L:57:PHE:HD1	1.58	0.52
2:L:97:ARG:HH22	2:L:102:LEU:HG	1.74	0.52
2:P:92:ILE:HG22	2:P:123:VAL:HB	1.92	0.52
2:V:56:TYR:HE1	2:V:144:ASN:HD21	1.56	0.52
2:J:217:TYR:O	2:J:221:THR:OG1	2.21	0.52
2:O:60:PHE:HB3	2:O:94:LEU:HD21	1.91	0.52
2:U:239:GLU:HG2	2:U:257:LYS:HA	1.90	0.52
2:V:147:VAL:HG12	2:V:169:ILE:HG23	1.90	0.52
2:D:103:ASN:OD1	2:D:104:ALA:N	2.42	0.52
2:I:162:LEU:HD11	2:I:207:ALA:HB2	1.92	0.52
2:K:239:GLU:HG2	2:K:257:LYS:HA	1.90	0.52
2:R:191:ALA:HB2	2:R:198:LYS:HB2	1.91	0.52
2:J:3:GLN:HB3	2:J:31:TRP:HE1	1.75	0.52
2:A:47:ILE:HD12	2:A:87:VAL:HG21	1.91	0.52
2:B:3:GLN:HA	2:B:29:ALA:HB3	1.92	0.52
2:L:51:ILE:HG23	2:L:53:LYS:H	1.75	0.52
2:M:60:PHE:HA	2:M:92:ILE:HG23	1.91	0.52
2:P:191:ALA:HB2	2:P:198:LYS:HB2	1.92	0.52
2:Q:60:PHE:HA	2:Q:92:ILE:HG23	1.91	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:S:191:ALA:HB2	2:S:198:LYS:HB2	1.91	0.52
2:A:57:PHE:HB3	2:A:89:ILE:HG23	1.90	0.52
2:O:176:VAL:HG13	2:P:241:ILE:HD11	1.93	0.52
2:Q:24:ARG:HG3	2:Q:199:PRO:HG3	1.91	0.52
2:H:191:ALA:HA	2:H:198:LYS:HG3	1.92	0.51
2:B:132:ARG:HH11	2:B:133:SER:HA	1.74	0.51
2:C:57:PHE:HB3	2:C:89:ILE:HG23	1.92	0.51
2:M:96:ASN:N	2:M:99:GLN:HE22	2.08	0.51
2:N:245:SER:OG	2:N:250:LEU:O	2.19	0.51
2:G:67:LYS:NZ	2:G:101:ASP:OD2	2.43	0.51
2:G:90:ILE:HD12	2:G:90:ILE:O	2.09	0.51
2:A:197:GLN:OE1	2:A:197:GLN:N	2.34	0.51
2:D:154:MET:HE1	2:D:201:LYS:HG2	1.91	0.51
2:K:225:LYS:HD3	2:L:225:LYS:HB3	1.92	0.51
2:N:143:GLN:OE1	2:N:143:GLN:HA	2.11	0.51
2:F:61:LEU:HA	2:F:65:TYR:HD2	1.75	0.51
2:C:17:LEU:O	2:C:21:GLU:N	2.36	0.51
2:D:79:TYR:CE2	2:D:116:ILE:HG22	2.46	0.51
2:L:99:GLN:OE1	2:L:99:GLN:N	2.43	0.51
2:L:103:ASN:OD1	2:L:104:ALA:N	2.43	0.51
2:S:150:GLU:HG3	2:S:166:GLU:HG3	1.91	0.51
2:H:5:PHE:N	2:H:55:GLN:OE1	2.37	0.51
2:M:147:VAL:HA	2:M:170:PRO:HD3	1.91	0.51
2:Q:152:ILE:HD12	2:Q:165:VAL:HG22	1.93	0.51
2:F:53:LYS:HE2	2:F:56:TYR:CZ	2.45	0.51
2:I:148:ARG:HB2	2:I:168:LYS:HG3	1.92	0.51
2:A:189:PHE:HD1	2:A:199:PRO:HG2	1.76	0.51
2:K:90:ILE:O	2:K:90:ILE:HD12	2.10	0.51
2:C:73:ASP:O	2:C:77:GLN:HG3	2.11	0.51
2:J:162:LEU:HD23	2:J:207:ALA:HB2	1.93	0.51
2:S:17:LEU:O	2:S:21:GLU:N	2.37	0.51
2:G:46:GLN:H	2:G:46:GLN:CD	2.18	0.51
2:Q:42:SER:HB2	2:U:121:LYS:HE2	1.93	0.51
2:S:64:GLU:HA	2:S:67:LYS:HZ2	1.76	0.51
2:S:189:PHE:HD1	2:S:199:PRO:HG2	1.76	0.51
2:D:53:LYS:HE2	2:D:56:TYR:CE1	2.46	0.50
2:K:57:PHE:N	2:K:88:LYS:O	2.31	0.50
2:P:3:GLN:N	2:P:3:GLN:OE1	2.44	0.50
2:V:73:ASP:O	2:V:77:GLN:HG3	2.11	0.50
2:S:173:ASN:HB2	2:T:236:ARG:HH12	1.76	0.50
2:N:152:ILE:HD12	2:N:165:VAL:HG22	1.93	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:c:1:A:OP2	2:G:214:ASN:N	2.45	0.50
2:A:214:ASN:HB2	2:B:217:TYR:HD2	1.76	0.50
2:K:126:ASP:OD1	2:K:126:ASP:N	2.44	0.50
2:Q:47:ILE:HA	2:Q:55:GLN:NE2	2.26	0.50
2:C:148:ARG:N	2:C:168:LYS:O	2.29	0.50
2:J:5:PHE:HB3	2:J:43:LEU:HD13	1.94	0.50
2:K:79:TYR:OH	2:K:119:ARG:NH2	2.44	0.50
2:M:97:ARG:HE	2:M:117:LEU:HD13	1.76	0.50
2:O:91:PRO:HD2	2:O:122:TYR:HA	1.93	0.50
2:R:65:TYR:CE2	2:R:71:CYS:HB3	2.47	0.50
2:A:8:HIS:CE1	2:A:32:ILE:HD11	2.47	0.50
2:K:5:PHE:H	2:K:55:GLN:NE2	2.09	0.50
2:R:126:ASP:OD1	2:R:132:ARG:NH2	2.45	0.50
2:V:5:PHE:N	2:V:55:GLN:OE1	2.44	0.50
2:T:118:THR:OG1	2:T:119:ARG:NH1	2.45	0.50
2:R:6:PHE:HB2	2:R:32:ILE:HD13	1.93	0.50
2:H:65:TYR:CE2	2:H:71:CYS:HB3	2.47	0.50
2:E:210:GLY:O	2:E:217:TYR:OH	2.24	0.50
2:A:104:ALA:O	2:I:159:GLY:N	2.45	0.50
2:C:165:VAL:HB	2:C:208:LEU:HD23	1.94	0.50
2:J:8:HIS:CE1	2:J:32:ILE:HD11	2.47	0.50
2:K:191:ALA:HB2	2:K:198:LYS:HB2	1.94	0.50
2:L:191:ALA:HB2	2:L:198:LYS:HB2	1.94	0.50
2:M:5:PHE:CE2	2:M:47:ILE:HD12	2.38	0.50
2:S:237:THR:OG1	2:S:239:GLU:OE2	2.18	0.50
2:K:57:PHE:HB3	2:K:89:ILE:HG23	1.92	0.50
2:N:65:TYR:CE2	2:N:71:CYS:HB3	2.47	0.50
2:U:145:GLU:HG3	2:U:146:ALA:H	1.77	0.50
2:V:5:PHE:HE1	2:V:31:TRP:HE3	1.58	0.50
2:D:48:ILE:HA	2:D:86:LYS:HZ3	1.76	0.49
2:I:105:LEU:HB3	2:I:109:ARG:HB2	1.93	0.49
2:M:15:ILE:HG21	2:M:94:LEU:HD11	1.93	0.49
2:M:152:ILE:HD12	2:M:165:VAL:HG22	1.93	0.49
2:O:90:ILE:HD12	2:O:90:ILE:O	2.12	0.49
2:S:184:LEU:HD13	2:S:184:LEU:O	2.11	0.49
2:I:217:TYR:O	2:I:221:THR:OG1	2.22	0.49
2:M:73:ASP:O	2:M:77:GLN:HG3	2.11	0.49
2:U:192:THR:O	2:S:209:TYR:OH	2.28	0.49
2:T:79:TYR:HA	2:T:82:HIS:HB3	1.94	0.49
1:b:3:A:O2'	2:C:236:ARG:NH2	2.46	0.49
2:C:132:ARG:O	2:C:132:ARG:NH1	2.45	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:D:60:PHE:HA	2:D:92:ILE:HG23	1.94	0.49
2:O:58:LEU:HG	2:O:90:ILE:HD11	1.94	0.49
2:Q:16:VAL:O	2:Q:20:LEU:N	2.43	0.49
2:R:48:ILE:HD12	2:R:48:ILE:H	1.77	0.49
2:S:221:THR:HG22	2:S:230:VAL:HG11	1.94	0.49
2:F:3:GLN:HA	2:F:29:ALA:HB3	1.94	0.49
2:A:73:ASP:O	2:A:77:GLN:HG3	2.13	0.49
2:A:142:TRP:HB3	2:A:148:ARG:HG2	1.94	0.49
2:A:152:ILE:HD12	2:A:165:VAL:HG22	1.94	0.49
2:J:191:ALA:HB2	2:J:198:LYS:HB2	1.93	0.49
2:K:58:LEU:HD22	2:K:90:ILE:HD11	1.94	0.49
2:P:237:THR:HG23	2:P:239:GLU:HG2	1.94	0.49
2:J:3:GLN:N	2:J:3:GLN:OE1	2.45	0.49
2:Q:73:ASP:O	2:Q:77:GLN:HG3	2.12	0.49
2:Q:185:LYS:NZ	2:U:172:SER:OG	2.44	0.49
2:R:3:GLN:HB2	2:R:55:GLN:HB3	1.95	0.49
2:S:32:ILE:HG13	2:S:33:ASP:OD2	2.12	0.49
2:G:147:VAL:HG21	2:G:167:PHE:HD1	1.77	0.49
2:J:126:ASP:OD1	2:J:126:ASP:N	2.45	0.49
2:J:126:ASP:HB2	2:J:128:HIS:HE1	1.78	0.49
2:Q:8:HIS:CE1	2:Q:32:ILE:HD11	2.47	0.49
2:G:15:ILE:HD12	2:G:125:PHE:HE1	1.77	0.49
2:C:8:HIS:CE1	2:C:32:ILE:HD11	2.48	0.49
2:P:5:PHE:N	2:P:55:GLN:OE1	2.45	0.49
2:Q:51:ILE:HG23	2:Q:53:LYS:H	1.78	0.49
2:R:96:ASN:ND2	2:R:124:GLU:OE2	2.45	0.49
2:H:3:GLN:HA	2:H:29:ALA:HB3	1.94	0.49
2:K:3:GLN:OE1	2:K:3:GLN:N	2.38	0.49
2:H:47:ILE:HD11	2:H:55:GLN:HE21	1.78	0.49
2:E:11:LYS:NZ	2:E:11:LYS:HB3	2.27	0.49
2:F:57:PHE:HB3	2:F:89:ILE:HG23	1.95	0.49
2:D:162:LEU:HD22	2:D:163:GLN:H	1.77	0.49
2:I:115:SER:O	2:I:119:ARG:HG2	2.13	0.49
2:Q:12:ASP:O	2:Q:16:VAL:HG23	2.13	0.49
2:H:169:ILE:HG23	2:H:174:LEU:HD21	1.94	0.49
2:C:191:ALA:HB2	2:C:198:LYS:HB2	1.95	0.49
2:L:96:ASN:ND2	2:L:124:GLU:OE2	2.46	0.49
2:N:5:PHE:HB3	2:N:43:LEU:HD13	1.95	0.49
2:S:53:LYS:HE2	2:S:56:TYR:CE1	2.48	0.49
2:A:105:LEU:HB3	2:A:109:ARG:HB2	1.95	0.48
2:C:89:ILE:O	2:C:120:LEU:HD21	2.13	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Q:150:GLU:HG3	2:Q:166:GLU:HG2	1.95	0.48
2:E:8:HIS:CE1	2:E:32:ILE:HD11	2.47	0.48
2:M:11:LYS:N	2:M:11:LYS:HE2	2.28	0.48
2:K:153:ARG:HB2	2:K:164:VAL:HG12	1.96	0.48
2:T:126:ASP:OD1	2:T:126:ASP:N	2.46	0.48
2:M:237:THR:HG21	2:N:176:VAL:HG11	1.95	0.48
2:F:162:LEU:HD22	2:F:207:ALA:HB2	1.95	0.48
2:F:246:LYS:NZ	2:B:235:SER:O	2.37	0.48
2:K:114:GLU:O	2:K:118:THR:HG23	2.13	0.48
2:T:97:ARG:HH12	2:T:102:LEU:HD11	1.79	0.48
2:L:115:SER:OG	2:L:119:ARG:NH2	2.43	0.48
2:G:148:ARG:HB2	2:G:168:LYS:HG3	1.95	0.48
2:E:48:ILE:HG13	2:E:86:LYS:HZ3	1.77	0.48
2:N:105:LEU:O	2:N:110:ARG:NH2	2.47	0.48
2:Q:221:THR:HG22	2:Q:230:VAL:HG11	1.95	0.48
2:S:225:LYS:HA	2:S:244:TYR:HE2	1.79	0.48
2:S:225:LYS:HB3	2:T:225:LYS:HD3	1.95	0.48
2:B:191:ALA:HB2	2:B:198:LYS:HB2	1.94	0.48
2:N:79:TYR:HA	2:N:82:HIS:HB3	1.95	0.48
2:S:245:SER:HB2	2:S:252:PRO:HD3	1.95	0.48
2:E:147:VAL:HG12	2:E:169:ILE:HG23	1.95	0.48
2:E:225:LYS:HB3	2:F:225:LYS:HD3	1.96	0.48
2:B:125:PHE:CE2	2:B:133:SER:HB3	2.49	0.48
2:B:143:GLN:NE2	2:B:144:ASN:HB3	2.28	0.48
2:D:51:ILE:HG23	2:D:53:LYS:H	1.78	0.48
2:J:6:PHE:HB2	2:J:32:ILE:HD13	1.96	0.48
2:L:56:TYR:HD1	2:L:141:LEU:HD12	1.79	0.48
2:Q:54:SER:C	2:Q:55:GLN:OE1	2.57	0.48
2:R:7:SER:HB3	2:R:59:ALA:HA	1.96	0.48
2:F:191:ALA:HB2	2:F:198:LYS:HB2	1.95	0.48
2:F:217:TYR:O	2:F:221:THR:HG23	2.14	0.48
2:B:42:SER:HB3	2:B:45:GLN:NE2	2.29	0.48
2:C:225:LYS:HB3	2:D:225:LYS:HD3	1.95	0.48
2:I:67:LYS:HD2	2:I:67:LYS:N	2.29	0.48
2:K:5:PHE:H	2:K:55:GLN:HE22	1.61	0.48
2:K:53:LYS:HE2	2:K:56:TYR:CE2	2.49	0.48
2:U:24:ARG:HH11	2:U:24:ARG:HG2	1.79	0.48
2:K:189:PHE:HD1	2:K:199:PRO:HG2	1.77	0.47
2:O:56:TYR:OH	2:O:145:GLU:OE1	2.28	0.47
2:O:197:GLN:O	2:O:198:LYS:HG2	2.14	0.47
2:Q:191:ALA:HB2	2:Q:198:LYS:HB2	1.95	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Q:201:LYS:HA	2:Q:201:LYS:HD3	1.66	0.47
2:G:152:ILE:HD12	2:G:165:VAL:HG22	1.95	0.47
2:C:5:PHE:HD1	2:C:31:TRP:HB2	1.77	0.47
2:O:184:LEU:HD13	2:O:184:LEU:O	2.13	0.47
2:T:3:GLN:HA	2:T:29:ALA:HB3	1.96	0.47
2:N:246:LYS:NZ	2:P:235:SER:O	2.43	0.47
2:O:165:VAL:HB	2:O:208:LEU:HD23	1.97	0.47
2:Q:14:LYS:HZ2	2:Q:15:ILE:HD12	1.78	0.47
2:U:191:ALA:HB2	2:U:198:LYS:HB2	1.96	0.47
2:V:3:GLN:N	2:V:3:GLN:OE1	2.47	0.47
2:S:73:ASP:O	2:S:77:GLN:HG3	2.14	0.47
2:A:4:ALA:HB3	2:A:30:THR:HG22	1.95	0.47
2:C:150:GLU:HG3	2:C:151:PRO:HD2	1.96	0.47
2:O:57:PHE:HB3	2:O:89:ILE:HG23	1.95	0.47
2:R:127:PRO:HD2	2:R:128:HIS:N	2.28	0.47
2:V:92:ILE:HA	2:V:123:VAL:HG13	1.96	0.47
2:A:119:ARG:HB3	2:A:119:ARG:HH11	1.78	0.47
2:P:81:LEU:HA	2:P:84:LYS:HG2	1.96	0.47
2:P:230:VAL:HG23	2:P:243:VAL:HG23	1.97	0.47
2:G:143:GLN:HA	2:G:148:ARG:HH21	1.80	0.47
2:E:201:LYS:HA	2:E:201:LYS:HD3	1.65	0.47
2:I:201:LYS:HD3	2:I:201:LYS:HA	1.63	0.47
2:O:201:LYS:HA	2:O:201:LYS:HD3	1.63	0.47
2:S:130:MET:HE2	2:S:130:MET:HA	1.96	0.47
1:c:3:A:O2'	2:G:236:ARG:NH2	2.48	0.47
2:G:237:THR:OG1	2:G:239:GLU:OE2	2.19	0.47
2:B:197:GLN:OE1	2:B:197:GLN:N	2.32	0.47
2:C:142:TRP:HB3	2:C:148:ARG:HD2	1.97	0.47
2:C:225:LYS:HD3	2:D:225:LYS:HB3	1.96	0.47
2:J:57:PHE:HB3	2:J:89:ILE:HG23	1.97	0.47
2:N:57:PHE:HB3	2:N:89:ILE:HG12	1.97	0.47
2:Q:126:ASP:OD1	2:Q:126:ASP:N	2.47	0.47
2:Q:244:TYR:HB2	2:R:222:LEU:HD23	1.96	0.47
2:U:201:LYS:HD3	2:U:201:LYS:HA	1.65	0.47
2:T:45:GLN:CD	2:T:45:GLN:H	2.23	0.47
2:E:162:LEU:HB3	2:E:205:PRO:HB2	1.97	0.47
2:B:15:ILE:HG12	2:B:125:PHE:HE1	1.80	0.47
2:C:53:LYS:HE2	2:C:56:TYR:CE2	2.48	0.47
2:J:66:LEU:HB3	2:J:105:LEU:HD21	1.96	0.47
2:L:58:LEU:HG	2:L:90:ILE:HD11	1.97	0.47
2:M:201:LYS:HA	2:M:201:LYS:HD3	1.67	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:O:191:ALA:HB2	2:O:198:LYS:HB2	1.96	0.47
2:G:187:GLU:OE1	2:G:187:GLU:HA	2.15	0.47
2:H:101:ASP:OD2	2:H:101:ASP:N	2.41	0.47
2:H:189:PHE:HD1	2:H:199:PRO:HG2	1.78	0.47
2:F:97:ARG:HE	2:F:117:LEU:HD13	1.79	0.47
2:J:21:GLU:O	2:J:25:GLN:HG2	2.14	0.47
2:M:5:PHE:N	2:M:55:GLN:OE1	2.48	0.47
2:M:187:GLU:HA	2:M:190:ILE:HD12	1.97	0.47
2:O:15:ILE:HA	2:O:18:GLU:OE2	2.14	0.47
2:O:148:ARG:HH11	2:O:148:ARG:HG2	1.80	0.47
2:G:32:ILE:HG12	2:G:33:ASP:OD2	2.15	0.47
2:B:164:VAL:HG12	2:B:207:ALA:HB3	1.97	0.47
2:I:150:GLU:HG3	2:I:166:GLU:HB3	1.97	0.47
2:J:147:VAL:HB	2:J:169:ILE:HG12	1.96	0.47
2:E:96:ASN:O	2:E:99:GLN:NE2	2.48	0.46
2:E:165:VAL:HB	2:E:208:LEU:HD23	1.97	0.46
2:N:221:THR:HG23	2:N:230:VAL:HG11	1.96	0.46
2:O:189:PHE:HD1	2:O:199:PRO:HG2	1.80	0.46
2:P:57:PHE:HB3	2:P:89:ILE:HG23	1.98	0.46
2:S:225:LYS:HA	2:S:244:TYR:CE2	2.49	0.46
2:H:138:ALA:HB1	2:H:142:TRP:CZ3	2.51	0.46
2:B:94:LEU:HD13	2:B:125:PHE:HD1	1.81	0.46
2:P:229:THR:HG22	2:P:246:LYS:H	1.80	0.46
2:Q:79:TYR:OH	2:Q:119:ARG:NH1	2.46	0.46
2:U:152:ILE:HD12	2:U:165:VAL:HG22	1.98	0.46
2:S:162:LEU:HD11	2:S:207:ALA:HB2	1.96	0.46
2:A:188:ASP:O	2:A:198:LYS:NZ	2.33	0.46
2:B:217:TYR:O	2:B:221:THR:HG23	2.15	0.46
2:C:55:GLN:OE1	2:C:56:TYR:C	2.59	0.46
2:C:91:PRO:HD2	2:C:122:TYR:HA	1.96	0.46
2:L:126:ASP:OD1	2:L:133:SER:OG	2.31	0.46
2:M:129:ASN:HD21	2:M:132:ARG:CZ	2.28	0.46
2:G:66:LEU:O	2:G:72:TRP:NE1	2.45	0.46
2:H:51:ILE:HG12	2:H:52:SER:N	2.31	0.46
2:C:17:LEU:HD12	2:C:17:LEU:H	1.81	0.46
2:D:63:ASN:OD1	2:D:64:GLU:N	2.48	0.46
2:K:165:VAL:HB	2:K:208:LEU:HD23	1.97	0.46
2:Q:5:PHE:CD1	2:Q:31:TRP:HB2	2.51	0.46
2:R:105:LEU:O	2:R:110:ARG:NH2	2.49	0.46
2:G:217:TYR:O	2:G:221:THR:HG22	2.15	0.46
2:D:193:SER:OG	2:D:195:ASN:OD1	2.23	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:I:195:ASN:OD1	2:I:196:GLU:N	2.49	0.46
2:U:197:GLN:O	2:U:198:LYS:HG2	2.16	0.46
2:H:88:LYS:HE3	2:H:88:LYS:HB3	1.81	0.46
2:E:73:ASP:O	2:E:77:GLN:HG3	2.16	0.46
2:E:153:ARG:HB2	2:E:164:VAL:HG12	1.98	0.46
2:D:8:HIS:CD2	2:D:16:VAL:HG21	2.51	0.46
2:D:79:TYR:HA	2:D:82:HIS:HB3	1.97	0.46
2:J:105:LEU:O	2:J:110:ARG:NH2	2.48	0.46
