Full wwPDB EM Validation Report

Mar 20, 2026 – 10:11 AM UTC

PDB ID	:	5VHI / pdb_00005vhi
EMDB ID	:	EMD-8676
Title	:	Conformational Landscape of the p28-Bound Human Proteasome Regulatory Particle
Authors	:	Lu, Y.; Wu, J.; Dong, Y.; Chen, S.; Sun, S.; Ma, Y.B.; Ouyang, Q.; Finley, D.; Kirschner, M.W.; Mao, Y.
Deposited on	:	2017-04-13
Resolution	:	6.80 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 (i) 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 (i)) were used in the production of this report:

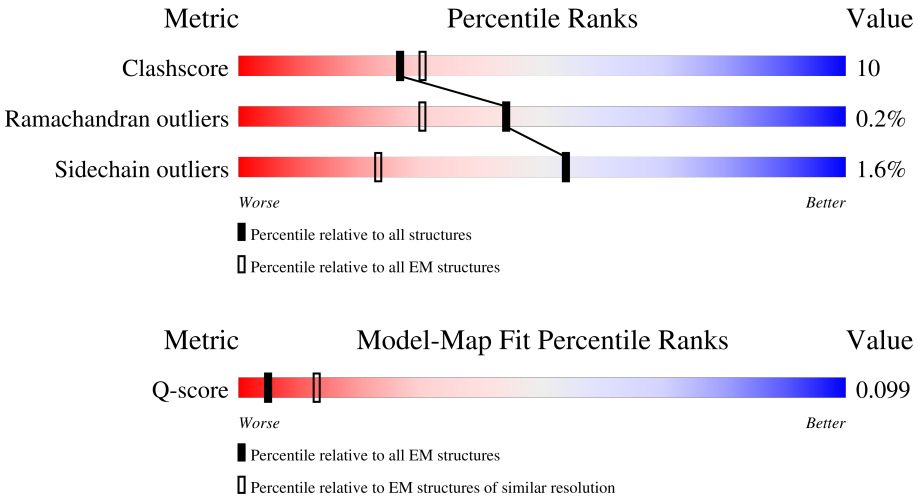
EMDB validation analysis	:	0.0.1.dev132
MolProbity	:	4-5-2 with Phenix2.0
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & 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 6.80 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	-
Q-score	-	25397	503 (6.30 - 7.30)

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	352	22% 73% 18% • 9%
2	B	341	30% 65% 22% • 13%
3	C	385	38% 66% 23% • • 9%
4	D	368	46% 69% 23% • 7%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
5	E	379	24% 61% 21% 18%
6	F	380	20% 68% 22% 8%
7	U	935	8% 69% 20% 10%
8	V	488	29% 72% 26%
9	W	456	24% 83% 16%
10	X	385	44% 85% 14%
11	Y	378	7% 78% 21%
12	Z	286	10% 81% 18%
13	a	374	11% 80% 19%
14	b	191	11% 76% 23%
15	c	287	12% 78% 21%
16	d	257	20% 78% 22%
17	G	226	84% 81% 19%
18	e	70	41% 71% 29%
19	f	848	28% 59% 20% 19%

2 Entry composition (i)

There are 20 unique types of molecules in this entry. The entry contains 54640 atoms, of which 0 are hydrogens and 0 are deuteriums.

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

- Molecule 1 is a protein called 26S proteasome regulatory subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	321	2525	1596	451	463	15	0	0

- Molecule 2 is a protein called 26S proteasome regulatory subunit 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	298	2332	1464	400	457	11	0	0

- Molecule 3 is a protein called 26S proteasome regulatory subunit 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	350	2757	1728	501	514	14	0	0

- Molecule 4 is a protein called 26S proteasome regulatory subunit 6B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	343	2743	1739	479	516	9	0	0

- Molecule 5 is a protein called 26S proteasome regulatory subunit 10B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	311	2468	1548	445	460	15	0	0

- Molecule 6 is a protein called 26S proteasome regulatory subunit 6A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	351	2746	1733	476	520	17	0	0

- Molecule 7 is a protein called 26S proteasome non-ATPase regulatory subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	U	845	Total	C	N	O	S	0	0
			6568	4169	1118	1236	45		

- Molecule 8 is a protein called 26S proteasome non-ATPase regulatory subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	V	488	Total	C	N	O	S	0	0
			3919	2487	695	723	14		

- Molecule 9 is a protein called 26S proteasome non-ATPase regulatory subunit 12.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	W	456	Total	C	N	O	S	0	0
			3703	2339	635	704	25		

- Molecule 10 is a protein called 26S proteasome non-ATPase regulatory subunit 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	X	385	Total	C	N	O	S	0	0
			3048	1939	515	582	12		

- Molecule 11 is a protein called 26S proteasome non-ATPase regulatory subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	Y	378	Total	C	N	O	S	0	0
			3115	1987	533	578	17		

- Molecule 12 is a protein called 26S proteasome non-ATPase regulatory subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	Z	286	Total	C	N	O	S	0	0
			2281	1457	392	427	5		

- Molecule 13 is a protein called 26S proteasome non-ATPase regulatory subunit 13.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	a	374	Total	C	N	O	S	0	0
			3003	1915	511	562	15		

- Molecule 14 is a protein called 26S proteasome non-ATPase regulatory subunit 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	b	191	Total	C	N	O	S	0	0
			1458	910	261	279	8		

- Molecule 15 is a protein called 26S proteasome non-ATPase regulatory subunit 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	c	287	Total	C	N	O	S	0	0
			2260	1430	389	422	19		

- Molecule 16 is a protein called 26S proteasome non-ATPase regulatory subunit 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	d	257	Total	C	N	O	S	0	0
			2116	1371	346	390	9		

- Molecule 17 is a protein called 26S proteasome non-ATPase regulatory subunit 10.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	G	226	Total	C	N	O	S	0	0
			1710	1063	302	334	11		

- Molecule 18 is a protein called 26S proteasome complex subunit SEM1.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	e	70	Total	C	N	O	S	0	0
			583	357	89	135	2		

- Molecule 19 is a protein called 26S proteasome non-ATPase regulatory subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	f	686	Total	C	N	O	S	0	0
			5304	3335	901	1033	35		

- Molecule 20 is ZINC ION (CCD ID: ZN) (formula: Zn).

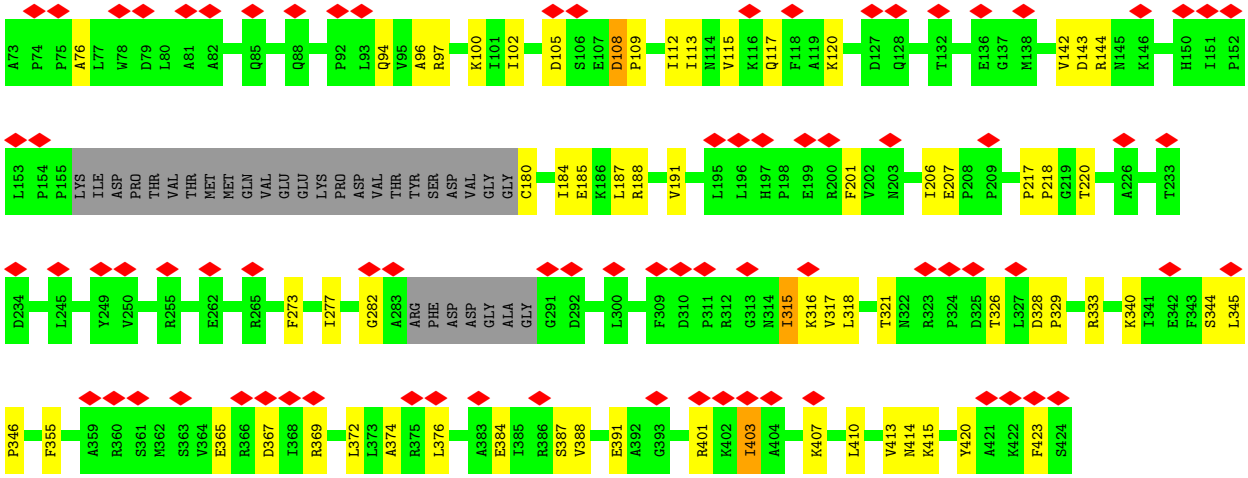
Mol	Chain	Residues	Atoms		AltConf
20	c	1	Total	Zn	0
			1	1	

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.

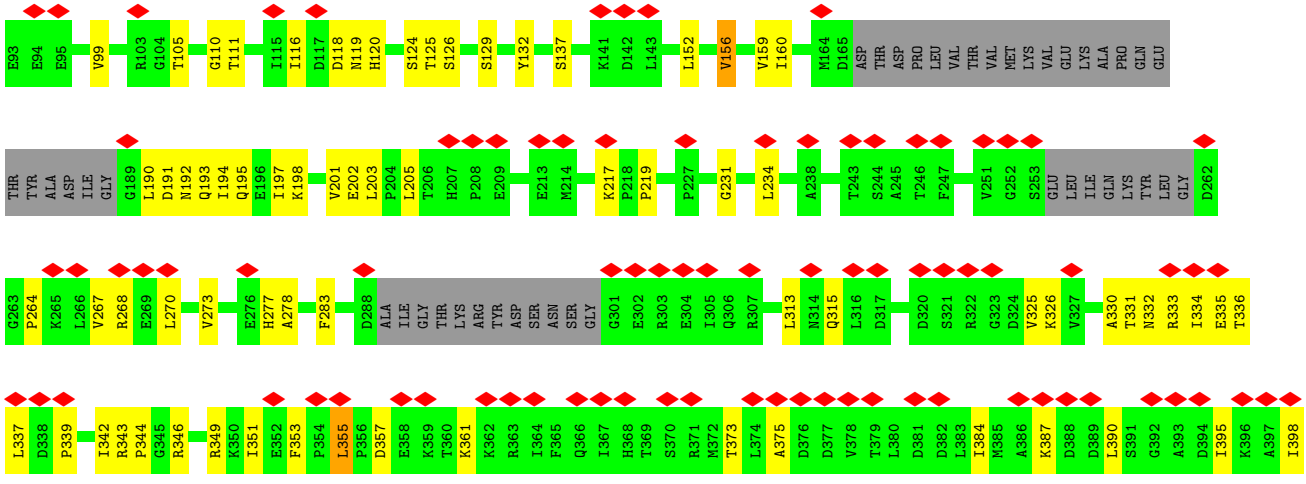
• Molecule 1: 26S proteasome regulatory subunit 7

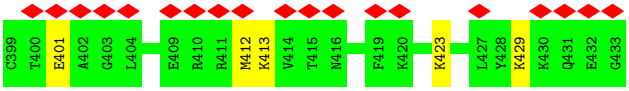
Chain A:



• Molecule 2: 26S proteasome regulatory subunit 4

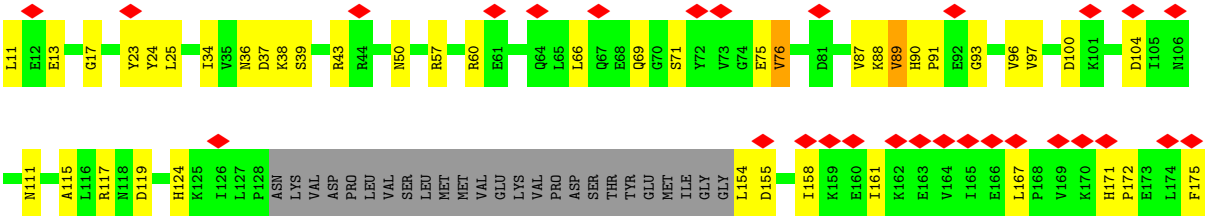
Chain B:





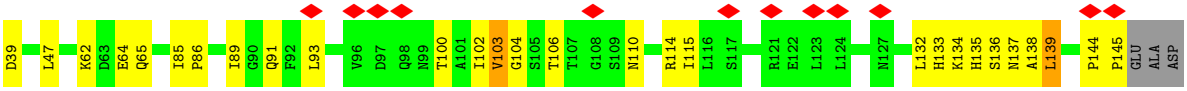
• Molecule 3: 26S proteasome regulatory subunit 8

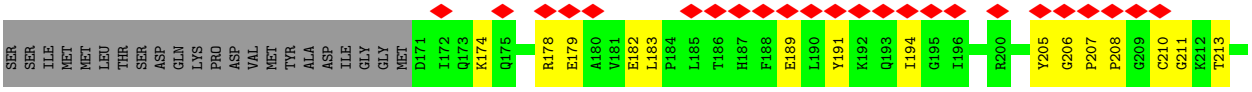
Chain C:

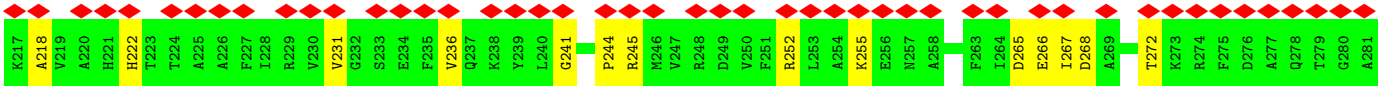


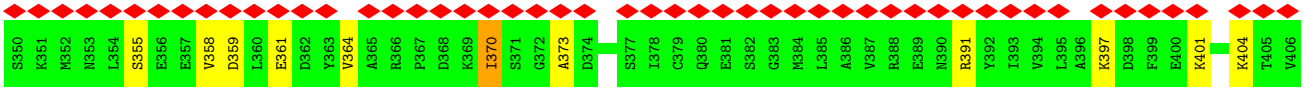
• Molecule 4: 26S proteasome regulatory subunit 6B

Chain D:



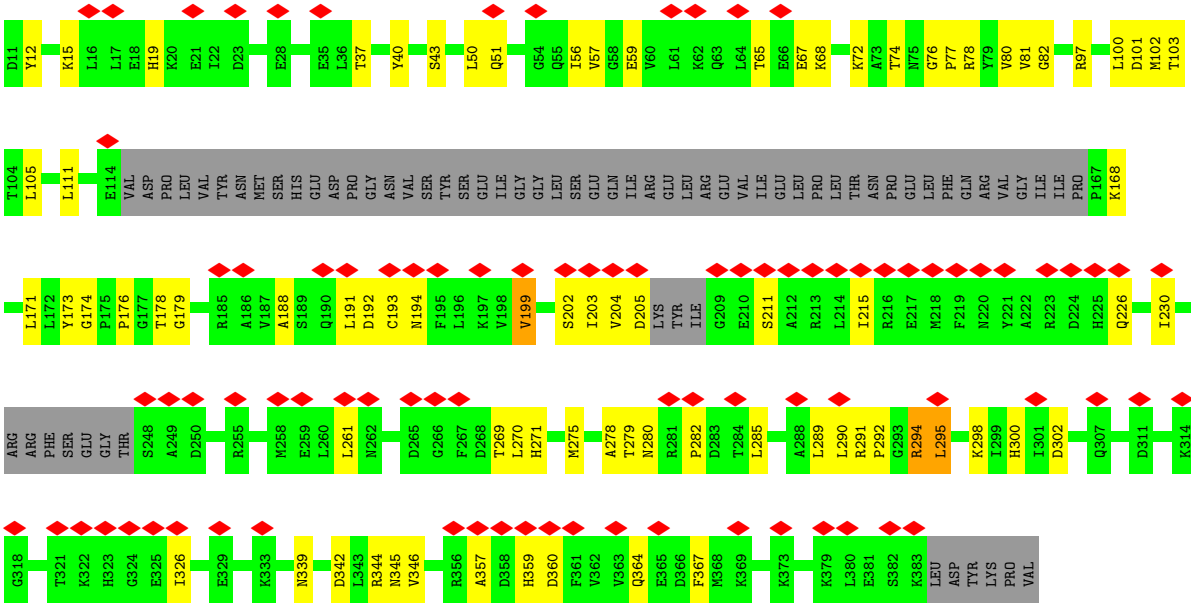






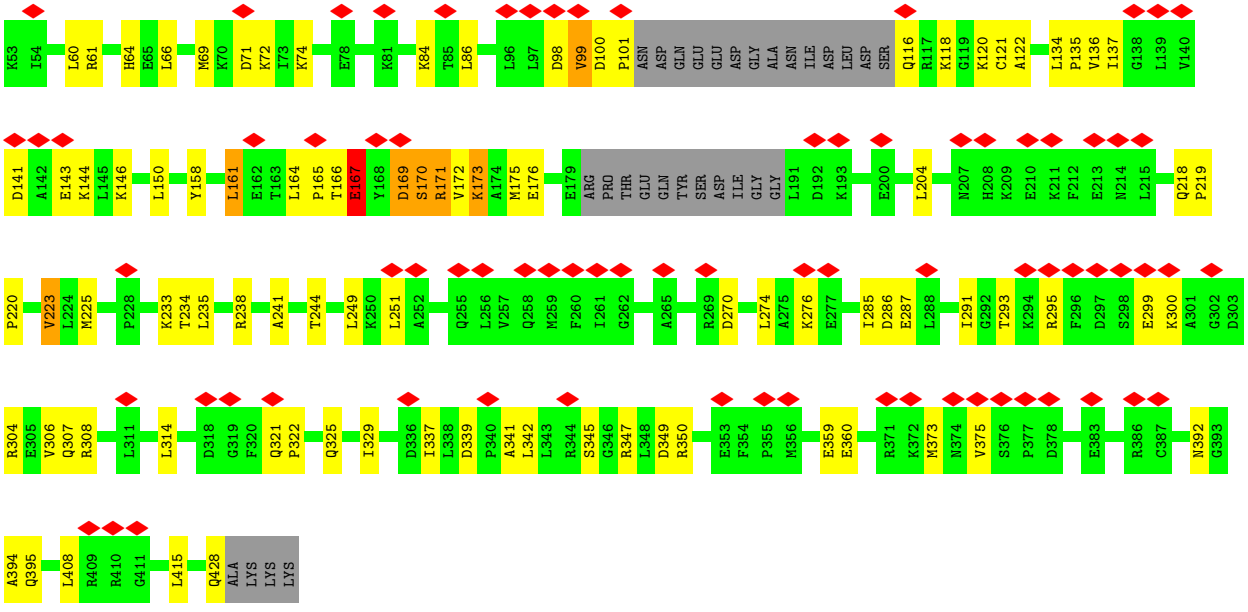
• Molecule 5: 26S proteasome regulatory subunit 10B

Chain E:



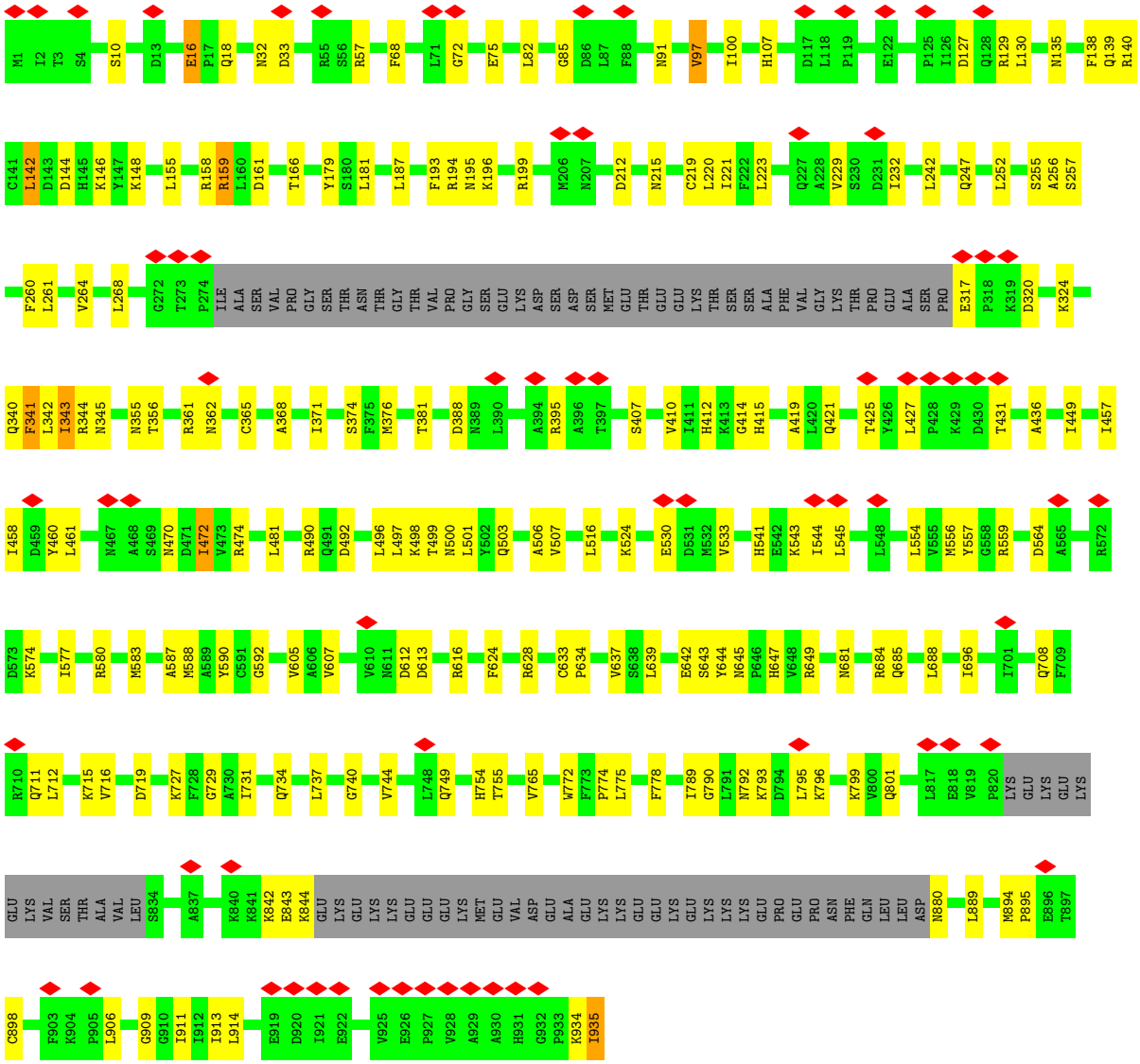
• Molecule 6: 26S proteasome regulatory subunit 6A

Chain F:



