



## Full wwPDB EM Validation Report ⓘ

Nov 25, 2024 – 12:54 PM EST

PDB ID : 9E8K  
EMDB ID : EMD-47723  
Title : Nub1/Fat10-processing human 26S proteasome bound to Txnl1 with Rpt6 at top of spiral staircase  
Authors : Arkinson, C.; Gee, C.L.; Martin, A.  
Deposited on : 2024-11-05  
Resolution : 4.08 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](mailto:validation@mail.wwpdb.org)

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev113  
Mogul : 2022.3.0, CSD as543be (2022)  
MolProbity : 4.02b-467  
buster-report : 1.1.7 (2018)  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.40

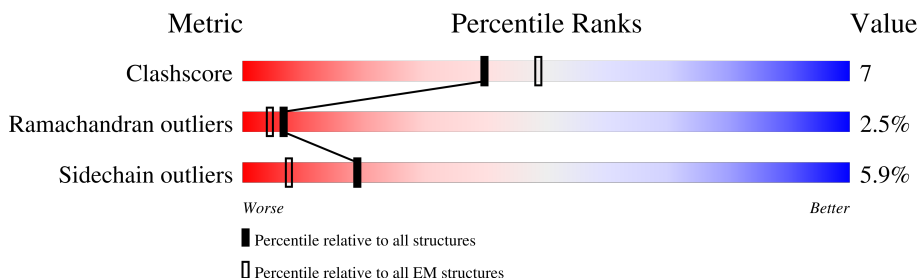
# 1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

*ELECTRON MICROSCOPY*

The reported resolution of this entry is 4.08 Å.

Percentile scores (ranging between 0-100) for global validation metrics of the entry are shown in the following graphic. The table shows the number of entries on which the scores are based.



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	210492	15764
Ramachandran outliers	207382	16835
Sidechain outliers	206894	16415

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for  $\geq 3$ , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions  $\leq 5\%$ . The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion  $< 40\%$ ). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	433	
2	C	406	
3	G	246	
4	H	234	
5	I	261	
6	J	248	
7	L	263	
8	M	255	

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Mol	Chain	Length	Quality of chain
9	O	277	
10	W	456	
11	X	422	
12	Y	389	
13	a	376	
14	b	377	
15	d	350	
16	u	289	
17	v	8	
18	D	418	
19	E	389	
20	F	439	
21	B	440	
22	K	241	
23	c	424	
24	Z	324	
25	V	534	
26	e	70	
27	U	953	

The following table lists non-polymeric compounds, carbohydrate monomers and non-standard residues in protein, DNA, RNA chains that are outliers for geometric or electron-density-fit criteria:

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
28	ADP	A	501	-	-	X	-
28	ADP	F	501	-	-	X	-
29	ATP	C	501	-	-	X	-
29	ATP	D	501	-	-	X	-
29	ATP	E	501	-	-	X	-

## 2 Entry composition [i](#)

There are 31 unique types of molecules in this entry. The entry contains 62343 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	359	2804	1765	496	526	17	0	0

- Molecule 2 is a protein called 26S protease regulatory subunit 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	C	364	2884	1817	517	533	17	0	0

- Molecule 3 is a protein called Proteasome subunit alpha type-6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	G	238	1811	1152	303	343	13	0	0

- Molecule 4 is a protein called Proteasome subunit alpha type-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	H	230	1715	1090	289	330	6	0	0

- Molecule 5 is a protein called Proteasome subunit alpha type-4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	I	248	1895	1195	324	368	8	0	0

- Molecule 6 is a protein called Proteasome subunit alpha type-7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	J	239	1704	1056	308	335	5	0	0

- Molecule 7 is a protein called Proteasome subunit alpha type-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	L	236	1838	1151	332	344	11	0	0

- Molecule 8 is a protein called Proteasome subunit alpha type-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	M	238	1839	1166	311	351	11	0	0

- Molecule 9 is a protein called Proteasome subunit beta type-7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	O	44	355	222	64	66	3	0	0

- Molecule 10 is a protein called 26S proteasome non-ATPase regulatory subunit 12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	W	438	3570	2261	609	677	23	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	X	378	2994	1909	507	566	12	0	0

- Molecule 12 is a protein called 26S proteasome non-ATPase regulatory subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	Y	380	3127	1995	535	580	17	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	a	373	2995	1911	510	559	15	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	b	188	1437	895	258	276	8	0	0

- Molecule 15 is a protein called 26S proteasome non-ATPase regulatory subunit 8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	d	269	2188	1414	359	406	9	0	0

- Molecule 16 is a protein called Thioredoxin-like protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	u	172	1376	865	226	276	9	0	0

- Molecule 17 is a protein called substrate peptide.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
17	v	8	40	24	8	8	0	0

- Molecule 18 is a protein called 26S proteasome regulatory subunit 6B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
18	D	366	2912	1843	505	553	11	0	0

- Molecule 19 is a protein called 26S protease regulatory subunit 10B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
19	E	368	2932	1846	522	548	16	0	0

- Molecule 20 is a protein called 26S proteasome regulatory subunit 6A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	F	367	2877	1818	498	544	17	0	0

- Molecule 21 is a protein called 26S proteasome regulatory subunit 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
21	B	326	2544	1600	435	498	11	0	0

- Molecule 22 is a protein called Proteasome subunit alpha type-5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	K	228	1729	1086	284	349	10	0	0

- Molecule 23 is a protein called 26S proteasome non-ATPase regulatory subunit 14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	c	271	2145	1359	368	401	17	0	0

There are 114 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
c	311	LEU	-	expression tag	UNP O00487
c	312	ILE	-	expression tag	UNP O00487
c	313	ASN	-	expression tag	UNP O00487
c	314	HIS	-	expression tag	UNP O00487
c	315	HIS	-	expression tag	UNP O00487
c	316	HIS	-	expression tag	UNP O00487
c	317	HIS	-	expression tag	UNP O00487
c	318	HIS	-	expression tag	UNP O00487
c	319	HIS	-	expression tag	UNP O00487
c	320	ASP	-	expression tag	UNP O00487
c	321	TYR	-	expression tag	UNP O00487
c	322	ASP	-	expression tag	UNP O00487
c	323	ILE	-	expression tag	UNP O00487
c	324	PRO	-	expression tag	UNP O00487
c	325	THR	-	expression tag	UNP O00487
c	326	THR	-	expression tag	UNP O00487
c	327	ALA	-	expression tag	UNP O00487
c	328	SER	-	expression tag	UNP O00487
c	329	GLU	-	expression tag	UNP O00487
c	330	ASN	-	expression tag	UNP O00487
c	331	LEU	-	expression tag	UNP O00487
c	332	TYR	-	expression tag	UNP O00487
c	333	PHE	-	expression tag	UNP O00487
c	334	GLN	-	expression tag	UNP O00487
c	335	GLY	-	expression tag	UNP O00487

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Chain	Residue	Modelled	Actual	Comment	Reference
c	336	GLU	-	expression tag	UNP O00487
c	337	LEU	-	expression tag	UNP O00487
c	338	GLY	-	expression tag	UNP O00487
c	339	MET	-	expression tag	UNP O00487
c	340	ARG	-	expression tag	UNP O00487
c	341	GLY	-	expression tag	UNP O00487
c	342	SER	-	expression tag	UNP O00487
c	343	ALA	-	expression tag	UNP O00487
c	344	GLY	-	expression tag	UNP O00487
c	345	LYS	-	expression tag	UNP O00487
c	346	ALA	-	expression tag	UNP O00487
c	347	GLY	-	expression tag	UNP O00487
c	348	GLU	-	expression tag	UNP O00487
c	349	GLY	-	expression tag	UNP O00487
c	350	GLU	-	expression tag	UNP O00487
c	351	ILE	-	expression tag	UNP O00487
c	352	PRO	-	expression tag	UNP O00487
c	353	ALA	-	expression tag	UNP O00487
c	354	PRO	-	expression tag	UNP O00487
c	355	LEU	-	expression tag	UNP O00487
c	356	ALA	-	expression tag	UNP O00487
c	357	GLY	-	expression tag	UNP O00487
c	358	THR	-	expression tag	UNP O00487
c	359	VAL	-	expression tag	UNP O00487
c	360	SER	-	expression tag	UNP O00487
c	361	LYS	-	expression tag	UNP O00487
c	362	ILE	-	expression tag	UNP O00487
c	363	LEU	-	expression tag	UNP O00487
c	364	VAL	-	expression tag	UNP O00487
c	365	LYS	-	expression tag	UNP O00487
c	366	GLU	-	expression tag	UNP O00487
c	367	GLY	-	expression tag	UNP O00487
c	368	ASP	-	expression tag	UNP O00487
c	369	THR	-	expression tag	UNP O00487
c	370	VAL	-	expression tag	UNP O00487
c	371	LYS	-	expression tag	UNP O00487
c	372	ALA	-	expression tag	UNP O00487
c	373	GLY	-	expression tag	UNP O00487
c	374	GLN	-	expression tag	UNP O00487
c	375	THR	-	expression tag	UNP O00487
c	376	VAL	-	expression tag	UNP O00487
c	377	LEU	-	expression tag	UNP O00487

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Chain	Residue	Modelled	Actual	Comment	Reference
c	378	VAL	-	expression tag	UNP O00487
c	379	LEU	-	expression tag	UNP O00487
c	380	GLU	-	expression tag	UNP O00487
c	381	ALA	-	expression tag	UNP O00487
c	382	MET	-	expression tag	UNP O00487
c	383	LYS	-	expression tag	UNP O00487
c	384	MET	-	expression tag	UNP O00487
c	385	GLU	-	expression tag	UNP O00487
c	386	THR	-	expression tag	UNP O00487
c	387	GLU	-	expression tag	UNP O00487
c	388	ILE	-	expression tag	UNP O00487
c	389	ASN	-	expression tag	UNP O00487
c	390	ALA	-	expression tag	UNP O00487
c	391	PRO	-	expression tag	UNP O00487
c	392	THR	-	expression tag	UNP O00487
c	393	ASP	-	expression tag	UNP O00487
c	394	GLY	-	expression tag	UNP O00487
c	395	LYS	-	expression tag	UNP O00487
c	396	VAL	-	expression tag	UNP O00487
c	397	GLU	-	expression tag	UNP O00487
c	398	LYS	-	expression tag	UNP O00487
c	399	VAL	-	expression tag	UNP O00487
c	400	LEU	-	expression tag	UNP O00487
c	401	VAL	-	expression tag	UNP O00487
c	402	LYS	-	expression tag	UNP O00487
c	403	GLU	-	expression tag	UNP O00487
c	404	ARG	-	expression tag	UNP O00487
c	405	ASP	-	expression tag	UNP O00487
c	406	ALA	-	expression tag	UNP O00487
c	407	VAL	-	expression tag	UNP O00487
c	408	GLN	-	expression tag	UNP O00487
c	409	GLY	-	expression tag	UNP O00487
c	410	GLY	-	expression tag	UNP O00487
c	411	GLN	-	expression tag	UNP O00487
c	412	GLY	-	expression tag	UNP O00487
c	413	LEU	-	expression tag	UNP O00487
c	414	ILE	-	expression tag	UNP O00487
c	415	LYS	-	expression tag	UNP O00487
c	416	ILE	-	expression tag	UNP O00487
c	417	GLY	-	expression tag	UNP O00487
c	418	VAL	-	expression tag	UNP O00487
c	419	HIS	-	expression tag	UNP O00487