2:O:16:VAL:O	2:O:20:LEU:N	2.42	0.46
2:O:129:ASN:HB3	2:O:132:ARG:HH21	1.81	0.46
2:U:165:VAL:HB	2:U:208:LEU:HD23	1.97	0.46
2:T:169:ILE:HG23	2:T:174:LEU:HD21	1.96	0.46
2:G:86:LYS:HE2	2:G:86:LYS:HB2	1.67	0.46
2:E:217:TYR:O	2:E:221:THR:HG23	2.16	0.46
2:I:15:ILE:HA	2:I:18:GLU:OE2	2.16	0.46
2:M:148:ARG:HG3	2:M:148:ARG:HH11	1.80	0.46
2:Q:89:ILE:O	2:Q:120:LEU:HD21	2.15	0.46
2:V:97:ARG:NE	2:V:117:LEU:HD13	2.31	0.46
2:G:5:PHE:HD1	2:G:43:LEU:HD22	1.79	0.46
2:G:74:GLU:OE2	2:G:74:GLU:N	2.28	0.46
2:D:46:GLN:CD	2:D:46:GLN:H	2.24	0.46
2:I:11:LYS:HE2	2:I:11:LYS:HA	1.96	0.46
2:I:96:ASN:HB3	2:I:99:GLN:HE22	1.80	0.46
2:M:44:ILE:O	2:M:47:ILE:HB	2.15	0.46
2:M:237:THR:OG1	2:M:239:GLU:OE2	2.22	0.46
2:O:152:ILE:HD12	2:O:165:VAL:HG22	1.98	0.46
2:U:96:ASN:OD1	2:U:98:ALA:N	2.39	0.46
2:G:53:LYS:HE2	2:G:56:TYR:CE1	2.51	0.46
2:G:69:ASP:OD1	2:G:69:ASP:N	2.49	0.46
2:H:254:MET:HE3	2:H:254:MET:HB3	1.81	0.46
2:F:166:GLU:HG2	2:F:209:TYR:HB3	1.97	0.46
2:R:53:LYS:HE2	2:R:56:TYR:CE2	2.51	0.46
2:T:191:ALA:HB2	2:T:198:LYS:HB2	1.98	0.46
2:G:197:GLN:O	2:G:198:LYS:HG2	2.16	0.46
2:F:65:TYR:CE1	2:F:71:CYS:HB3	2.51	0.46
2:P:73:ASP:O	2:P:77:GLN:HG3	2.16	0.46
2:G:12:ASP:OD2	2:G:12:ASP:N	2.49	0.45
2:E:148:ARG:HG3	2:E:148:ARG:HH11	1.82	0.45
2:B:88:LYS:HE3	2:B:88:LYS:HB3	1.80	0.45
2:B:132:ARG:NH1	2:B:133:SER:HA	2.31	0.45
2:K:6:PHE:HB2	2:K:32:ILE:HD13	1.97	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:217:TYR:O	2:K:221:THR:HG23	2.16	0.45
2:N:17:LEU:O	2:N:21:GLU:N	2.35	0.45
2:P:56:TYR:HD2	2:P:141:LEU:HD22	1.80	0.45
2:Q:47:ILE:HA	2:Q:55:GLN:HE22	1.80	0.45
2:U:70:TRP:N	2:U:70:TRP:CD1	2.84	0.45
2:U:250:LEU:HA	2:U:254:MET:HE1	1.98	0.45
2:H:52:SER:O	2:H:86:LYS:NZ	2.50	0.45
2:D:90:ILE:HG21	2:D:140:ALA:HB1	1.98	0.45
2:N:6:PHE:HB2	2:N:32:ILE:HD13	1.97	0.45
2:U:225:LYS:HB3	2:V:225:LYS:HD3	1.97	0.45
1:g:0:A:OP2	2:M:227:ARG:NH1	2.43	0.45
2:F:8:HIS:CE1	2:F:32:ILE:HD11	2.51	0.45
2:C:239:GLU:HG2	2:C:257:LYS:HA	1.97	0.45
2:D:5:PHE:HB3	2:D:43:LEU:HD22	1.99	0.45
2:I:3:GLN:HG2	2:I:55:GLN:HB3	1.97	0.45
2:L:148:ARG:H	2:L:148:ARG:HG2	1.63	0.45
2:L:154:MET:HE1	2:L:161:GLU:CD	2.41	0.45
2:M:210:GLY:O	2:M:217:TYR:OH	2.26	0.45
2:O:217:TYR:O	2:O:221:THR:HG23	2.16	0.45
1:d:3:A:O2'	2:E:236:ARG:NH2	2.49	0.45
2:G:61:LEU:N	2:G:92:ILE:O	2.49	0.45
2:I:5:PHE:HE1	2:I:31:TRP:CD1	2.34	0.45
2:O:202:PHE:O	2:O:203:ASP:OD1	2.34	0.45
2:S:89:ILE:O	2:S:120:LEU:HD21	2.16	0.45
1:d:0:A:P	2:H:226:ASN:HB2	2.57	0.45
2:G:201:LYS:HA	2:G:201:LYS:HD3	1.66	0.45
2:C:84:LYS:HB3	2:C:84:LYS:HE2	1.77	0.45
2:K:201:LYS:HA	2:K:201:LYS:HD3	1.64	0.45
2:M:213:PRO:HG2	2:M:216:LEU:HB2	1.98	0.45
2:N:45:GLN:CD	2:N:45:GLN:H	2.25	0.45
2:O:56:TYR:CE1	2:O:88:LYS:HD2	2.52	0.45
2:O:96:ASN:O	2:O:100:LEU:HD23	2.17	0.45
2:Q:187:GLU:HA	2:Q:190:ILE:HD12	1.99	0.45
2:V:56:TYR:OH	2:V:145:GLU:OE1	2.25	0.45
2:V:88:LYS:HE3	2:V:88:LYS:HB3	1.79	0.45
2:I:152:ILE:HD12	2:I:165:VAL:HG22	1.97	0.45
2:J:125:PHE:CZ	2:J:130:MET:HE1	2.52	0.45
2:K:5:PHE:N	2:K:55:GLN:NE2	2.63	0.45
2:M:147:VAL:HB	2:M:169:ILE:HG12	1.99	0.45
2:M:222:LEU:HA	2:N:222:LEU:HD13	1.99	0.45
2:O:126:ASP:OD1	2:O:126:ASP:N	2.49	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Q:57:PHE:HB3	2:Q:89:ILE:HG23	1.98	0.45
2:Q:148:ARG:HG3	2:Q:148:ARG:NH1	2.31	0.45
2:R:125:PHE:CE1	2:R:133:SER:HB3	2.52	0.45
2:U:62:SER:H	2:U:65:TYR:HB3	1.81	0.45
2:U:145:GLU:HG3	2:U:146:ALA:N	2.31	0.45
2:U:189:PHE:HD1	2:U:199:PRO:HG2	1.81	0.45
2:G:150:GLU:HG3	2:G:166:GLU:HG3	1.98	0.45
2:G:255:VAL:HG11	2:H:176:VAL:HG12	1.99	0.45
2:A:84:LYS:HB3	2:A:84:LYS:HE2	1.75	0.45
2:C:96:ASN:OD1	2:C:97:ARG:N	2.49	0.45
2:D:191:ALA:HA	2:D:198:LYS:HG3	1.98	0.45
2:K:105:LEU:H	2:K:105:LEU:HD22	1.82	0.45
2:N:53:LYS:HE2	2:N:56:TYR:CE1	2.51	0.45
2:N:102:LEU:O	2:N:110:ARG:NE	2.45	0.45
2:O:8:HIS:CD2	2:O:16:VAL:HG21	2.51	0.45
2:R:51:ILE:HG13	2:R:52:SER:H	1.82	0.45
2:R:115:SER:OG	2:R:119:ARG:NH2	2.41	0.45
2:R:185:LYS:NZ	2:V:171:GLY:O	2.50	0.45
2:V:11:LYS:HA	2:V:11:LYS:HD3	1.74	0.45
2:S:57:PHE:HB3	2:S:89:ILE:HG23	1.99	0.45
2:H:60:PHE:CD1	2:H:94:LEU:HD21	2.52	0.45
2:H:115:SER:O	2:H:119:ARG:NE	2.50	0.45
2:K:197:GLN:O	2:K:198:LYS:HG2	2.17	0.45
2:K:210:GLY:O	2:K:217:TYR:OH	2.20	0.45
2:L:66:LEU:HB3	2:L:105:LEU:HD21	1.99	0.45
2:N:48:ILE:N	2:N:48:ILE:HD12	2.31	0.45
2:Q:9:ASN:HB3	2:Q:64:GLU:OE2	2.16	0.45
2:Q:47:ILE:HD13	2:Q:55:GLN:NE2	2.32	0.45
2:C:57:PHE:HB3	2:C:89:ILE:HA	1.99	0.45
2:C:127:PRO:HA	2:C:130:MET:HE1	1.99	0.45
2:J:92:ILE:HG23	2:J:125:PHE:HB2	1.98	0.45
2:K:155:ILE:C	2:K:155:ILE:HD12	2.42	0.45
2:M:9:ASN:HB3	2:M:64:GLU:OE1	2.17	0.45
2:N:132:ARG:HD3	2:N:132:ARG:C	2.42	0.45
2:H:66:LEU:HB3	2:H:105:LEU:HD11	1.99	0.45
2:H:229:THR:HG23	2:H:244:TYR:O	2.17	0.45
2:A:89:ILE:O	2:A:120:LEU:HD21	2.17	0.45
2:D:56:TYR:HE2	2:D:141:LEU:O	2.00	0.45
2:J:65:TYR:CE2	2:J:71:CYS:HB3	2.52	0.45
2:R:73:ASP:O	2:R:77:GLN:HG2	2.17	0.45
2:V:217:TYR:O	2:V:221:THR:HG23	2.17	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:S:187:GLU:HA	2:S:190:ILE:HD12	1.99	0.45
2:S:255:VAL:HG11	2:T:176:VAL:HG12	1.98	0.45
2:T:73:ASP:O	2:T:77:GLN:HG3	2.17	0.45
2:T:82:HIS:ND1	2:T:87:VAL:O	2.28	0.45
1:e:1:A:O2'	2:K:236:ARG:NH2	2.50	0.44
2:G:185:LYS:HD2	2:G:187:GLU:H	1.82	0.44
2:I:53:LYS:HE2	2:I:56:TYR:CE2	2.52	0.44
2:I:88:LYS:HB3	2:I:88:LYS:HE3	1.81	0.44
2:I:244:TYR:HB2	2:J:222:LEU:HD23	1.99	0.44
2:J:254:MET:HE3	2:J:254:MET:HB3	1.76	0.44
2:O:55:GLN:HE21	2:O:87:VAL:HG21	1.82	0.44
2:V:23:LEU:HD23	2:V:23:LEU:HA	1.85	0.44
2:S:42:SER:HB3	2:S:45:GLN:HE22	1.83	0.44
2:S:188:ASP:OD1	2:S:188:ASP:N	2.50	0.44
2:T:42:SER:C	2:T:45:GLN:HE22	2.25	0.44
2:T:70:TRP:CD1	2:T:70:TRP:C	2.95	0.44
2:K:195:ASN:OD1	2:K:196:GLU:N	2.51	0.44
2:P:67:LYS:HE3	2:P:67:LYS:HB3	1.76	0.44
2:G:147:VAL:HA	2:G:170:PRO:HD3	2.00	0.44
2:I:65:TYR:CZ	2:I:71:CYS:HB3	2.52	0.44
2:L:227:ARG:HA	2:L:227:ARG:HD2	1.85	0.44
2:N:8:HIS:CD2	2:N:16:VAL:HG21	2.51	0.44
2:R:82:HIS:ND1	2:R:87:VAL:O	2.43	0.44
2:S:5:PHE:CD1	2:S:31:TRP:HB2	2.52	0.44
2:G:57:PHE:HB3	2:G:89:ILE:HG23	2.00	0.44
2:H:17:LEU:O	2:H:21:GLU:N	2.35	0.44
2:H:51:ILE:HG12	2:H:52:SER:H	1.82	0.44
2:E:96:ASN:HB3	2:E:99:GLN:HE22	1.81	0.44
2:B:57:PHE:HD2	2:B:89:ILE:HG23	1.82	0.44
2:B:96:ASN:HB2	2:B:99:GLN:OE1	2.17	0.44
2:B:154:MET:HE2	2:B:154:MET:HB2	1.85	0.44
2:C:154:MET:HE3	2:C:154:MET:HB3	1.76	0.44
2:K:5:PHE:CD1	2:K:31:TRP:HB2	2.52	0.44
2:K:96:ASN:OD1	2:K:97:ARG:N	2.51	0.44
2:M:154:MET:HE2	2:M:154:MET:HB2	1.80	0.44
2:Q:210:GLY:O	2:Q:217:TYR:OH	2.28	0.44
2:B:51:ILE:HG13	2:B:52:SER:H	1.83	0.44
2:B:57:PHE:HB3	2:B:89:ILE:HG12	2.00	0.44
2:C:105:LEU:HB3	2:C:109:ARG:HB2	2.00	0.44
2:I:187:GLU:HA	2:I:190:ILE:HD12	2.00	0.44
2:J:53:LYS:HE2	2:J:56:TYR:CZ	2.52	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:K:5:PHE:HD1	2:K:31:TRP:HB2	1.83	0.44
2:M:244:TYR:HB2	2:N:222:LEU:HD23	2.00	0.44
2:O:15:ILE:HD11	2:O:125:PHE:CE2	2.52	0.44
2:R:101:ASP:OD1	2:R:101:ASP:N	2.37	0.44
2:U:96:ASN:HB3	2:U:99:GLN:NE2	2.33	0.44
2:T:100:LEU:HD23	2:T:100:LEU:HA	1.79	0.44
2:F:203:ASP:C	2:F:203:ASP:OD1	2.60	0.44
2:B:55:GLN:O	2:B:87:VAL:HG23	2.18	0.44
2:D:188:ASP:O	2:D:198:LYS:NZ	2.37	0.44
2:I:225:LYS:HB3	2:J:225:LYS:HD3	2.00	0.44
2:K:63:ASN:ND2	2:K:95:THR:HG21	2.33	0.44
2:M:148:ARG:HB2	2:M:168:LYS:HG3	1.99	0.44
2:N:210:GLY:O	2:N:217:TYR:OH	2.28	0.44
2:F:97:ARG:NE	2:F:117:LEU:HD13	2.31	0.44
2:M:57:PHE:HB3	2:M:89:ILE:HG23	1.99	0.44
2:M:148:ARG:NH1	2:M:148:ARG:HG3	2.33	0.44
2:U:13:LYS:O	2:U:17:LEU:HD22	2.17	0.44
2:U:217:TYR:O	2:U:221:THR:HG23	2.18	0.44
2:G:66:LEU:HD22	2:G:105:LEU:HD21	2.00	0.44
2:G:142:TRP:HB3	2:G:148:ARG:NE	2.33	0.44
2:F:100:LEU:HD23	2:F:100:LEU:HA	1.85	0.44
2:B:126:ASP:OD1	2:B:126:ASP:N	2.50	0.44
2:D:112:PHE:O	2:D:116:ILE:HG23	2.18	0.44
2:I:148:ARG:HD3	2:I:170:PRO:HD3	2.00	0.44
2:K:5:PHE:CD2	2:K:55:GLN:HG3	2.52	0.44
2:R:90:ILE:HD13	2:R:90:ILE:HA	1.90	0.44
2:T:55:GLN:O	2:T:87:VAL:HG23	2.18	0.44
2:T:150:GLU:OE2	2:T:168:LYS:NZ	2.40	0.44
2:T:187:GLU:OE2	2:T:187:GLU:HA	2.18	0.44
2:F:92:ILE:HD13	2:F:123:VAL:HG13	1.98	0.44
2:F:154:MET:HE2	2:F:154:MET:HB3	1.73	0.44
2:A:88:LYS:HE3	2:A:88:LYS:HB3	1.80	0.44
2:O:6:PHE:HE2	2:O:19:VAL:HG12	1.82	0.44
2:O:15:ILE:HD13	2:O:94:LEU:HD12	1.98	0.44
2:O:82:HIS:HD1	2:O:88:LYS:HA	1.83	0.44
2:Q:176:VAL:HG12	2:R:241:ILE:HD11	1.99	0.44
2:S:51:ILE:HG13	2:S:52:SER:H	1.83	0.44
2:T:57:PHE:HB3	2:T:89:ILE:HG23	1.99	0.44
2:G:17:LEU:O	2:G:21:GLU:N	2.40	0.43
2:H:119:ARG:NH1	2:H:119:ARG:HB2	2.32	0.43
2:E:53:LYS:HE2	2:E:56:TYR:CE2	2.53	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:F:66:LEU:O	2:F:72:TRP:NE1	2.32	0.43
2:F:82:HIS:ND1	2:F:88:LYS:HA	2.32	0.43
2:C:217:TYR:O	2:C:221:THR:HG23	2.18	0.43
2:D:51:ILE:HG23	2:D:53:LYS:N	2.33	0.43
2:D:57:PHE:HB3	2:D:89:ILE:HG23	2.00	0.43
2:I:189:PHE:CD1	2:I:199:PRO:HG2	2.53	0.43
2:J:8:HIS:CG	2:J:16:VAL:HG21	2.53	0.43
2:K:84:LYS:HB3	2:K:84:LYS:HE2	1.78	0.43
2:M:21:GLU:HA	2:M:24:ARG:HB3	1.99	0.43
2:M:176:VAL:HG12	2:N:241:ILE:HD11	2.00	0.43
2:T:5:PHE:N	2:T:55:GLN:OE1	2.50	0.43
2:H:62:SER:HB3	2:H:94:LEU:HD12	1.99	0.43
2:E:148:ARG:HG3	2:E:148:ARG:NH1	2.32	0.43
2:D:148:ARG:HH12	2:D:170:PRO:HB3	1.82	0.43
2:L:5:PHE:N	2:L:55:GLN:OE1	2.49	0.43
2:P:8:HIS:CE1	2:P:32:ILE:HD11	2.53	0.43
2:Q:255:VAL:HG11	2:R:176:VAL:HB	2.00	0.43
2:G:104:ALA:O	2:M:159:GLY:N	2.51	0.43
2:D:125:PHE:CE2	2:D:133:SER:HB3	2.53	0.43
2:K:112:PHE:CD1	2:K:112:PHE:C	2.96	0.43
2:P:185:LYS:HZ2	2:P:187:GLU:HG3	1.84	0.43
2:P:197:GLN:OE1	2:P:197:GLN:N	2.38	0.43
2:S:218:ALA:HB1	2:T:221:THR:HG21	1.99	0.43
2:T:62:SER:O	2:T:66:LEU:HG	2.19	0.43
1:e:0:A:OP2	2:I:227:ARG:NH1	2.43	0.43
2:B:53:LYS:HE2	2:B:56:TYR:CZ	2.54	0.43
2:B:84:LYS:HD3	2:B:84:LYS:N	2.34	0.43
2:I:203:ASP:O	2:I:203:ASP:OD2	2.36	0.43
2:J:11:LYS:HE3	2:J:12:ASP:OD1	2.18	0.43
2:L:51:ILE:HG23	2:L:53:LYS:N	2.33	0.43
2:N:48:ILE:HD12	2:N:48:ILE:H	1.83	0.43
2:Q:12:ASP:O	2:Q:15:ILE:HG22	2.18	0.43
2:U:73:ASP:O	2:U:77:GLN:HG3	2.18	0.43
2:V:114:GLU:O	2:V:118:THR:HG23	2.18	0.43
2:V:117:LEU:HD23	2:V:117:LEU:HA	1.82	0.43
2:S:82:HIS:HD1	2:S:88:LYS:HA	1.83	0.43
2:T:132:ARG:HH12	2:T:133:SER:HA	1.83	0.43
1:b:1:A:C5	2:C:213:PRO:HB3	2.54	0.43
2:G:90:ILE:HA	2:G:91:PRO:HD3	1.90	0.43
2:G:125:PHE:CD2	2:G:133:SER:HB3	2.53	0.43
2:G:184:LEU:HD13	2:G:184:LEU:O	2.18	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:E:89:ILE:O	2:E:120:LEU:HD21	2.19	0.43
2:B:185:LYS:HB2	2:B:188:ASP:OD2	2.19	0.43
2:O:64:GLU:C	2:O:64:GLU:OE1	2.61	0.43
2:O:227:ARG:HA	2:O:227:ARG:HD2	1.90	0.43
2:Q:147:VAL:HA	2:Q:170:PRO:HD3	2.01	0.43
2:R:17:LEU:HD12	2:R:18:GLU:N	2.33	0.43
2:R:169:ILE:HG23	2:R:174:LEU:HD21	2.00	0.43
2:S:51:ILE:HG23	2:S:53:LYS:H	1.83	0.43
2:G:11:LYS:HE2	2:G:64:GLU:HG3	2.00	0.43
2:F:88:LYS:HE3	2:F:88:LYS:HB3	1.80	0.43
2:C:15:ILE:HG21	2:C:94:LEU:HD11	2.01	0.43
2:N:189:PHE:HD1	2:N:199:PRO:HG2	1.83	0.43
2:U:8:HIS:CD2	2:U:16:VAL:HG21	2.53	0.43
2:T:191:ALA:HA	2:T:198:LYS:HG3	2.01	0.43
2:G:51:ILE:HG23	2:G:53:LYS:H	1.83	0.43
2:H:53:LYS:HE2	2:H:56:TYR:CE2	2.54	0.43
2:E:132:ARG:HG2	2:E:132:ARG:HH11	1.83	0.43
2:A:159:GLY:N	2:U:104:ALA:O	2.50	0.43
2:B:42:SER:HB3	2:B:45:GLN:HE22	1.82	0.43
2:C:213:PRO:HG2	2:C:216:LEU:HB2	2.01	0.43
2:K:61:LEU:HB2	2:K:93:LEU:HD23	2.00	0.43
2:K:67:LYS:HE2	2:K:101:ASP:OD2	2.19	0.43
2:M:16:VAL:HG23	2:M:17:LEU:HD23	1.99	0.43
2:P:126:ASP:OD1	2:P:126:ASP:N	2.52	0.43
2:S:3:GLN:HB2	2:S:55:GLN:HB3	2.00	0.43
2:S:251:ALA:H	2:S:254:MET:HE3	1.83	0.43
2:G:91:PRO:HG2	2:G:122:TYR:HB3	2.01	0.43
2:D:220:LEU:HD23	2:D:220:LEU:HA	1.88	0.43
2:N:154:MET:HE2	2:N:154:MET:HB2	1.79	0.43
2:O:6:PHE:HZ	2:O:23:LEU:HD12	1.84	0.43
2:O:187:GLU:OE2	2:O:187:GLU:HA	2.19	0.43
2:Q:14:LYS:NZ	2:Q:15:ILE:HD12	2.33	0.43
2:Q:24:ARG:HG2	2:Q:24:ARG:HH11	1.84	0.43
2:V:47:ILE:HD12	2:V:47:ILE:C	2.44	0.43
2:V:163:GLN:HG2	2:V:206:VAL:HA	2.00	0.43
2:G:97:ARG:NH2	2:G:117:LEU:HB3	2.34	0.43
2:N:132:ARG:HD3	2:N:133:SER:N	2.34	0.43
2:O:82:HIS:ND1	2:O:88:LYS:HA	2.34	0.43