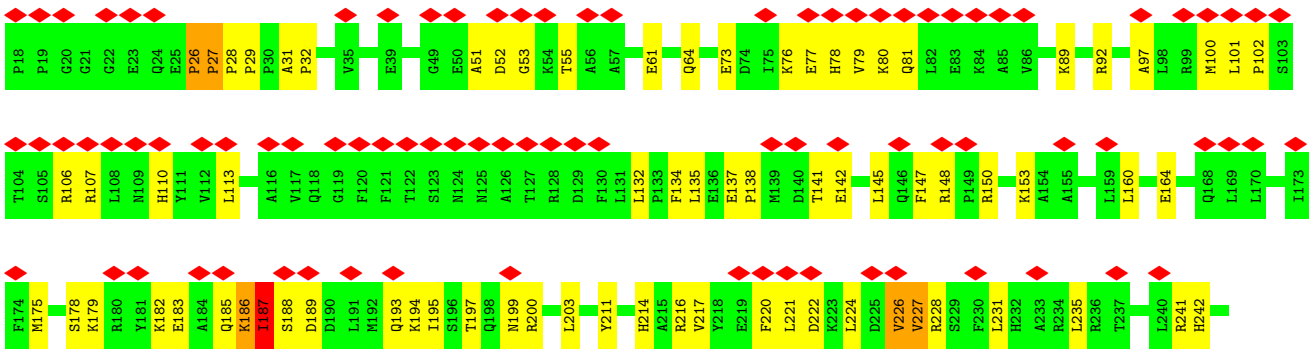
• Molecule 7: 26S proteasome non-ATPase regulatory subunit 1

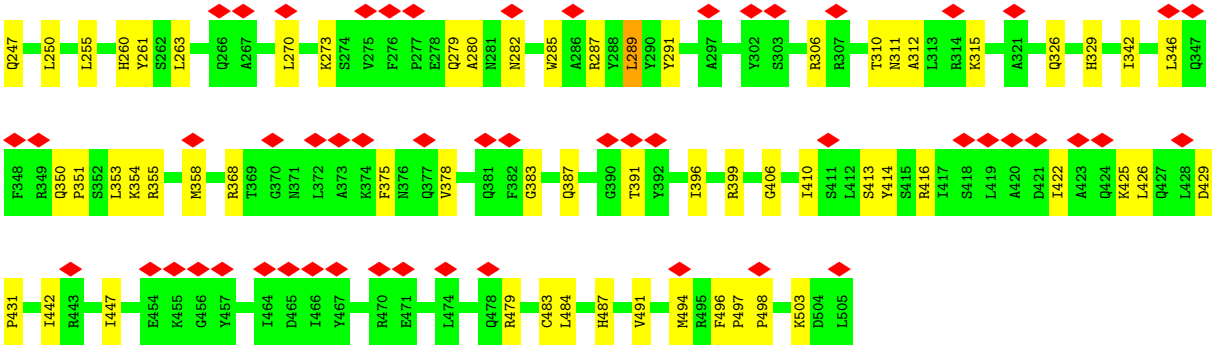
Chain U:



• Molecule 8: 26S proteasome non-ATPase regulatory subunit 3

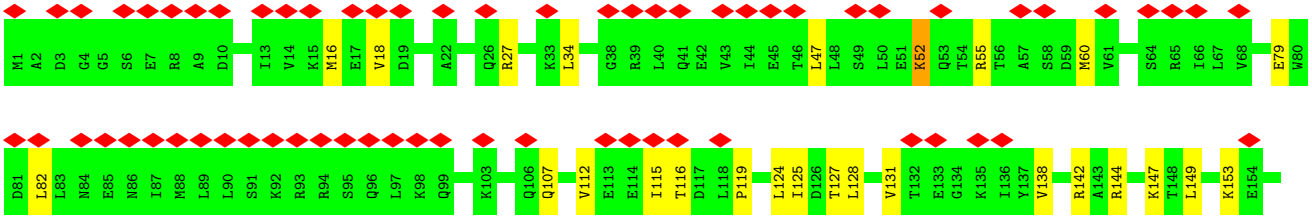
Chain V:





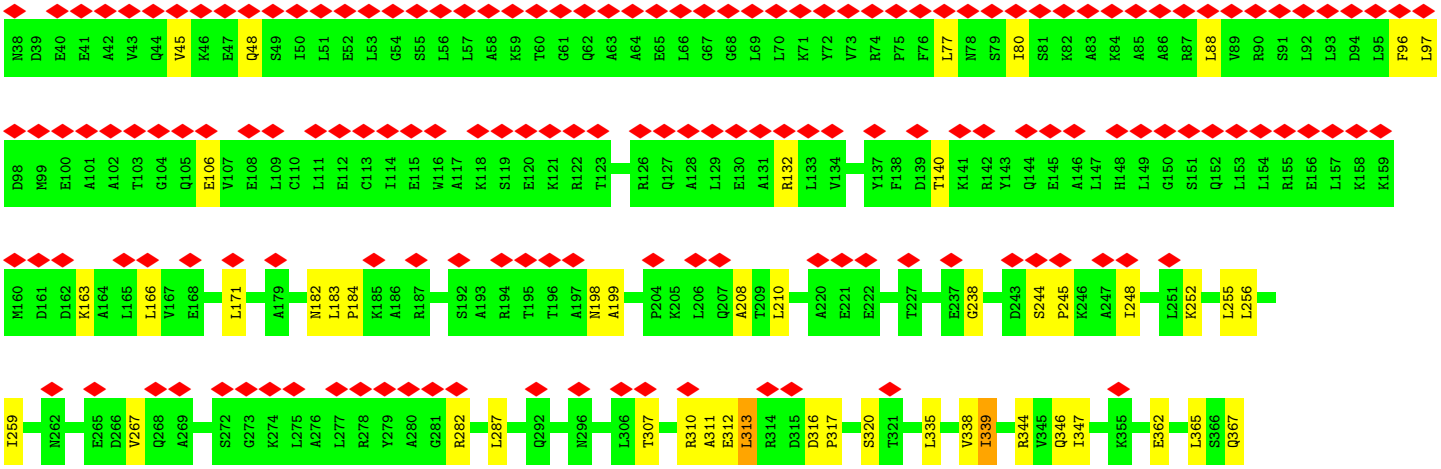
• Molecule 9: 26S proteasome non-ATPase regulatory subunit 12

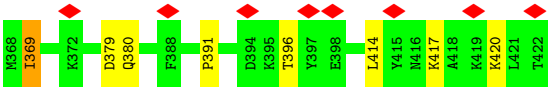
Chain W:



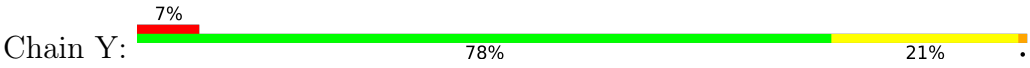
• Molecule 10: 26S proteasome non-ATPase regulatory subunit 11

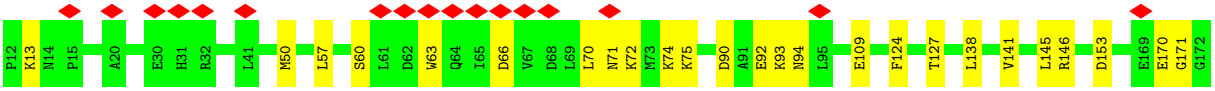
Chain X:

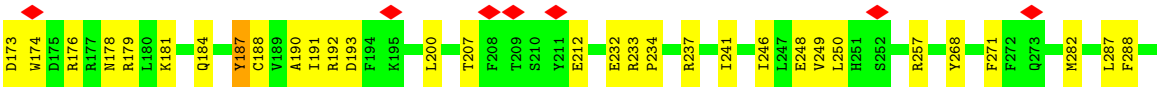


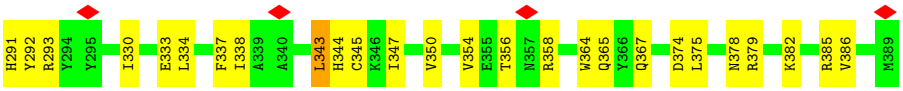


• Molecule 11: 26S proteasome non-ATPase regulatory subunit 6

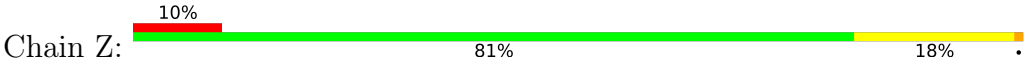


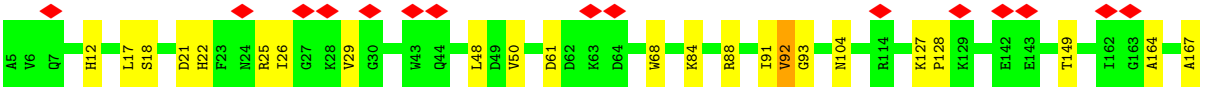


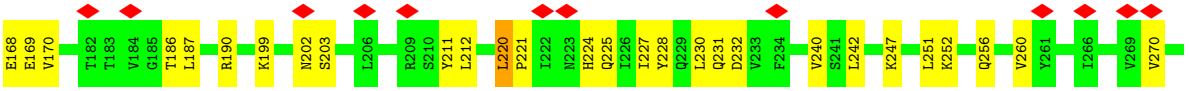


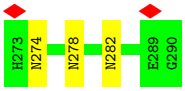


• Molecule 12: 26S proteasome non-ATPase regulatory subunit 7

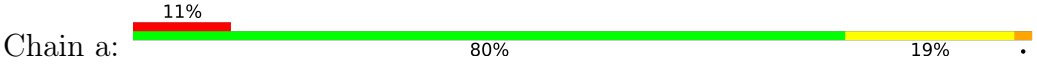


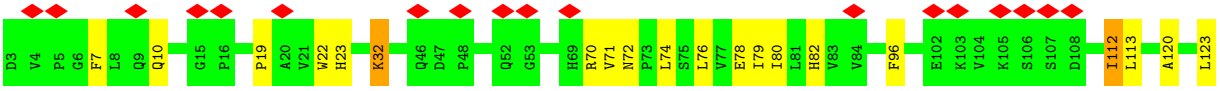


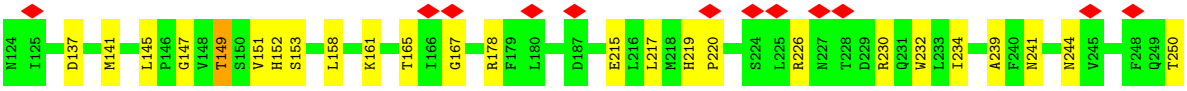


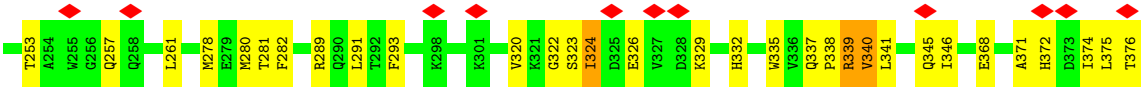


• Molecule 13: 26S proteasome non-ATPase regulatory subunit 13



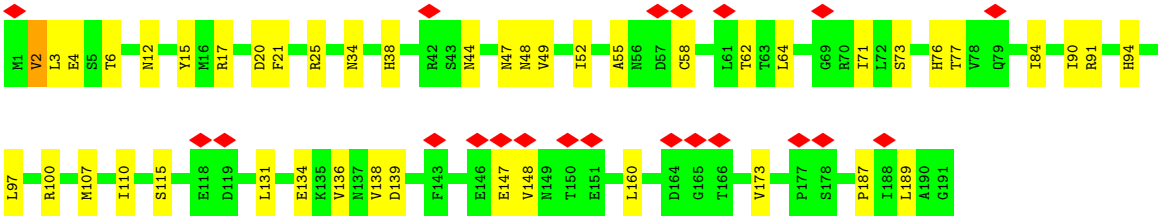






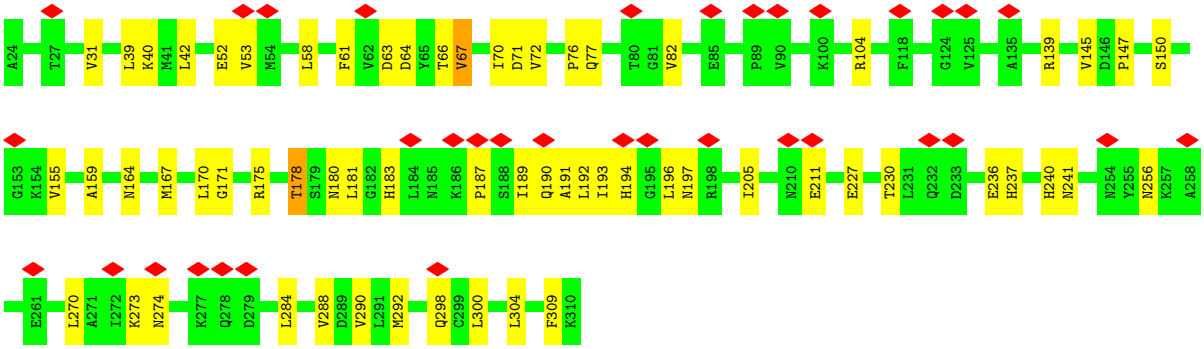
• Molecule 14: 26S proteasome non-ATPase regulatory subunit 4

Chain b:



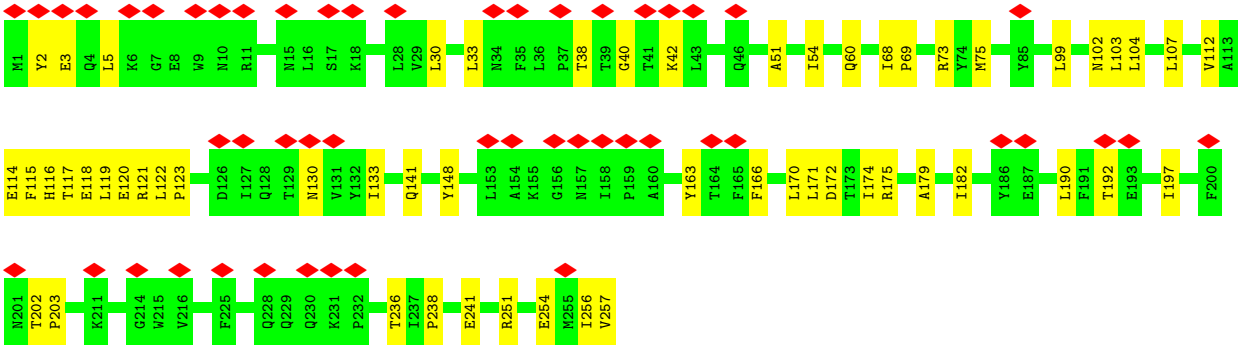
• Molecule 15: 26S proteasome non-ATPase regulatory subunit 14

Chain c:



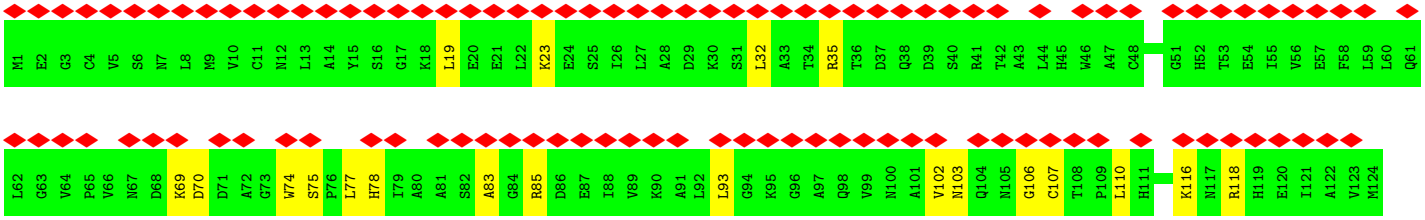
• Molecule 16: 26S proteasome non-ATPase regulatory subunit 8

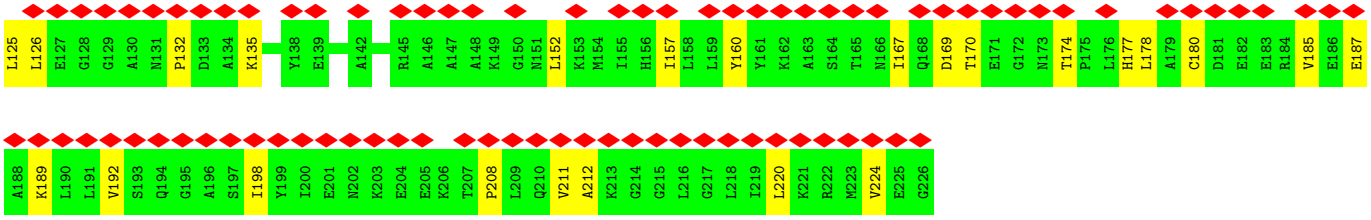
Chain d:



• Molecule 17: 26S proteasome non-ATPase regulatory subunit 10

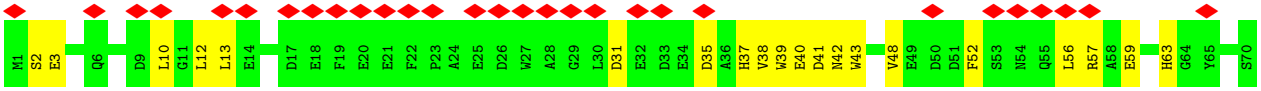
Chain G:





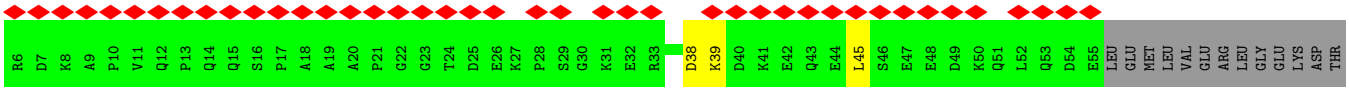
• Molecule 18: 26S proteasome complex subunit SEM1

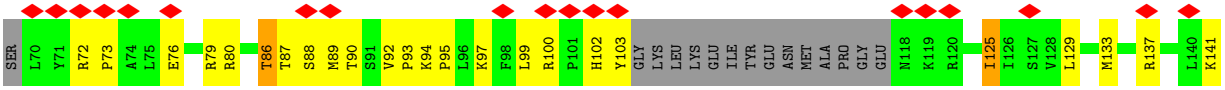
Chain e:

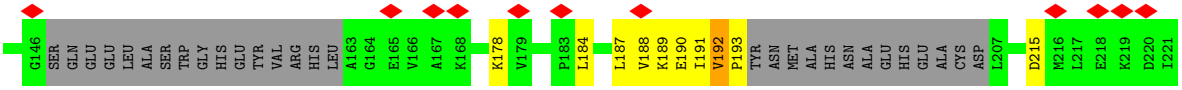


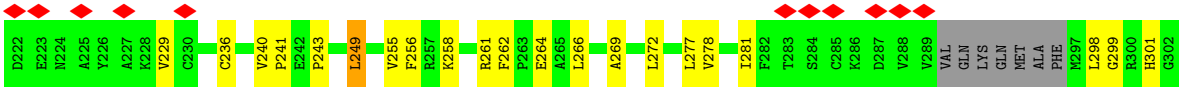
• Molecule 19: 26S proteasome non-ATPase regulatory subunit 2

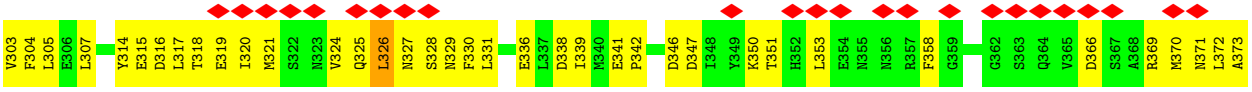
Chain f:

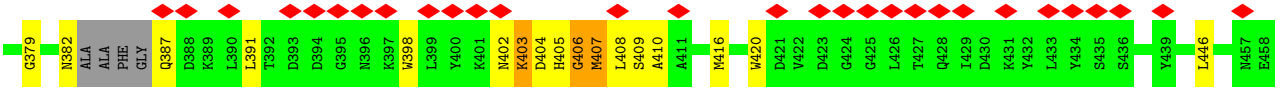


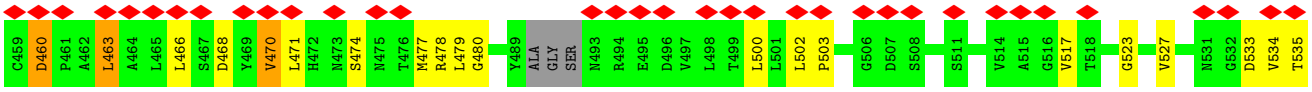


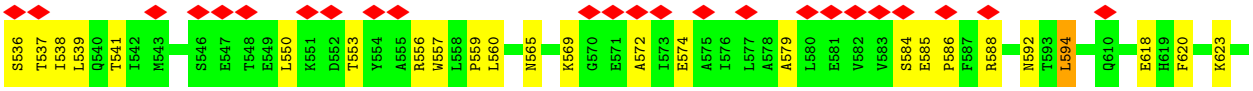


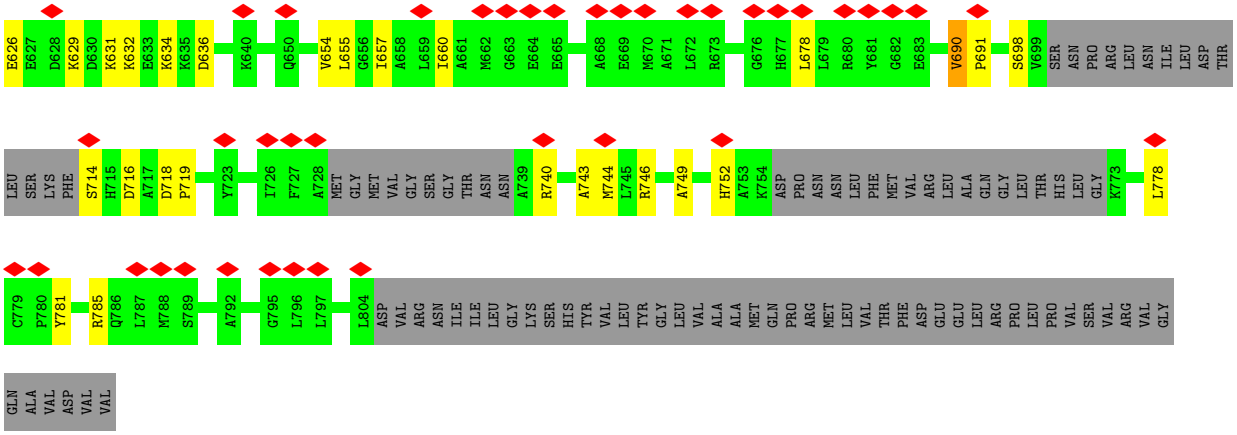











E626 E627 D628 K629 D630 K631 K632 E633 K634 K635 D636 K640 Q650 V654 L655 G656 I657 A658 L659 I660 A661 M662 G663 E664 E665 A668 E669 M670 A671 L672 R673 G676 H677 L678 L679 R680 Y681 G682 E683 V690 P691 S698 V699 SER ASN PRO ARG LEU ASN ILE LEU ASP THR
LEU SER LYS PHE S714 H715 D716 A717 D718 P719 Y723 I726 F727 A728 MET GLY MET VAL GLY SER GLY THR ASN ASN A739 R740 A743 M744 L745 R746 A749 H752 A753 K754 ASP PRO ASN ASN LEU PHE MET VAL ARG LEU ALA GLN GLY LEU THR HIS LEU GLY K773 L778
C779 P780 Y781 R785 Q786 L787 M788 S789 A792 G795 L796 L797 L804 ASP VAL ARG ASN ILE ILE LEU GLY LYS SER HIS TYR VAL LEU TYR GLY LEU VAL ALA ALA MET GLN PRO ARG MET LEU VAL THR PHE ASP GLU GLU LEU ARG PRO LEU PRO VAL SER VAL ARG VAL GLY
GLN ALA VAL ASP VAL VAL