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Chain	Residue	Modelled	Actual	Comment	Reference
c	420	HIS	-	expression tag	UNP O00487
c	421	HIS	-	expression tag	UNP O00487
c	422	HIS	-	expression tag	UNP O00487
c	423	HIS	-	expression tag	UNP O00487
c	424	HIS	-	expression tag	UNP O00487

- Molecule 24 is a protein called 26S proteasome non-ATPase regulatory subunit 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
24	Z	282	2251	1440	387	419	5	0	0

- Molecule 25 is a protein called 26S proteasome non-ATPase regulatory subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	V	439	3525	2239	623	650	13	0	0

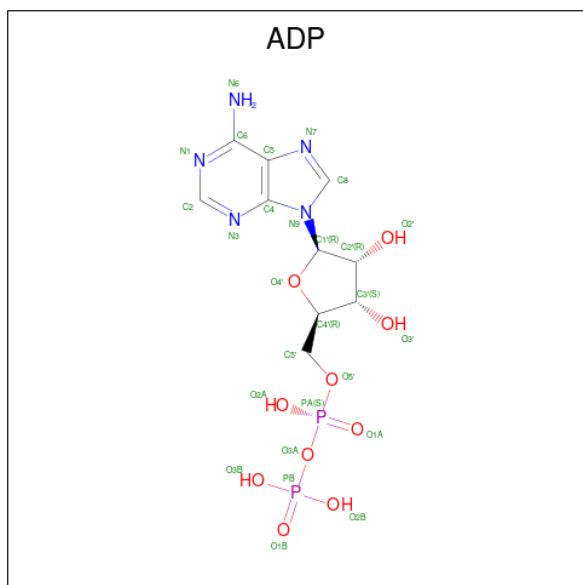
- Molecule 26 is a protein called 26S proteasome complex subunit SEM1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
26	e	41	349	212	55	82	0	0

- Molecule 27 is a protein called 26S proteasome non-ATPase regulatory subunit 1.

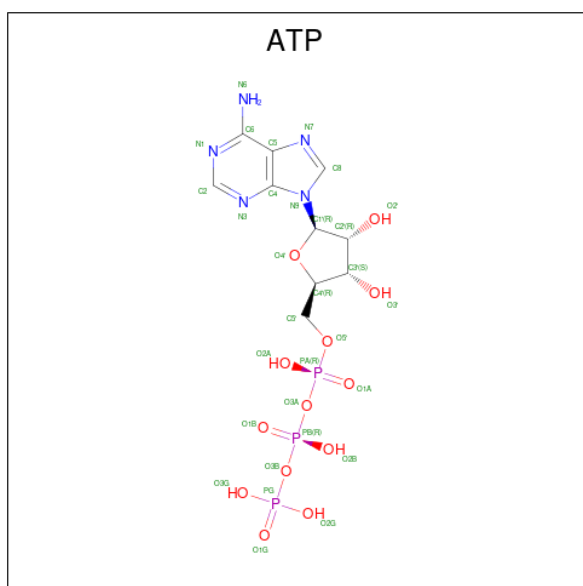
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	U	811	6331	4020	1076	1191	44	0	0

- Molecule 28 is ADENOSINE-5'-DIPHOSPHATE (three-letter code: ADP) (formula:  $C_{10}H_{15}N_5O_{10}P_2$ ) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
			Total	C	N	O	P	
28	A	1	Total	C	N	O	P	0
			27	10	5	10	2	
28	F	1	Total	C	N	O	P	0
			27	10	5	10	2	
28	B	1	Total	C	N	O	P	0
			27	10	5	10	2	

- Molecule 29 is ADENOSINE-5'-TRIPHOSPHATE (three-letter code: ATP) (formula:  $C_{10}H_{16}N_5O_{13}P_3$ ) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
29	C	1	Total	C	N	O	P	0
			31	10	5	13	3	
29	D	1	Total	C	N	O	P	0
			31	10	5	13	3	
29	E	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 30 is MAGNESIUM ION (three-letter code: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
30	C	1	Total	Mg	0
			1	1	

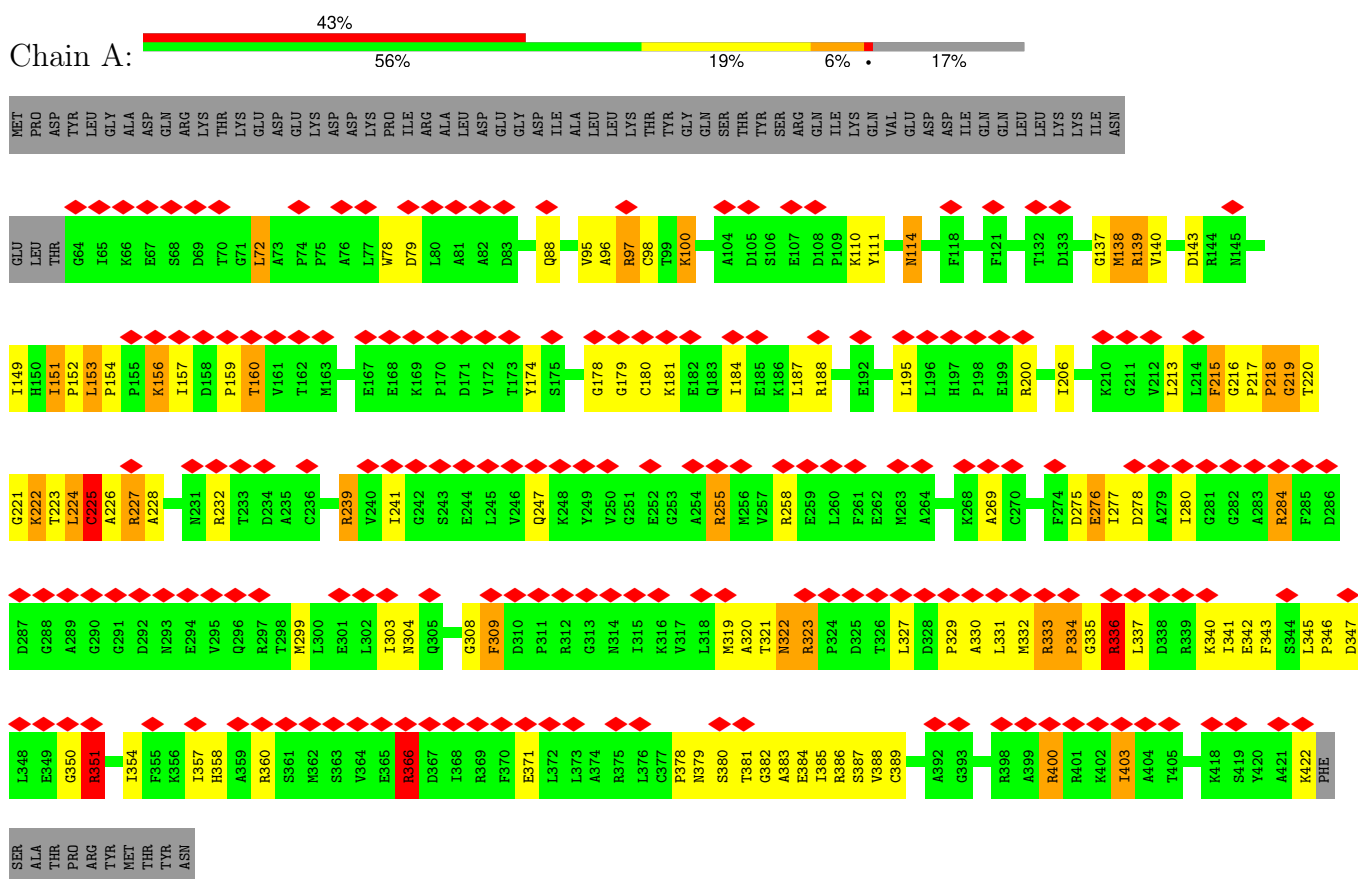
- Molecule 31 is ZINC ION (three-letter code: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

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

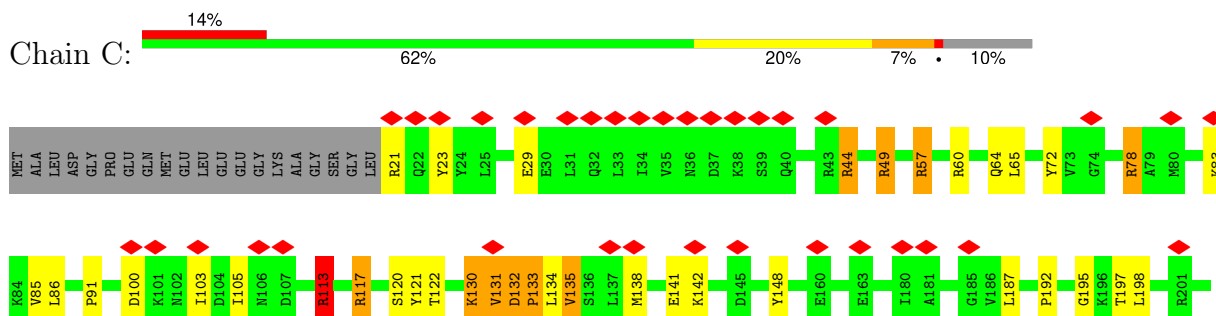
### 3 Residue-property plots [i](#)