2:Q:92:ILE:HA	2:Q:123:VAL:HG13	2.01	0.43
2:R:189:PHE:HD1	2:R:199:PRO:HG2	1.84	0.43
2:T:22:HIS:CG	2:T:134:LEU:HD13	2.53	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:23:LEU:HD23	2:B:23:LEU:HA	1.90	0.43
2:C:13:LYS:O	2:C:17:LEU:HD12	2.19	0.43
2:C:126:ASP:OD1	2:C:126:ASP:N	2.50	0.43
2:P:166:GLU:HG2	2:P:209:TYR:HB3	2.01	0.43
2:J:195:ASN:C	2:J:195:ASN:OD1	2.62	0.42
2:L:42:SER:HB3	2:L:45:GLN:NE2	2.33	0.42
2:U:42:SER:HB3	2:U:45:GLN:NE2	2.34	0.42
2:U:153:ARG:HB2	2:U:164:VAL:HG12	2.01	0.42
2:V:55:GLN:HE21	2:V:87:VAL:HG21	1.84	0.42
2:B:169:ILE:HG23	2:B:174:LEU:HD21	2.01	0.42
2:K:213:PRO:HG2	2:K:216:LEU:HB2	2.01	0.42
2:N:11:LYS:HA	2:N:11:LYS:HD3	1.74	0.42
2:N:126:ASP:OD1	2:N:133:SER:OG	2.37	0.42
2:R:125:PHE:HE1	2:R:133:SER:HB3	1.84	0.42
2:S:28:VAL:HG11	2:S:141:LEU:HD21	2.00	0.42
2:S:46:GLN:OE1	2:S:46:GLN:N	2.45	0.42
2:S:154:MET:HE3	2:S:161:GLU:OE2	2.19	0.42
2:T:79:TYR:CE2	2:T:116:ILE:HG22	2.54	0.42
2:D:51:ILE:HG13	2:D:52:SER:H	1.84	0.42
2:U:89:ILE:O	2:U:120:LEU:HD21	2.19	0.42
2:S:201:LYS:HA	2:S:201:LYS:HD3	1.66	0.42
2:G:66:LEU:HD13	2:G:105:LEU:HD21	2.01	0.42
2:H:119:ARG:HB2	2:H:119:ARG:CZ	2.49	0.42
2:F:191:ALA:HA	2:F:198:LYS:HG3	2.01	0.42
2:K:117:LEU:HD23	2:K:117:LEU:HA	1.84	0.42
2:O:139:GLU:C	2:O:139:GLU:OE1	2.62	0.42
2:Q:222:LEU:HA	2:R:222:LEU:HD13	2.00	0.42
2:Q:244:TYR:HE1	2:Q:246:LYS:HB2	1.84	0.42
2:U:222:LEU:HD13	2:V:222:LEU:HA	2.02	0.42
2:E:225:LYS:HD3	2:F:225:LYS:HB3	2.01	0.42
2:D:62:SER:O	2:D:66:LEU:HG	2.18	0.42
2:D:230:VAL:HG23	2:D:243:VAL:HG23	2.02	0.42
2:J:190:ILE:HA	2:J:200:VAL:HB	2.00	0.42
2:K:115:SER:O	2:K:119:ARG:NH1	2.52	0.42
2:M:104:ALA:O	2:Q:159:GLY:N	2.53	0.42
2:M:246:LYS:NZ	2:O:235:SER:O	2.50	0.42
2:R:127:PRO:HA	2:R:130:MET:HE1	2.00	0.42
2:G:43:LEU:O	2:G:47:ILE:HG12	2.19	0.42
2:O:97:ARG:NH2	2:O:114:GLU:OE2	2.52	0.42
2:Q:82:HIS:HD1	2:Q:88:LYS:HA	1.84	0.42
2:U:12:ASP:O	2:U:15:ILE:HG22	2.19	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:U:213:PRO:HG2	2:U:216:LEU:HB2	2.02	0.42
2:F:73:ASP:O	2:F:77:GLN:HG3	2.20	0.42
2:K:239:GLU:HB3	2:K:255:VAL:HG13	2.02	0.42
2:L:254:MET:HE3	2:L:254:MET:HB2	1.75	0.42
2:O:77:GLN:HA	2:O:80:ALA:HB3	2.01	0.42
2:O:117:LEU:HD23	2:O:117:LEU:HA	1.84	0.42
2:R:51:ILE:HG23	2:R:53:LYS:H	1.83	0.42
2:R:127:PRO:CD	2:R:128:HIS:N	2.83	0.42
2:R:239:GLU:HG2	2:R:257:LYS:HA	2.02	0.42
2:S:155:ILE:HD11	2:S:164:VAL:HG23	2.00	0.42
2:S:250:LEU:HA	2:S:254:MET:HE1	2.02	0.42
2:E:79:TYR:HA	2:E:82:HIS:HB3	2.02	0.42
2:F:126:ASP:OD1	2:F:126:ASP:N	2.52	0.42
2:I:142:TRP:O	2:I:148:ARG:NH2	2.48	0.42
2:J:15:ILE:HD12	2:J:15:ILE:C	2.44	0.42
2:L:237:THR:HG23	2:L:239:GLU:HG2	2.00	0.42
2:M:66:LEU:O	2:M:72:TRP:NE1	2.50	0.42
2:M:105:LEU:H	2:M:105:LEU:HD22	1.85	0.42
2:N:254:MET:HE3	2:N:254:MET:HB3	1.85	0.42
2:O:239:GLU:HG2	2:O:257:LYS:HA	2.02	0.42
2:Q:55:GLN:O	2:Q:87:VAL:HG23	2.20	0.42
2:Q:214:ASN:HB2	2:R:217:TYR:HD2	1.85	0.42
2:U:105:LEU:HD22	2:U:105:LEU:H	1.84	0.42
2:S:51:ILE:HG23	2:S:53:LYS:N	2.35	0.42
2:E:13:LYS:O	2:E:17:LEU:HD22	2.19	0.42
2:M:225:LYS:HB3	2:N:225:LYS:HD3	2.01	0.42
2:O:64:GLU:HA	2:O:67:LYS:HE2	2.02	0.42
2:U:27:LEU:HD23	2:U:27:LEU:HA	1.83	0.42
2:U:225:LYS:HA	2:U:244:TYR:CE2	2.55	0.42
2:T:53:LYS:HE2	2:T:56:TYR:CE2	2.55	0.42
2:H:61:LEU:HA	2:H:65:TYR:CD1	2.54	0.42
2:H:73:ASP:O	2:H:77:GLN:HG3	2.19	0.42
2:H:132:ARG:NH1	2:H:133:SER:OG	2.53	0.42
2:H:145:GLU:HG2	2:H:146:ALA:H	1.85	0.42
2:H:203:ASP:OD1	2:H:246:LYS:NZ	2.47	0.42
2:D:129:ASN:HB3	2:D:132:ARG:NH2	2.34	0.42
2:J:245:SER:OG	2:J:250:LEU:O	2.23	0.42
2:L:46:GLN:OE1	2:L:46:GLN:N	2.47	0.42
2:N:167:PHE:CZ	2:N:217:TYR:HE1	2.38	0.42
2:P:96:ASN:HB3	2:P:99:GLN:NE2	2.35	0.42
2:Q:51:ILE:HG13	2:Q:52:SER:H	1.84	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:Q:189:PHE:HD1	2:Q:199:PRO:HG2	1.84	0.42
2:U:225:LYS:HD3	2:V:225:LYS:HB3	2.00	0.42
2:E:105:LEU:HB3	2:E:109:ARG:HB2	2.01	0.41
2:E:126:ASP:OD1	2:E:126:ASP:N	2.53	0.41
2:J:132:ARG:HG2	2:J:132:ARG:HH11	1.84	0.41
2:J:167:PHE:CZ	2:J:217:TYR:HE1	2.38	0.41
2:O:225:LYS:HA	2:O:244:TYR:CE2	2.55	0.41
2:P:51:ILE:HG13	2:P:52:SER:H	1.85	0.41
2:R:11:LYS:HA	2:R:11:LYS:HD3	1.74	0.41
2:T:3:GLN:CG	2:T:31:TRP:HE1	2.31	0.41
2:E:51:ILE:HG13	2:E:52:SER:H	1.85	0.41
2:A:201:LYS:HA	2:A:201:LYS:HD3	1.65	0.41
2:D:5:PHE:N	2:D:55:GLN:OE1	2.51	0.41
2:I:96:ASN:HB3	2:I:99:GLN:NE2	2.35	0.41
2:K:4:ALA:HA	2:K:55:GLN:HE22	1.85	0.41
2:M:184:LEU:O	2:M:184:LEU:HD13	2.20	0.41
2:P:51:ILE:HG23	2:P:53:LYS:H	1.85	0.41
2:U:97:ARG:HH11	2:U:97:ARG:HG2	1.85	0.41
2:T:84:LYS:HE2	2:T:84:LYS:N	2.34	0.41
2:H:96:ASN:ND2	2:H:124:GLU:OE2	2.53	0.41
2:E:225:LYS:HA	2:E:244:TYR:CE2	2.55	0.41
2:A:215:TRP:HE1	2:B:234:ASN:ND2	2.19	0.41
2:C:62:SER:H	2:C:65:TYR:HB3	1.85	0.41
2:C:250:LEU:HA	2:C:254:MET:HE1	2.01	0.41
2:D:88:LYS:HE3	2:D:88:LYS:HB3	1.80	0.41
2:K:166:GLU:OE1	2:K:167:PHE:N	2.53	0.41
2:L:79:TYR:HA	2:L:82:HIS:HB3	2.02	0.41
2:P:220:LEU:HD23	2:P:220:LEU:HA	1.86	0.41
2:R:51:ILE:HG23	2:R:53:LYS:N	2.35	0.41
2:T:115:SER:HA	2:T:119:ARG:NH1	2.36	0.41
1:b:0:A:P	2:B:226:ASN:HB2	2.61	0.41
2:G:70:TRP:HZ2	2:E:97:ARG:HH22	1.68	0.41
2:I:179:LEU:HD23	2:I:179:LEU:HA	1.89	0.41
2:L:100:LEU:HD23	2:L:100:LEU:HA	1.85	0.41
2:O:210:GLY:O	2:O:217:TYR:OH	2.30	0.41
2:U:169:ILE:HD13	2:U:174:LEU:HD11	2.02	0.41
2:G:154:MET:HE2	2:G:154:MET:HB3	1.85	0.41
2:G:166:GLU:OE1	2:G:167:PHE:N	2.53	0.41
2:E:91:PRO:HD2	2:E:122:TYR:HA	2.03	0.41
2:A:148:ARG:HH11	2:A:148:ARG:HG3	1.85	0.41
2:A:179:LEU:HD23	2:A:179:LEU:HA	1.86	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:A:213:PRO:HG2	2:A:216:LEU:HB2	2.02	0.41
2:D:148:ARG:NH1	2:D:170:PRO:HB3	2.36	0.41
2:J:88:LYS:HE3	2:J:88:LYS:HB3	1.83	0.41
2:K:156:LYS:HE2	2:K:159:GLY:HA2	2.03	0.41
2:P:82:HIS:ND1	2:P:88:LYS:HA	2.36	0.41
2:Q:185:LYS:O	2:Q:185:LYS:HG3	2.19	0.41
2:Q:203:ASP:OD1	2:Q:203:ASP:C	2.63	0.41
2:U:55:GLN:N	2:U:55:GLN:OE1	2.53	0.41
2:U:88:LYS:HE3	2:U:88:LYS:HB3	1.82	0.41
2:V:163:GLN:O	2:V:207:ALA:N	2.53	0.41
2:S:8:HIS:CE1	2:S:32:ILE:HD11	2.55	0.41
2:H:61:LEU:HD23	2:H:65:TYR:CE1	2.56	0.41
2:A:222:LEU:HA	2:B:222:LEU:HD13	2.02	0.41
2:M:203:ASP:OD1	2:M:203:ASP:C	2.64	0.41
2:O:23:LEU:HD22	2:O:141:LEU:HD23	2.03	0.41
2:R:100:LEU:HD23	2:R:100:LEU:HA	1.84	0.41
2:U:8:HIS:CE1	2:U:32:ILE:HD11	2.56	0.41
2:V:51:ILE:HG23	2:V:53:LYS:H	1.85	0.41
2:S:27:LEU:HD23	2:S:152:ILE:HD11	2.03	0.41
2:G:162:LEU:HD21	2:G:207:ALA:HB3	2.02	0.41
2:G:225:LYS:HD3	2:H:225:LYS:HB3	2.01	0.41
2:F:13:LYS:O	2:F:17:LEU:HD23	2.20	0.41
2:C:150:GLU:OE2	2:C:168:LYS:NZ	2.52	0.41
2:D:191:ALA:HB2	2:D:198:LYS:HB2	2.03	0.41
2:J:42:SER:HB3	2:J:45:GLN:NE2	2.34	0.41
2:Q:88:LYS:HB3	2:Q:88:LYS:HE3	1.81	0.41
2:R:81:LEU:HA	2:R:84:LYS:HG2	2.01	0.41
2:V:77:GLN:O	2:V:81:LEU:HG	2.21	0.41
2:F:130:MET:HE2	2:F:130:MET:HA	2.03	0.41
2:F:139:GLU:OE2	2:F:148:ARG:NH1	2.54	0.41
2:A:100:LEU:HD23	2:A:100:LEU:HA	1.87	0.41
2:I:8:HIS:CE1	2:I:32:ILE:HD11	2.56	0.41
2:J:169:ILE:HG23	2:J:174:LEU:HD21	2.03	0.41
2:K:189:PHE:CD1	2:K:199:PRO:HG2	2.56	0.41
2:L:6:PHE:HE1	2:L:20:LEU:HB2	1.86	0.41
2:M:132:ARG:HB2	2:M:132:ARG:NH1	2.33	0.41
2:N:133:SER:O	2:N:137:VAL:HG12	2.21	0.41
2:O:3:GLN:HG2	2:O:54:SER:O	2.21	0.41
2:P:65:TYR:CZ	2:P:71:CYS:HB3	2.55	0.41
2:U:189:PHE:CD1	2:U:199:PRO:HG2	2.56	0.41
2:S:163:GLN:HG2	2:S:205:PRO:O	2.19	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:G:48:ILE:HG23	2:G:86:LYS:NZ	2.36	0.41
2:G:84:LYS:HB3	2:G:84:LYS:HE2	1.75	0.41
2:G:132:ARG:HG3	2:G:132:ARG:HH11	1.86	0.41
2:G:244:TYR:HB2	2:H:222:LEU:HD23	2.03	0.41
2:A:184:LEU:HD13	2:A:184:LEU:O	2.21	0.41
2:B:150:GLU:OE2	2:B:168:LYS:NZ	2.46	0.41
2:C:152:ILE:HD12	2:C:165:VAL:HG22	2.02	0.41
2:D:237:THR:OG1	2:D:239:GLU:OE2	2.28	0.41
2:I:197:GLN:O	2:I:198:LYS:HG2	2.21	0.41
2:J:79:TYR:HA	2:J:82:HIS:HB3	2.02	0.41
2:K:90:ILE:HA	2:K:91:PRO:HD3	1.86	0.41
2:M:189:PHE:CD1	2:M:199:PRO:HG2	2.53	0.41
2:N:15:ILE:HD12	2:N:15:ILE:HA	1.95	0.41
2:N:126:ASP:OD1	2:N:126:ASP:N	2.54	0.41
2:P:51:ILE:HG23	2:P:53:LYS:N	2.36	0.41
2:P:60:PHE:CD1	2:P:92:ILE:HD11	2.56	0.41
2:P:62:SER:H	2:P:65:TYR:HB3	1.85	0.41
2:Q:51:ILE:HG23	2:Q:53:LYS:N	2.36	0.41
2:R:106:THR:OG1	2:R:107:ASP:N	2.54	0.41
2:R:129:ASN:HB3	2:R:132:ARG:HH22	1.84	0.41
2:T:117:LEU:HD23	2:T:117:LEU:HA	1.88	0.41
2:E:57:PHE:HB3	2:E:89:ILE:HG12	2.03	0.41
2:E:152:ILE:H	2:E:152:ILE:HG12	1.65	0.41
2:C:142:TRP:HB3	2:C:148:ARG:CD	2.51	0.41
2:I:246:LYS:NZ	2:K:235:SER:O	2.43	0.41
2:J:97:ARG:HE	2:J:117:LEU:HD13	1.86	0.41
2:M:53:LYS:HE2	2:M:56:TYR:CE1	2.55	0.41
2:P:42:SER:HB3	2:P:45:GLN:HE22	1.86	0.41
2:P:132:ARG:HG2	2:P:132:ARG:HH11	1.86	0.41
2:Q:62:SER:H	2:Q:65:TYR:HB3	1.86	0.41
2:V:13:LYS:O	2:V:17:LEU:HD22	2.21	0.41
2:V:119:ARG:HB2	2:V:119:ARG:NH1	2.36	0.41
2:E:121:LYS:HE2	2:E:121:LYS:HB2	1.84	0.40
2:F:51:ILE:HG13	2:F:52:SER:H	1.85	0.40
2:K:4:ALA:O	2:K:31:TRP:N	2.41	0.40
2:M:126:ASP:OD1	2:M:126:ASP:C	2.64	0.40
2:O:12:ASP:O	2:O:16:VAL:HG23	2.21	0.40
2:P:88:LYS:HE3	2:P:88:LYS:HB3	1.80	0.40
2:U:12:ASP:O	2:U:16:VAL:HG23	2.21	0.40
2:T:91:PRO:HD3	2:T:120:LEU:HD22	2.02	0.40
2:G:23:LEU:HD23	2:G:23:LEU:HA	1.91	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:H:15:ILE:HD12	2:H:16:VAL:N	2.36	0.40
2:H:89:ILE:O	2:H:120:LEU:HD21	2.22	0.40
2:C:100:LEU:HD23	2:C:100:LEU:HA	1.84	0.40
2:D:97:ARG:HE	2:D:117:LEU:HD13	1.85	0.40
2:L:8:HIS:CG	2:L:16:VAL:HG21	2.56	0.40
2:O:189:PHE:CD1	2:O:199:PRO:HG2	2.55	0.40
2:O:242:CYS:O	2:O:253:GLY:N	2.54	0.40
2:V:189:PHE:HD1	2:V:199:PRO:HG2	1.87	0.40
2:G:148:ARG:N	2:G:168:LYS:O	2.38	0.40
2:G:233:PHE:HB2	2:G:240:TYR:CE1	2.56	0.40
2:H:93:LEU:HB3	2:H:95:THR:O	2.21	0.40
2:A:150:GLU:OE2	2:A:168:LYS:NZ	2.41	0.40
2:B:5:PHE:CD2	2:B:31:TRP:HB2	2.56	0.40
2:D:6:PHE:HZ	2:D:23:LEU:HD12	1.86	0.40
2:D:70:TRP:H	2:D:70:TRP:HE3	1.65	0.40
2:K:100:LEU:HD12	2:K:100:LEU:HA	1.92	0.40
2:L:11:LYS:HG2	2:L:64:GLU:HG2	2.02	0.40
2:M:173:ASN:HB2	2:N:236:ARG:HH12	1.87	0.40
2:Q:32:ILE:HG23	2:Q:33:ASP:OD1	2.20	0.40
2:Q:82:HIS:ND1	2:Q:88:LYS:HA	2.37	0.40
2:G:89:ILE:O	2:G:120:LEU:HD21	2.21	0.40
2:H:11:LYS:HA	2:H:11:LYS:HD3	1.71	0.40
2:E:32:ILE:HG23	2:E:33:ASP:OD1	2.21	0.40
2:E:48:ILE:HA	2:E:86:LYS:HZ3	1.87	0.40
2:F:172:SER:O	2:F:172:SER:OG	2.39	0.40
2:A:148:ARG:NH1	2:A:148:ARG:HG3	2.36	0.40
2:B:189:PHE:HD1	2:B:199:PRO:HG2	1.87	0.40
2:D:97:ARG:NE	2:D:117:LEU:HD13	2.37	0.40
2:D:214:ASN:OD1	2:D:215:TRP:N	2.54	0.40
2:J:213:PRO:HG2	2:J:216:LEU:HB2	2.03	0.40
2:L:47:ILE:HD13	2:L:47:ILE:HA	1.99	0.40
2:L:55:GLN:O	2:L:87:VAL:HG13	2.22	0.40
2:L:189:PHE:HD1	2:L:199:PRO:HG2	1.87	0.40
2:N:213:PRO:HG2	2:N:216:LEU:HB2	2.03	0.40
2:O:213:PRO:HG2	2:O:216:LEU:HB2	2.04	0.40
2:R:6:PHE:HZ	2:R:23:LEU:HD12	1.86	0.40
2:R:117:LEU:HD23	2:R:117:LEU:HA	1.86	0.40
2:R:129:ASN:HB3	2:R:132:ARG:NH2	2.37	0.40
2:U:162:LEU:HB3	2:U:205:PRO:HB2	2.04	0.40
2:E:60:PHE:HB3	2:E:94:LEU:HD21	2.03	0.40
2:A:214:ASN:OD1	2:A:214:ASN:N	2.54	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:42:SER:HB3	2:C:45:GLN:HE22	1.86	0.40
2:C:201:LYS:HA	2:C:201:LYS:HD3	1.63	0.40
2:I:213:PRO:HG2	2:I:216:LEU:HB2	2.04	0.40
2:K:23:LEU:HD23	2:K:23:LEU:HA	1.91	0.40
2:K:251:ALA:H	2:K:254:MET:CE	2.33	0.40
2:M:94:LEU:HD13	2:M:94:LEU:HA	1.86	0.40
2:V:142:TRP:O	2:V:148:ARG:NH2	2.55	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	
2	A	245/263 (93%)	236 (96%)	9 (4%)	0	100	100
2	B	245/263 (93%)	232 (95%)	13 (5%)	0	100	100
2	C	245/263 (93%)	237 (97%)	8 (3%)	0	100	100
2	D	245/263 (93%)	236 (96%)	9 (4%)	0	100	100
2	E	245/263 (93%)	235 (96%)	10 (4%)	0	100	100
2	F	245/263 (93%)	237 (97%)	8 (3%)	0	100	100
2	G	245/263 (93%)	236 (96%)	9 (4%)	0	100	100
2	H	245/263 (93%)	238 (97%)	7 (3%)	0	100	100
2	I	245/263 (93%)	237 (97%)	8 (3%)	0	100	100
2	J	245/263 (93%)	237 (97%)	8 (3%)	0	100	100
2	K	245/263 (93%)	235 (96%)	10 (4%)	0	100	100
2	L	245/263 (93%)	236 (96%)	9 (4%)	0	100	100
2	M	245/263 (93%)	234 (96%)	11 (4%)	0	100	100
2	N	245/263 (93%)	235 (96%)	10 (4%)	0	100	100