4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	10891	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TECNAI ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/Å^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.015	Depositor
Minimum map value	-0.006	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.002	Depositor
Recommended contour level	0.004	Depositor
Map size (Å)	250.88, 250.88, 250.88	wwPDB
Map dimensions	256, 256, 256	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.98, 0.98, 0.98	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: ZN

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	0.31	0/2567	0.74	1/3462 (0.0%)
2	B	0.29	0/2362	0.74	2/3182 (0.1%)
3	C	0.34	1/2790 (0.0%)	0.80	7/3748 (0.2%)
4	D	0.28	0/2787	0.71	1/3763 (0.0%)
5	E	0.27	0/2499	0.71	5/3350 (0.1%)
6	F	0.29	0/2781	0.73	2/3745 (0.1%)
7	U	0.27	0/6684	0.68	2/9043 (0.0%)
8	V	0.32	0/3997	0.81	9/5399 (0.2%)
9	W	0.27	0/3750	0.70	3/5039 (0.1%)
10	X	0.27	0/3092	0.67	2/4168 (0.0%)
11	Y	0.26	0/3173	0.65	0/4273
12	Z	0.26	0/2324	0.71	2/3150 (0.1%)
13	a	0.27	0/3061	0.72	1/4144 (0.0%)
14	b	0.29	0/1478	0.73	0/2001
15	c	0.26	0/2302	0.70	0/3110
16	d	0.27	0/2162	0.68	0/2919
17	G	0.25	0/1735	0.64	0/2343
18	e	0.26	0/596	0.65	0/805
19	f	0.31	0/5377	0.79	3/7248 (0.0%)
All	All	0.28	1/55517 (0.0%)	0.72	40/74892 (0.1%)

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
3	C	317	PHE	C-N	5.23	1.39	1.33

All (40) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
19	f	407	MET	N-CA-C	-15.35	94.06	111.71

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
8	V	29	PRO	CA-C-N	-8.56	113.00	121.65
8	V	29	PRO	C-N-CA	-8.56	113.00	121.65
12	Z	220	LEU	CA-C-N	8.22	130.11	119.84
12	Z	220	LEU	C-N-CA	8.22	130.11	119.84
9	W	221	LYS	CA-C-N	-7.96	112.47	126.32
9	W	221	LYS	C-N-CA	-7.96	112.47	126.32
3	C	320	PRO	CA-N-CD	-7.82	101.05	112.00
3	C	318	PRO	CA-C-N	-7.74	114.09	119.66
3	C	318	PRO	C-N-CA	-7.74	114.09	119.66
7	U	16	GLU	CA-C-N	7.14	126.82	119.82
7	U	16	GLU	C-N-CA	7.14	126.82	119.82
10	X	311	ALA	N-CA-C	-6.63	103.31	111.33
3	C	319	PRO	O-C-N	6.52	124.21	121.15
8	V	26	PRO	N-CA-C	6.50	118.63	110.70
9	W	221	LYS	N-CA-C	-6.37	97.23	110.80
8	V	187	ILE	N-CA-C	6.25	119.80	111.17
3	C	317	PHE	CA-C-N	-6.17	114.03	120.38
3	C	317	PHE	C-N-CA	-6.17	114.03	120.38
2	B	203	LEU	CA-C-N	-6.16	115.43	121.65
2	B	203	LEU	C-N-CA	-6.16	115.43	121.65
8	V	28	PRO	N-CA-C	6.13	118.18	110.70
8	V	27	PRO	N-CA-C	5.99	118.01	110.70
5	E	76	GLY	CA-C-N	-5.94	113.84	120.14
5	E	76	GLY	C-N-CA	-5.94	113.84	120.14
5	E	174	GLY	N-CA-C	5.60	123.75	112.34
1	A	344	SER	CB-CA-C	-5.59	110.14	116.63
3	C	255	GLY	N-CA-C	5.58	126.40	113.18
8	V	227	VAL	N-CA-C	5.42	115.56	110.30
4	D	317	LEU	N-CA-C	5.19	117.26	108.02
6	F	204	LEU	CA-C-N	-5.13	114.38	119.56
6	F	204	LEU	C-N-CA	-5.13	114.38	119.56
13	a	339	ARG	CB-CA-C	-5.11	110.28	117.23
10	X	391	PRO	N-CA-C	5.09	116.92	110.70
5	E	226	GLN	CA-C-N	-5.09	114.56	119.90
5	E	226	GLN	C-N-CA	-5.09	114.56	119.90
8	V	26	PRO	CA-C-N	-5.06	115.17	120.38
8	V	26	PRO	C-N-CA	-5.06	115.17	120.38
19	f	100	ARG	CA-C-N	5.05	125.05	119.90
19	f	100	ARG	C-N-CA	5.05	125.05	119.90

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	2525	0	2586	38	0
2	B	2332	0	2370	56	0
3	C	2757	0	2854	122	0
4	D	2743	0	2795	65	0
5	E	2468	0	2542	64	0
6	F	2746	0	2841	94	0
7	U	6568	0	6627	123	0
8	V	3919	0	3959	128	0
9	W	3703	0	3821	56	0
10	X	3048	0	3139	34	0
11	Y	3115	0	3120	58	0
12	Z	2281	0	2312	45	0
13	a	3003	0	3016	49	0
14	b	1458	0	1505	27	0
15	c	2260	0	2276	45	0
16	d	2116	0	2146	39	0
17	G	1710	0	1713	26	0
18	e	583	0	493	17	0
19	f	5304	0	5315	134	0
20	c	1	0	0	0	0
All	All	54640	0	55430	1102	0

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

All (1102) 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)
19:f:403:LYS:C	19:f:407:MET:HE2	1.20	1.52
6:F:173:LYS:CD	6:F:274:LEU:HD21	1.08	1.51
3:C:320:PRO:HG2	3:C:355:SER:C	1.10	1.50
19:f:403:LYS:CA	19:f:407:MET:HE2	1.41	1.48
8:V:183:GLU:HA	8:V:187:ILE:CG1	1.42	1.46
19:f:403:LYS:C	19:f:407:MET:CE	1.92	1.42
3:C:320:PRO:CG	3:C:356:GLY:CA	1.99	1.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:320:PRO:HG3	3:C:356:GLY:CA	1.52	1.39
6:F:173:LYS:CG	6:F:274:LEU:HD21	1.49	1.39
6:F:173:LYS:CD	6:F:274:LEU:CD2	2.03	1.37
3:C:320:PRO:HG2	3:C:356:GLY:N	1.35	1.37
3:C:320:PRO:CG	3:C:356:GLY:N	1.87	1.37
5:E:294:ARG:O	5:E:295:LEU:HG	1.16	1.33
3:C:320:PRO:CG	3:C:355:SER:C	2.06	1.28
19:f:404:ASP:N	19:f:407:MET:CE	1.94	1.28
6:F:173:LYS:HG3	6:F:274:LEU:CD2	1.63	1.26
3:C:321:ASN:C	3:C:322:GLU:OE2	1.78	1.25
3:C:322:GLU:O	3:C:324:ALA:N	1.68	1.24
6:F:167:GLU:OE1	6:F:274:LEU:HD12	1.33	1.23
19:f:404:ASP:N	19:f:407:MET:HE3	1.52	1.22
3:C:191:PRO:CG	3:C:319:PRO:HG3	1.76	1.15
8:V:183:GLU:CA	8:V:187:ILE:HG12	1.76	1.14
6:F:173:LYS:CG	6:F:274:LEU:CD2	2.15	1.13
8:V:183:GLU:CA	8:V:187:ILE:CG1	2.29	1.10
5:E:294:ARG:O	5:E:295:LEU:CG	1.99	1.10
6:F:173:LYS:HD2	6:F:274:LEU:HD21	1.26	1.09
6:F:173:LYS:HD3	6:F:274:LEU:HD21	1.12	1.08
6:F:167:GLU:HG2	6:F:274:LEU:HD11	1.30	1.08
3:C:320:PRO:HG2	3:C:355:SER:O	1.53	1.08
9:W:221:LYS:O	9:W:222:LEU:HB2	1.37	1.07
3:C:321:ASN:O	3:C:322:GLU:CD	1.98	1.06
5:E:291:ARG:HG3	5:E:292:PRO:HD2	1.37	1.05
19:f:403:LYS:HA	19:f:407:MET:HE2	1.29	1.05
6:F:167:GLU:HG3	6:F:270:ASP:OD1	1.55	1.04
8:V:185:GLN:HG3	8:V:186:LYS:HG3	1.37	1.03
19:f:403:LYS:CA	19:f:407:MET:CE	2.31	1.03
3:C:320:PRO:CG	3:C:356:GLY:HA2	1.77	1.03
3:C:320:PRO:CD	3:C:356:GLY:N	2.21	1.02
3:C:322:GLU:O	3:C:325:ARG:N	1.90	1.02
3:C:191:PRO:HG3	3:C:319:PRO:CG	1.90	1.02
19:f:403:LYS:HA	19:f:407:MET:CE	1.91	1.01
3:C:321:ASN:O	3:C:322:GLU:OE2	1.78	1.01
3:C:322:GLU:OE2	3:C:325:ARG:NH1	1.94	1.01
19:f:404:ASP:CA	19:f:407:MET:HE3	1.91	1.01
6:F:175:MET:O	6:F:176:GLU:HG2	1.61	1.00
6:F:167:GLU:OE1	6:F:274:LEU:CD1	2.11	0.99
3:C:320:PRO:CD	3:C:356:GLY:CA	2.40	0.98
8:V:183:GLU:HA	8:V:187:ILE:HG13	1.40	0.98

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:167:GLU:HG2	6:F:274:LEU:CD1	1.94	0.98
8:V:183:GLU:N	8:V:187:ILE:HD11	1.80	0.96
3:C:191:PRO:CD	3:C:319:PRO:HG3	1.96	0.95
3:C:320:PRO:CD	3:C:356:GLY:HA3	1.98	0.94
3:C:320:PRO:HG3	3:C:356:GLY:HA2	0.96	0.94
8:V:183:GLU:HA	8:V:187:ILE:HG12	0.93	0.91
3:C:191:PRO:CG	3:C:319:PRO:CG	2.48	0.91
3:C:257:SER:H	4:D:316:THR:HG22	1.34	0.90
9:W:221:LYS:O	9:W:222:LEU:CB	2.18	0.89
6:F:167:GLU:CG	6:F:274:LEU:HD11	2.05	0.87
19:f:406:GLY:O	19:f:410:ALA:N	2.08	0.86
3:C:320:PRO:HD2	3:C:356:GLY:N	1.90	0.86
3:C:316:GLU:CD	3:C:318:PRO:HD3	2.01	0.85
6:F:173:LYS:HD2	6:F:274:LEU:CD2	1.89	0.85
3:C:316:GLU:OE1	3:C:318:PRO:HD3	1.77	0.85
8:V:183:GLU:HG3	8:V:187:ILE:HG13	1.59	0.85
6:F:169:ASP:O	6:F:171:ARG:HG2	1.79	0.83
3:C:322:GLU:C	3:C:324:ALA:N	2.37	0.82
6:F:167:GLU:CG	6:F:274:LEU:CD1	2.57	0.82
6:F:173:LYS:HG3	6:F:274:LEU:HD22	1.59	0.81
3:C:322:GLU:O	3:C:323:GLU:C	2.23	0.81
3:C:321:ASN:O	3:C:322:GLU:HB2	1.81	0.80
6:F:167:GLU:CG	6:F:270:ASP:OD1	2.30	0.80
3:C:321:ASN:O	3:C:322:GLU:CB	2.29	0.79
8:V:183:GLU:CG	8:V:187:ILE:HG13	2.13	0.79
19:f:404:ASP:HA	19:f:407:MET:HE3	1.63	0.79
5:E:291:ARG:CG	5:E:292:PRO:HD2	2.13	0.78
19:f:404:ASP:HA	19:f:407:MET:HB2	1.64	0.78
3:C:320:PRO:HD3	3:C:356:GLY:HA3	1.65	0.77
5:E:294:ARG:HH11	5:E:294:ARG:HG3	1.50	0.76
6:F:175:MET:O	6:F:176:GLU:CG	2.33	0.75
8:V:183:GLU:N	8:V:187:ILE:CD1	2.50	0.75
6:F:173:LYS:HD3	6:F:274:LEU:CD2	1.89	0.75
9:W:115:ILE:HG12	9:W:116:THR:HG22	1.68	0.75
3:C:322:GLU:C	3:C:324:ALA:H	1.95	0.74
4:D:85:ILE:HG21	5:E:68:LYS:HD2	1.70	0.73
19:f:373:ALA:HB2	19:f:744:MET:HG3	1.71	0.73
4:D:174:LYS:HE2	4:D:343:LEU:HB3	1.72	0.72
5:E:294:ARG:HG3	5:E:294:ARG:NH1	2.02	0.72
5:E:291:ARG:HG3	5:E:292:PRO:CD	2.19	0.72
6:F:169:ASP:O	6:F:170:SER:C	2.33	0.71

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:322:GLU:OE2	3:C:322:GLU:N	2.23	0.71
6:F:173:LYS:HD3	6:F:274:LEU:HD11	1.72	0.71
9:W:422:ASN:HD21	12:Z:247:LYS:HG3	1.54	0.71
8:V:182:LYS:C	8:V:187:ILE:CD1	2.64	0.70
5:E:289:LEU:HA	5:E:294:ARG:NH1	2.06	0.70
9:W:221:LYS:HG3	9:W:222:LEU:HD12	1.73	0.70
19:f:236:CYS:HA	19:f:240:VAL:HB	1.74	0.70
7:U:342:LEU:HD23	7:U:345:ASN:HD21	1.56	0.69
3:C:320:PRO:HD2	3:C:356:GLY:H	1.54	0.69
5:E:294:ARG:O	5:E:295:LEU:CB	2.41	0.69
6:F:167:GLU:CD	6:F:274:LEU:CD1	2.64	0.69
19:f:88:SER:HB3	19:f:92:VAL:HG23	1.73	0.69
6:F:173:LYS:NZ	6:F:173:LYS:HB3	2.07	0.69
8:V:185:GLN:HG2	8:V:186:LYS:HZ3	1.57	0.69
8:V:182:LYS:HB3	8:V:187:ILE:HD13	1.73	0.69
3:C:255:GLY:N	4:D:318:ASP:O	2.17	0.69
6:F:167:GLU:N	6:F:167:GLU:OE2	2.26	0.68
8:V:263:LEU:HD22	16:d:121:ARG:HE	1.58	0.68
12:Z:240:VAL:HG12	12:Z:242:LEU:H	1.58	0.68
8:V:279:GLN:O	8:V:285:TRP:NE1	2.27	0.68
13:a:374:ILE:HD12	16:d:251:ARG:HB2	1.75	0.68
1:A:206:ILE:HG23	1:A:207:GLU:HG2	1.76	0.67
3:C:320:PRO:CG	3:C:355:SER:O	2.26	0.67
8:V:182:LYS:C	8:V:187:ILE:HD11	2.19	0.67
8:V:185:GLN:HE21	8:V:186:LYS:HE3	1.59	0.67
13:a:320:VAL:HG22	13:a:322:GLY:H	1.60	0.67
19:f:72:ARG:HG3	19:f:73:PRO:HD3	1.77	0.67
19:f:629:LYS:HE2	19:f:632:LYS:HD3	1.76	0.67
10:X:310:ARG:HA	10:X:313:LEU:HB2	1.76	0.66
19:f:89:MET:HG2	19:f:90:THR:HG23	1.75	0.66
19:f:262:PHE:HB3	19:f:281:ILE:HD11	1.77	0.66
6:F:166:THR:O	6:F:167:GLU:HB2	1.94	0.66
8:V:182:LYS:HB3	8:V:186:LYS:HE2	1.77	0.66
9:W:125:ILE:HD12	9:W:128:LEU:HD21	1.78	0.66
8:V:100:MET:HG2	8:V:102:PRO:HD2	1.77	0.66
9:W:124:LEU:HD13	9:W:149:LEU:HD13	1.76	0.66
10:X:338:VAL:HG23	10:X:339:ILE:HD12	1.76	0.66
15:c:52:GLU:HB3	15:c:82:VAL:HG23	1.77	0.66
1:A:333:ARG:HH12	1:A:340:LYS:HD3	1.60	0.66
2:B:361:LYS:HE3	2:B:384:ILE:HB	1.76	0.66
6:F:173:LYS:HB3	6:F:173:LYS:HZ3	1.58	0.66

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:W:16:MET:HE3	9:W:27:ARG:HH21	1.61	0.66
7:U:506:ALA:HB1	7:U:543:LYS:HB2	1.77	0.65
19:f:553:THR:HA	19:f:556:ARG:HE	1.59	0.65
7:U:799:LYS:HB3	7:U:801:GLN:HE22	1.62	0.65
19:f:192:VAL:HG13	19:f:193:PRO:HD3	1.78	0.65
4:D:39:ASP:N	7:U:179:TYR:HH	1.94	0.65
3:C:321:ASN:O	3:C:322:GLU:CG	2.45	0.65
8:V:183:GLU:CA	8:V:187:ILE:HG13	2.14	0.65
13:a:32:LYS:HB3	14:b:20:ASP:HB3	1.77	0.65
7:U:212:ASP:OD2	7:U:215:ASN:ND2	2.30	0.64
11:Y:181:LYS:HE3	11:Y:200:LEU:HA	1.77	0.64
9:W:299:ILE:HG22	9:W:301:LYS:H	1.61	0.64
7:U:127:ASP:OD2	7:U:129:ARG:NH1	2.31	0.64
9:W:316:ARG:HG3	9:W:318:SER:H	1.63	0.64
19:f:460:ASP:OD1	19:f:460:ASP:N	2.28	0.64
12:Z:278:ASN:O	12:Z:282:ASN:ND2	2.31	0.64
8:V:141:THR:HG22	8:V:145:LEU:HD13	1.77	0.64
3:C:347:ILE:HG12	3:C:383:PHE:HB3	1.79	0.63
5:E:290:LEU:HA	5:E:295:LEU:HD12	1.79	0.63
13:a:374:ILE:HG13	13:a:375:LEU:HG	1.81	0.63
19:f:86:THR:HG23	19:f:87:THR:H	1.64	0.63
12:Z:190:ARG:HD2	13:a:375:LEU:HD13	1.79	0.63
7:U:592:GLY:HA2	7:U:628:ARG:HE	1.63	0.63
1:A:97:ARG:HB3	1:A:142:VAL:HG13	1.80	0.63
3:C:57:ARG:NH1	7:U:644:TYR:OH	2.32	0.63
6:F:121:CYS:SG	6:F:122:ALA:N	2.71	0.63
6:F:141:ASP:HB3	6:F:144:LYS:HB2	1.81	0.63
15:c:159:ALA:H	15:c:205:ILE:HD11	1.63	0.63
16:d:112:VAL:O	16:d:116:HIS:ND1	2.32	0.63
1:A:115:VAL:HG13	1:A:117:GLN:H	1.62	0.63
5:E:188:ALA:HA	5:E:192:ASP:HB2	1.80	0.63
5:E:294:ARG:C	5:E:295:LEU:HG	2.17	0.63
16:d:107:LEU:HD22	16:d:170:LEU:HD11	1.80	0.63
7:U:57:ARG:HE	7:U:85:GLY:HA3	1.64	0.62
3:C:34:ILE:HG22	3:C:38:LYS:HE2	1.81	0.62
7:U:127:ASP:HB3	7:U:130:LEU:HD13	1.80	0.62
8:V:186:LYS:NZ	8:V:186:LYS:H	1.96	0.62
8:V:346:LEU:HD23	18:e:40:GLU:HG2	1.81	0.62
9:W:405:LYS:HB3	9:W:414:ASN:HB2	1.81	0.62
6:F:167:GLU:CD	6:F:274:LEU:HD12	2.16	0.62
9:W:408:ARG:HB2	10:X:344:ARG:HG2	1.81	0.62

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:a:19:PRO:HA	13:a:22:TRP:HB2	1.81	0.62
2:B:120:HIS:HB2	2:B:132:TYR:HB2	1.79	0.62
11:Y:237:ARG:HA	11:Y:241:ILE:HB	1.82	0.62
15:c:63:ASP:OD1	15:c:66:THR:OG1	2.13	0.62
11:Y:188:CYS:HA	11:Y:191:ILE:HG22	1.82	0.62
15:c:40:LYS:NZ	15:c:72:VAL:O	2.30	0.62
2:B:313:LEU:HD11	2:B:344:PRO:HB2	1.81	0.62
5:E:233:ASP:HA	5:E:278:ALA:HB3	1.82	0.62
8:V:160:LEU:HD13	8:V:182:LYS:HE3	1.82	0.62
8:V:479:ARG:NH1	11:Y:374:ASP:OD1	2.33	0.62
9:W:408:ARG:O	10:X:346:GLN:NE2	2.32	0.62
7:U:247:GLN:HE21	7:U:913:ILE:H	1.47	0.62
15:c:145:VAL:HG22	15:c:147:PRO:HD3	1.82	0.62
6:F:173:LYS:HD3	6:F:274:LEU:CD1	2.30	0.61
7:U:524:LYS:HB2	7:U:559:ARG:HH11	1.64	0.61
3:C:191:PRO:HG3	3:C:319:PRO:HG3	1.51	0.61
3:C:255:GLY:HA2	4:D:322:LEU:HB2	1.82	0.61
1:A:108:ASP:OD1	1:A:108:ASP:N	2.30	0.61
8:V:182:LYS:HB3	8:V:187:ILE:CD1	2.30	0.61
12:Z:164:ALA:HB1	12:Z:168:GLU:HB3	1.81	0.61
10:X:362:GLU:OE2	10:X:380:GLN:NE2	2.34	0.61
18:e:52:PHE:HB3	18:e:57:ARG:HA	1.82	0.61
8:V:255:LEU:HD22	8:V:291:TYR:HB3	1.81	0.61
5:E:294:ARG:HH11	5:E:294:ARG:CG	2.14	0.61
7:U:221:ILE:HD12	7:U:754:HIS:HB2	1.82	0.60
11:Y:192:ARG:NH2	18:e:38:VAL:O	2.33	0.60
13:a:19:PRO:O	13:a:23:HIS:ND1	2.26	0.60
6:F:166:THR:O	6:F:166:THR:HG22	2.01	0.60
6:F:170:SER:O	6:F:171:ARG:HB3	2.01	0.60
7:U:681:ASN:HA	7:U:684:ARG:HE	1.66	0.60
8:V:483:CYS:O	8:V:487:HIS:ND1	2.34	0.60
3:C:255:GLY:N	4:D:318:ASP:H	2.00	0.60
1:A:401:ARG:NH1	1:A:403:ILE:O	2.34	0.60
8:V:186:LYS:HE2	8:V:187:ILE:HD13	1.84	0.60
8:V:410:ILE:HD12	8:V:422:ILE:HD11	1.83	0.60
14:b:110:ILE:HG22	14:b:139:ASP:HB2	1.83	0.60
15:c:64:ASP:HA	15:c:139:ARG:HH21	1.66	0.60
3:C:295:THR:HG22	3:C:297:ARG:H	1.66	0.60
3:C:316:GLU:OE2	3:C:318:PRO:HD3	2.01	0.60
11:Y:173:ASP:HB2	11:Y:176:ARG:HB3	1.83	0.60
1:A:76:ALA:HB1	2:B:137:SER:HB3	1.84	0.60