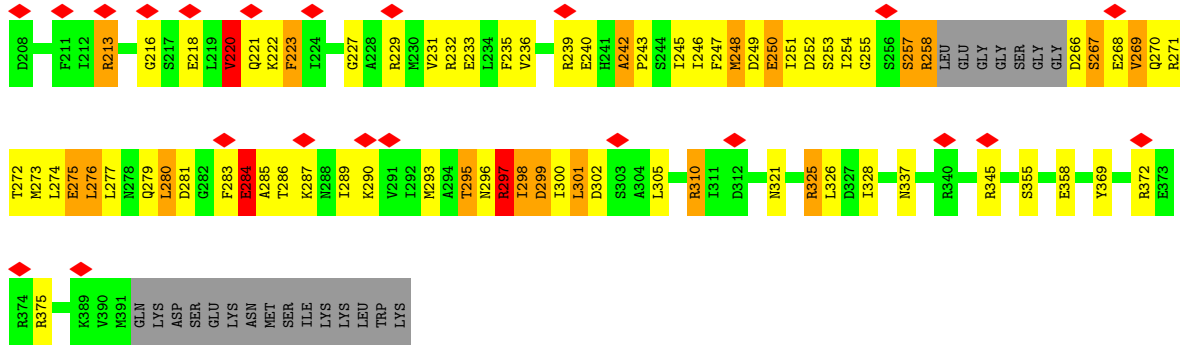
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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

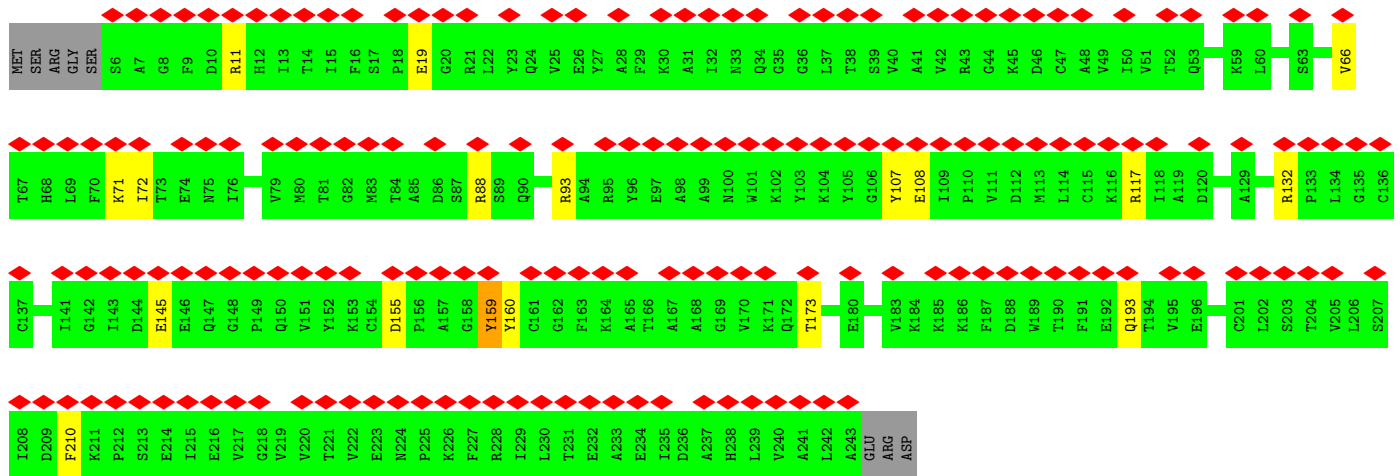
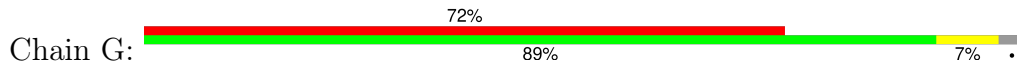


- Molecule 2: 26S protease regulatory subunit 8

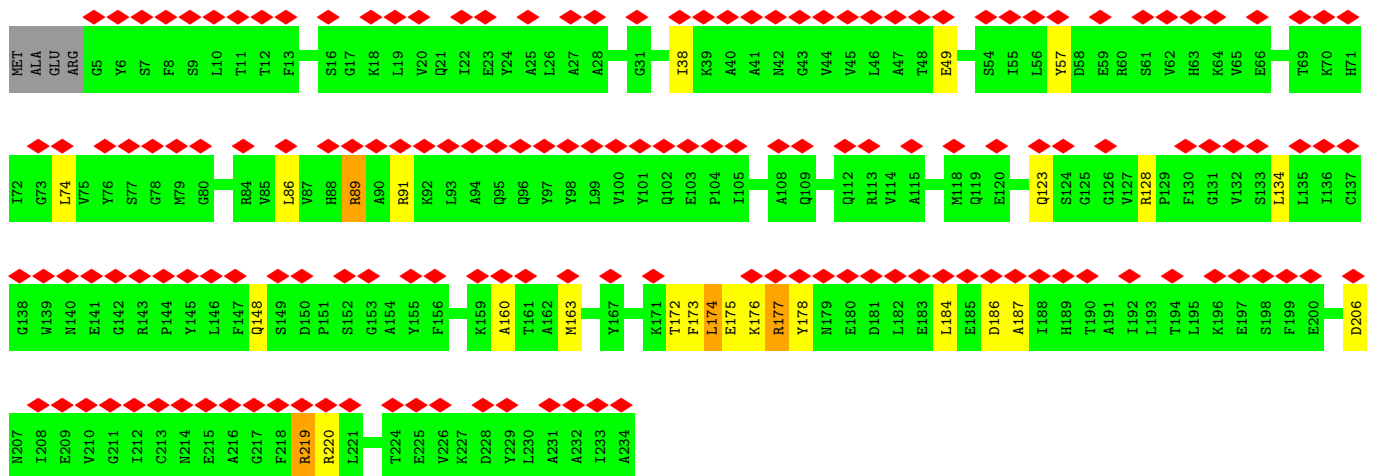
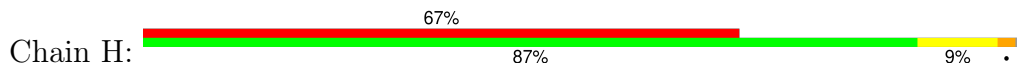