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	O	245/263 (93%)	234 (96%)	11 (4%)	0	100	100
2	P	245/263 (93%)	238 (97%)	7 (3%)	0	100	100
2	Q	245/263 (93%)	238 (97%)	7 (3%)	0	100	100
2	R	245/263 (93%)	238 (97%)	7 (3%)	0	100	100
2	S	245/263 (93%)	234 (96%)	11 (4%)	0	100	100
2	T	245/263 (93%)	235 (96%)	10 (4%)	0	100	100
2	U	245/263 (93%)	234 (96%)	11 (4%)	0	100	100
2	V	245/263 (93%)	236 (96%)	9 (4%)	0	100	100
All	All	5390/5786 (93%)	5188 (96%)	202 (4%)	0	100	100

There are no Ramachandran outliers to report.

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	A	222/233 (95%)	218 (98%)	4 (2%)	51	77
2	B	222/233 (95%)	220 (99%)	2 (1%)	70	85
2	C	222/233 (95%)	216 (97%)	6 (3%)	39	71
2	D	222/233 (95%)	214 (96%)	8 (4%)	31	65
2	E	222/233 (95%)	216 (97%)	6 (3%)	39	71
2	F	222/233 (95%)	218 (98%)	4 (2%)	51	77
2	G	222/233 (95%)	215 (97%)	7 (3%)	34	67
2	H	222/233 (95%)	219 (99%)	3 (1%)	59	80
2	I	222/233 (95%)	216 (97%)	6 (3%)	39	71
2	J	222/233 (95%)	216 (97%)	6 (3%)	39	71
2	K	222/233 (95%)	218 (98%)	4 (2%)	51	77
2	L	222/233 (95%)	213 (96%)	9 (4%)	27	61
2	M	222/233 (95%)	217 (98%)	5 (2%)	44	74