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:429:LYS:HG3	3:C:310:ARG:HH21	1.66	0.60
7:U:842:LYS:O	7:U:880:ASN:N	2.34	0.60
8:V:142:GLU:OE1	8:V:148:ARG:NE	2.29	0.60
8:V:153:LYS:HZ3	8:V:203:LEU:HB2	1.67	0.60
3:C:172:PRO:HA	3:C:175:PHE:HB2	1.84	0.59
8:V:183:GLU:HG3	8:V:187:ILE:CG1	2.31	0.59
16:d:38:THR:HG22	16:d:40:GLY:H	1.67	0.59
2:B:375:ALA:HB2	2:B:413:LYS:HD2	1.82	0.59
5:E:178:THR:O	5:E:339:ASN:ND2	2.35	0.59
1:A:407:LYS:HA	1:A:410:LEU:HD23	1.85	0.59
9:W:417:ARG:NH1	9:W:420:ASP:OD2	2.35	0.59
4:D:65:GLN:NE2	16:d:256:ILE:O	2.36	0.59
10:X:163:LYS:HA	10:X:166:LEU:HD13	1.84	0.59
2:B:202:GLU:HA	2:B:205:LEU:HD13	1.84	0.58
3:C:319:PRO:HB2	3:C:355:SER:HA	1.85	0.58
19:f:80:ARG:HB3	19:f:95:PRO:HB2	1.84	0.58
1:A:185:GLU:OE1	1:A:188:ARG:NH2	2.37	0.58
6:F:175:MET:C	6:F:176:GLU:HG2	2.27	0.58
11:Y:171:GLY:O	11:Y:176:ARG:NH2	2.36	0.58
19:f:347:ASP:O	19:f:351:THR:OG1	2.21	0.58
7:U:355:ASN:HD21	7:U:716:VAL:HG21	1.69	0.58
9:W:115:ILE:HG23	9:W:116:THR:H	1.68	0.58
8:V:100:MET:HE2	8:V:102:PRO:HG2	1.86	0.58
2:B:116:ILE:HG22	2:B:118:ASP:H	1.68	0.58
7:U:414:GLY:H	7:U:449:ILE:HG23	1.69	0.58
7:U:474:ARG:NH2	7:U:500:ASN:O	2.35	0.58
14:b:3:LEU:HD23	14:b:44:ASN:HD21	1.68	0.58
3:C:320:PRO:HG3	3:C:356:GLY:HA3	1.73	0.58
3:C:322:GLU:O	3:C:324:ALA:CA	2.51	0.58
11:Y:90:ASP:O	11:Y:94:ASN:ND2	2.36	0.58
13:a:70:ARG:HA	14:b:17:ARG:HH12	1.67	0.58
18:e:38:VAL:HG12	18:e:40:GLU:H	1.69	0.58
8:V:150:ARG:HB3	8:V:199:ASN:HD22	1.68	0.57
3:C:374:ARG:NH2	11:Y:173:ASP:OD1	2.37	0.57
5:E:12:TYR:HA	5:E:15:LYS:HE2	1.87	0.57
9:W:406:VAL:HG12	9:W:413:ILE:HG22	1.85	0.57
19:f:366:ASP:H	19:f:370:MET:HB2	1.70	0.57
6:F:173:LYS:CD	6:F:274:LEU:CG	2.82	0.57
8:V:375:PHE:HA	8:V:378:VAL:HB	1.85	0.57
7:U:458:ILE:HA	7:U:461:LEU:HB2	1.87	0.57
11:Y:330:ILE:HA	11:Y:333:GLU:HB2	1.86	0.57

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:d:75:MET:HE2	16:d:102:ASN:HB2	1.87	0.57
5:E:289:LEU:HA	5:E:294:ARG:HH12	1.68	0.57
6:F:173:LYS:HD3	6:F:274:LEU:CG	2.34	0.57
8:V:311:ASN:OD1	8:V:315:LYS:NZ	2.38	0.57
10:X:316:ASP:OD2	10:X:320:SER:OG	2.22	0.57
17:G:70:ASP:OD1	17:G:74:TRP:N	2.37	0.57
3:C:50:ASN:ND2	7:U:642:GLU:O	2.38	0.57
8:V:80:LYS:HG3	8:V:81:GLN:H	1.69	0.57
6:F:173:LYS:HG3	6:F:274:LEU:HD23	1.75	0.57
19:f:406:GLY:C	19:f:408:LEU:N	2.54	0.57
7:U:142:LEU:HD21	7:U:166:THR:HG22	1.87	0.57
8:V:351:PRO:HB2	8:V:355:ARG:HH22	1.69	0.57
8:V:368:ARG:HH22	18:e:43:TRP:HZ2	1.53	0.57
8:V:396:ILE:O	16:d:141:GLN:NE2	2.37	0.57
16:d:2:TYR:HD2	16:d:3:GLU:HG3	1.69	0.57
14:b:84:ILE:HD12	14:b:115:SER:HB2	1.86	0.57
2:B:355:LEU:HD12	2:B:357:ASP:H	1.70	0.57
4:D:313:ARG:O	4:D:316:THR:OG1	2.23	0.57
6:F:169:ASP:O	6:F:170:SER:O	2.22	0.56
11:Y:192:ARG:HH21	18:e:41:ASP:HB3	1.70	0.56
19:f:303:VAL:HG22	19:f:339:ILE:HG13	1.86	0.56
19:f:325:GLN:HE22	19:f:331:LEU:H	1.53	0.56
3:C:273:MET:HG3	3:C:307:ARG:HH12	1.70	0.56
5:E:199:VAL:HG11	6:F:308:ARG:HD2	1.85	0.56
7:U:799:LYS:HG2	7:U:843:GLU:HA	1.87	0.56
19:f:403:LYS:C	19:f:407:MET:HE3	1.98	0.56
3:C:43:ARG:HB2	7:U:639:LEU:HD21	1.87	0.56
3:C:257:SER:N	4:D:316:THR:HG22	2.13	0.56
14:b:2:VAL:O	14:b:44:ASN:ND2	2.35	0.56
1:A:102:ILE:HG22	1:A:113:ILE:HG12	1.87	0.56
8:V:186:LYS:HD2	8:V:187:ILE:HG23	1.87	0.56
8:V:216:ARG:NH2	18:e:3:GLU:O	2.38	0.56
2:B:125:THR:HG22	2:B:129:SER:H	1.71	0.56
19:f:466:LEU:O	19:f:478:ARG:NH2	2.36	0.56
7:U:159:ARG:NE	7:U:161:ASP:OD1	2.38	0.56
15:c:58:LEU:HB2	15:c:71:ASP:HB3	1.88	0.56
10:X:171:LEU:HD13	10:X:210:LEU:HD23	1.87	0.56
3:C:158:ILE:HA	3:C:161:ILE:HG22	1.87	0.56
7:U:749:GLN:HA	7:U:755:THR:HA	1.88	0.56
8:V:306:ARG:NH2	8:V:310:THR:OG1	2.39	0.55
3:C:154:LEU:HD23	3:C:324:ALA:HB1	1.88	0.55

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:U:436:ALA:HB1	7:U:472:ILE:HG12	1.89	0.55
7:U:498:LYS:HD3	7:U:501:LEU:HD21	1.89	0.55
8:V:189:ASP:OD1	8:V:189:ASP:N	2.40	0.55
4:D:268:ASP:O	4:D:272:THR:OG1	2.24	0.55
6:F:293:THR:HG22	6:F:295:ARG:H	1.70	0.55
15:c:175:ARG:HH12	15:c:180:ASN:HD21	1.54	0.55
1:A:94:GLN:HB2	2:B:156:VAL:HG11	1.88	0.55
12:Z:187:LEU:HA	12:Z:190:ARG:HG2	1.87	0.55
14:b:62:THR:HG21	14:b:71:ILE:HG12	1.89	0.55
1:A:96:ALA:H	1:A:144:ARG:HH11	1.55	0.55
2:B:234:LEU:HD13	2:B:330:ALA:HB1	1.88	0.55
6:F:375:VAL:HG22	6:F:415:LEU:HB3	1.88	0.55
11:Y:92:GLU:HG2	11:Y:93:LYS:HD2	1.89	0.55
3:C:191:PRO:HD2	3:C:319:PRO:HG3	1.84	0.55
9:W:393:LEU:HA	9:W:396:LEU:HB2	1.88	0.55
14:b:6:THR:HB	14:b:49:VAL:HG22	1.89	0.55
15:c:194:HIS:HA	15:c:197:ASN:HB2	1.89	0.55
19:f:358:PHE:HD1	19:f:391:LEU:HD22	1.72	0.55
19:f:585:GLU:HB2	19:f:586:PRO:HD2	1.89	0.55
2:B:190:LEU:O	2:B:194:ILE:N	2.33	0.55
6:F:291:ILE:HD12	6:F:306:VAL:HG11	1.89	0.55
11:Y:72:LYS:HA	11:Y:75:LYS:HE3	1.89	0.55
14:b:12:ASN:HD21	14:b:55:ALA:HB2	1.71	0.55
19:f:535:THR:OG1	19:f:536:SER:N	2.36	0.55
2:B:231:GLY:HA2	2:B:234:LEU:HD12	1.89	0.55
12:Z:26:ILE:HG23	12:Z:29:VAL:HG22	1.87	0.55
12:Z:231:GLN:NE2	13:a:345:GLN:O	2.39	0.55
12:Z:256:GLN:HE22	15:c:298:GLN:HG2	1.72	0.55
5:E:51:GLN:O	12:Z:88:ARG:NH2	2.38	0.54
6:F:167:GLU:CD	6:F:274:LEU:HD11	2.31	0.54
7:U:557:TYR:O	7:U:559:ARG:NH2	2.40	0.54
7:U:789:ILE:HD12	7:U:911:ILE:HG23	1.88	0.54
11:Y:344:HIS:HD2	11:Y:358:ARG:HG3	1.72	0.54
7:U:421:GLN:O	7:U:425:THR:OG1	2.20	0.54
3:C:319:PRO:CB	3:C:355:SER:HA	2.37	0.54
8:V:195:ILE:HB	8:V:200:ARG:HB2	1.90	0.54
4:D:359:ASP:HB2	17:G:74:TRP:HZ2	1.72	0.54
4:D:391:ARG:HH12	4:D:397:LYS:HD2	1.73	0.54
11:Y:190:ALA:HB2	11:Y:287:LEU:HD21	1.90	0.54
12:Z:21:ASP:OD2	15:c:104:ARG:NH2	2.41	0.54
13:a:123:LEU:HD13	13:a:161:LYS:HB2	1.90	0.54

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:d:122:LEU:HG	16:d:123:PRO:HD3	1.88	0.54
6:F:314:LEU:HD21	6:F:342:LEU:HD23	1.90	0.54
13:a:72:ASN:HD21	13:a:74:LEU:HD12	1.73	0.54
19:f:533:ASP:HB2	19:f:535:THR:HG22	1.90	0.54
19:f:45:LEU:HD22	19:f:86:THR:HG21	1.90	0.54
8:V:61:GLU:O	8:V:64:GLN:NE2	2.41	0.54
13:a:340:VAL:HG13	13:a:341:LEU:H	1.73	0.54
13:a:341:LEU:HD11	13:a:346:ILE:HD11	1.90	0.54
8:V:183:GLU:N	8:V:187:ILE:CG1	2.70	0.54
13:a:165:THR:HG22	13:a:167:GLY:H	1.73	0.54
7:U:155:LEU:O	7:U:158:ARG:NH1	2.40	0.53
7:U:613:ASP:OD1	7:U:616:ARG:NH1	2.41	0.53
8:V:391:THR:HB	16:d:123:PRO:HG2	1.90	0.53
10:X:97:LEU:HD12	10:X:132:ARG:HE	1.73	0.53
15:c:190:GLN:O	15:c:194:HIS:NE2	2.40	0.53
7:U:574:LYS:HD3	15:c:211:GLU:HB3	1.90	0.53
19:f:325:GLN:HE22	19:f:331:LEU:HB2	1.74	0.53
8:V:326:GLN:HE22	18:e:12:LEU:HD11	1.73	0.53
8:V:422:ILE:HG13	8:V:425:LYS:HE3	1.90	0.53
9:W:422:ASN:HB2	12:Z:251:LEU:HD13	1.90	0.53
17:G:157:ILE:HA	17:G:160:TYR:HD2	1.73	0.53
2:B:190:LEU:HD23	2:B:353:PHE:HE1	1.73	0.53
7:U:772:TRP:HD1	7:U:775:LEU:HG	1.72	0.53
8:V:200:ARG:HH11	8:V:242:HIS:CE1	2.25	0.53
2:B:193:GLN:HG3	2:B:351:ILE:HD13	1.90	0.53
7:U:458:ILE:HG23	7:U:481:LEU:HD11	1.90	0.53
9:W:147:LYS:HB3	9:W:185:PHE:HE1	1.73	0.53
19:f:324:VAL:O	19:f:325:GLN:HG2	2.09	0.53
6:F:116:GLN:HE21	6:F:118:LYS:HB3	1.74	0.53
11:Y:250:LEU:HD13	11:Y:257:ARG:HD3	1.89	0.53
19:f:579:ALA:HA	19:f:592:ASN:HD21	1.73	0.53
6:F:171:ARG:HG3	6:F:172:VAL:N	2.24	0.53
6:F:293:THR:O	6:F:307:GLN:NE2	2.40	0.53
17:G:102:VAL:HB	17:G:106:GLY:HA2	1.91	0.53
7:U:583:MET:HE3	7:U:605:VAL:HG11	1.91	0.53
12:Z:25:ARG:HD3	15:c:104:ARG:HE	1.74	0.53
13:a:226:ARG:HB3	13:a:234:ILE:HD11	1.91	0.53
3:C:202:ALA:O	3:C:206:HIS:ND1	2.35	0.53
17:G:185:VAL:HG12	17:G:189:LYS:HE2	1.91	0.53
4:D:103:VAL:HG11	4:D:132:LEU:HD11	1.91	0.52
11:Y:153:ASP:OD1	11:Y:153:ASP:N	2.41	0.52

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:b:34:ASN:O	14:b:38:HIS:ND1	2.29	0.52
1:A:420:TYR:OH	2:B:346:ARG:NH2	2.43	0.52
4:D:179:GLU:HA	4:D:183:LEU:HD13	1.90	0.52
7:U:497:LEU:HD22	7:U:516:LEU:HD13	1.91	0.52
8:V:289:LEU:HD13	8:V:312:ALA:HB2	1.92	0.52
3:C:191:PRO:HG3	3:C:319:PRO:HG2	1.85	0.52
3:C:194:THR:HB	3:C:328:ILE:HG12	1.91	0.52
7:U:247:GLN:HE21	7:U:913:ILE:HG13	1.73	0.52
7:U:343:ILE:HG12	7:U:934:LYS:HD3	1.91	0.52
7:U:795:LEU:HD12	7:U:796:LYS:HG3	1.91	0.52
11:Y:246:ILE:HA	11:Y:249:VAL:HG22	1.90	0.52
8:V:145:LEU:HA	8:V:148:ARG:HD2	1.92	0.52
19:f:533:ASP:OD1	19:f:565:ASN:ND2	2.42	0.52
1:A:365:GLU:HG2	1:A:367:ASP:H	1.74	0.52
9:W:267:LEU:HD23	9:W:299:ILE:HD11	1.92	0.52
19:f:93:PRO:HB2	19:f:137:ARG:HE	1.74	0.52
6:F:69:MET:HA	6:F:72:LYS:HG2	1.92	0.52
6:F:293:THR:HA	6:F:337:ILE:HG21	1.92	0.52
8:V:484:LEU:HD21	12:Z:260:VAL:HG22	1.92	0.52
12:Z:61:ASP:OD2	14:b:91:ARG:NH1	2.42	0.52
18:e:39:TRP:HA	18:e:42:ASN:HD22	1.75	0.52
6:F:299:GLU:HG3	6:F:300:LYS:H	1.75	0.52
8:V:263:LEU:HD23	16:d:118:GLU:HA	1.91	0.52
8:V:315:LYS:NZ	11:Y:378:ASN:OD1	2.35	0.52
9:W:448:LYS:HE3	12:Z:211:TYR:HD1	1.74	0.52
12:Z:48:LEU:HD11	12:Z:92:VAL:HG21	1.91	0.52
3:C:13:GLU:O	3:C:17:GLY:N	2.43	0.52
8:V:187:ILE:O	8:V:188:SER:C	2.53	0.52
12:Z:149:THR:O	13:a:178:ARG:NH1	2.42	0.52
19:f:404:ASP:CA	19:f:407:MET:HB2	2.38	0.52
19:f:655:LEU:HB3	19:f:678:LEU:HD11	1.91	0.52
7:U:187:LEU:HD11	7:U:193:PHE:HZ	1.75	0.52
7:U:457:ILE:HG22	7:U:460:TYR:HB3	1.93	0.52
11:Y:282:MET:HG3	11:Y:288:PHE:HE2	1.75	0.52
9:W:416:GLN:HG3	9:W:417:ARG:H	1.75	0.51
13:a:145:LEU:O	13:a:147:GLY:N	2.43	0.51
19:f:371:ASN:OD1	19:f:398:TRP:NE1	2.43	0.51
2:B:273:VAL:O	2:B:277:HIS:ND1	2.36	0.51
3:C:291:VAL:HB	3:C:293:MET:HE2	1.93	0.51
16:d:30:LEU:HD23	16:d:33:LEU:HD12	1.91	0.51
16:d:238:PRO:HA	16:d:241:GLU:HG2	1.92	0.51

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:U:497:LEU:HD23	7:U:501:LEU:HD23	1.91	0.51
7:U:643:SER:O	7:U:649:ARG:NH1	2.44	0.51
7:U:793:LYS:HB3	7:U:796:LYS:HB2	1.93	0.51
8:V:26:PRO:HG2	8:V:27:PRO:HD3	1.92	0.51
11:Y:179:ARG:NH1	11:Y:212:GLU:OE1	2.42	0.51
8:V:51:ALA:HB3	8:V:150:ARG:HH22	1.76	0.51
19:f:536:SER:HA	19:f:539:LEU:HB3	1.91	0.51
5:E:230:ILE:HB	5:E:275:MET:HA	1.92	0.51
9:W:333:LEU:HD12	9:W:334:GLU:HG2	1.93	0.51
17:G:116:LYS:O	17:G:118:ARG:NH1	2.43	0.51
1:A:220:THR:HB	1:A:346:PRO:HG3	1.93	0.51
9:W:366:MET:HA	9:W:369:TYR:HD2	1.75	0.51
3:C:119:ASP:HB2	15:c:191:ALA:HB2	1.91	0.51
11:Y:178:ASN:HD21	11:Y:207:THR:HA	1.74	0.51
11:Y:343:LEU:HD12	11:Y:344:HIS:H	1.75	0.51
17:G:75:SER:OG	17:G:78:HIS:ND1	2.33	0.51
7:U:317:GLU:HB2	7:U:320:ASP:HB2	1.91	0.51
13:a:293:PHE:HB2	13:a:329:LYS:HZ1	1.76	0.51
19:f:350:LYS:HG3	19:f:351:THR:HG23	1.91	0.51
1:A:201:PHE:HA	6:F:408:LEU:HD11	1.93	0.51
8:V:185:GLN:CG	8:V:186:LYS:HZ3	2.21	0.51
9:W:316:ARG:NH2	9:W:381:LEU:O	2.44	0.51
13:a:112:ILE:HD12	13:a:113:LEU:HG	1.92	0.51
13:a:280:MET:HE2	13:a:291:LEU:HD13	1.93	0.51
4:D:89:ILE:HB	5:E:78:ARG:HG3	1.94	0.50
7:U:564:ASP:OD1	7:U:590:TYR:OH	2.26	0.50
8:V:193:GLN:HG2	8:V:194:LYS:H	1.76	0.50
9:W:435:LEU:HD11	15:c:236:GLU:HG2	1.93	0.50
12:Z:232:ASP:OD2	13:a:335:TRP:NE1	2.44	0.50
8:V:416:ARG:NH2	11:Y:350:VAL:O	2.44	0.50
14:b:131:LEU:HD13	14:b:138:VAL:HG21	1.91	0.50
9:W:60:MET:SD	9:W:107:GLN:NE2	2.84	0.50
4:D:339:ARG:NH2	17:G:178:LEU:O	2.44	0.50
6:F:173:LYS:NZ	6:F:173:LYS:CB	2.73	0.50
7:U:792:ASN:HB3	7:U:914:LEU:HB3	1.92	0.50
13:a:239:ALA:HB1	13:a:244:ASN:HD21	1.76	0.50
14:b:187:PRO:HB2	14:b:189:LEU:HG	1.93	0.50
16:d:254:GLU:HB3	16:d:257:VAL:HG22	1.93	0.50
12:Z:170:VAL:HG12	15:c:155:VAL:HB	1.94	0.50
3:C:11:LEU:O	7:U:91:ASN:ND2	2.44	0.50
3:C:100:ASP:N	3:C:100:ASP:OD1	2.44	0.50