• Molecule 3: Proteasome subunit alpha type-6



• Molecule 4: Proteasome subunit alpha type-2

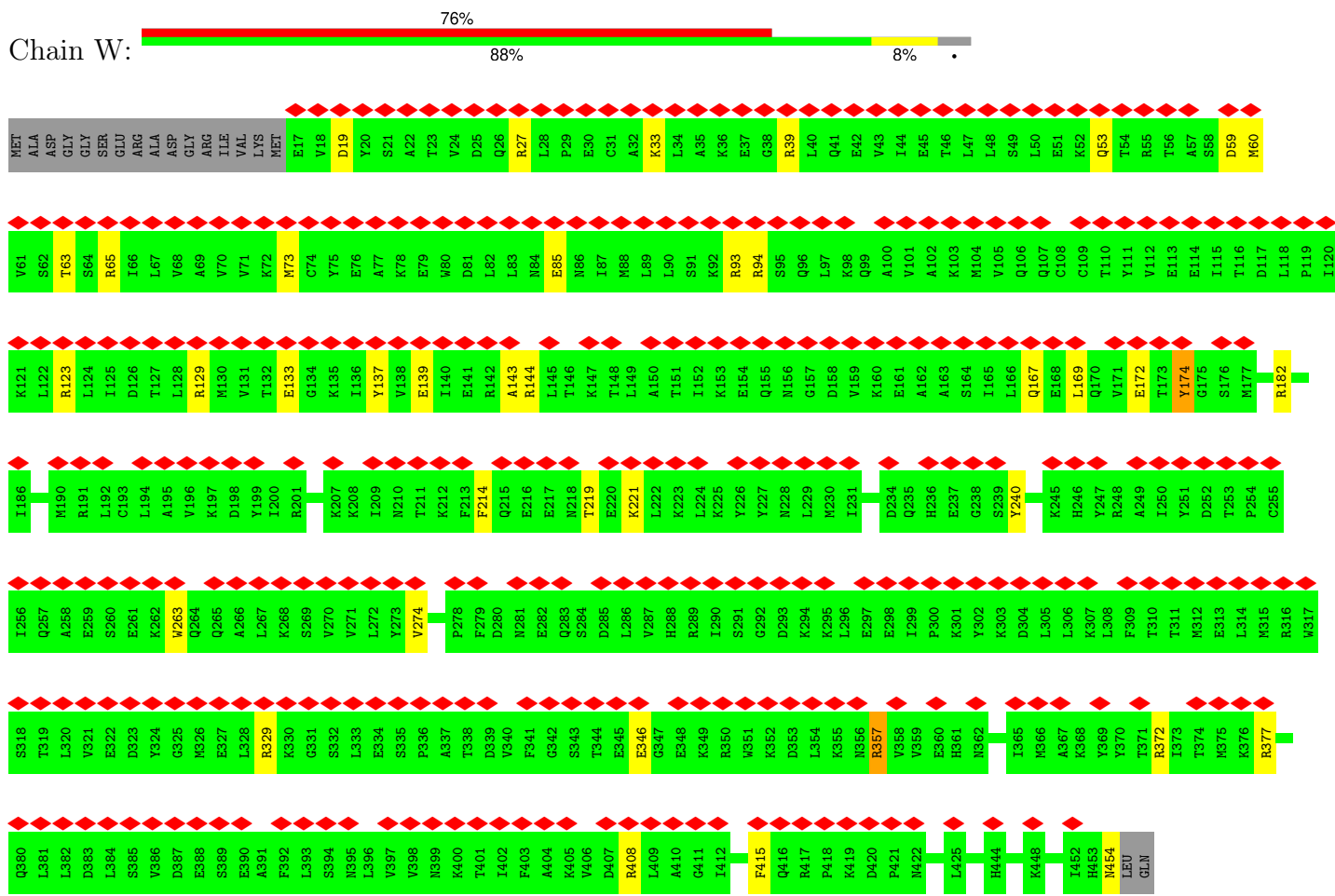


• Molecule 5: Proteasome subunit alpha type-4

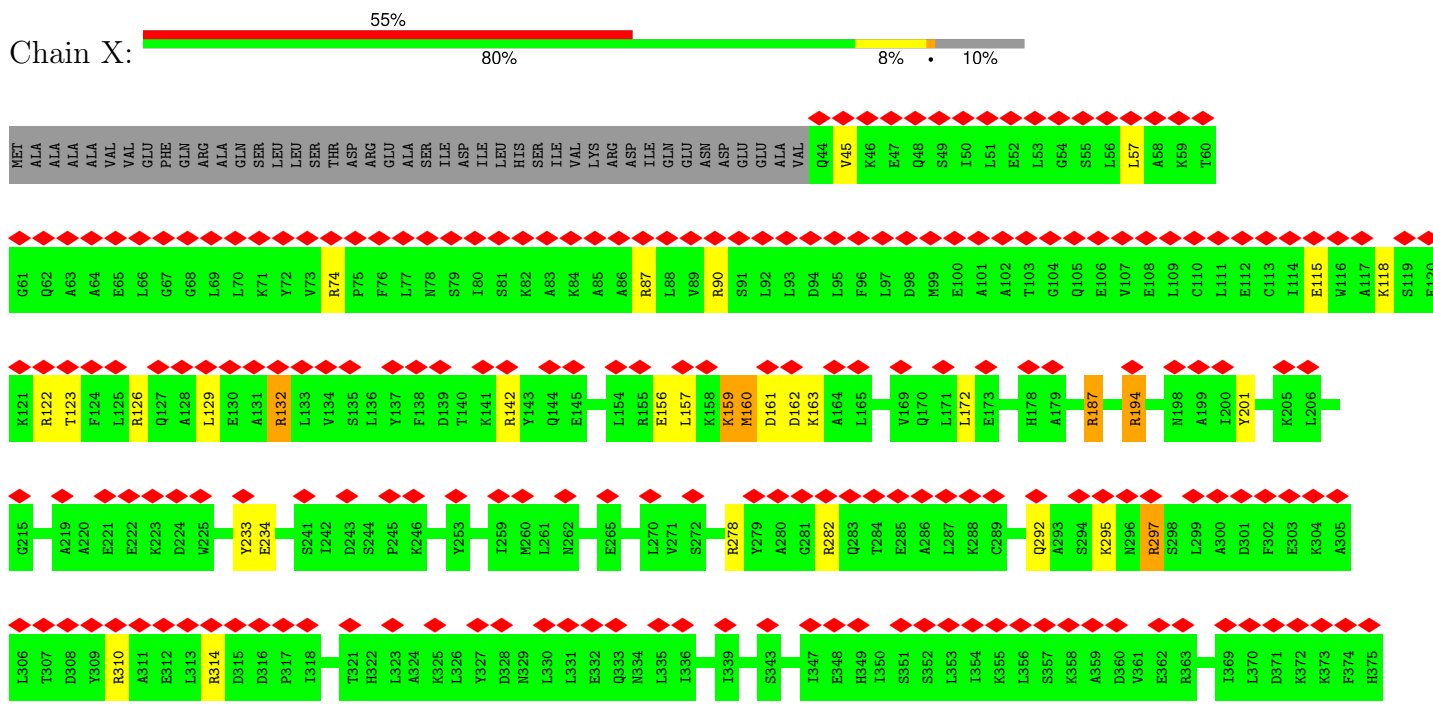






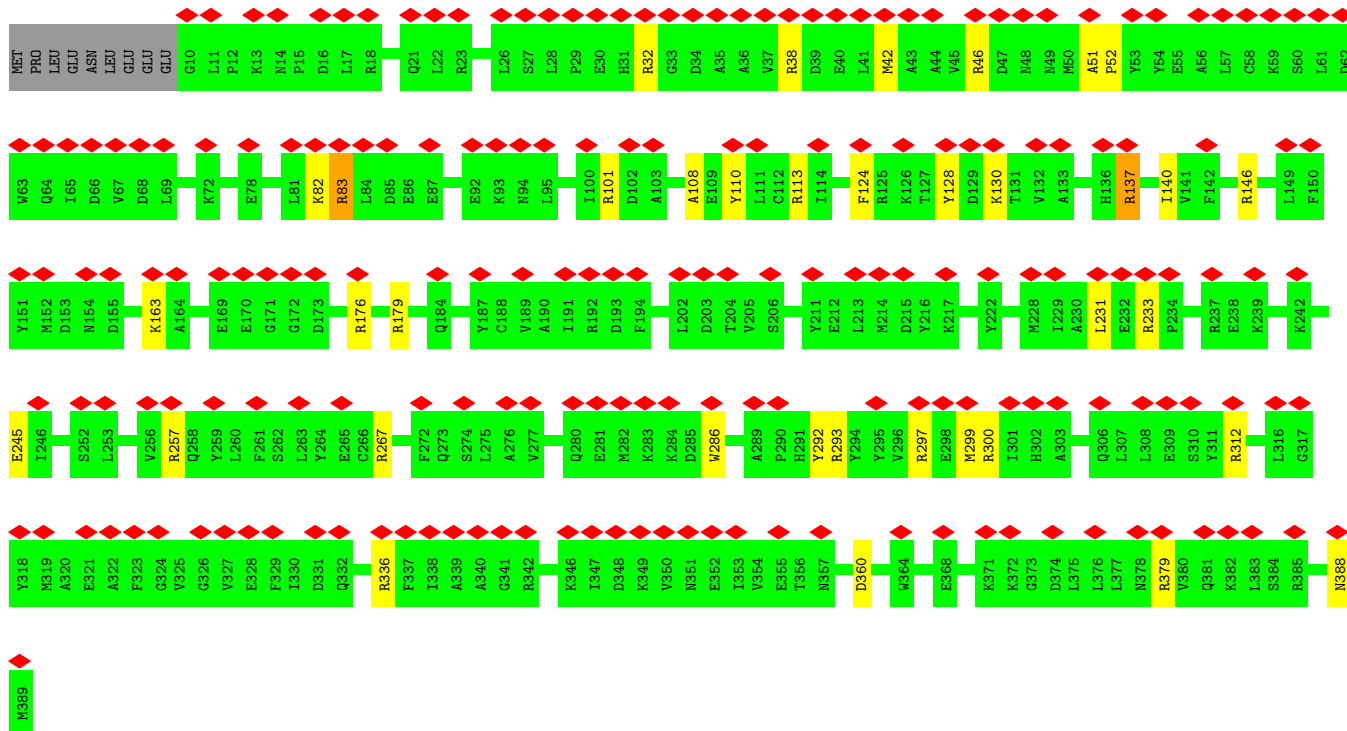
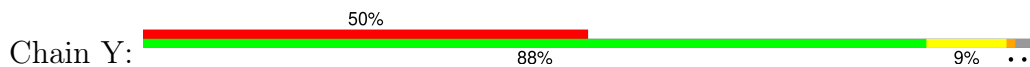


• Molecule 11: 26S proteasome non-ATPase regulatory subunit 11

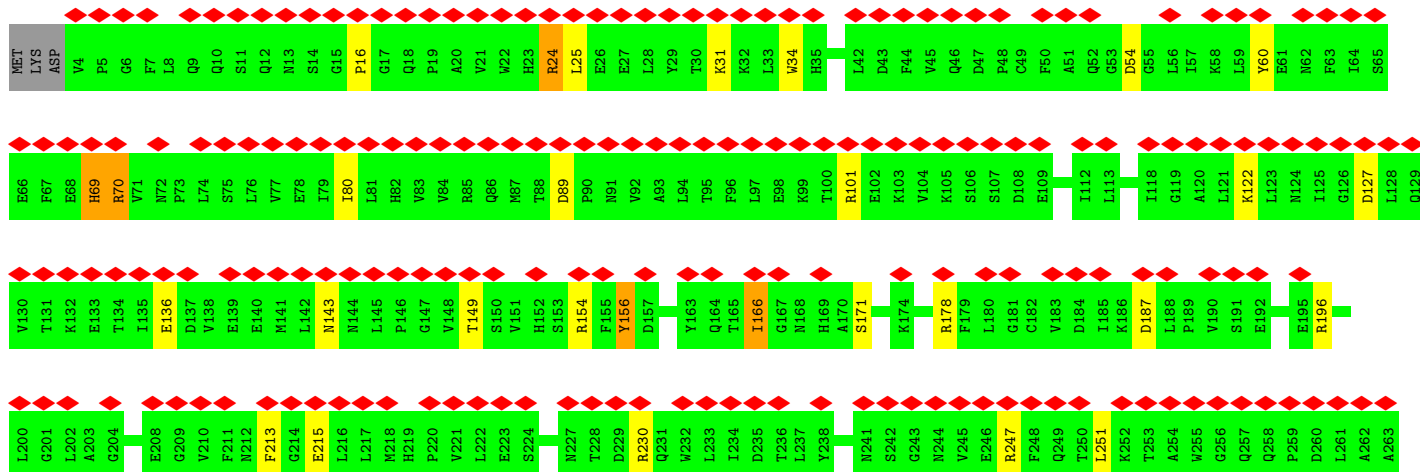
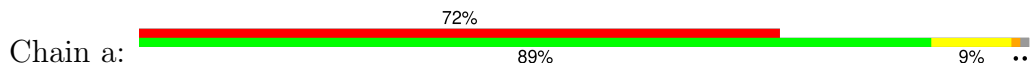