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
2	N	222/233 (95%)	221 (100%)	1 (0%)	81 89
2	O	222/233 (95%)	218 (98%)	4 (2%)	51 77
2	P	222/233 (95%)	218 (98%)	4 (2%)	51 77
2	Q	222/233 (95%)	217 (98%)	5 (2%)	44 74
2	R	222/233 (95%)	219 (99%)	3 (1%)	59 80
2	S	222/233 (95%)	217 (98%)	5 (2%)	44 74
2	T	222/233 (95%)	221 (100%)	1 (0%)	81 89
2	U	222/233 (95%)	220 (99%)	2 (1%)	70 85
2	V	222/233 (95%)	215 (97%)	7 (3%)	34 67
All	All	4884/5126 (95%)	4782 (98%)	102 (2%)	46 75

All (102) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
2	G	73	ASP
2	G	100	LEU
2	G	102	LEU
2	G	123	VAL
2	G	206	VAL
2	G	216	LEU
2	G	247	SER
2	H	102	LEU
2	H	147	VAL
2	H	232	VAL
2	E	66	LEU
2	E	94	LEU
2	E	105	LEU
2	E	141	LEU
2	E	172	SER
2	E	176	VAL
2	F	19	VAL
2	F	130	MET
2	F	206	VAL
2	F	255	VAL
2	A	87	VAL
2	A	102	LEU
2	A	162	LEU
2	A	247	SER
2	B	131	THR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	B	147	VAL
2	C	66	LEU
2	C	69	ASP
2	C	95	THR
2	C	147	VAL
2	C	166	GLU
2	C	195	ASN
2	D	12	ASP
2	D	26	SER
2	D	27	LEU
2	D	48	ILE
2	D	106	THR
2	D	181	HIS
2	D	192	THR
2	D	206	VAL
2	I	3	GLN
2	I	15	ILE
2	I	141	LEU
2	I	193	SER
2	I	206	VAL
2	I	247	SER
2	J	11	LYS
2	J	27	LEU
2	J	73	ASP
2	J	106	THR
2	J	147	VAL
2	J	232	VAL
2	K	66	LEU
2	K	157	VAL
2	K	160	THR
2	K	222	LEU
2	L	48	ILE
2	L	69	ASP
2	L	101	ASP
2	L	106	THR
2	L	147	VAL
2	L	188	ASP
2	L	192	THR
2	L	206	VAL
2	L	243	VAL
2	M	92	ILE
2	M	100	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	M	176	VAL
2	M	206	VAL
2	M	247	SER
2	N	141	LEU
2	O	95	THR
2	O	100	LEU
2	O	105	LEU
2	O	222	LEU
2	P	48	ILE
2	P	106	THR
2	P	147	VAL
2	P	206	VAL
2	Q	20	LEU
2	Q	123	VAL
2	Q	176	VAL
2	Q	206	VAL
2	Q	247	SER
2	R	12	ASP
2	R	55	GLN
2	R	147	VAL
2	U	123	VAL
2	U	154	MET
2	V	30	THR
2	V	32	ILE
2	V	58	LEU
2	V	95	THR
2	V	123	VAL
2	V	181	HIS
2	V	188	ASP
2	S	87	VAL
2	S	100	LEU
2	S	106	THR
2	S	158	ASN
2	S	184	LEU
2	T	12	ASP