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:59:GLU:O	5:E:72:LYS:N	2.43	0.50
6:F:121:CYS:HA	6:F:135:PRO:HA	1.93	0.50
17:G:19:LEU:HD11	17:G:23:LYS:HE3	1.92	0.50
2:B:268:ARG:HA	2:B:315:GLN:HE22	1.77	0.50
1:A:282:GLY:H	1:A:326:THR:HG22	1.77	0.50
4:D:207:PRO:HG2	4:D:208:PRO:HD3	1.93	0.50
4:D:265:ASP:OD1	4:D:266:GLU:N	2.44	0.50
16:d:30:LEU:HD11	16:d:54:ILE:HD11	1.93	0.50
3:C:191:PRO:HG2	3:C:319:PRO:HB3	1.94	0.49
8:V:183:GLU:CA	8:V:187:ILE:CD1	2.89	0.49
15:c:270:LEU:O	15:c:274:ASN:ND2	2.44	0.49
5:E:74:THR:OG1	5:E:97:ARG:NH1	2.39	0.49
19:f:468:ASP:OD1	19:f:474:SER:HB2	2.12	0.49
2:B:111:THR:O	2:B:124:SER:N	2.45	0.49
9:W:131:VAL:HG22	9:W:142:ARG:HD2	1.94	0.49
11:Y:124:PHE:HA	11:Y:127:THR:HG22	1.92	0.49
15:c:39:LEU:HD23	15:c:42:LEU:HD12	1.94	0.49
15:c:236:GLU:O	15:c:240:HIS:ND1	2.34	0.49
19:f:370:MET:SD	19:f:370:MET:N	2.85	0.49
3:C:251:ILE:HD13	3:C:293:MET:HB3	1.94	0.49
6:F:373:MET:SD	6:F:373:MET:N	2.84	0.49
8:V:185:GLN:HG3	8:V:186:LYS:CG	2.27	0.49
8:V:220:PHE:HD2	8:V:221:LEU:HD23	1.77	0.49
9:W:34:LEU:HD11	9:W:47:LEU:HD11	1.93	0.49
9:W:153:LYS:HE2	9:W:161:GLU:HG3	1.95	0.49
10:X:379:ASP:OD1	10:X:380:GLN:N	2.45	0.49
7:U:261:LEU:HA	7:U:264:VAL:HG12	1.95	0.49
7:U:376:MET:HA	7:U:740:GLY:H	1.78	0.49
11:Y:268:TYR:HA	11:Y:271:PHE:HB3	1.95	0.49
12:Z:21:ASP:OD2	12:Z:25:ARG:NH2	2.46	0.49
13:a:78:GLU:O	13:a:82:HIS:ND1	2.40	0.49
9:W:258:ALA:O	9:W:262:LYS:NZ	2.39	0.49
10:X:365:LEU:O	10:X:369:ILE:HD12	2.12	0.49
14:b:97:LEU:O	14:b:100:ARG:NH1	2.46	0.49
3:C:191:PRO:CG	3:C:319:PRO:CB	2.90	0.49
4:D:205:TYR:HB3	4:D:333:PHE:H	1.78	0.49
5:E:56:ILE:HG12	5:E:57:VAL:H	1.78	0.49
5:E:81:VAL:HG11	5:E:100:LEU:HD22	1.94	0.49
7:U:894:MET:HE1	7:U:906:LEU:H	1.78	0.49
11:Y:292:TYR:OH	18:e:57:ARG:NH1	2.46	0.49
13:a:149:THR:O	13:a:153:SER:N	2.46	0.49

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:119:ASP:OD1	3:C:119:ASP:N	2.46	0.49
4:D:267:ILE:HD11	4:D:311:THR:HB	1.95	0.49
2:B:395:ILE:HA	2:B:398:ILE:HG12	1.94	0.49
6:F:84:LYS:HG3	6:F:161:LEU:HD22	1.93	0.49
7:U:719:ASP:HB2	7:U:727:LYS:HE2	1.95	0.49
10:X:45:VAL:HA	10:X:48:GLN:HG2	1.95	0.49
12:Z:224:HIS:ND1	12:Z:227:ILE:HD12	2.27	0.49
10:X:252:LYS:HG3	10:X:287:LEU:HD11	1.93	0.48
11:Y:190:ALA:O	18:e:37:HIS:NE2	2.44	0.48
13:a:120:ALA:HA	13:a:123:LEU:HD12	1.95	0.48
16:d:119:LEU:HD23	16:d:122:LEU:HD21	1.94	0.48
19:f:403:LYS:C	19:f:405:HIS:H	2.21	0.48
1:A:100:LYS:HG2	1:A:142:VAL:HG11	1.95	0.48
3:C:320:PRO:O	3:C:322:GLU:OE2	2.28	0.48
7:U:344:ARG:HD2	7:U:880:ASN:HB3	1.95	0.48
9:W:405:LYS:N	9:W:414:ASN:O	2.43	0.48
3:C:66:LEU:HD23	4:D:136:SER:HB3	1.94	0.48
7:U:135:ASN:HA	7:U:138:PHE:HB3	1.96	0.48
12:Z:12:HIS:ND1	12:Z:50:VAL:O	2.46	0.48
13:a:215:GLU:H	13:a:339:ARG:HH12	1.61	0.48
19:f:382:ASN:OD1	19:f:387:GLN:N	2.46	0.48
4:D:241:GLY:O	4:D:245:ARG:NH2	2.46	0.48
7:U:470:ASN:OD1	7:U:470:ASN:N	2.45	0.48
8:V:182:LYS:CB	8:V:187:ILE:CD1	2.90	0.48
11:Y:138:LEU:HD23	11:Y:176:ARG:HD2	1.95	0.48
19:f:304:PHE:HA	19:f:307:LEU:HB2	1.94	0.48
3:C:154:LEU:N	3:C:327:ASP:OD2	2.47	0.48
8:V:175:MET:HG2	8:V:217:VAL:HG21	1.95	0.48
9:W:421:PRO:HG2	9:W:424:LEU:HD12	1.96	0.48
14:b:131:LEU:HD12	14:b:160:LEU:HD11	1.96	0.48
15:c:187:PRO:HB2	15:c:193:ILE:HD11	1.96	0.48
19:f:315:GLU:HA	19:f:318:THR:HG22	1.94	0.48
19:f:325:GLN:HE21	19:f:328:SER:HA	1.78	0.48
2:B:343:ARG:HB2	2:B:344:PRO:HD3	1.95	0.48
3:C:13:GLU:HB2	7:U:140:ARG:HH12	1.78	0.48
3:C:253:SER:HB2	4:D:318:ASP:HA	1.96	0.48
7:U:895:PRO:HB2	7:U:898:CYS:HB2	1.96	0.48
8:V:442:ILE:HA	8:V:447:ILE:HD11	1.94	0.48
14:b:147:GLU:HG3	14:b:148:VAL:H	1.78	0.48
15:c:309:PHE:HD1	16:d:236:THR:HB	1.78	0.48
16:d:103:LEU:HD13	16:d:115:PHE:HE1	1.76	0.48

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:d:148:TYR:HE1	16:d:171:LEU:HD22	1.79	0.48
2:B:198:LYS:O	2:B:202:GLU:HB2	2.14	0.48
4:D:205:TYR:CG	4:D:206:GLY:N	2.81	0.48
4:D:313:ARG:NH2	4:D:315:ASP:OD2	2.47	0.48
7:U:415:HIS:HB2	7:U:419:ALA:HB2	1.96	0.48
12:Z:199:LYS:HD3	15:c:230:THR:HG21	1.96	0.48
15:c:180:ASN:HA	15:c:183:HIS:HD2	1.77	0.48
2:B:99:VAL:HB	2:B:160:ILE:HD11	1.96	0.48
3:C:75:GLU:O	3:C:88:LYS:N	2.43	0.48
4:D:323:ARG:HE	4:D:326:ARG:HH21	1.62	0.48
5:E:173:TYR:CZ	5:E:300:HIS:HB3	2.49	0.48
5:E:282:PRO:HA	5:E:285:LEU:HD12	1.96	0.48
7:U:580:ARG:HD3	7:U:613:ASP:HB3	1.95	0.48
3:C:312:ASP:OD1	3:C:313:ARG:N	2.47	0.48
6:F:339:ASP:HB3	6:F:342:LEU:HG	1.95	0.48
8:V:106:ARG:O	8:V:110:HIS:ND1	2.32	0.48
1:A:112:ILE:HD11	1:A:120:LYS:HD2	1.95	0.47
11:Y:109:GLU:HG2	11:Y:146:ARG:HH22	1.79	0.47
13:a:250:THR:HA	13:a:253:THR:HG22	1.96	0.47
3:C:295:THR:HG21	3:C:299:ASP:HB2	1.95	0.47
5:E:345:ASN:ND2	6:F:349:ASP:OD2	2.47	0.47
8:V:110:HIS:HA	8:V:113:LEU:HB2	1.95	0.47
8:V:383:GLY:O	8:V:387:GLN:NE2	2.47	0.47
12:Z:167:ALA:HB1	15:c:42:LEU:HD22	1.95	0.47
15:c:237:HIS:HA	15:c:240:HIS:HB2	1.96	0.47
16:d:104:LEU:HD11	16:d:170:LEU:HB2	1.96	0.47
3:C:37:ASP:HB2	8:V:503:LYS:HB2	1.95	0.47
3:C:256:SER:H	4:D:318:ASP:HB2	1.78	0.47
3:C:374:ARG:NH2	11:Y:170:GLU:O	2.47	0.47
5:E:65:THR:HG22	5:E:67:GLU:H	1.80	0.47
7:U:790:GLY:H	7:U:844:LYS:HG3	1.79	0.47
8:V:211:TYR:HA	8:V:214:HIS:CE1	2.49	0.47
9:W:220:GLU:O	9:W:221:LYS:HB3	2.14	0.47
14:b:48:ASN:HB2	14:b:64:LEU:HB3	1.96	0.47
19:f:76:GLU:OE1	19:f:79:ARG:NH2	2.46	0.47
19:f:466:LEU:HD12	19:f:500:LEU:HD12	1.97	0.47
19:f:538:ILE:HA	19:f:541:THR:HG22	1.96	0.47
7:U:541:HIS:HB2	7:U:544:ILE:HG22	1.96	0.47
9:W:455:LEU:HA	12:Z:220:LEU:HD22	1.94	0.47
11:Y:337:PHE:HB3	11:Y:343:LEU:HD21	1.95	0.47
13:a:372:HIS:O	13:a:376:THR:OG1	2.24	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:G:169:ASP:OD1	17:G:170:THR:N	2.47	0.47
6:F:251:LEU:HB3	6:F:285:ILE:HG22	1.96	0.47
11:Y:293:ARG:HH21	18:e:48:VAL:HG12	1.80	0.47
5:E:176:PRO:HG2	5:E:302:ASP:HA	1.96	0.47
8:V:280:ALA:C	8:V:282:ASN:H	2.23	0.47
17:G:198:ILE:HD13	17:G:224:VAL:HG21	1.95	0.47
19:f:749:ALA:HA	19:f:752:HIS:HB2	1.94	0.47
1:A:105:ASP:OD1	1:A:105:ASP:N	2.48	0.47
2:B:219:PRO:HA	2:B:326:LYS:HZ2	1.79	0.47
3:C:71:SER:HB2	3:C:117:ARG:HA	1.97	0.47
3:C:191:PRO:HG3	3:C:319:PRO:CB	2.43	0.47
4:D:86:PRO:HB2	5:E:105:LEU:HD12	1.97	0.47
5:E:37:THR:HG21	6:F:66:LEU:HD22	1.96	0.47
6:F:60:LEU:O	6:F:64:HIS:ND1	2.31	0.47
6:F:98:ASP:OD1	6:F:99:VAL:N	2.45	0.47
7:U:229:VAL:HG23	7:U:232:ILE:HD11	1.96	0.47
7:U:255:SER:OG	7:U:256:ALA:N	2.47	0.47
7:U:374:SER:HB3	7:U:407:SER:HB3	1.97	0.47
10:X:208:ALA:HB2	10:X:238:GLY:HA3	1.97	0.47
13:a:120:ALA:HB2	13:a:158:LEU:HD11	1.97	0.47
14:b:90:ILE:HG23	14:b:94:HIS:CD2	2.49	0.47
14:b:134:GLU:HG3	14:b:136:VAL:HG23	1.96	0.47
16:d:163:TYR:HA	16:d:166:PHE:HD2	1.80	0.47
19:f:249:LEU:HD23	19:f:272:LEU:HG	1.96	0.47
19:f:266:LEU:HD11	19:f:305:LEU:HD23	1.96	0.47
19:f:325:GLN:NE2	19:f:331:LEU:H	2.13	0.47
19:f:404:ASP:C	19:f:406:GLY:H	2.23	0.47
5:E:203:ILE:O	5:E:211:SER:OG	2.30	0.47
5:E:279:THR:OG1	5:E:280:ASN:N	2.39	0.47
7:U:772:TRP:CD1	7:U:775:LEU:HG	2.49	0.47
17:G:135:LYS:HE2	17:G:167:ILE:HG23	1.95	0.47
2:B:429:LYS:HZ3	3:C:310:ARG:HE	1.63	0.47
3:C:299:ASP:HA	3:C:302:ASP:HB3	1.97	0.47
4:D:115:ILE:HG22	4:D:139:LEU:HD21	1.96	0.47
7:U:612:ASP:OD1	7:U:645:ASN:ND2	2.48	0.47
8:V:32:PRO:HG2	8:V:78:HIS:ND1	2.30	0.47
8:V:186:LYS:HZ3	8:V:186:LYS:H	1.60	0.47
8:V:342:ILE:O	8:V:368:ARG:NH2	2.48	0.47
15:c:227:GLU:HB2	15:c:230:THR:HA	1.97	0.47
19:f:632:LYS:O	19:f:636:ASP:HB3	2.14	0.47
3:C:115:ALA:HB3	3:C:124:HIS:HB2	1.97	0.47

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:U:195:ASN:OD1	7:U:196:LYS:N	2.47	0.47
7:U:374:SER:HB2	7:U:410:VAL:HB	1.96	0.47
7:U:681:ASN:HB3	7:U:684:ARG:HH11	1.80	0.47
8:V:97:ALA:HA	8:V:107:ARG:HD3	1.97	0.47
10:X:414:LEU:HD23	10:X:417:LYS:HZ1	1.80	0.47
11:Y:347:ILE:HD11	11:Y:354:VAL:HG22	1.97	0.47
12:Z:18:SER:O	12:Z:22:HIS:ND1	2.30	0.47
13:a:281:THR:O	13:a:289:ARG:NH1	2.48	0.47
19:f:38:ASP:OD1	19:f:39:LYS:N	2.48	0.47
19:f:137:ARG:HH11	19:f:141:LYS:HE2	1.80	0.47
2:B:334:ILE:HD12	2:B:337:LEU:HD12	1.96	0.46
3:C:322:GLU:O	3:C:324:ALA:C	2.57	0.46
6:F:276:LYS:HA	6:F:325:GLN:HE22	1.79	0.46
8:V:235:LEU:HD11	8:V:247:GLN:HG3	1.97	0.46
10:X:77:LEU:HD21	10:X:88:LEU:HD23	1.97	0.46
19:f:470:VAL:HG13	19:f:471:LEU:H	1.80	0.46
5:E:205:ASP:O	6:F:308:ARG:NH2	2.48	0.46
6:F:100:ASP:HB3	6:F:101:PRO:HD3	1.96	0.46
7:U:181:LEU:HG	7:U:194:ARG:HH11	1.80	0.46
7:U:490:ARG:NH2	7:U:492:ASP:OD2	2.49	0.46
1:A:315:ILE:HG13	1:A:316:LYS:H	1.80	0.46
2:B:120:HIS:O	2:B:120:HIS:ND1	2.48	0.46
8:V:183:GLU:HG3	8:V:187:ILE:CD1	2.45	0.46
8:V:231:LEU:HD21	8:V:250:LEU:HB3	1.97	0.46
8:V:315:LYS:HD2	11:Y:385:ARG:HE	1.80	0.46
11:Y:71:ASN:HA	11:Y:74:LYS:HE3	1.98	0.46
16:d:179:ALA:HA	16:d:182:ILE:HG22	1.97	0.46
2:B:278:ALA:HA	2:B:325:VAL:HB	1.98	0.46
6:F:321:GLN:N	6:F:322:PRO:HD2	2.31	0.46
7:U:257:SER:HB3	7:U:260:PHE:HB3	1.96	0.46
7:U:362:ASN:OD1	7:U:395:ARG:NH2	2.49	0.46
7:U:708:GLN:HA	7:U:711:GLN:HG2	1.97	0.46
15:c:241:ASN:HD21	15:c:300:LEU:HD12	1.81	0.46
19:f:341:GLU:HG3	19:f:342:PRO:HD3	1.98	0.46
19:f:690:VAL:HG13	19:f:691:PRO:HD3	1.98	0.46
4:D:355:SER:HB3	4:D:358:VAL:HG23	1.98	0.46
6:F:234:THR:HG22	6:F:238:ARG:HH22	1.81	0.46
8:V:73:GLU:HA	8:V:76:LYS:HG2	1.97	0.46
8:V:354:LYS:O	8:V:358:MET:HG3	2.16	0.46
8:V:410:ILE:HD11	8:V:426:LEU:HD21	1.96	0.46
10:X:198:ASN:OD1	10:X:199:ALA:N	2.49	0.46

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:f:93:PRO:HA	19:f:133:MET:HE2	1.97	0.46
19:f:261:ARG:O	19:f:264:GLU:HG2	2.15	0.46
4:D:64:GLU:HA	7:U:607:VAL:HG11	1.97	0.46
5:E:40:TYR:O	5:E:43:SER:OG	2.25	0.46
6:F:223:VAL:HG23	6:F:350:ARG:HB2	1.98	0.46
8:V:396:ILE:HD12	8:V:399:ARG:HD3	1.97	0.46
11:Y:184:GLN:HA	11:Y:187:TYR:HD1	1.79	0.46
19:f:379:GLY:HA3	19:f:416:MET:HE3	1.98	0.46
10:X:96:PHE:HE2	10:X:106:GLU:HG2	1.80	0.46
19:f:269:ALA:HB2	19:f:277:LEU:HD22	1.97	0.46
4:D:106:THR:HG21	5:E:77:PRO:HA	1.98	0.46
5:E:269:THR:OG1	5:E:271:HIS:ND1	2.45	0.46
5:E:345:ASN:HD21	6:F:345:SER:HA	1.80	0.46
7:U:740:GLY:HA3	7:U:744:VAL:HG22	1.96	0.46
11:Y:63:TRP:HA	11:Y:66:ASP:HB3	1.97	0.46
17:G:93:LEU:HD11	17:G:125:LEU:HD23	1.98	0.46
19:f:241:PRO:HB2	19:f:243:PRO:HD2	1.97	0.46
19:f:353:LEU:HD21	19:f:387:GLN:HB3	1.97	0.46
19:f:372:LEU:HD23	19:f:402:ASN:HD21	1.80	0.46
6:F:223:VAL:HG13	6:F:329:ILE:HG23	1.98	0.46
8:V:263:LEU:HD21	16:d:120:GLU:HB3	1.97	0.46
16:d:3:GLU:OE1	16:d:5:LEU:N	2.49	0.46
19:f:402:ASN:OD1	19:f:403:LYS:N	2.49	0.46
19:f:654:VAL:HA	19:f:657:ILE:HD12	1.98	0.46
12:Z:202:ASN:OD1	12:Z:203:SER:N	2.49	0.46
3:C:191:PRO:CG	3:C:319:PRO:HB3	2.45	0.45
7:U:196:LYS:HA	7:U:199:ARG:HG2	1.98	0.45
11:Y:364:TRP:HA	11:Y:367:GLN:HB2	1.98	0.45
2:B:373:THR:OG1	2:B:412:MET:O	2.33	0.45
3:C:11:LEU:O	7:U:140:ARG:NH1	2.49	0.45
6:F:286:ASP:OD1	6:F:287:GLU:N	2.46	0.45
17:G:174:THR:OG1	17:G:177:HIS:ND1	2.42	0.45
19:f:325:GLN:HB2	19:f:330:PHE:HD2	1.81	0.45
2:B:125:THR:OG1	2:B:126:SER:N	2.49	0.45
2:B:387:LYS:HD2	2:B:390:LEU:HD22	1.98	0.45
5:E:178:THR:OG1	5:E:179:GLY:N	2.49	0.45
6:F:295:ARG:NH1	6:F:304:ARG:HH21	2.14	0.45
6:F:341:ALA:O	6:F:347:ARG:NH2	2.49	0.45
7:U:68:PHE:O	7:U:72:GLY:N	2.49	0.45
8:V:224:LEU:HD11	8:V:228:ARG:H	1.80	0.45
8:V:282:ASN:ND2	11:Y:385:ARG:O	2.49	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:X:417:LYS:HA	10:X:420:LYS:HG2	1.98	0.45
19:f:327:ASN:C	19:f:329:ASN:H	2.24	0.45
1:A:391:GLU:OE1	2:B:349:ARG:NH1	2.47	0.45
2:B:198:LYS:HD2	2:B:202:GLU:HG3	1.98	0.45
5:E:171:LEU:HD23	5:E:298:LYS:HE2	1.98	0.45
6:F:276:LYS:HD2	6:F:325:GLN:HE22	1.81	0.45
7:U:765:VAL:HG11	7:U:778:PHE:HD2	1.81	0.45
11:Y:13:LYS:HB2	11:Y:212:GLU:HG2	1.98	0.45
14:b:20:ASP:OD1	14:b:20:ASP:N	2.49	0.45
15:c:192:LEU:HG	15:c:196:LEU:HD12	1.99	0.45
19:f:298:LEU:HA	19:f:301:HIS:CD2	2.52	0.45
19:f:403:LYS:HG2	19:f:404:ASP:H	1.81	0.45
19:f:620:PHE:HB3	19:f:623:LYS:HG2	1.99	0.45
1:A:184:ILE:HD12	1:A:187:LEU:HD11	1.99	0.45
3:C:24:TYR:HE1	8:V:241:ARG:HG3	1.81	0.45
3:C:43:ARG:HB2	7:U:639:LEU:HD11	1.99	0.45
4:D:93:LEU:HD22	4:D:102:ILE:HD11	1.97	0.45
7:U:16:GLU:HB2	7:U:18:GLN:NE2	2.31	0.45
13:a:217:LEU:HD23	13:a:241:ASN:HD22	1.82	0.45
15:c:170:LEU:HG	15:c:171:GLY:H	1.82	0.45
17:G:126:LEU:HD22	17:G:132:PRO:HG3	1.98	0.45
1:A:414:ASN:OD1	1:A:415:LYS:N	2.50	0.45
7:U:530:GLU:HA	7:U:533:VAL:HG12	1.97	0.45
8:V:164:GLU:OE2	8:V:178:SER:OG	2.33	0.45
16:d:190:LEU:HD22	16:d:192:THR:HG22	1.97	0.45
6:F:143:GLU:O	6:F:146:LYS:NZ	2.37	0.45
11:Y:232:GLU:HG3	11:Y:234:PRO:HD2	1.98	0.45
19:f:93:PRO:HB2	19:f:137:ARG:HH21	1.82	0.45
19:f:618:GLU:HG3	19:f:620:PHE:H	1.81	0.45
4:D:100:THR:OG1	4:D:114:ARG:NH1	2.50	0.45
6:F:175:MET:SD	6:F:249:LEU:HB3	2.57	0.45
7:U:75:GLU:OE2	7:U:107:HIS:NE2	2.50	0.45
9:W:346:GLU:OE2	9:W:350:ARG:NE	2.48	0.45
13:a:324:ILE:HG22	13:a:326:GLU:HB3	1.97	0.45
19:f:188:VAL:HA	19:f:191:ILE:HG12	1.99	0.45
19:f:320:ILE:HG23	19:f:321:MET:HE2	1.99	0.45
19:f:474:SER:HA	19:f:477:MET:HB3	1.99	0.45
5:E:81:VAL:HG12	5:E:105:LEU:HB3	1.99	0.45
7:U:139:GLN:HA	7:U:142:LEU:HB2	1.99	0.45
7:U:146:LYS:O	7:U:148:LYS:HG2	2.17	0.45
8:V:287:ARG:HH22	18:e:2:SER:H	1.63	0.45