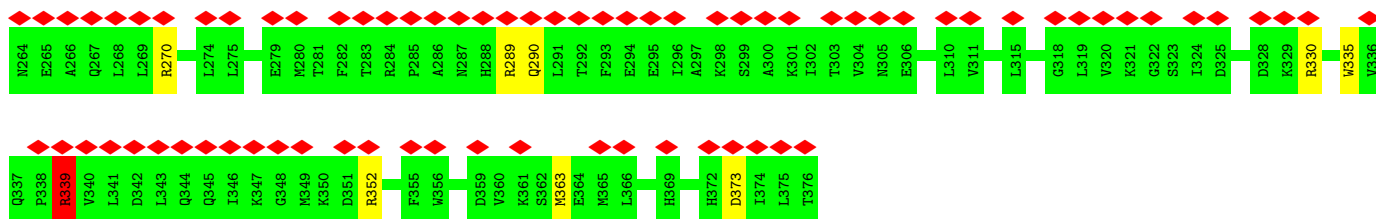


• Molecule 12: 26S proteasome non-ATPase regulatory subunit 6

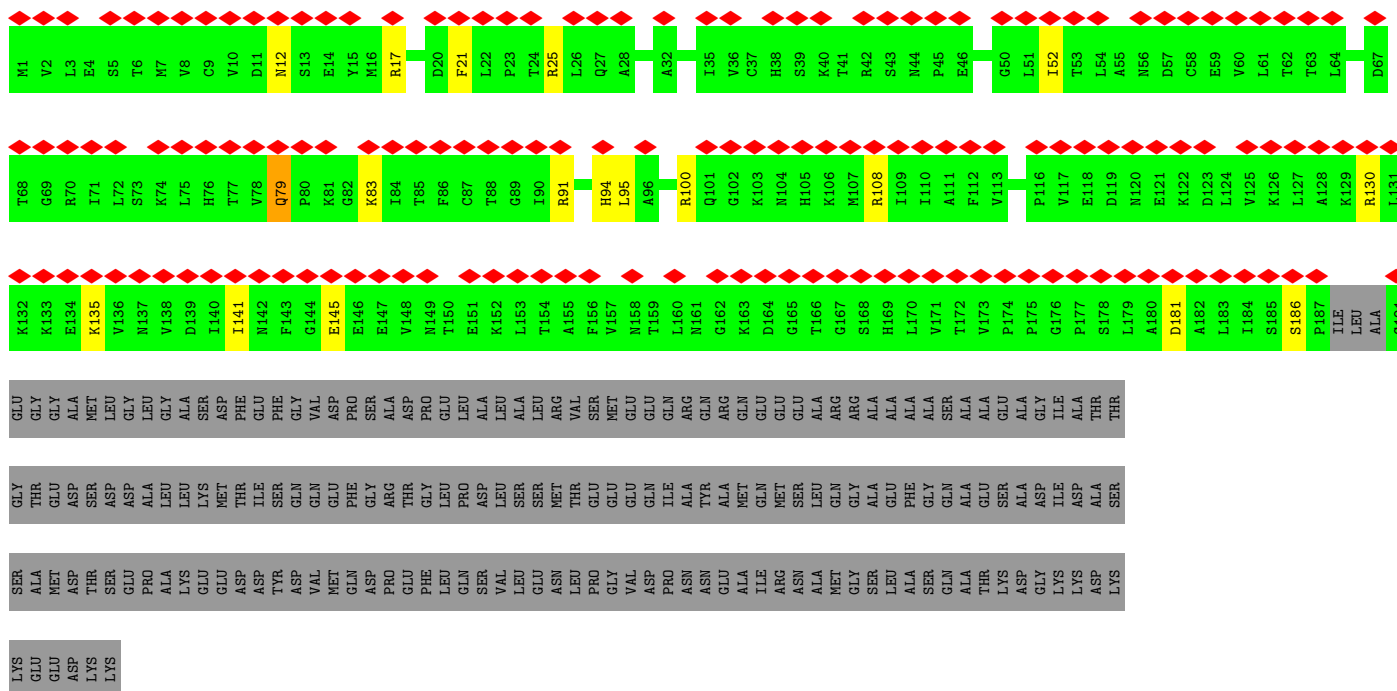
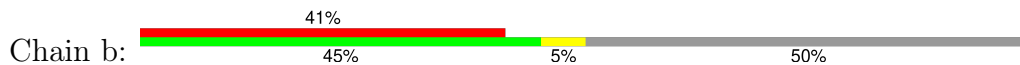


• Molecule 13: 26S proteasome non-ATPase regulatory subunit 13

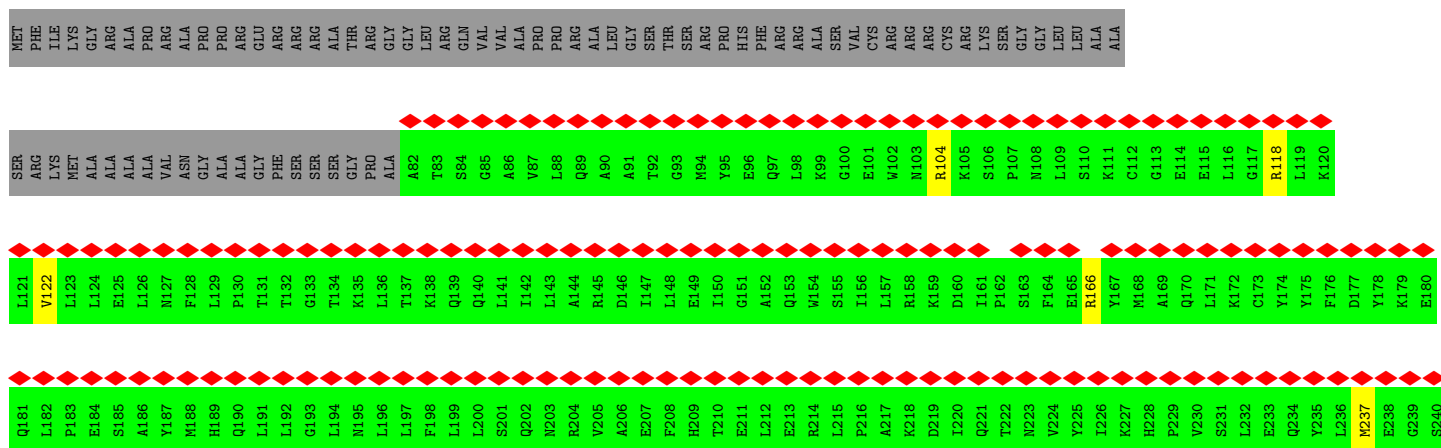


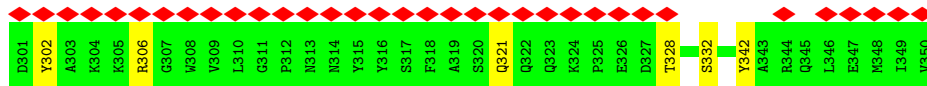
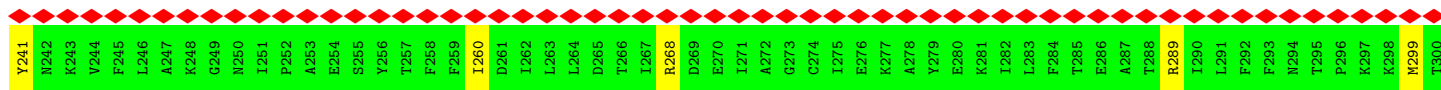


• Molecule 14: 26S proteasome non-ATPase regulatory subunit 4

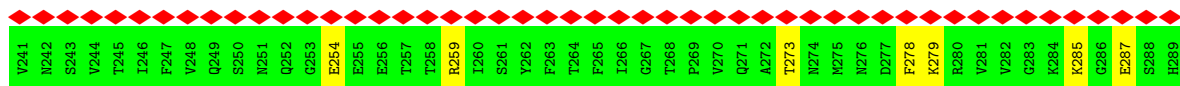
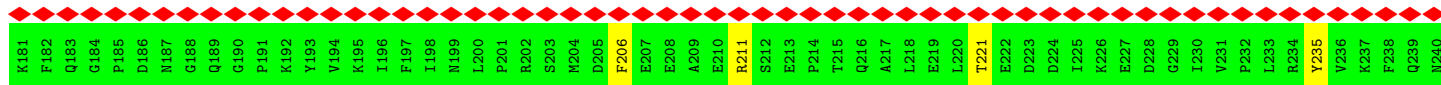
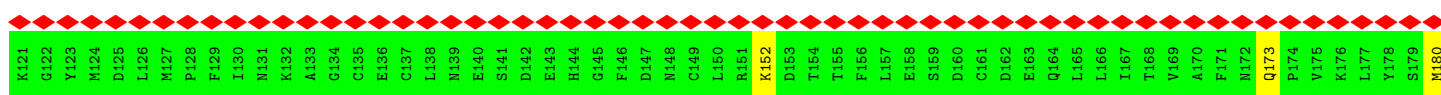
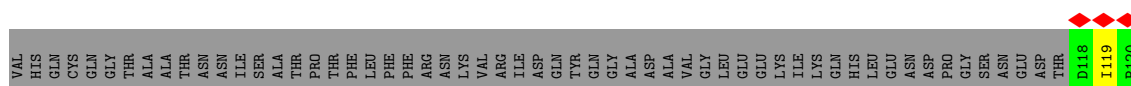


• Molecule 15: 26S proteasome non-ATPase regulatory subunit 8





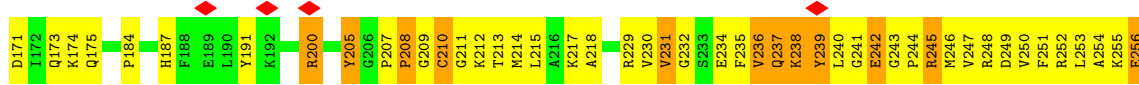
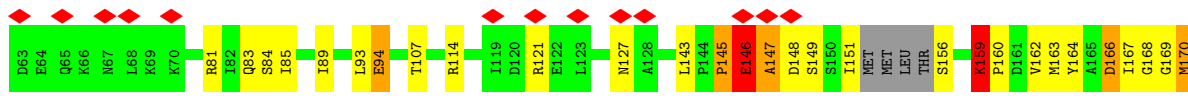
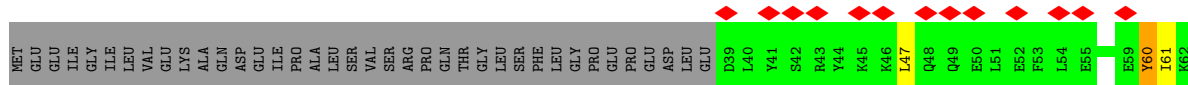
• Molecule 16: Thioredoxin-like protein 1