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (49) such sidechains are listed below:

Mol	Chain	Res	Type
2	G	228	ASN
2	H	103	ASN
2	H	144	ASN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	H	173	ASN
2	H	180	HIS
2	E	99	GLN
2	F	8	HIS
2	F	25	GLN
2	F	180	HIS
2	F	181	HIS
2	A	96	ASN
2	A	129	ASN
2	A	181	HIS
2	B	129	ASN
2	D	22	HIS
2	D	144	ASN
2	D	180	HIS
2	I	158	ASN
2	J	8	HIS
2	J	173	ASN
2	J	234	ASN
2	K	55	GLN
2	K	99	GLN
2	L	25	GLN
2	L	63	ASN
2	L	180	HIS
2	M	8	HIS
2	M	129	ASN
2	M	144	ASN
2	M	181	HIS
2	N	8	HIS
2	N	45	GLN
2	N	234	ASN
2	O	8	HIS
2	P	8	HIS
2	P	180	HIS
2	P	234	ASN
2	Q	158	ASN
2	R	173	ASN
2	R	234	ASN
2	U	8	HIS
2	V	83	GLN
2	V	103	ASN
2	V	144	ASN
2	V	180	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
2	S	158	ASN
2	S	228	ASN
2	T	22	HIS
2	T	173	ASN

5.3.3 RNA (i)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	a	3/4 (75%)	3 (100%)	0
1	b	3/4 (75%)	3 (100%)	0
1	c	3/4 (75%)	3 (100%)	0
1	d	3/4 (75%)	3 (100%)	0
1	e	3/4 (75%)	3 (100%)	0
1	f	3/4 (75%)	3 (100%)	0
1	g	3/4 (75%)	3 (100%)	0
1	h	3/4 (75%)	3 (100%)	0
1	i	3/4 (75%)	3 (100%)	0
1	j	3/4 (75%)	3 (100%)	0
1	k	3/4 (75%)	3 (100%)	0
All	All	33/44 (75%)	33 (100%)	0

All (33) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	e	1	A
1	e	2	A
1	e	3	A
1	f	1	A
1	f	2	A
1	f	3	A
1	g	1	A
1	g	2	A
1	g	3	A
1	h	1	A
1	h	2	A
1	h	3	A
1	i	1	A
1	i	2	A
1	i	3	A
1	j	1	A
1	j	2	A

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
1	j	3	A
1	k	1	A
1	k	2	A
1	k	3	A
1	c	1	A
1	c	2	A
1	c	3	A
1	d	1	A
1	d	2	A
1	d	3	A
1	a	1	A
1	a	2	A
1	a	3	A
1	b	1	A
1	b	2	A
1	b	3	A

There are no RNA pucker outliers to report.

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.

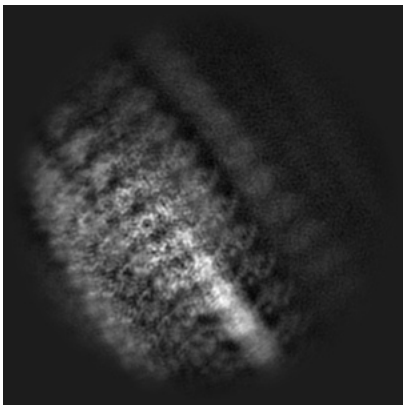
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-48698. These allow visual inspection of the internal detail of the map and identification of artifacts.

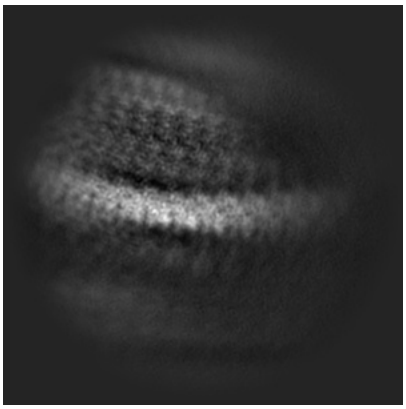
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

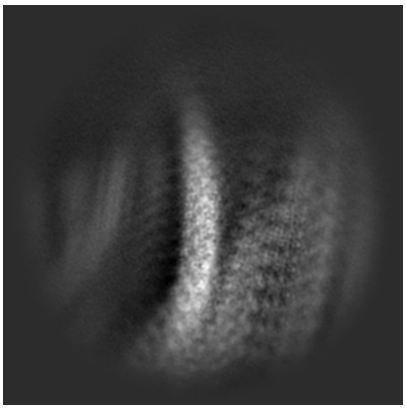
6.1.1 Primary map



X

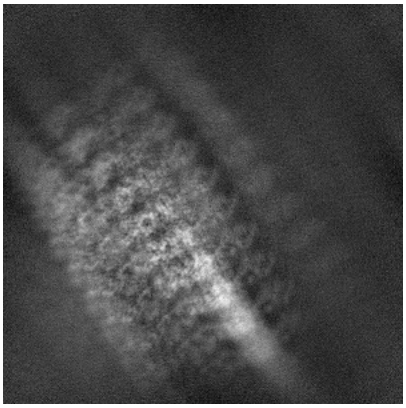


Y

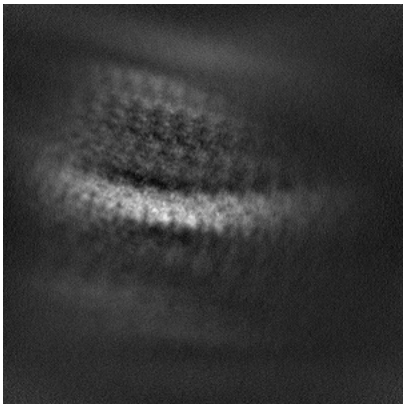


Z

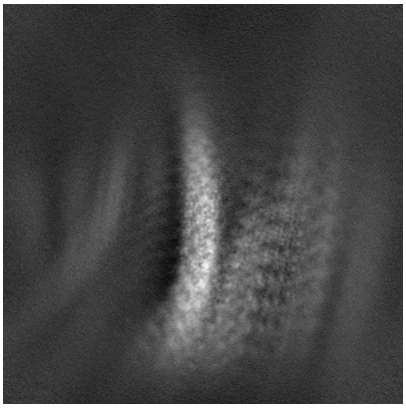
6.1.2 Raw map



X



Y

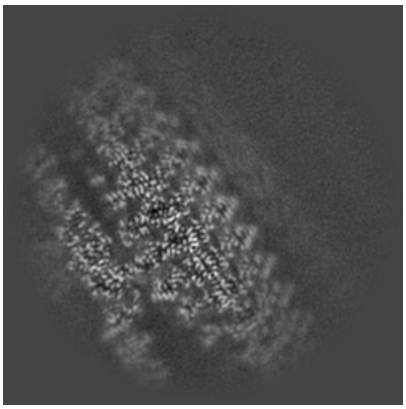


Z

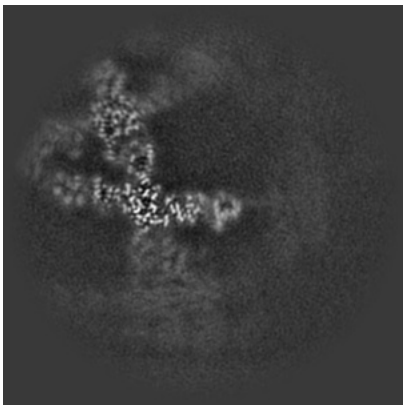
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

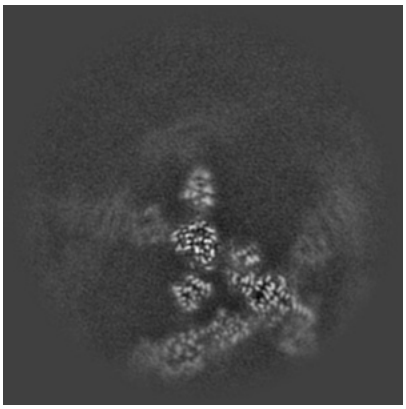
6.2.1 Primary map



X Index: 256

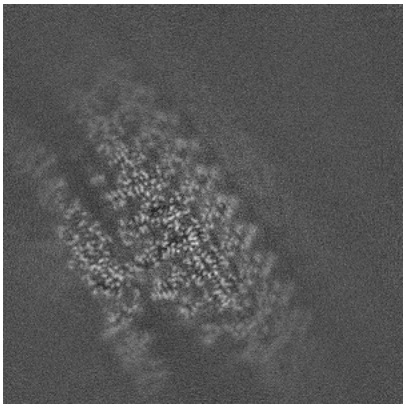


Y Index: 256

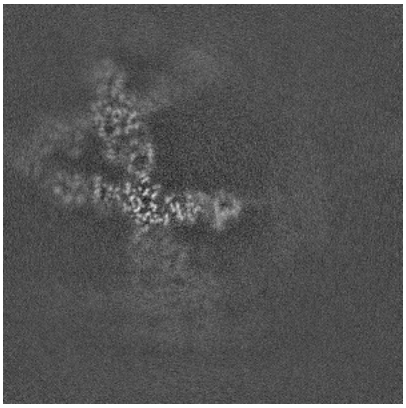


Z Index: 256

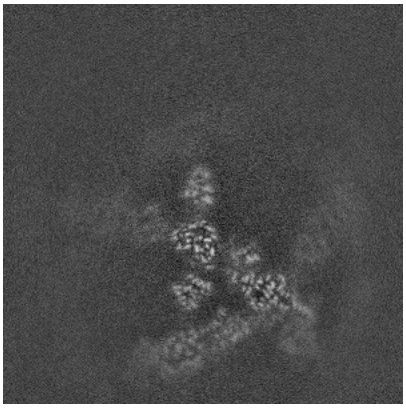
6.2.2 Raw map



X Index: 256



Y Index: 256

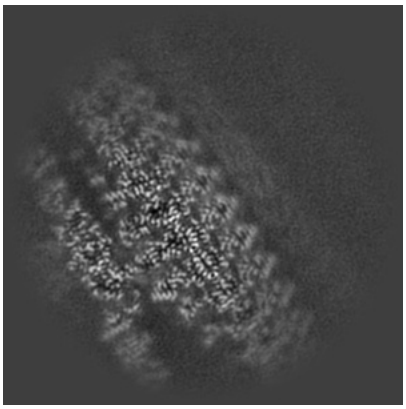


Z Index: 256

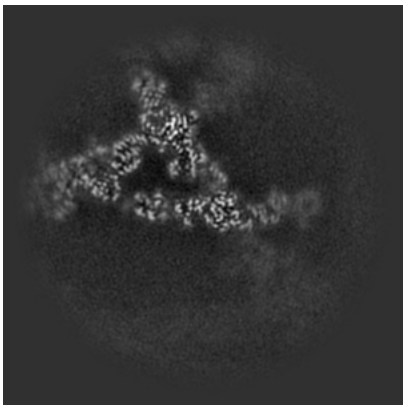
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

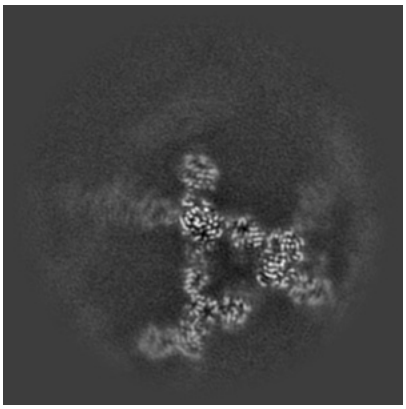
6.3.1 Primary map



X Index: 255

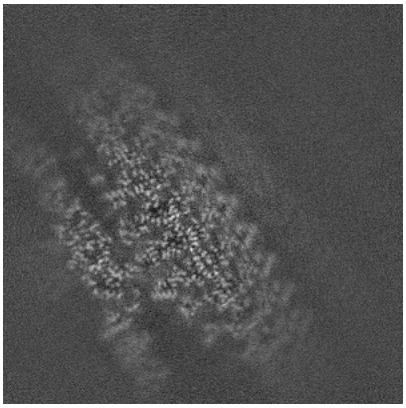


Y Index: 183

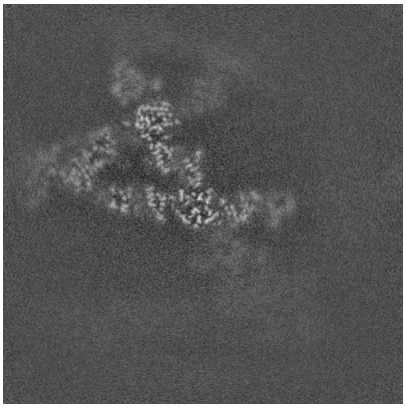


Z Index: 209

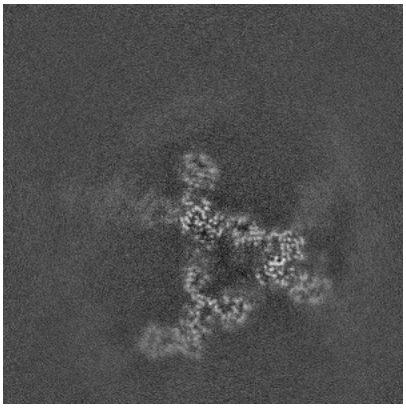
6.3.2 Raw map



X Index: 255



Y Index: 205

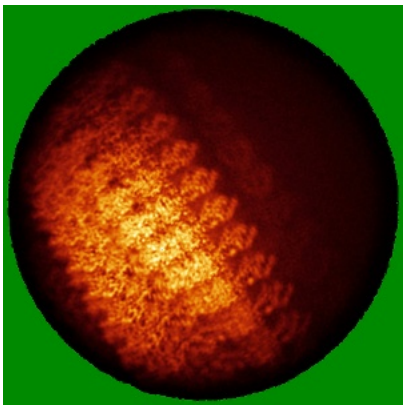


Z Index: 210

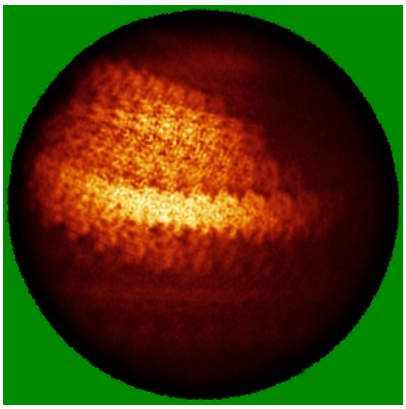
The images above show the largest variance slices of the map in three orthogonal directions.