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:Y:375:LEU:HD21	11:Y:379:ARG:HH21	1.82	0.45
4:D:133:HIS:HD2	4:D:138:ALA:HB3	1.82	0.45
6:F:120:LYS:HD3	6:F:136:VAL:HB	1.99	0.45
6:F:395:GLN:HB3	6:F:428:GLN:HE22	1.82	0.45
7:U:144:ASP:C	7:U:146:LYS:H	2.25	0.45
11:Y:343:LEU:HD12	11:Y:344:HIS:N	2.31	0.45
12:Z:252:LYS:HE3	15:c:304:LEU:HD12	1.98	0.45
15:c:53:VAL:HG12	15:c:77:GLN:HG3	1.99	0.45
19:f:336:GLU:C	19:f:338:ASP:H	2.25	0.45
19:f:631:LYS:HA	19:f:634:LYS:HZ2	1.82	0.45
3:C:76:VAL:O	3:C:111:ASN:N	2.49	0.44
4:D:401:LYS:HA	4:D:404:LYS:HE2	1.99	0.44
5:E:204:VAL:HG21	6:F:304:ARG:HB3	1.98	0.44
8:V:183:GLU:CB	8:V:187:ILE:HG13	2.46	0.44
16:d:171:LEU:HA	16:d:174:ILE:HG12	1.99	0.44
19:f:572:ALA:HB1	19:f:574:GLU:HG3	1.99	0.44
2:B:191:ASP:HA	2:B:194:ILE:HG22	1.99	0.44
9:W:144:ARG:HA	9:W:147:LYS:HZ3	1.82	0.44
2:B:191:ASP:N	2:B:191:ASP:OD1	2.51	0.44
3:C:298:ILE:HD12	3:C:298:ILE:H	1.82	0.44
4:D:218:ALA:O	4:D:222:HIS:ND1	2.31	0.44
7:U:82:LEU:HD22	7:U:130:LEU:HG	1.99	0.44
7:U:82:LEU:HB3	7:U:130:LEU:HD11	1.98	0.44
7:U:381:THR:HG22	7:U:412:HIS:HA	1.99	0.44
9:W:343:SER:HB2	9:W:346:GLU:HB3	1.99	0.44
9:W:370:TYR:HB2	13:a:323:SER:HB2	1.98	0.44
11:Y:191:ILE:HG23	11:Y:193:ASP:H	1.82	0.44
12:Z:84:LYS:HE3	15:c:76:PRO:HG3	1.99	0.44
17:G:192:VAL:HG21	17:G:220:LEU:HD22	1.98	0.44
3:C:213:ARG:HH22	3:C:249:ASP:HB3	1.82	0.44
4:D:210:CYS:HB2	4:D:373:ALA:HB1	1.99	0.44
5:E:357:ALA:O	5:E:359:HIS:ND1	2.50	0.44
12:Z:17:LEU:HD22	15:c:39:LEU:HD12	1.98	0.44
17:G:110:LEU:HD22	17:G:126:LEU:HD21	1.99	0.44
19:f:94:LYS:HB3	19:f:95:PRO:HD3	1.99	0.44
19:f:406:GLY:O	19:f:409:SER:N	2.50	0.44
2:B:110:GLY:HA3	2:B:152:LEU:HD13	1.98	0.44
3:C:256:SER:H	4:D:318:ASP:N	2.16	0.44
4:D:289:LEU:HD12	4:D:292:LEU:HD11	1.98	0.44
6:F:150:LEU:HB3	6:F:164:LEU:O	2.18	0.44
8:V:197:THR:OG1	8:V:199:ASN:OD1	2.19	0.44

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:Y:334:LEU:O	11:Y:338:ILE:HG12	2.18	0.44
12:Z:186:THR:HG23	12:Z:187:LEU:H	1.83	0.44
1:A:369:ARG:HH11	1:A:372:LEU:HD22	1.82	0.44
7:U:146:LYS:HG2	7:U:148:LYS:HZ3	1.83	0.44
7:U:496:LEU:HA	7:U:499:THR:HG22	1.98	0.44
19:f:89:MET:SD	19:f:89:MET:N	2.81	0.44
2:B:387:LYS:HG2	2:B:423:LYS:HE3	1.99	0.44
3:C:57:ARG:NH2	3:C:60:ARG:HD3	2.33	0.44
8:V:260:HIS:HD2	8:V:261:TYR:HD2	1.64	0.44
16:d:172:ASP:O	16:d:175:ARG:HG2	2.17	0.44
19:f:369:ARG:HD3	19:f:740:ARG:HB3	1.99	0.44
2:B:217:LYS:O	2:B:219:PRO:HD3	2.18	0.44
8:V:491:VAL:HA	8:V:494:MET:HG2	1.99	0.44
11:Y:382:LYS:O	11:Y:386:VAL:HG23	2.17	0.44
12:Z:225:GLN:HA	12:Z:228:TYR:HD2	1.83	0.44
19:f:301:HIS:HA	19:f:304:PHE:CZ	2.53	0.44
1:A:328:ASP:HB3	1:A:329:PRO:HD3	2.00	0.44
3:C:87:VAL:HG12	3:C:89:VAL:HG22	2.00	0.44
3:C:331:ILE:HD13	3:C:334:ARG:HE	1.83	0.44
4:D:361:GLU:O	4:D:364:VAL:HG12	2.18	0.44
7:U:616:ARG:HH21	7:U:647:HIS:CD2	2.36	0.44
19:f:479:LEU:HG	19:f:517:VAL:HG21	2.00	0.44
1:A:273:PHE:HD1	1:A:318:LEU:HD13	1.83	0.43
2:B:194:ILE:HA	2:B:197:ILE:HG22	2.00	0.43
2:B:234:LEU:HB3	2:B:283:PHE:HZ	1.83	0.43
8:V:182:LYS:CB	8:V:187:ILE:HD11	2.47	0.43
10:X:367:GLN:HG3	11:Y:233:ARG:HH22	1.82	0.43
13:a:293:PHE:HD2	13:a:329:LYS:HE2	1.83	0.43
19:f:92:VAL:O	19:f:95:PRO:HD2	2.17	0.43
19:f:718:ASP:HB3	19:f:719:PRO:HD3	2.00	0.43
2:B:339:PRO:HA	2:B:342:ILE:HD13	1.99	0.43
4:D:252:ARG:HA	4:D:255:LYS:HG2	2.00	0.43
7:U:242:LEU:HG	7:U:324:LYS:HD2	1.99	0.43
13:a:152:HIS:CD2	13:a:178:ARG:HG2	2.53	0.43
19:f:184:LEU:HA	19:f:187:LEU:HD12	2.00	0.43
19:f:190:GLU:C	19:f:193:PRO:HD2	2.43	0.43
3:C:167:LEU:O	3:C:171:HIS:ND1	2.50	0.43
3:C:295:THR:HB	3:C:300:ILE:HG12	2.00	0.43
4:D:133:HIS:HB2	4:D:137:ASN:N	2.33	0.43
4:D:236:VAL:HG22	4:D:285:VAL:HG11	2.01	0.43
5:E:344:ARG:HH21	6:F:218:GLN:HG3	1.82	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:364:GLN:HA	5:E:367:PHE:HB2	1.99	0.43
6:F:241:ALA:O	6:F:244:THR:OG1	2.35	0.43
7:U:685:GLN:HG3	7:U:729:GLY:HA3	2.00	0.43
9:W:79:GLU:HG3	9:W:82:LEU:HB3	2.00	0.43
11:Y:141:VAL:O	11:Y:145:LEU:HG	2.17	0.43
11:Y:345:CYS:SG	11:Y:356:THR:OG1	2.74	0.43
12:Z:92:VAL:HG13	12:Z:93:GLY:H	1.83	0.43
14:b:52:ILE:HD11	14:b:58:CYS:HB3	1.99	0.43
17:G:32:LEU:HD23	17:G:35:ARG:HE	1.83	0.43
19:f:446:LEU:HD13	19:f:480:GLY:HA2	1.99	0.43
1:A:180:CYS:HB2	1:A:184:ILE:HB	1.99	0.43
3:C:104:ASP:OD1	3:C:104:ASP:N	2.50	0.43
7:U:97:VAL:O	7:U:100:ILE:HG13	2.18	0.43
8:V:132:LEU:O	8:V:134:PHE:N	2.49	0.43
10:X:396:THR:OG1	11:Y:365:GLN:NE2	2.51	0.43
15:c:273:LYS:HG3	15:c:274:ASN:H	1.82	0.43
19:f:316:ASP:O	19:f:319:GLU:HG2	2.18	0.43
19:f:556:ARG:O	19:f:559:PRO:HD2	2.19	0.43
1:A:384:GLU:O	1:A:387:SER:OG	2.29	0.43
9:W:116:THR:HG23	9:W:119:PRO:HD2	2.01	0.43
10:X:282:ARG:HB3	10:X:312:GLU:OE2	2.17	0.43
16:d:60:GLN:NE2	16:d:163:TYR:OH	2.50	0.43
18:e:35:ASP:O	18:e:37:HIS:ND1	2.51	0.43
19:f:569:LYS:HD2	19:f:572:ALA:HB3	2.01	0.43
6:F:170:SER:O	6:F:171:ARG:CB	2.64	0.43
6:F:225:MET:HE2	6:F:233:LYS:HB2	2.00	0.43
7:U:361:ARG:N	7:U:365:CYS:SG	2.91	0.43
8:V:270:LEU:HA	8:V:273:LYS:HD3	2.00	0.43
11:Y:190:ALA:O	11:Y:291:HIS:NE2	2.51	0.43
12:Z:225:GLN:HA	12:Z:228:TYR:CD2	2.53	0.43
13:a:282:PHE:CE2	13:a:345:GLN:HG3	2.54	0.43
15:c:31:VAL:HA	15:c:67:VAL:HG13	1.99	0.43
19:f:94:LYS:HA	19:f:97:LYS:HE3	2.00	0.43
19:f:102:HIS:CG	19:f:103:TYR:H	2.36	0.43
4:D:134:LYS:HG3	4:D:135:HIS:ND1	2.33	0.43
8:V:89:LYS:HG3	8:V:92:ARG:HE	1.84	0.43
9:W:124:LEU:HA	9:W:127:THR:HG22	2.00	0.43
10:X:316:ASP:HA	10:X:317:PRO:HD3	1.83	0.43
19:f:346:ASP:O	19:f:350:LYS:HG2	2.18	0.43
2:B:118:ASP:O	2:B:119:ASN:ND2	2.52	0.43
8:V:226:VAL:HG13	8:V:227:VAL:HG23	2.00	0.43

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:W:441:LYS:HA	9:W:444:HIS:CE1	2.54	0.43
10:X:259:ILE:HD13	10:X:267:VAL:HG21	2.00	0.43
12:Z:228:TYR:HB3	13:a:338:PRO:HB2	2.00	0.43
13:a:76:LEU:HA	13:a:79:ILE:HG22	2.00	0.43
13:a:137:ASP:O	13:a:141:MET:HG2	2.19	0.43
16:d:130:ASN:HB3	16:d:133:ILE:HG12	2.01	0.43
19:f:698:SER:OG	19:f:716:ASP:OD1	2.35	0.43
2:B:192:ASN:OD1	2:B:195:GLN:NE2	2.51	0.43
3:C:23:TYR:CD2	8:V:194:LYS:HB3	2.54	0.43
3:C:90:HIS:CG	3:C:91:PRO:HD2	2.53	0.43
5:E:68:LYS:HG2	5:E:82:GLY:HA2	2.00	0.43
5:E:101:ASP:OD1	5:E:102:MET:N	2.51	0.43
8:V:51:ALA:HB1	8:V:55:THR:HA	2.00	0.43
8:V:52:ASP:OD1	8:V:53:GLY:N	2.50	0.43
11:Y:57:LEU:HD12	11:Y:60:SER:HB2	2.01	0.43
12:Z:164:ALA:HB3	12:Z:169:GLU:HG3	2.00	0.43
16:d:99:LEU:O	16:d:103:LEU:HG	2.19	0.43
19:f:778:LEU:HA	19:f:781:TYR:HE1	1.84	0.43
1:A:201:PHE:CG	6:F:408:LEU:HD21	2.54	0.43
2:B:205:LEU:O	19:f:714:SER:N	2.52	0.43
2:B:270:LEU:HA	2:B:273:VAL:HG12	2.01	0.43
2:B:331:THR:OG1	2:B:332:ASN:N	2.49	0.43
9:W:422:ASN:HD22	12:Z:251:LEU:HB2	1.84	0.43
16:d:68:ILE:HB	16:d:69:PRO:HD3	2.01	0.43
16:d:202:THR:HA	16:d:203:PRO:HD3	1.79	0.43
19:f:255:VAL:HA	19:f:258:LYS:HZ2	1.84	0.43
19:f:463:LEU:HD22	19:f:466:LEU:HD11	2.01	0.43
1:A:277:ILE:HG22	1:A:321:THR:HB	2.01	0.42
2:B:429:LYS:HZ3	3:C:310:ARG:NE	2.17	0.42
4:D:283:ARG:O	4:D:286:GLN:HG2	2.19	0.42
9:W:240:TYR:HB3	9:W:276:LEU:HD13	2.01	0.42
9:W:309:PHE:HD2	9:W:310:THR:HG22	1.84	0.42
15:c:70:ILE:HG23	15:c:71:ASP:H	1.84	0.42
15:c:189:ILE:HG13	15:c:191:ALA:H	1.84	0.42
17:G:152:LEU:HD23	17:G:187:GLU:HG2	2.01	0.42
5:E:261:LEU:HD22	5:E:294:ARG:HE	1.84	0.42
5:E:342:ASP:O	5:E:346:VAL:HG23	2.19	0.42
6:F:71:ASP:HA	6:F:74:LYS:HE3	2.00	0.42
7:U:341:PHE:HA	7:U:344:ARG:HG2	2.01	0.42
9:W:144:ARG:HD3	9:W:147:LYS:HZ3	1.85	0.42
16:d:2:TYR:CD2	16:d:3:GLU:HG3	2.51	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
17:G:77:LEU:HD11	17:G:125:LEU:HD21	2.01	0.42
19:f:95:PRO:O	19:f:99:LEU:HB2	2.19	0.42
3:C:313:ARG:NH1	3:C:314:LYS:O	2.52	0.42
6:F:359:GLU:HG2	6:F:360:GLU:H	1.84	0.42
7:U:388:ASP:OD1	7:U:388:ASP:N	2.52	0.42
8:V:31:ALA:HB3	8:V:32:PRO:HD3	2.01	0.42
8:V:185:GLN:HG2	8:V:186:LYS:NZ	2.31	0.42
8:V:350:GLN:HE21	8:V:353:LEU:HD13	1.83	0.42
11:Y:344:HIS:CD2	11:Y:358:ARG:HG3	2.52	0.42
15:c:288:VAL:O	15:c:292:MET:HG2	2.19	0.42
17:G:177:HIS:CE1	17:G:208:PRO:HG3	2.54	0.42
1:A:100:LYS:HE2	1:A:142:VAL:HG21	2.00	0.42
2:B:390:LEU:HD21	2:B:423:LYS:HE2	2.01	0.42
3:C:25:LEU:HD11	4:D:47:LEU:HD23	2.02	0.42
5:E:15:LYS:O	5:E:19:HIS:ND1	2.33	0.42
7:U:82:LEU:HD13	7:U:130:LEU:HD21	2.02	0.42
7:U:633:CYS:O	7:U:637:VAL:HG23	2.19	0.42
9:W:205:ILE:O	9:W:208:LYS:N	2.52	0.42
10:X:335:LEU:O	10:X:339:ILE:HB	2.20	0.42
14:b:4:GLU:O	14:b:47:ASN:ND2	2.51	0.42
19:f:178:LYS:NZ	19:f:215:ASP:O	2.45	0.42
19:f:249:LEU:HB3	19:f:272:LEU:HD11	2.00	0.42
19:f:299:GLY:O	19:f:303:VAL:HG23	2.19	0.42
19:f:324:VAL:C	19:f:326:LEU:H	2.28	0.42
19:f:743:ALA:O	19:f:746:ARG:HG2	2.19	0.42
2:B:398:ILE:HA	2:B:401:GLU:HG2	2.01	0.42
3:C:69:GLN:HE22	4:D:135:HIS:HA	1.84	0.42
5:E:72:LYS:HZ3	5:E:78:ARG:HE	1.67	0.42
5:E:360:ASP:OD1	5:E:360:ASP:N	2.53	0.42
6:F:219:PRO:HA	6:F:220:PRO:HD3	1.92	0.42
6:F:235:LEU:HD13	6:F:394:ALA:HB2	2.02	0.42
7:U:10:SER:HB3	16:d:73:ARG:HG3	2.01	0.42
8:V:498:PRO:HG3	12:Z:274:ASN:HB3	2.01	0.42
12:Z:127:LYS:HA	12:Z:128:PRO:HD3	1.89	0.42
16:d:40:GLY:C	16:d:42:LYS:H	2.27	0.42
5:E:289:LEU:HD23	5:E:294:ARG:CZ	2.48	0.42
8:V:496:PHE:HB3	8:V:497:PRO:HD3	2.01	0.42
14:b:21:PHE:HB2	14:b:25:ARG:HH21	1.84	0.42
15:c:256:ASN:HD21	15:c:290:VAL:HG11	1.84	0.42
19:f:502:LEU:HB3	19:f:503:PRO:HD3	2.00	0.42
19:f:594:LEU:HD21	19:f:626:GLU:HG3	2.01	0.42

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:264:PRO:HB2	2:B:267:VAL:HB	2.01	0.42
3:C:338:LEU:HD11	3:C:342:ILE:HD13	2.02	0.42
5:E:102:MET:HG3	5:E:103:THR:HG23	2.02	0.42
7:U:32:ASN:OD1	7:U:33:ASP:N	2.53	0.42
7:U:712:LEU:HD21	7:U:734:GLN:HG2	2.01	0.42
8:V:221:LEU:HD12	8:V:222:ASP:N	2.34	0.42
9:W:52:LYS:HE3	9:W:55:ARG:HH21	1.84	0.42
13:a:368:GLU:HA	13:a:371:ALA:HB3	2.00	0.42
1:A:108:ASP:OD1	1:A:109:PRO:HD3	2.20	0.42
4:D:206:GLY:HA3	4:D:334:PRO:HA	2.02	0.42
6:F:392:ASN:HB2	6:F:395:GLN:HG3	2.00	0.42
7:U:219:CYS:SG	7:U:220:LEU:N	2.91	0.42
10:X:244:SER:HB2	10:X:245:PRO:HD3	2.01	0.42
10:X:255:LEU:HB2	10:X:287:LEU:HD13	2.02	0.42
16:d:51:ALA:HA	16:d:54:ILE:HG12	2.01	0.42
18:e:10:LEU:HD23	18:e:13:LEU:HD12	2.02	0.42
18:e:59:GLU:O	18:e:63:HIS:ND1	2.53	0.42
19:f:229:VAL:HG21	19:f:256:PHE:CZ	2.55	0.42
2:B:105:THR:HA	3:C:97:VAL:HG21	2.01	0.42
3:C:191:PRO:HG2	3:C:319:PRO:CB	2.50	0.42
4:D:244:PRO:HG3	4:D:288:ILE:HG12	2.01	0.42
5:E:191:LEU:C	5:E:193:CYS:H	2.27	0.42
10:X:183:LEU:HB2	10:X:184:PRO:HD3	2.01	0.42
19:f:331:LEU:HD23	19:f:331:LEU:HA	1.95	0.42
19:f:404:ASP:OD1	19:f:407:MET:HE3	2.19	0.42
4:D:370:ILE:H	4:D:370:ILE:HG13	1.71	0.42
8:V:135:LEU:C	8:V:138:PRO:HD2	2.44	0.42
3:C:89:VAL:HB	3:C:93:GLY:HA3	2.02	0.41
4:D:189:GLU:HG2	11:Y:174:TRP:CE3	2.55	0.41
4:D:345:PHE:HA	4:D:348:ILE:HG22	2.02	0.41
5:E:192:ASP:C	5:E:194:ASN:H	2.27	0.41
8:V:315:LYS:HD2	11:Y:385:ARG:NE	2.35	0.41
11:Y:50:MET:HE3	11:Y:70:LEU:HD22	2.01	0.41
17:G:177:HIS:HD2	17:G:211:VAL:HG21	1.85	0.41
1:A:217:PRO:HA	1:A:218:PRO:HD3	1.94	0.41
8:V:280:ALA:HA	8:V:285:TRP:CD1	2.56	0.41
12:Z:270:VAL:HG13	15:c:284:LEU:HD22	2.01	0.41
13:a:70:ARG:HH21	14:b:15:TYR:HA	1.86	0.41
19:f:523:GLY:O	19:f:527:VAL:HG13	2.20	0.41
3:C:36:ASN:O	3:C:39:SER:OG	2.29	0.41
4:D:191:TYR:HA	4:D:194:ILE:HG12	2.02	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:168:LYS:HB2	5:E:270:LEU:HB3	2.02	0.41
7:U:264:VAL:HG22	7:U:268:LEU:HD13	2.02	0.41
8:V:186:LYS:HD2	8:V:187:ILE:H	1.85	0.41
8:V:406:GLY:O	8:V:410:ILE:HG12	2.20	0.41
9:W:149:LEU:O	9:W:153:LYS:HG2	2.20	0.41
13:a:337:GLN:HA	13:a:338:PRO:HD3	1.87	0.41
14:b:97:LEU:HD13	14:b:107:MET:HB3	2.03	0.41
4:D:89:ILE:HD11	5:E:80:VAL:HG13	2.02	0.41
4:D:178:ARG:HG3	4:D:182:GLU:HG2	2.02	0.41
6:F:171:ARG:CG	6:F:172:VAL:N	2.83	0.41
7:U:356:THR:HG22	7:U:731:ILE:HD11	2.02	0.41
19:f:557:TRP:O	19:f:560:LEU:HB2	2.20	0.41
4:D:62:LYS:HD3	4:D:65:GLN:NE2	2.35	0.41
4:D:91:GLN:O	4:D:104:GLY:N	2.52	0.41
4:D:339:ARG:HD2	4:D:339:ARG:H	1.85	0.41
5:E:289:LEU:HD23	5:E:294:ARG:NH1	2.35	0.41
7:U:340:GLN:NE2	7:U:344:ARG:HH12	2.19	0.41
7:U:474:ARG:HH22	7:U:503:GLN:HB2	1.85	0.41
7:U:554:LEU:HA	7:U:588:MET:HE1	2.03	0.41
7:U:696:ILE:HG22	7:U:737:LEU:HA	2.02	0.41
8:V:329:HIS:CD2	8:V:353:LEU:HD23	2.55	0.41
12:Z:22:HIS:O	12:Z:26:ILE:HG13	2.20	0.41
17:G:180:CYS:HB3	17:G:212:ALA:HB2	2.02	0.41
19:f:92:VAL:HB	19:f:93:PRO:HD3	2.01	0.41
19:f:125:ILE:HA	19:f:129:LEU:HD12	2.01	0.41
19:f:406:GLY:C	19:f:409:SER:H	2.28	0.41
2:B:387:LYS:HB3	2:B:390:LEU:HD13	2.03	0.41
3:C:388:ALA:O	3:C:392:GLN:HG2	2.21	0.41
4:D:144:PRO:HA	4:D:145:PRO:HD3	1.88	0.41
5:E:202:SER:HB3	5:E:215:ILE:HD11	2.02	0.41
7:U:545:LEU:HB3	7:U:577:ILE:HG21	2.03	0.41
7:U:587:ALA:HB1	7:U:624:PHE:HD2	1.85	0.41
8:V:182:LYS:CB	8:V:186:LYS:HE2	2.42	0.41
7:U:368:ALA:HA	7:U:371:ILE:HG22	2.03	0.41
7:U:556:MET:SD	7:U:559:ARG:HG3	2.60	0.41
7:U:633:CYS:HB2	7:U:634:PRO:HD3	2.03	0.41
12:Z:68:TRP:HD1	12:Z:104:ASN:HD21	1.67	0.41
13:a:7:PHE:HA	13:a:10:GLN:NE2	2.35	0.41
13:a:324:ILE:HG12	13:a:332:HIS:H	1.84	0.41
3:C:317:PHE:O	3:C:317:PHE:CD2	2.74	0.41
3:C:372:ARG:HH12	4:D:191:TYR:HB2	1.86	0.41