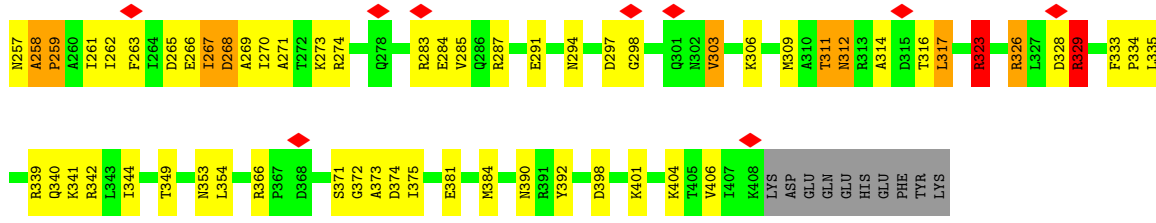


• Molecule 17: substrate peptide

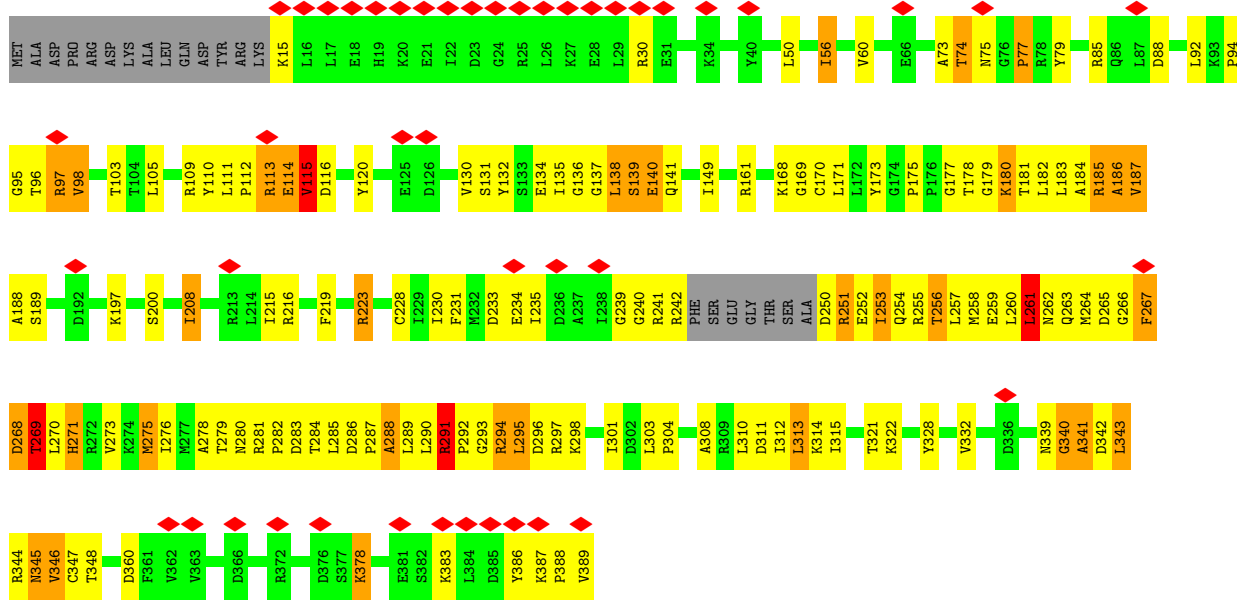


• Molecule 18: 26S proteasome regulatory subunit 6B

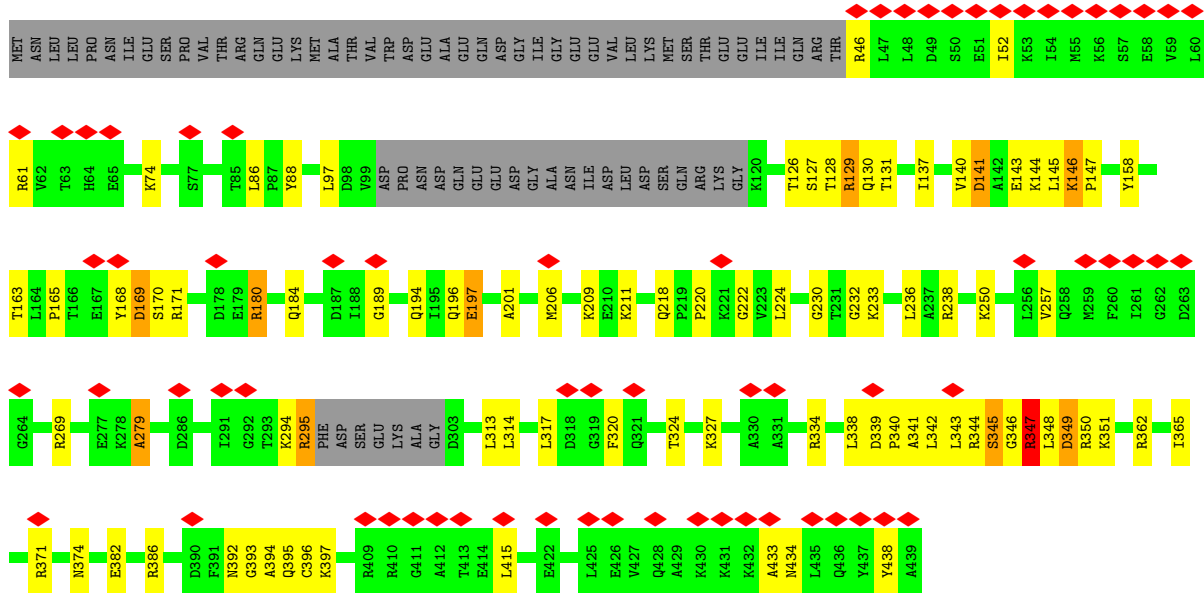




• Molecule 19: 26S protease regulatory subunit 10B

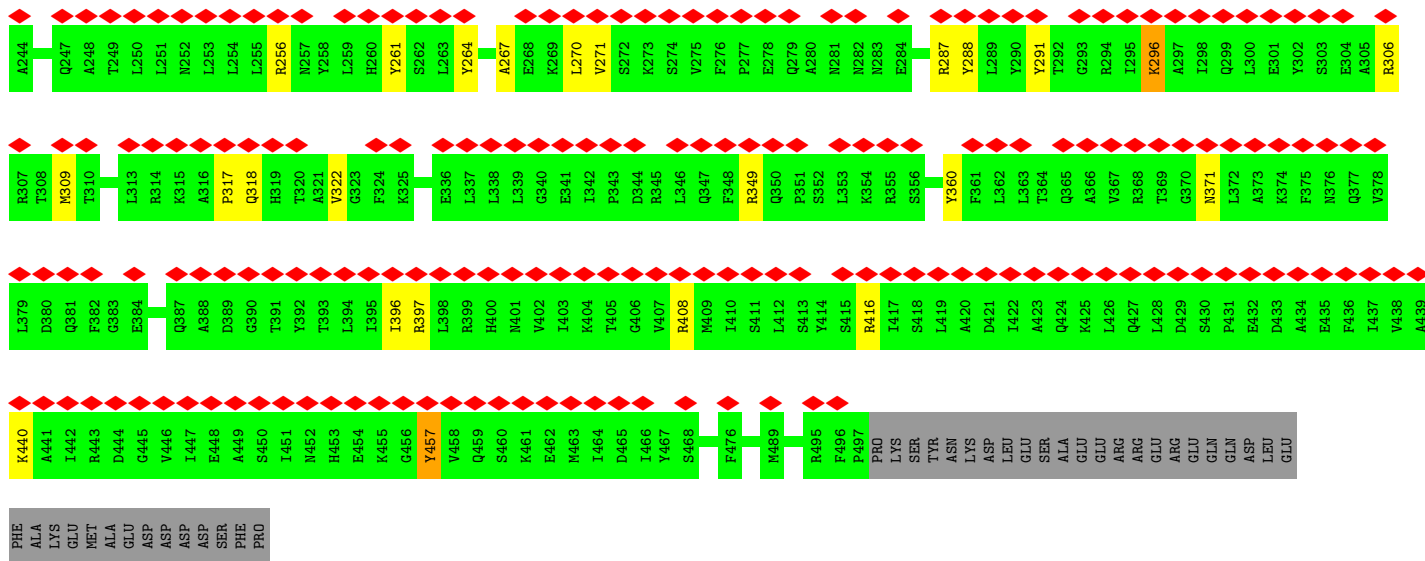


• Molecule 20: 26S proteasome regulatory subunit 6A

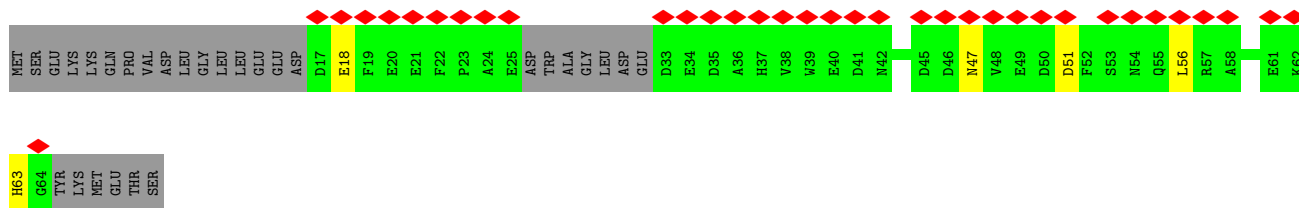




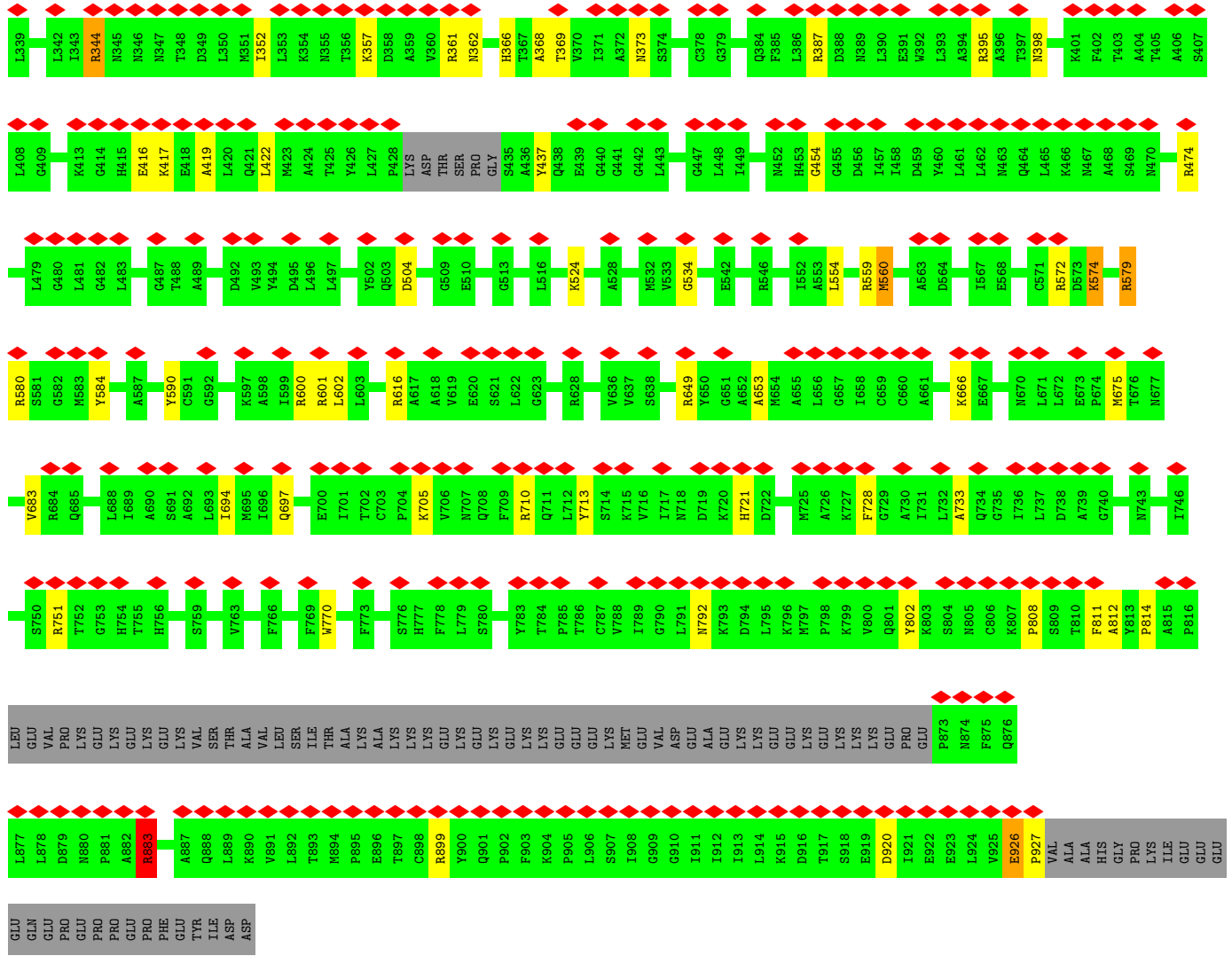




• Molecule 26: 26S proteasome complex subunit SEM1







## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	10722	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	50	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	1700	Depositor
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.468	Depositor
Minimum map value	-0.275	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.023	Depositor
Recommended contour level	0.13	Depositor
Map size (Å)	356.32, 356.32, 356.32	wwPDB
Map dimensions	340, 340, 340	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.048, 1.048, 1.048	Depositor

## 5 Model quality

### 5.1 Standard geometry

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

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	0.65	0/2851	1.10	14/3849 (0.4%)
2	C	0.62	0/2922	1.09	15/3932 (0.4%)
3	G	0.63	0/1844	0.99	5/2503 (0.2%)