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

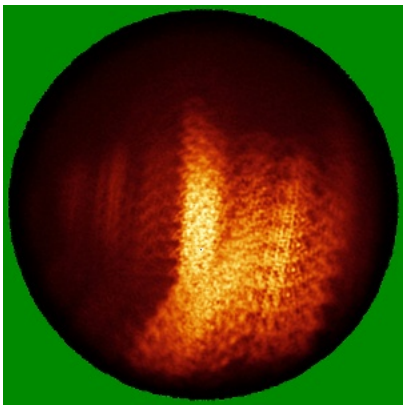
6.4.1 Primary map



X

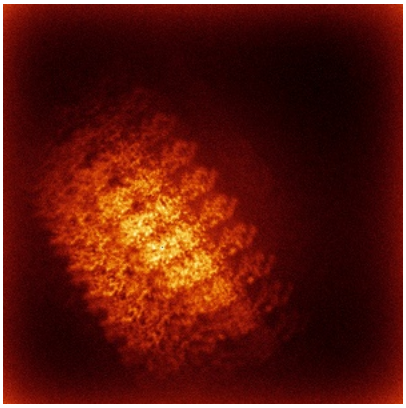


Y

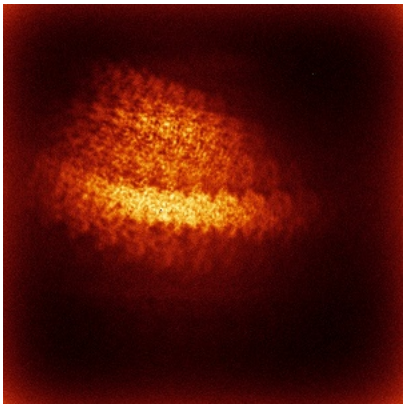


Z

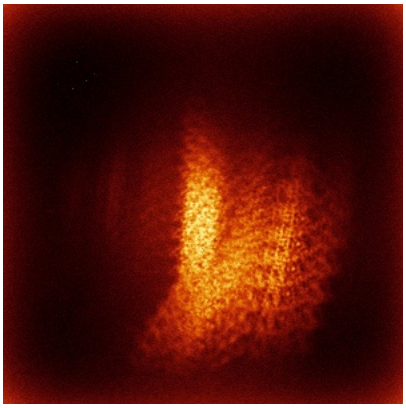
6.4.2 Raw map



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.

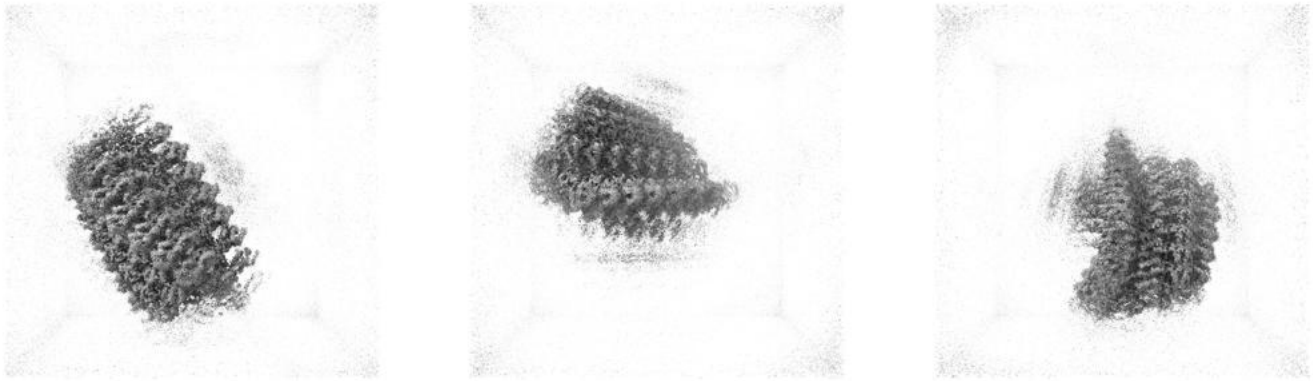
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.154. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

These images show the 3D surface of the raw map. The raw map's contour level was selected so that its surface encloses the same volume as the primary map does at its recommended contour level.

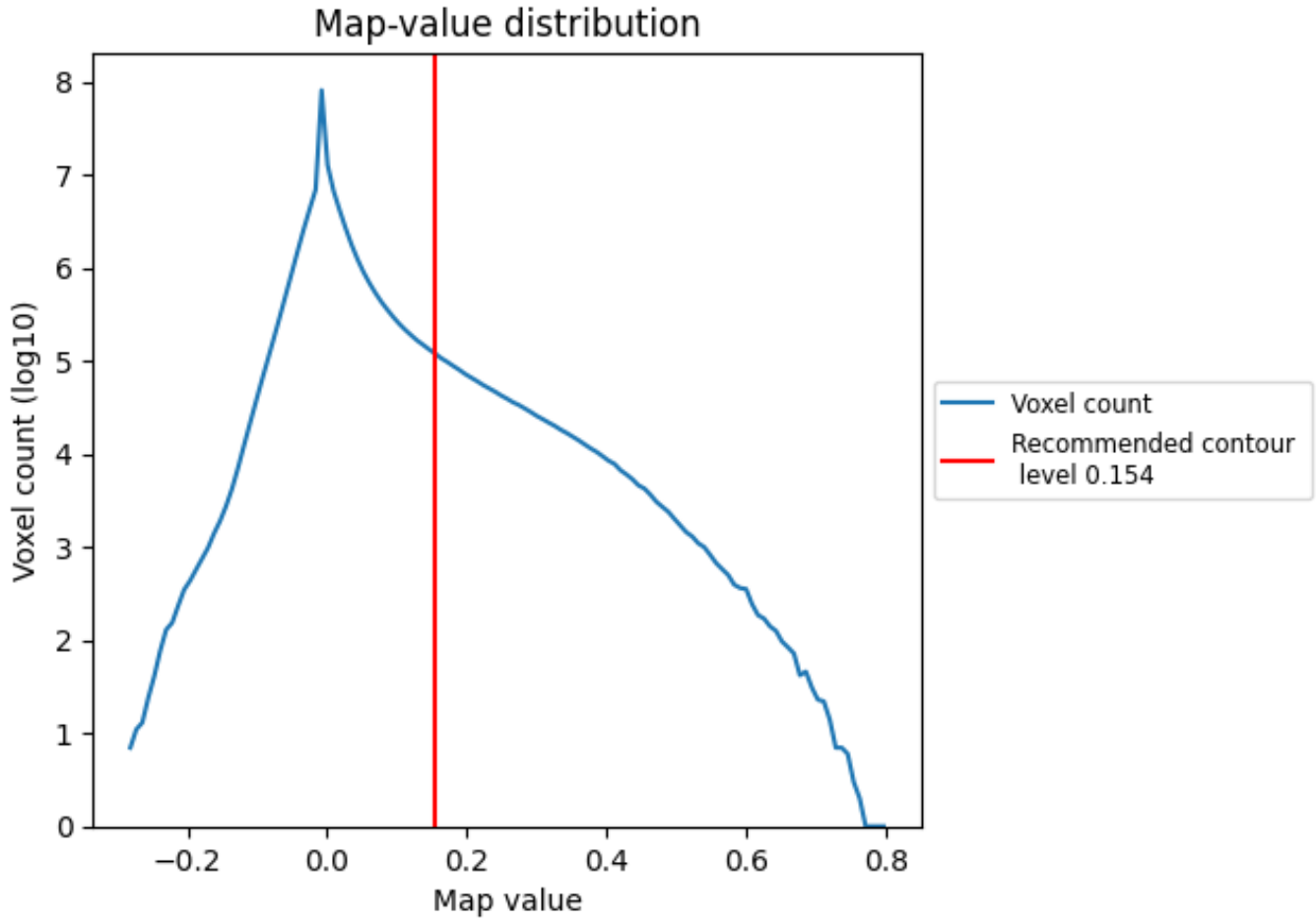
6.6 Mask visualisation (i)

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

7 Map analysis

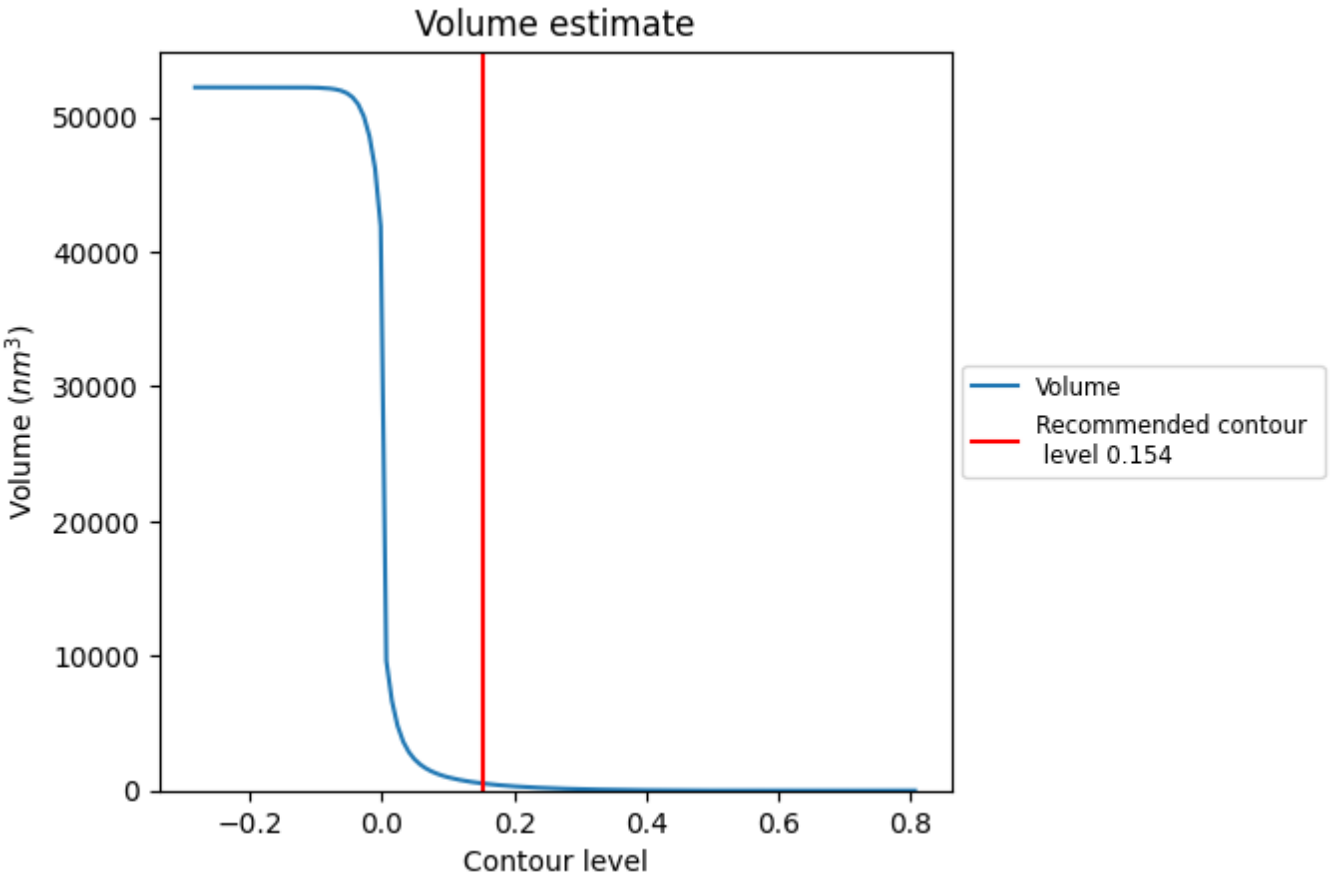
This section contains the results of statistical analysis of the map.

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.

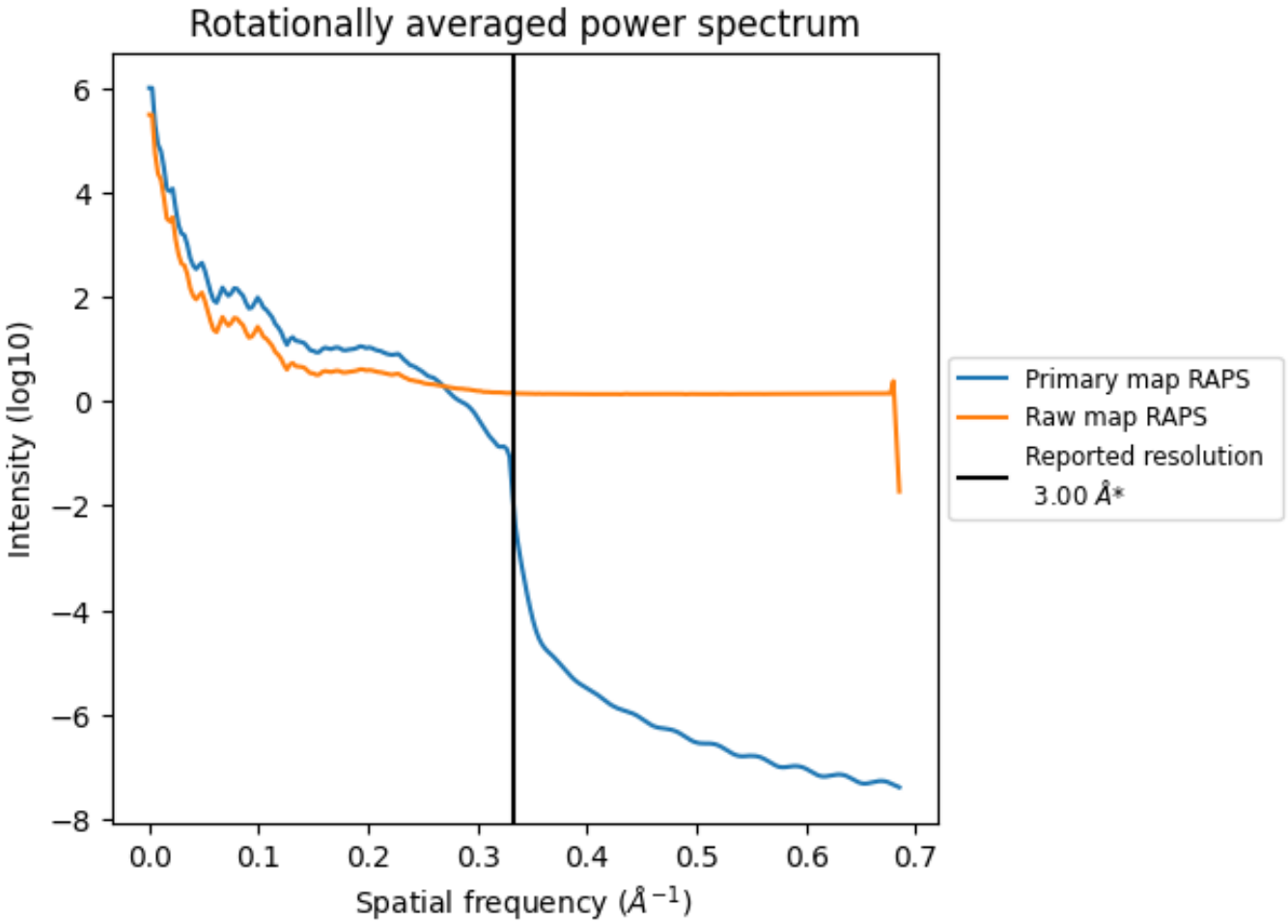
7.2 Volume estimate



The volume at the recommended contour level is 523 nm^3; this corresponds to an approximate mass of 473 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)