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:134:LEU:HD22	6:F:158:TYR:O	2.20	0.41
7:U:688:LEU:HD11	7:U:715:LYS:HE2	2.02	0.41
7:U:772:TRP:CD1	7:U:774:PRO:HD2	2.56	0.41
8:V:147:PHE:HD1	8:V:150:ARG:HD3	1.86	0.41
8:V:179:LYS:HE2	8:V:214:HIS:HB2	2.03	0.41
8:V:413:SER:OG	8:V:414:TYR:N	2.53	0.41
8:V:429:ASP:OD1	8:V:429:ASP:N	2.51	0.41
9:W:179:LYS:HD2	9:W:217:GLU:HB2	2.03	0.41
10:X:245:PRO:HA	10:X:248:ILE:HG22	2.02	0.41
13:a:278:MET:HA	13:a:281:THR:HG22	2.03	0.41
14:b:76:HIS:CG	14:b:77:THR:H	2.38	0.41
15:c:178:THR:HA	15:c:181:LEU:HD13	2.03	0.41
19:f:533:ASP:OD1	19:f:533:ASP:N	2.51	0.41
19:f:537:THR:OG1	19:f:538:ILE:N	2.54	0.41
3:C:320:PRO:CG	3:C:356:GLY:HA3	2.13	0.41
5:E:97:ARG:HE	5:E:111:LEU:HD23	1.86	0.41
6:F:61:ARG:NH2	14:b:73:SER:O	2.54	0.41
8:V:77:GLU:O	8:V:80:LYS:NZ	2.43	0.41
8:V:430:SER:HA	8:V:431:PRO:HD3	1.92	0.41
9:W:396:LEU:HA	9:W:399:ASN:HB3	2.03	0.41
15:c:61:PHE:HE1	15:c:67:VAL:HG23	1.86	0.41
7:U:894:MET:HA	7:U:895:PRO:HD3	1.90	0.40
8:V:101:LEU:HB3	8:V:102:PRO:HD3	2.03	0.40
9:W:413:ILE:H	9:W:413:ILE:HG13	1.72	0.40
10:X:182:ASN:ND2	11:Y:248:GLU:OE2	2.55	0.40
16:d:182:ILE:HG12	16:d:197:ILE:HG21	2.03	0.40
17:G:83:ALA:O	17:G:85:ARG:NH1	2.54	0.40
19:f:584:SER:OG	19:f:588:ARG:HB2	2.21	0.40
19:f:660:ILE:HG21	19:f:785:ARG:HD2	2.03	0.40
7:U:889:LEU:HD13	7:U:909:GLY:H	1.85	0.40
9:W:335:SER:O	9:W:337:ALA:N	2.50	0.40
9:W:408:ARG:HH22	10:X:347:ILE:HG12	1.85	0.40
13:a:219:HIS:HA	13:a:220:PRO:HD3	1.78	0.40
13:a:230:ARG:HB3	13:a:232:TRP:HD1	1.87	0.40
17:G:103:ASN:OD1	17:G:107:CYS:N	2.55	0.40
18:e:31:ASP:O	18:e:35:ASP:N	2.54	0.40
19:f:278:VAL:O	19:f:281:ILE:HG22	2.21	0.40
19:f:406:GLY:HA2	19:f:409:SER:H	1.86	0.40
1:A:388:VAL:HG13	1:A:413:VAL:HG22	2.03	0.40
3:C:327:ASP:OD1	3:C:327:ASP:N	2.54	0.40
3:C:343:ASN:HD22	3:C:346:LYS:HE3	1.86	0.40

Continued on next page...

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:211:GLY:C	4:D:213:THR:H	2.29	0.40
8:V:235:LEU:HD11	8:V:247:GLN:HA	2.02	0.40
10:X:259:ILE:HD12	10:X:259:ILE:HA	1.97	0.40
10:X:307:THR:HA	10:X:310:ARG:HE	1.87	0.40
12:Z:211:TYR:HE1	12:Z:227:ILE:HG21	1.86	0.40
13:a:80:ILE:HD11	13:a:96:PHE:HB3	2.04	0.40
13:a:257:GLN:HB3	13:a:261:LEU:HD22	2.02	0.40
15:c:147:PRO:HA	15:c:150:SER:HB2	2.03	0.40
17:G:69:LYS:HZ3	17:G:75:SER:HB3	1.86	0.40
1:A:143:ASP:OD1	1:A:144:ARG:N	2.54	0.40
2:B:333:ARG:HG2	2:B:335:GLU:H	1.87	0.40
2:B:333:ARG:HD2	2:B:336:THR:HG23	2.03	0.40
3:C:50:ASN:HD21	7:U:643:SER:HA	1.87	0.40
3:C:155:ASP:N	3:C:155:ASP:OD1	2.54	0.40
4:D:104:GLY:HA2	4:D:110:ASN:HA	2.03	0.40
7:U:935:ILE:H	7:U:935:ILE:HG13	1.61	0.40
9:W:444:HIS:CE1	12:Z:230:LEU:HD12	2.57	0.40
15:c:164:ASN:HB2	15:c:167:MET:HG3	2.04	0.40
16:d:114:GLU:HA	16:d:117:THR:HG22	2.02	0.40
19:f:278:VAL:HG21	19:f:317:LEU:HD22	2.04	0.40
1:A:355:PHE:HE2	1:A:374:ALA:HB2	1.86	0.40
1:A:420:TYR:HA	1:A:423:PHE:CE1	2.57	0.40
2:B:197:ILE:O	2:B:201:VAL:HG22	2.21	0.40
3:C:171:HIS:HB3	3:C:175:PHE:CZ	2.56	0.40
4:D:133:HIS:HB2	4:D:137:ASN:H	1.87	0.40
5:E:50:LEU:HG	6:F:137:ILE:HD12	2.02	0.40
8:V:137:GLU:HB2	8:V:138:PRO:HD3	2.04	0.40
8:V:285:TRP:O	8:V:289:LEU:HB2	2.21	0.40
10:X:256:LEU:O	10:X:259:ILE:HG22	2.21	0.40

There are no symmetry-related clashes.

5.3 Torsion angles (i)

5.3.1 Protein backbone (i)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	A	315/352 (90%)	285 (90%)	30 (10%)	0	100	100
2	B	290/341 (85%)	263 (91%)	27 (9%)	0	100	100
3	C	344/385 (89%)	324 (94%)	17 (5%)	3 (1%)	14	51
4	D	339/368 (92%)	321 (95%)	17 (5%)	1 (0%)	36	72
5	E	303/379 (80%)	283 (93%)	19 (6%)	1 (0%)	36	72
6	F	345/380 (91%)	316 (92%)	25 (7%)	4 (1%)	10	44
7	U	837/935 (90%)	791 (94%)	46 (6%)	0	100	100
8	V	484/488 (99%)	419 (87%)	65 (13%)	0	100	100
9	W	452/456 (99%)	411 (91%)	40 (9%)	1 (0%)	43	78
10	X	383/385 (100%)	364 (95%)	18 (5%)	1 (0%)	36	72
11	Y	376/378 (100%)	348 (93%)	28 (7%)	0	100	100
12	Z	284/286 (99%)	256 (90%)	27 (10%)	1 (0%)	30	67
13	a	372/374 (100%)	349 (94%)	23 (6%)	0	100	100
14	b	189/191 (99%)	171 (90%)	18 (10%)	0	100	100
15	c	285/287 (99%)	262 (92%)	23 (8%)	0	100	100
16	d	255/257 (99%)	236 (92%)	19 (8%)	0	100	100
17	G	224/226 (99%)	224 (100%)	0	0	100	100
18	e	68/70 (97%)	62 (91%)	6 (9%)	0	100	100
19	f	664/848 (78%)	600 (90%)	62 (9%)	2 (0%)	36	72
All	All	6809/7386 (92%)	6285 (92%)	510 (8%)	14 (0%)	44	78

All (14) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	C	320	PRO
3	C	322	GLU
3	C	323	GLU
5	E	295	LEU
10	X	313	LEU
6	F	170	SER
6	F	171	ARG
9	W	221	LYS
19	f	326	LEU
6	F	167	GLU
12	Z	221	PRO
4	D	319	PRO

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
19	f	406	GLY
6	F	165	PRO

5.3.2 Protein sidechains (i)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	A	274/300 (91%)	267 (97%)	7 (3%)	40	62
2	B	262/298 (88%)	259 (99%)	3 (1%)	65	76
3	C	302/333 (91%)	293 (97%)	9 (3%)	36	57
4	D	300/321 (94%)	295 (98%)	5 (2%)	53	69
5	E	270/333 (81%)	267 (99%)	3 (1%)	65	76
6	F	302/326 (93%)	295 (98%)	7 (2%)	44	64
7	U	717/798 (90%)	705 (98%)	12 (2%)	53	69
8	V	422/422 (100%)	417 (99%)	5 (1%)	63	75
9	W	416/416 (100%)	408 (98%)	8 (2%)	50	67
10	X	331/331 (100%)	327 (99%)	4 (1%)	63	75
11	Y	334/334 (100%)	332 (99%)	2 (1%)	78	83
12	Z	257/257 (100%)	254 (99%)	3 (1%)	63	75
13	a	334/334 (100%)	327 (98%)	7 (2%)	47	65
14	b	167/167 (100%)	165 (99%)	2 (1%)	63	75
15	c	252/252 (100%)	250 (99%)	2 (1%)	73	80
16	d	231/231 (100%)	231 (100%)	0	100	100
17	G	180/180 (100%)	180 (100%)	0	100	100
18	e	63/63 (100%)	62 (98%)	1 (2%)	55	70
19	f	579/714 (81%)	564 (97%)	15 (3%)	40	62
All	All	5993/6410 (94%)	5898 (98%)	95 (2%)	54	70

All (95) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	108	ASP
1	A	191	VAL
1	A	315	ILE
1	A	317	VAL
1	A	345	LEU
1	A	376	LEU
1	A	403	ILE
2	B	156	VAL
2	B	159	VAL
2	B	355	LEU
3	C	76	VAL
3	C	89	VAL
3	C	96	VAL
3	C	194	THR
3	C	254	ILE
3	C	311	ILE
3	C	320	PRO
3	C	322	GLU
3	C	350	LEU
4	D	103	VAL
4	D	139	LEU
4	D	231	VAL
4	D	316	THR
4	D	370	ILE
5	E	199	VAL
5	E	294	ARG
5	E	326	ILE
6	F	86	LEU
6	F	99	VAL
6	F	161	LEU
6	F	167	GLU
6	F	169	ASP
6	F	173	LYS
6	F	223	VAL
7	U	97	VAL
7	U	142	LEU
7	U	159	ARG
7	U	223	LEU
7	U	252	LEU
7	U	341	PHE
7	U	343	ILE
7	U	427	LEU
7	U	431	THR

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
7	U	472	ILE
7	U	507	VAL
7	U	935	ILE
8	V	79	VAL
8	V	186	LYS
8	V	187	ILE
8	V	226	VAL
8	V	289	LEU
9	W	18	VAL
9	W	52	LYS
9	W	112	VAL
9	W	138	VAL
9	W	159	VAL
9	W	211	THR
9	W	333	LEU
9	W	396	LEU
10	X	80	ILE
10	X	140	THR
10	X	339	ILE
10	X	369	ILE
11	Y	187	TYR
11	Y	343	LEU
12	Z	91	ILE
12	Z	92	VAL
12	Z	212	LEU
13	a	32	LYS
13	a	71	VAL
13	a	112	ILE
13	a	149	THR
13	a	151	VAL
13	a	324	ILE
13	a	340	VAL
14	b	2	VAL
14	b	173	VAL
15	c	67	VAL
15	c	178	THR
18	e	56	LEU
19	f	86	THR
19	f	125	ILE
19	f	189	LYS
19	f	192	VAL
19	f	249	LEU

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
19	f	314	TYR
19	f	403	LYS
19	f	420	TRP
19	f	460	ASP
19	f	463	LEU
19	f	470	VAL
19	f	534	VAL
19	f	550	LEU
19	f	594	LEU
19	f	690	VAL

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (78) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	353	HIS
2	B	315	GLN
3	C	50	ASN
3	C	69	GLN
3	C	270	GLN
3	C	288	ASN
3	C	296	ASN
3	C	343	ASN
3	C	380	GLN
4	D	65	GLN
4	D	91	GLN
4	D	110	ASN
4	D	133	HIS
4	D	187	HIS
5	E	226	GLN
5	E	339	ASN
5	E	345	ASN
6	F	116	GLN
6	F	325	GLN
6	F	333	ASN
6	F	428	GLN
7	U	111	GLN
7	U	247	GLN
7	U	258	GLN
7	U	340	GLN
7	U	355	ASN
7	U	377	HIS
7	U	438	GLN

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
7	U	452	ASN
7	U	685	GLN
7	U	708	GLN
7	U	734	GLN
7	U	805	ASN
7	U	901	GLN
8	V	185	GLN
8	V	242	HIS
8	V	260	HIS
8	V	282	ASN
8	V	326	GLN
8	V	350	GLN
8	V	387	GLN
8	V	452	ASN
8	V	477	HIS
9	W	210	ASN
9	W	257	GLN
9	W	283	GLN
9	W	356	ASN
9	W	422	ASN
9	W	430	GLN
9	W	454	ASN
10	X	178	HIS
10	X	416	ASN
11	Y	273	GLN
11	Y	363	ASN
11	Y	365	GLN
12	Z	102	HIS
13	a	35	HIS
13	a	152	HIS
13	a	244	ASN
13	a	290	GLN
13	a	332	HIS
14	b	29	GLN
14	b	34	ASN
14	b	44	ASN
14	b	47	ASN
14	b	76	HIS
15	c	130	GLN
15	c	131	GLN
15	c	183	HIS
15	c	237	HIS

Continued on next page...

Continued from previous page...

Mol	Chain	Res	Type
15	c	256	ASN
16	d	60	GLN
17	G	144	HIS
18	e	55	GLN
19	f	325	GLN
19	f	531	ASN
19	f	592	ASN
19	f	750	GLN

5.3.3 RNA (i)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates (i)

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 1 ligands modelled in this entry, 1 is monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
8	V	1
9	W	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	V	237:THR	C	238:ALA	N	3.31
1	W	205:ILE	C	206:SER	N	3.16

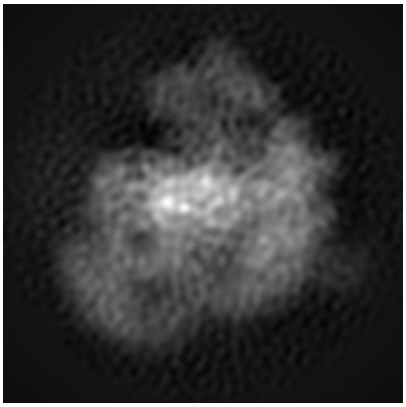
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-8676. These allow visual inspection of the internal detail of the map and identification of artifacts.

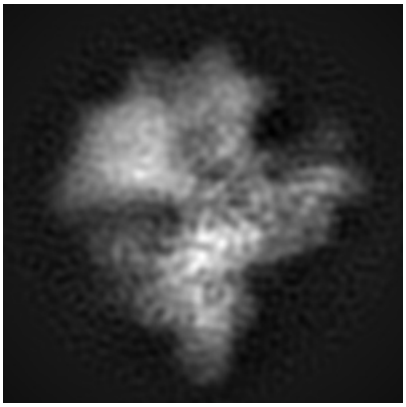
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

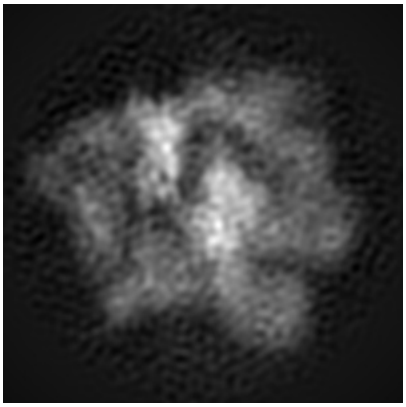
6.1.1 Primary map



X



Y

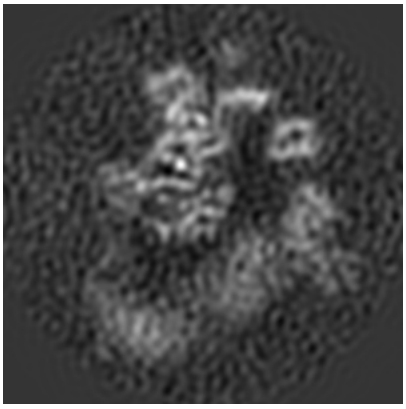


Z

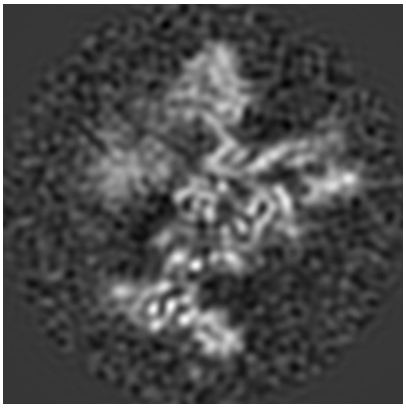
The images above show the map projected in three orthogonal directions.

6.2 Central slices

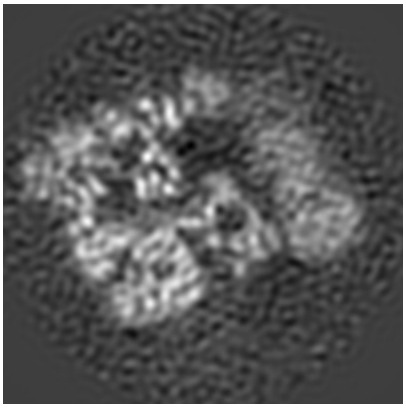
6.2.1 Primary map



X Index: 128



Y Index: 128

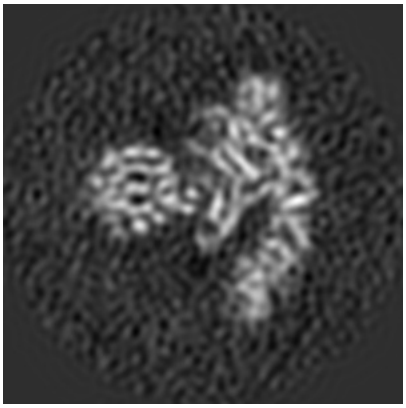


Z Index: 128

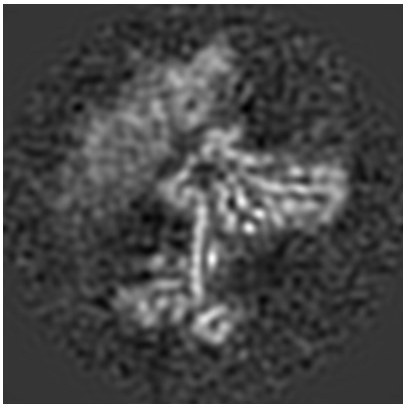
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

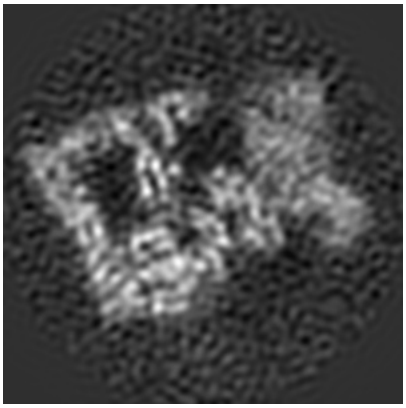
6.3.1 Primary map



X Index: 106



Y Index: 115

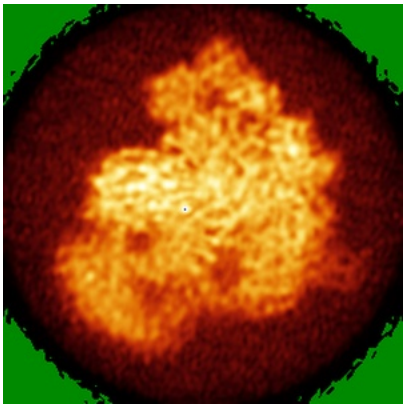


Z Index: 139

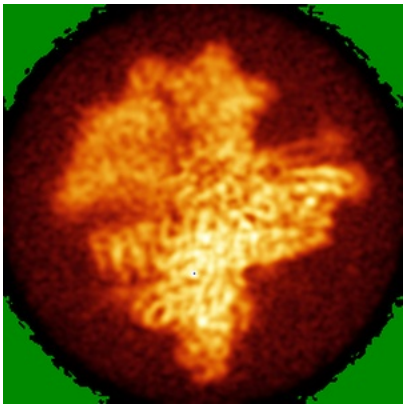
The images above show the largest variance slices of the map in three orthogonal directions.