4	H	0.66	0/1751	1.03	6/2379 (0.3%)
5	I	0.66	0/1925	1.00	5/2606 (0.2%)
6	J	0.65	0/1728	1.05	8/2358 (0.3%)
7	L	0.67	0/1872	1.10	13/2533 (0.5%)
8	M	0.69	0/1874	1.08	6/2530 (0.2%)
9	O	0.70	0/359	1.11	3/483 (0.6%)
10	W	0.64	0/3618	1.06	18/4868 (0.4%)
11	X	0.62	0/3038	1.02	13/4095 (0.3%)
12	Y	0.68	0/3185	1.08	20/4290 (0.5%)
13	a	0.65	0/3053	1.10	13/4133 (0.3%)
14	b	0.59	0/1456	1.10	8/1969 (0.4%)
15	d	0.69	0/2234	0.98	6/3018 (0.2%)
16	u	0.67	0/1403	1.01	2/1892 (0.1%)
18	D	0.66	1/2958 (0.0%)	1.14	23/3993 (0.6%)
19	E	0.61	0/2976	0.99	6/4004 (0.1%)
20	F	0.61	0/2914	1.04	13/3925 (0.3%)
21	B	0.61	0/2576	1.07	16/3474 (0.5%)
22	K	0.61	0/1755	1.02	6/2375 (0.3%)
23	c	0.59	0/2185	1.03	8/2951 (0.3%)
24	Z	0.60	0/2293	0.99	2/3108 (0.1%)
25	V	0.68	0/3591	1.14	17/4849 (0.4%)
26	e	0.65	0/357	1.04	0/483
27	U	0.63	0/6443	1.05	21/8718 (0.2%)
All	All	0.64	1/63161 (0.0%)	1.06	267/85318 (0.3%)

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

sidechain that are expected to be planar.

Mol	Chain	#Chirality outliers	#Planarity outliers
1	A	0	4
2	C	0	7
3	G	0	2
5	I	0	1
6	J	0	3
10	W	0	3
11	X	0	1
12	Y	0	2
13	a	0	3
15	d	0	2
16	u	0	1
18	D	0	6
20	F	0	2
21	B	0	1
22	K	0	1
23	c	0	1
24	Z	0	1
25	V	0	3
26	e	0	1
27	U	0	2
All	All	0	47

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
18	D	145	PRO	C-O	-5.14	1.12	1.23