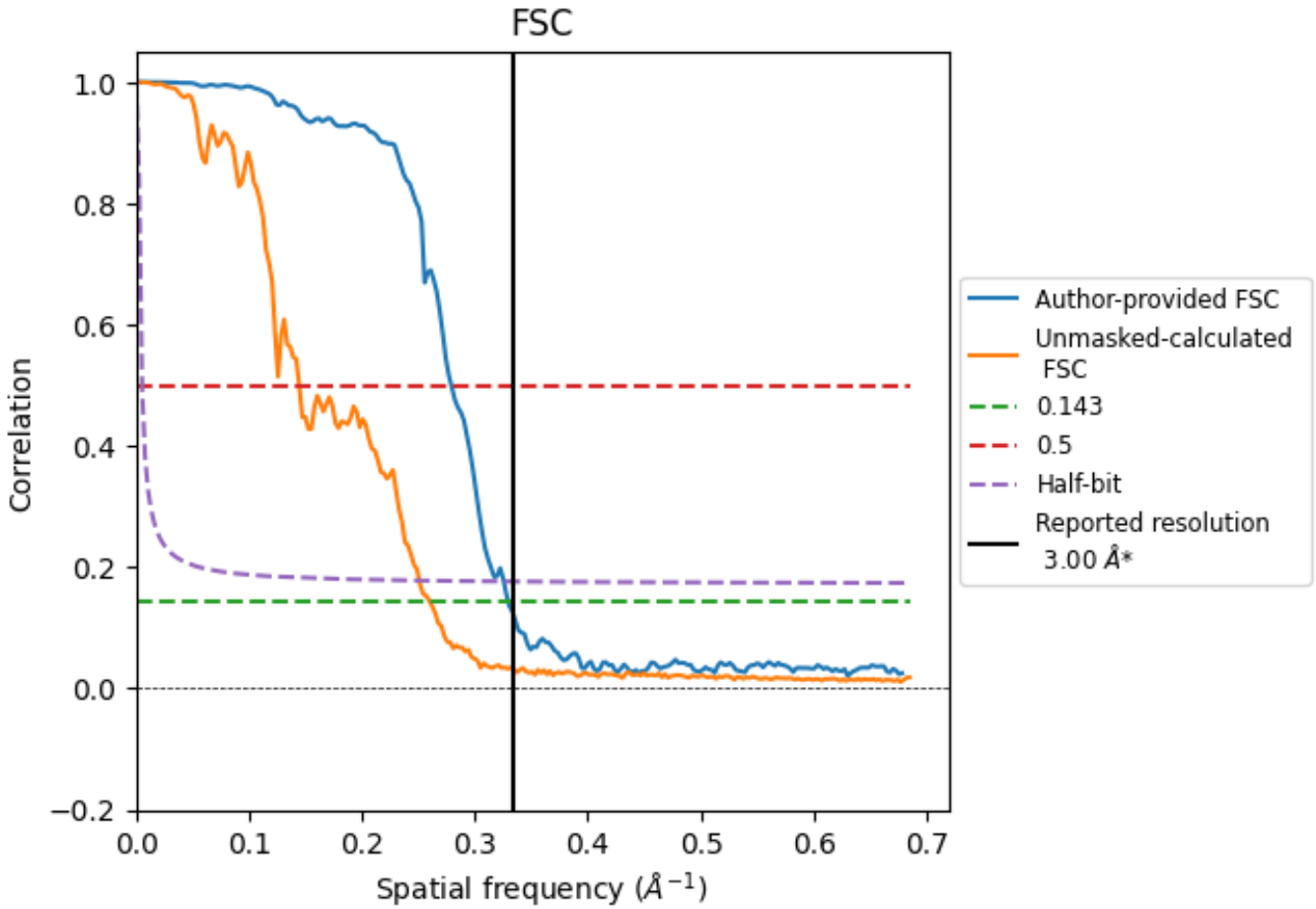


*Reported resolution corresponds to spatial frequency of 0.333 Å^{-1}

8 Fourier-Shell correlation

Fourier-Shell Correlation (FSC) is the most commonly used method to estimate the resolution of single-particle and subtomogram-averaged maps. The shape of the curve depends on the imposed symmetry, mask and whether or not the two 3D reconstructions used were processed from a common reference. The reported resolution is shown as a black line. A curve is displayed for the half-bit criterion in addition to lines showing the 0.143 gold standard cut-off and 0.5 cut-off.

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.333 Å^{-1}

8.2 Resolution estimates (i)

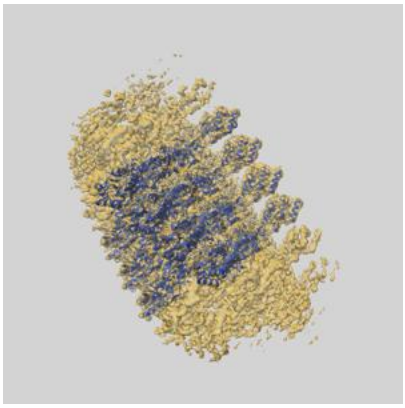
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.00	-	-
Author-provided FSC curve	3.03	3.58	3.07
Unmasked-calculated*	3.84	6.93	3.99

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.84 differs from the reported value 3.0 by more than 10 %

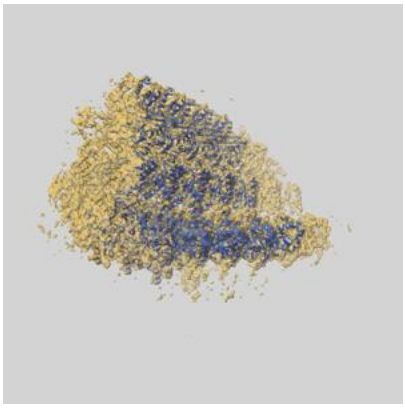
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-48698 and PDB model 9MW9. Per-residue inclusion information can be found in section 3 on page 7.

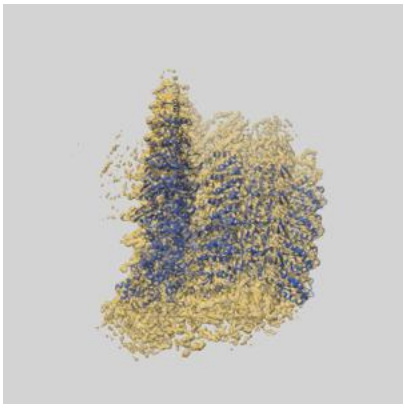
9.1 Map-model overlay



X



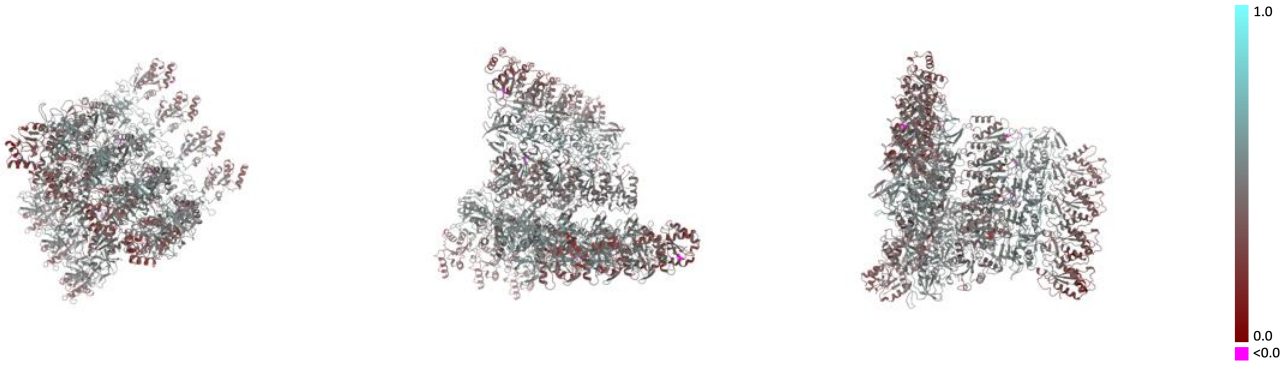
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.154 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.

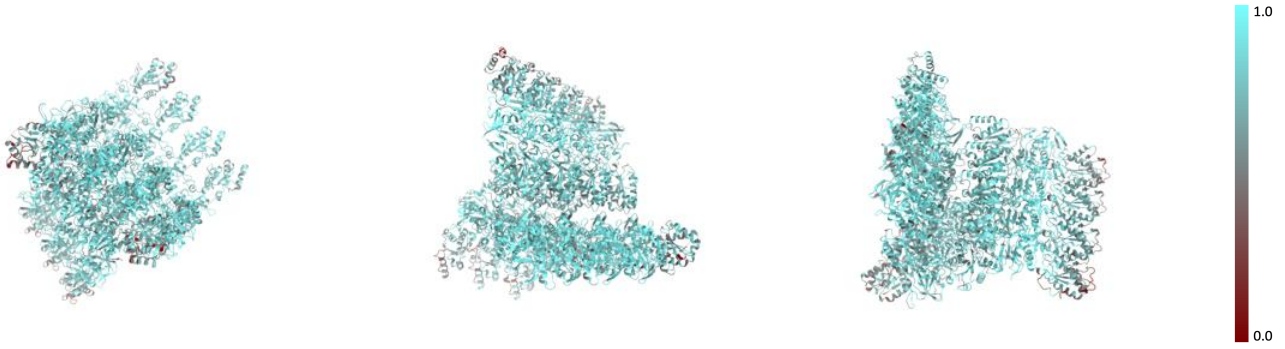
9.2 Q-score mapped to coordinate model (i)



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.

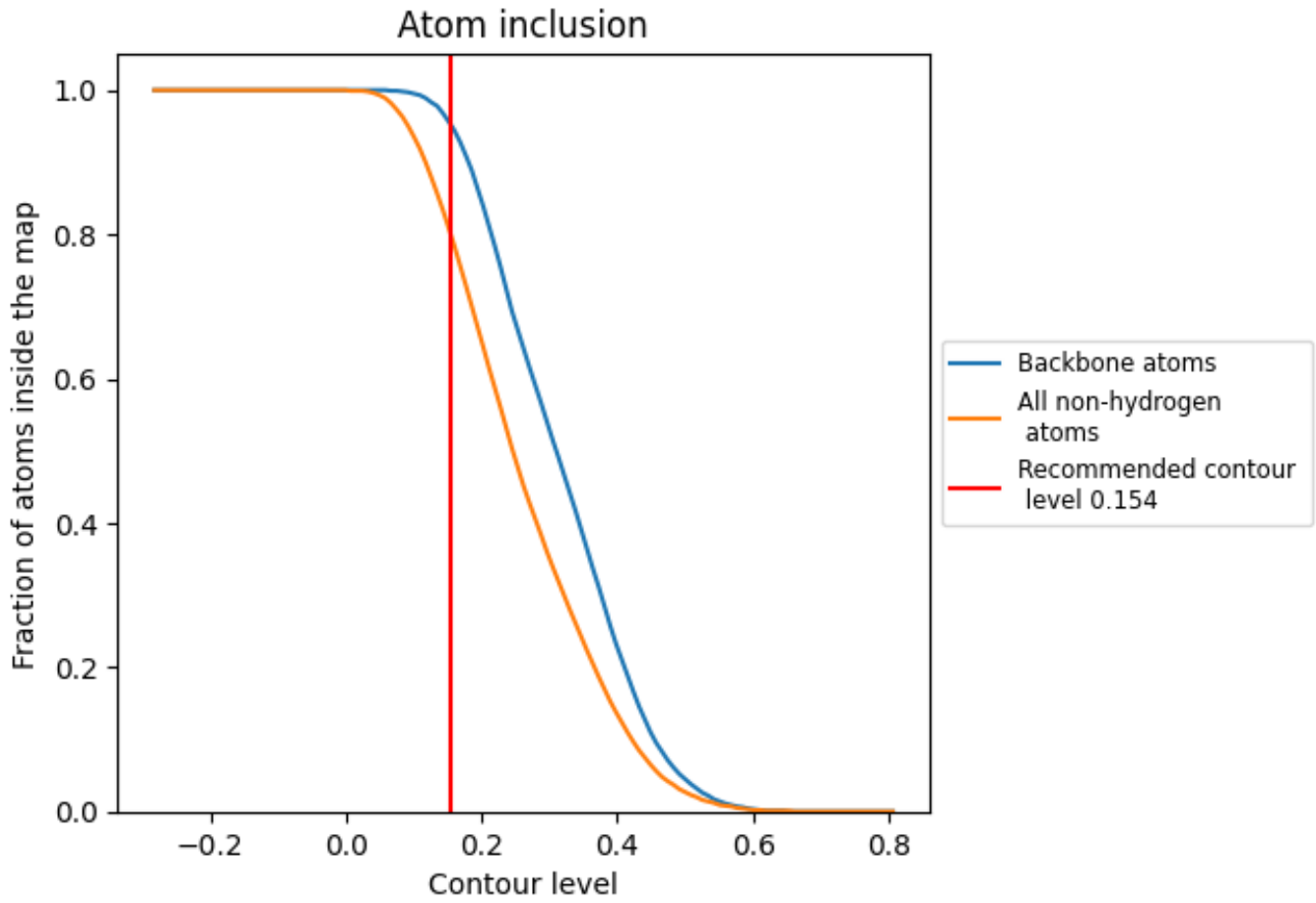
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.154).

9.4 Atom inclusion (i)



At the recommended contour level, 95% of all backbone atoms, 80% 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 (0.154) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.8020	0.4480
A	0.8490	0.4840
B	0.7980	0.4240
C	0.8090	0.4670
D	0.6890	0.3840
E	0.8460	0.4830
F	0.8020	0.4220
G	0.8150	0.4630
H	0.7150	0.3960
I	0.8520	0.4880
J	0.8500	0.4400
K	0.7910	0.4690
L	0.7530	0.4100
M	0.8310	0.4800
N	0.8130	0.4330
O	0.8590	0.4890
P	0.8700	0.4510
Q	0.8090	0.4670
R	0.6930	0.4040
S	0.8140	0.4720
T	0.6990	0.3950
U	0.8330	0.4810
V	0.7530	0.4110
a	1.0000	0.5340
b	0.9890	0.5250
c	0.9890	0.4930
d	0.9770	0.5310
e	1.0000	0.5360
f	1.0000	0.5460
g	1.0000	0.5470
h	1.0000	0.5380
i	1.0000	0.5280
j	1.0000	0.5370
k	0.9890	0.5050