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

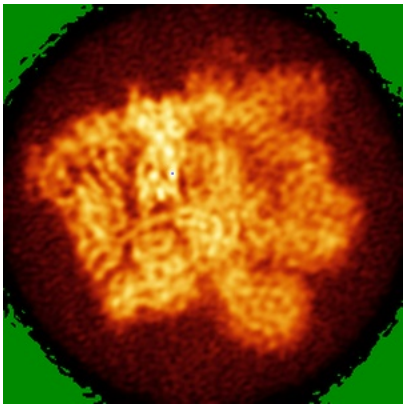
6.4.1 Primary map



X



Y

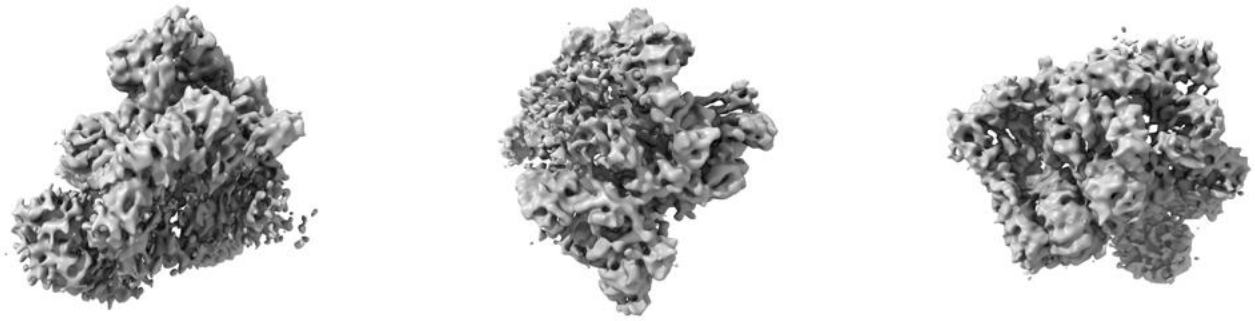


Z

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

6.5 Orthogonal surface views (i)

6.5.1 Primary map



X Y Z

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

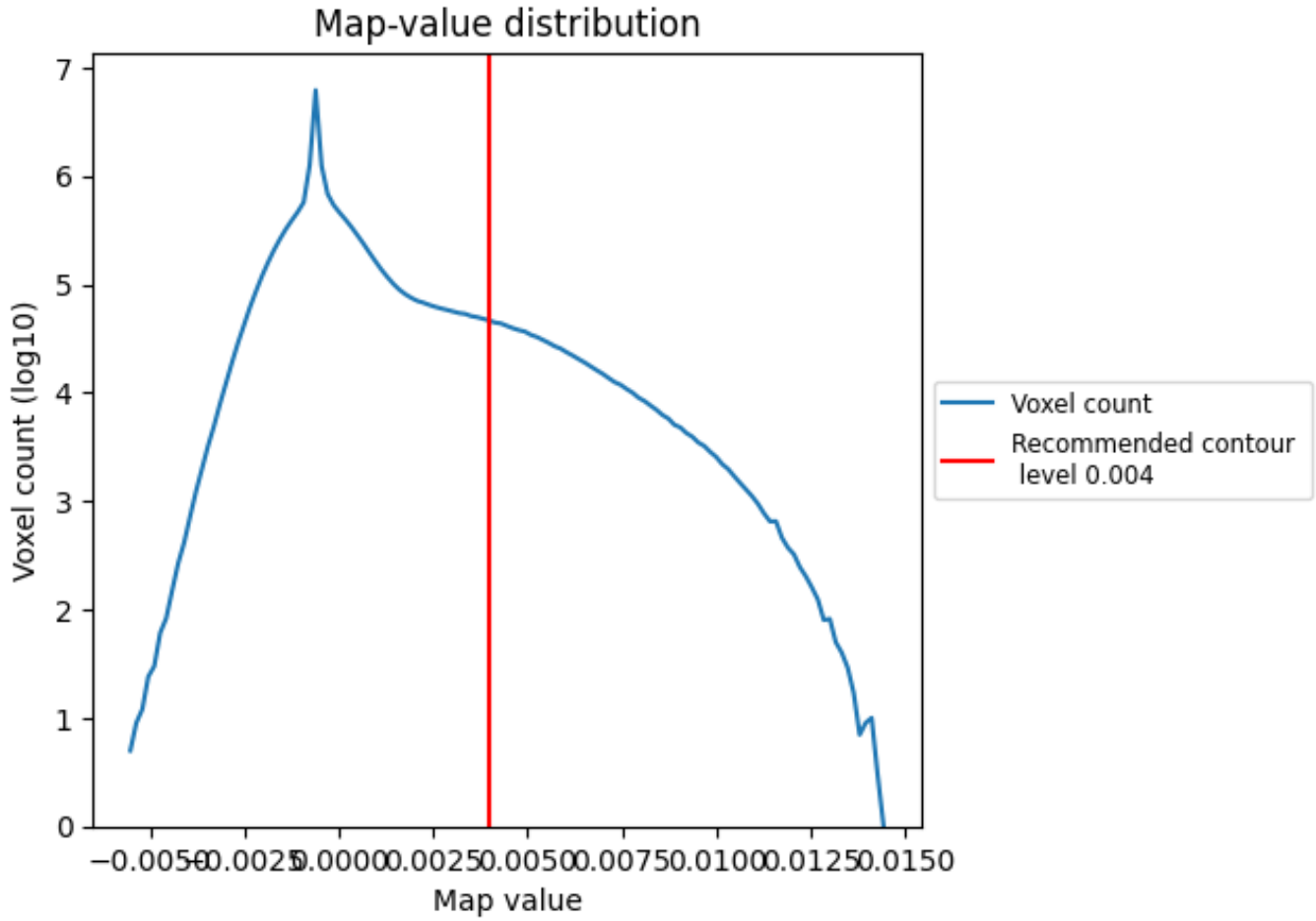
6.6 Mask visualisation (i)

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

7 Map analysis

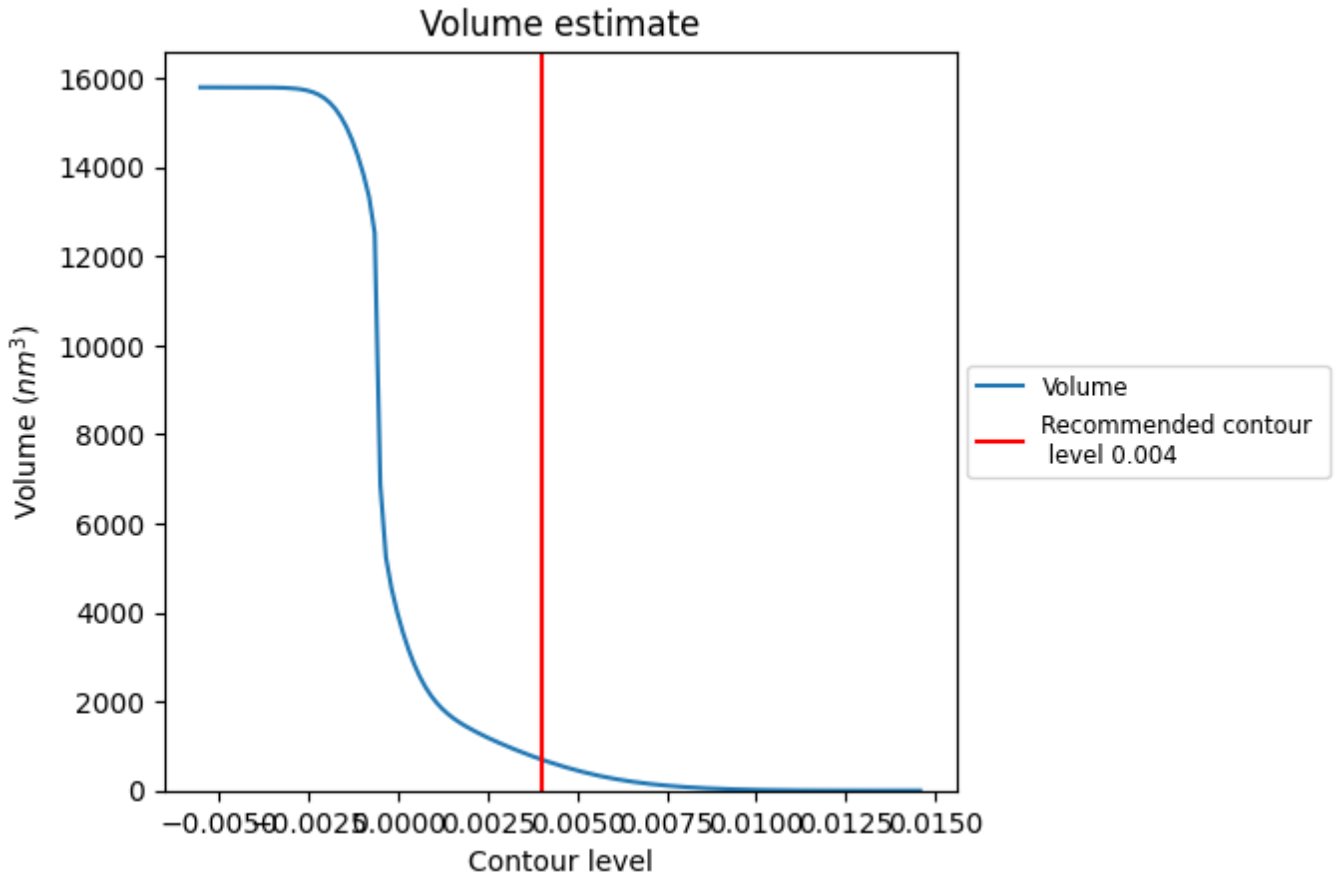
This section contains the results of statistical analysis of the map.

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.

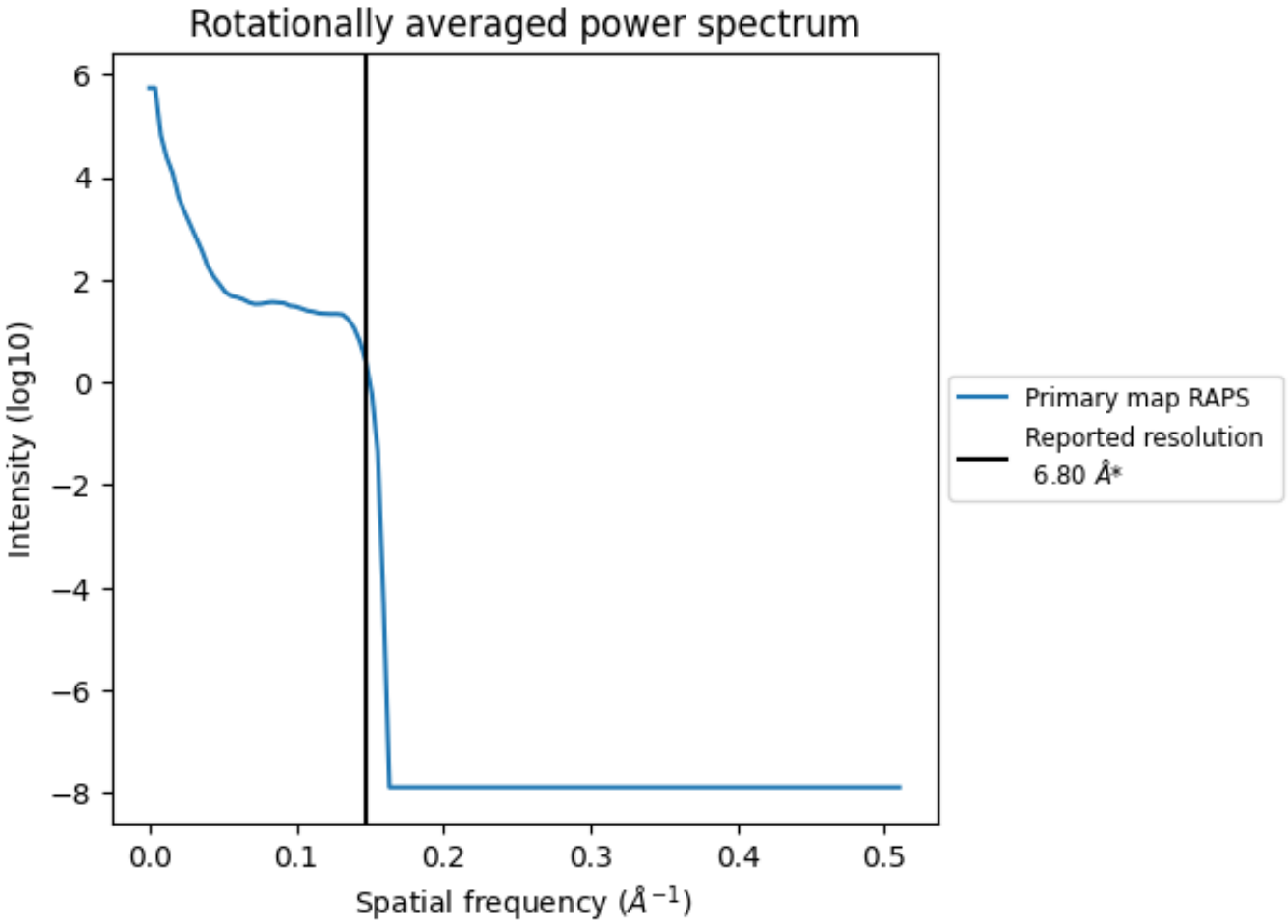
7.2 Volume estimate



The volume at the recommended contour level is 699 nm^3; this corresponds to an approximate mass of 632 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 0.147 Å^{-1}

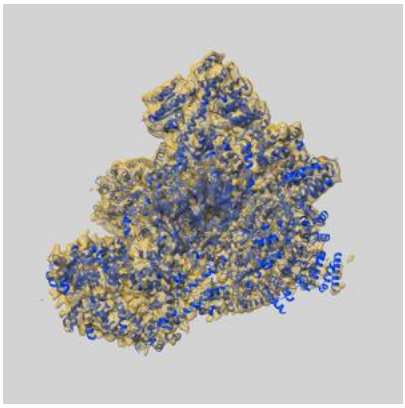
8 Fourier-Shell correlation

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

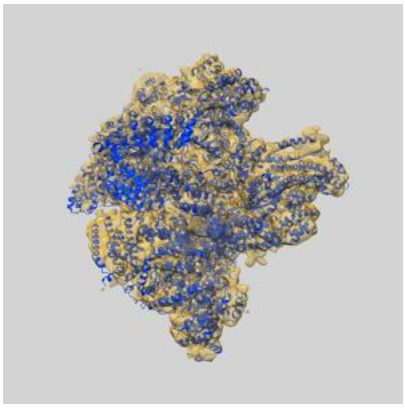
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-8676 and PDB model 5VHI. Per-residue inclusion information can be found in section 3 on page 7.

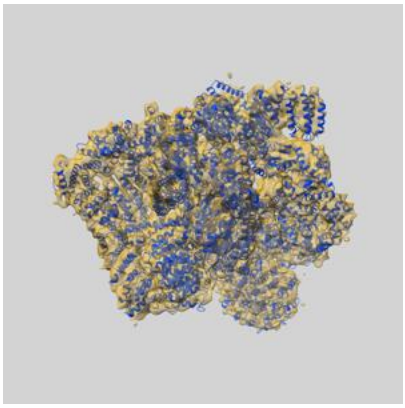
9.1 Map-model overlay



X



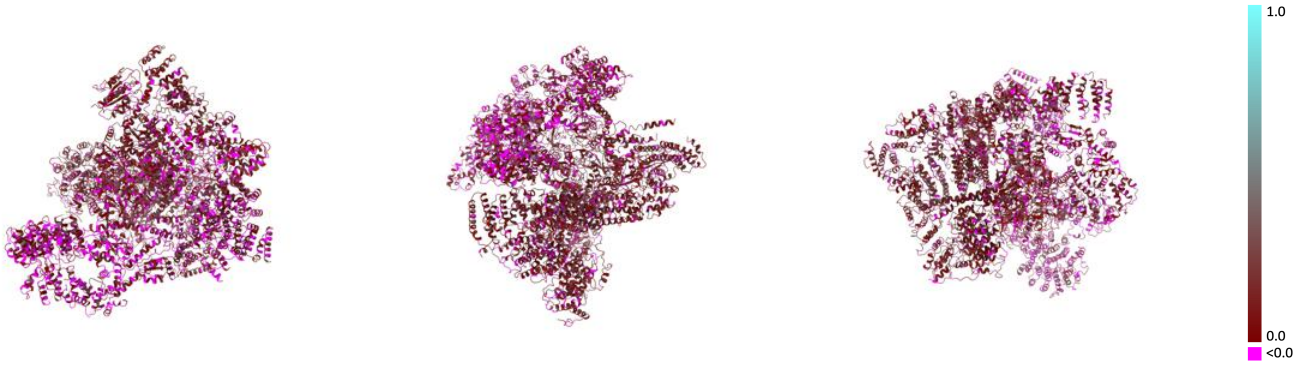
Y



Z

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

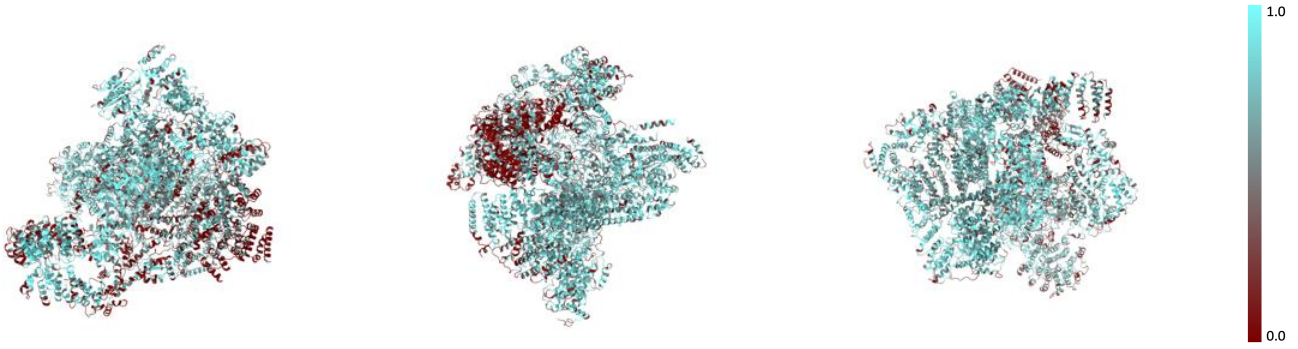
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

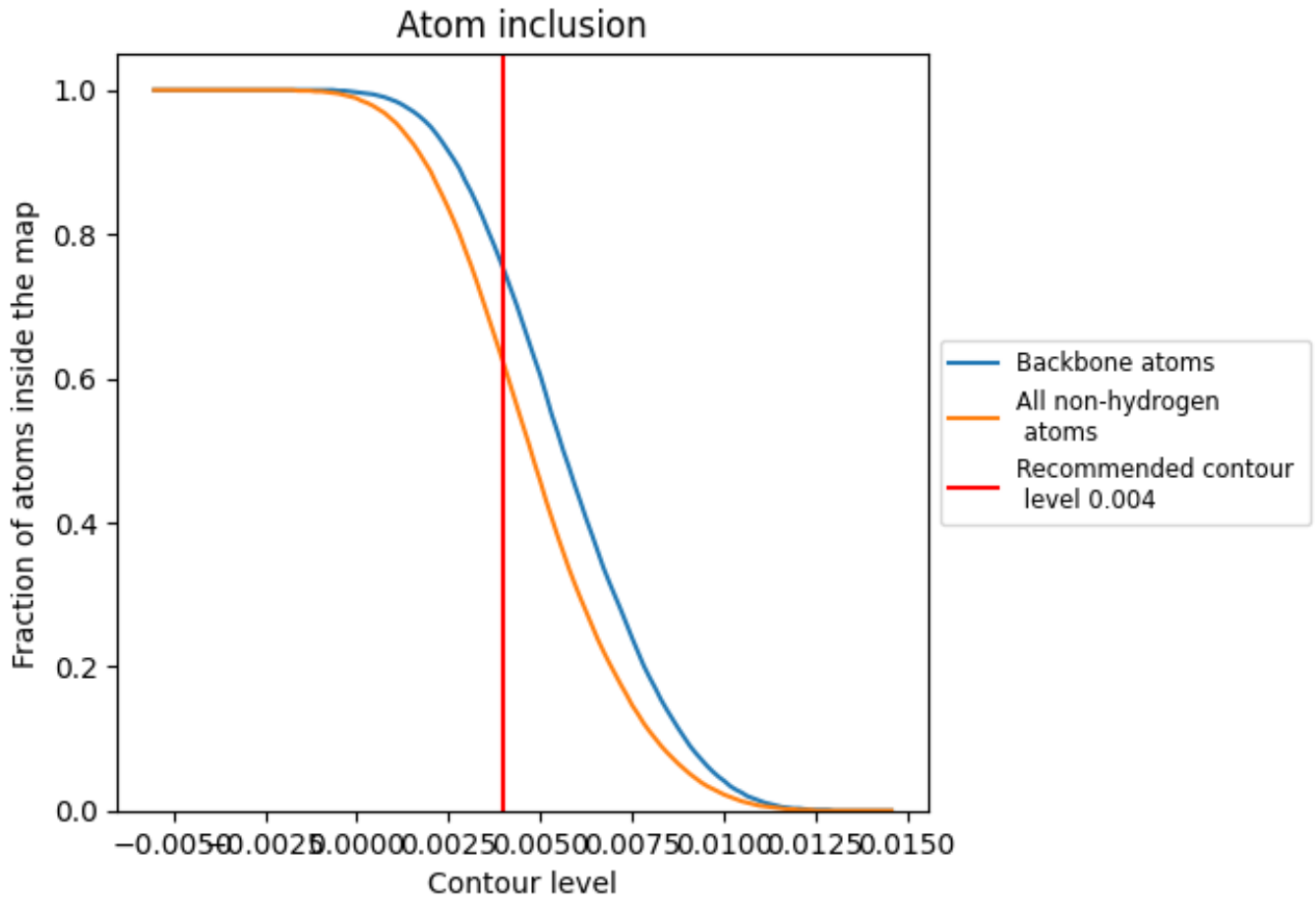
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

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

9.4 Atom inclusion (i)



At the recommended contour level, 75% of all backbone atoms, 62% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

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

Chain	Atom inclusion	Q-score
All	0.6210	0.0990
A	0.6430	0.0840
B	0.5530	0.0660
C	0.4830	0.0670
D	0.4350	0.0610
E	0.6000	0.0810
F	0.6750	0.0940
G	0.1650	0.0280
U	0.7750	0.1400
V	0.6070	0.1070
W	0.6450	0.1100
X	0.4720	0.1030
Y	0.7680	0.1300
Z	0.7160	0.1330
a	0.7310	0.1330
b	0.7480	0.1270
c	0.6910	0.1340
d	0.6610	0.1290
e	0.4830	0.0680
f	0.5750	0.0410