All (267) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	220	VAL	CA-CB-CG1	14.84	133.16	110.90
18	D	274	ARG	NE-CZ-NH2	12.85	126.73	120.30
19	E	115	VAL	CA-CB-CG1	12.56	129.74	110.90
18	D	323	ARG	NE-CZ-NH2	11.57	126.09	120.30
27	U	616	ARG	NE-CZ-NH2	11.33	125.97	120.30
18	D	326	ARG	NE-CZ-NH2	11.28	125.94	120.30
18	D	145	PRO	O-C-N	-11.13	104.90	122.70
18	D	274	ARG	NE-CZ-NH1	-10.28	115.16	120.30
25	V	65	ARG	NE-CZ-NH2	10.28	125.44	120.30
1	A	403	ILE	CA-CB-CG1	9.88	129.77	111.00
10	W	182	ARG	NE-CZ-NH2	9.84	125.22	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
7	L	125	ARG	NE-CZ-NH2	9.38	124.99	120.30
20	F	269	ARG	NE-CZ-NH2	9.14	124.87	120.30
12	Y	179	ARG	NE-CZ-NH2	8.94	124.77	120.30
20	F	362	ARG	NE-CZ-NH2	8.92	124.76	120.30
25	V	228	ARG	NE-CZ-NH2	8.89	124.75	120.30
27	U	649	ARG	NE-CZ-NH2	8.83	124.72	120.30
10	W	129	ARG	NE-CZ-NH2	8.61	124.61	120.30
25	V	306	ARG	NE-CZ-NH2	8.50	124.55	120.30
25	V	150	ARG	NE-CZ-NH2	8.49	124.55	120.30
18	D	81	ARG	NE-CZ-NH2	8.49	124.54	120.30
3	G	117	ARG	NE-CZ-NH2	8.43	124.52	120.30
14	b	100	ARG	NE-CZ-NH2	8.22	124.41	120.30
11	X	194	ARG	NE-CZ-NH2	8.11	124.36	120.30
20	F	371	ARG	NE-CZ-NH2	8.07	124.33	120.30
14	b	130	ARG	NE-CZ-NH1	-8.00	116.30	120.30
2	C	325	ARG	NE-CZ-NH2	7.92	124.26	120.30
20	F	180	ARG	NE-CZ-NH2	7.91	124.26	120.30
18	D	287	ARG	NE-CZ-NH2	7.90	124.25	120.30
9	O	75	ARG	NE-CZ-NH2	7.86	124.23	120.30
25	V	416	ARG	NE-CZ-NH2	7.86	124.23	120.30
7	L	169	ARG	NE-CZ-NH2	7.79	124.19	120.30
2	C	372	ARG	NE-CZ-NH2	7.75	124.18	120.30
25	V	180	ARG	NE-CZ-NH2	7.74	124.17	120.30
10	W	94	ARG	NE-CZ-NH2	7.74	124.17	120.30
2	C	242	ALA	CB-CA-C	7.71	121.66	110.10
21	B	408	ARG	NE-CZ-NH2	7.66	124.13	120.30
13	a	247	ARG	NE-CZ-NH2	7.64	124.12	120.30
4	H	128	ARG	NE-CZ-NH2	7.59	124.09	120.30
8	M	129	ARG	NE-CZ-NH2	7.55	124.07	120.30
18	D	323	ARG	CD-NE-CZ	7.53	134.14	123.60
10	W	357	ARG	NE-CZ-NH2	7.52	124.06	120.30
22	K	168	ARG	NE-CZ-NH2	7.47	124.04	120.30
9	O	72	ARG	NE-CZ-NH2	7.45	124.03	120.30
24	Z	34	ARG	NE-CZ-NH2	7.45	124.03	120.30
13	a	196	ARG	NE-CZ-NH2	7.44	124.02	120.30
10	W	27	ARG	NE-CZ-NH2	7.42	124.01	120.30
12	Y	32	ARG	NE-CZ-NH2	7.41	124.01	120.30
6	J	95	ARG	NE-CZ-NH2	7.39	123.99	120.30
11	X	132	ARG	NE-CZ-NH2	7.37	123.98	120.30
10	W	372	ARG	NE-CZ-NH2	7.34	123.97	120.30
11	X	282	ARG	NE-CZ-NH2	7.33	123.97	120.30
20	F	238	ARG	NE-CZ-NH2	7.32	123.96	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
25	V	27	PRO	CA-N-CD	-7.31	101.26	111.50
21	B	307	ARG	NE-CZ-NH2	7.29	123.95	120.30
15	d	104	ARG	NE-CZ-NH2	7.25	123.92	120.30
16	u	211	ARG	NE-CZ-NH2	7.24	123.92	120.30
14	b	108	ARG	NE-CZ-NH2	7.24	123.92	120.30
8	M	65	ARG	NE-CZ-NH2	7.22	123.91	120.30
23	c	126	ASP	CB-CG-OD1	7.22	124.80	118.30
14	b	17	ARG	NE-CZ-NH2	7.21	123.91	120.30
2	C	49	ARG	NE-CZ-NH2	7.20	123.90	120.30
27	U	474	ARG	NE-CZ-NH2	7.20	123.90	120.30
4	H	91	ARG	NE-CZ-NH2	7.18	123.89	120.30
6	J	60	ARG	NE-CZ-NH2	7.18	123.89	120.30
18	D	283	ARG	NE-CZ-NH2	7.18	123.89	120.30
18	D	283	ARG	NE-CZ-NH1	-7.17	116.71	120.30
10	W	93	ARG	NE-CZ-NH2	7.14	123.87	120.30
13	a	154	ARG	NE-CZ-NH2	7.14	123.87	120.30
18	D	366	ARG	NE-CZ-NH2	7.09	123.85	120.30
21	B	169	PRO	N-CA-C	7.07	130.48	112.10
13	a	270	ARG	NE-CZ-NH2	7.05	123.83	120.30
21	B	333	ARG	NE-CZ-NH2	7.05	123.82	120.30
13	a	178	ARG	NE-CZ-NH2	7.05	123.82	120.30
7	L	157	ARG	NE-CZ-NH2	7.03	123.82	120.30
20	F	171	ARG	NE-CZ-NH2	7.01	123.80	120.30
12	Y	176	ARG	NE-CZ-NH2	6.93	123.76	120.30
1	A	200	ARG	NE-CZ-NH2	6.89	123.74	120.30
12	Y	300	ARG	NE-CZ-NH2	6.83	123.72	120.30
25	V	408	ARG	NE-CZ-NH2	6.79	123.69	120.30
22	K	135	ARG	NE-CZ-NH2	6.77	123.69	120.30
20	F	61	ARG	NE-CZ-NH2	6.76	123.68	120.30
11	X	142	ARG	NE-CZ-NH2	6.75	123.68	120.30
27	U	344	ARG	NE-CZ-NH2	6.72	123.66	120.30
3	G	88	ARG	NE-CZ-NH2	6.72	123.66	120.30
27	U	600	ARG	NE-CZ-NH2	6.72	123.66	120.30
27	U	395	ARG	NE-CZ-NH2	6.71	123.66	120.30
10	W	329	ARG	NE-CZ-NH2	6.66	123.63	120.30
2	C	57	ARG	NE-CZ-NH2	6.65	123.62	120.30
18	D	205	TYR	CB-CG-CD2	-6.61	117.03	121.00
7	L	89	ARG	NE-CZ-NH2	6.61	123.61	120.30
2	C	310	ARG	NE-CZ-NH2	6.61	123.61	120.30
7	L	101	ARG	NE-CZ-NH2	6.61	123.61	120.30
12	Y	293	ARG	NE-CZ-NH1	6.60	123.60	120.30
15	d	289	ARG	NE-CZ-NH2	6.59	123.60	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	X	122	ARG	NE-CZ-NH2	6.54	123.57	120.30
25	V	349	ARG	NE-CZ-NH2	6.53	123.56	120.30
21	B	268	ARG	NE-CZ-NH2	6.53	123.56	120.30
22	K	20	ARG	NE-CZ-NH2	6.53	123.56	120.30
7	L	126	ARG	NE-CZ-NH2	6.50	123.55	120.30
12	Y	233	ARG	NE-CZ-NH2	6.48	123.54	120.30
14	b	91	ARG	NE-CZ-NH2	6.46	123.53	120.30
11	X	187	ARG	NE-CZ-NH2	6.46	123.53	120.30
6	J	81	ARG	NE-CZ-NH2	6.46	123.53	120.30
23	c	255	TYR	CB-CG-CD2	-6.46	117.13	121.00
5	I	226	ARG	NE-CZ-NH2	6.44	123.52	120.30
11	X	126	ARG	NE-CZ-NH2	6.40	123.50	120.30
22	K	53	ARG	NE-CZ-NH2	6.38	123.49	120.30
12	Y	83	ARG	NE-CZ-NH2	6.37	123.48	120.30
2	C	78	ARG	NE-CZ-NH2	6.36	123.48	120.30
8	M	169	ARG	NE-CZ-NH2	6.36	123.48	120.30
18	D	121	ARG	NE-CZ-NH2	6.35	123.48	120.30
18	D	326	ARG	NE-CZ-NH1	-6.35	117.13	120.30
11	X	297	ARG	NE-CZ-NH2	6.33	123.46	120.30
7	L	193	ARG	NE-CZ-NH2	6.31	123.45	120.30
12	Y	336	ARG	NE-CZ-NH2	6.31	123.45	120.30
11	X	278	ARG	NE-CZ-NH2	6.29	123.45	120.30
27	U	194	ARG	NE-CZ-NH2	6.29	123.44	120.30
2	C	44	ARG	NE-CZ-NH2	6.26	123.43	120.30
18	D	339	ARG	NE-CZ-NH2	6.26	123.43	120.30
13	a	330	ARG	NE-CZ-NH2	6.25	123.42	120.30
15	d	118	ARG	NE-CZ-NH2	6.23	123.42	120.30
6	J	36	ARG	NE-CZ-NH2	6.22	123.41	120.30
2	C	232	ARG	NE-CZ-NH2	6.21	123.40	120.30
1	A	366	ARG	NE-CZ-NH2	6.20	123.40	120.30
12	Y	267	ARG	NE-CZ-NH2	6.20	123.40	120.30
7	L	196	ARG	NE-CZ-NH2	6.19	123.40	120.30
12	Y	379	ARG	NE-CZ-NH2	6.19	123.40	120.30
27	U	579	ARG	NE-CZ-NH2	6.19	123.39	120.30
25	V	261	TYR	CB-CG-CD2	-6.18	117.29	121.00
21	B	210	TYR	CB-CG-CD2	-6.18	117.29	121.00
12	Y	38	ARG	NE-CZ-NH2	6.17	123.38	120.30
5	I	49	ARG	NE-CZ-NH2	6.17	123.38	120.30
18	D	114	ARG	NE-CZ-NH2	6.15	123.38	120.30
23	c	139	ARG	NE-CZ-NH2	6.14	123.37	120.30
21	B	408	ARG	NE-CZ-NH1	-6.14	117.23	120.30
1	A	239	ARG	NE-CZ-NH2	6.13	123.36	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
20	F	279	ALA	CB-CA-C	6.13	119.30	110.10
25	V	256	ARG	NE-CZ-NH2	6.11	123.35	120.30
27	U	710	ARG	NE-CZ-NH2	6.08	123.34	120.30
5	I	17	ARG	NE-CZ-NH2	6.08	123.34	120.30
14	b	25	ARG	NE-CZ-NH2	6.07	123.33	120.30
10	W	377	ARG	NE-CZ-NH2	6.06	123.33	120.30
21	B	272	ARG	NE-CZ-NH2	6.06	123.33	120.30
2	C	60	ARG	NE-CZ-NH2	6.04	123.32	120.30
27	U	559	ARG	NE-CZ-NH2	6.04	123.32	120.30
7	L	51	ARG	NE-CZ-NH2	6.03	123.31	120.30
12	Y	146	ARG	NE-CZ-NH2	6.03	123.31	120.30
13	a	289	ARG	NE-CZ-NH2	6.00	123.30	120.30
22	K	93	ARG	NE-CZ-NH2	5.99	123.30	120.30
27	U	751	ARG	NE-CZ-NH2	5.98	123.29	120.30
20	F	386	ARG	NE-CZ-NH2	5.98	123.29	120.30
2	C	345	ARG	NE-CZ-NH2	5.96	123.28	120.30
25	V	148	ARG	NE-CZ-NH2	5.96	123.28	120.30
10	W	214	PHE	CB-CG-CD2	-5.94	116.64	120.80
23	c	126	ASP	OD1-CG-OD2	-5.94	112.01	123.30
27	U	572	ARG	NE-CZ-NH2	5.93	123.27	120.30
27	U	387	ARG	NE-CZ-NH2	5.92	123.26	120.30
18	D	342	ARG	NE-CZ-NH2	5.91	123.25	120.30
1	A	400	ARG	NE-CZ-NH2	5.89	123.24	120.30
1	A	284	ARG	NE-CZ-NH2	5.88	123.24	120.30
11	X	90	ARG	NE-CZ-NH2	5.85	123.23	120.30
19	E	109	ARG	NE-CZ-NH2	5.84	123.22	120.30
1	A	188	ARG	NE-CZ-NH2	5.83	123.21	120.30
7	L	96	ARG	NE-CZ-NH2	5.82	123.21	120.30
18	D	205	TYR	CA-CB-CG	5.78	124.38	113.40
1	A	258	ARG	NE-CZ-NH1	-5.78	117.41	120.30
3	G	132	ARG	NE-CZ-NH2	5.75	123.17	120.30
5	I	23	TYR	CB-CG-CD2	-5.75	117.55	121.00
10	W	123	ARG	NE-CZ-NH2	5.75	123.18	120.30
2	C	213	ARG	NE-CZ-NH2	5.73	123.17	120.30
12	Y	137	ARG	NE-CZ-NH2	5.73	123.16	120.30
18	D	274	ARG	CD-NE-CZ	5.71	131.59	123.60
27	U	616	ARG	NE-CZ-NH1	-5.70	117.45	120.30
19	E	115	VAL	N-CA-CB	-5.70	98.97	111.50
24	Z	177	ARG	NE-CZ-NH2	5.70	123.15	120.30
12	Y	46	ARG	NE-CZ-NH2	5.69	123.15	120.30
10	W	408	ARG	NE-CZ-NH2	5.68	123.14	120.30
1	A	188	ARG	NE-CZ-NH1	-5.67	117.46	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
21	B	249	ARG	NE-CZ-NH2	5.67	123.13	120.30
20	F	295	ARG	NE-CZ-NH2	5.64	123.12	120.30
4	H	220	ARG	NE-CZ-NH2	5.64	123.12	120.30
25	V	287	ARG	NE-CZ-NH2	5.61	123.11	120.30
1	A	351	ARG	NE-CZ-NH2	5.60	123.10	120.30
27	U	601	ARG	NE-CZ-NH2	5.58	123.09	120.30
6	J	38	ARG	NE-CZ-NH2	5.55	123.07	120.30
9	O	93	TYR	CB-CG-CD2	-5.54	117.68	121.00
8	M	92	ARG	NE-CZ-NH2	5.53	123.06	120.30
4	H	57	TYR	CB-CG-CD2	-5.52	117.69	121.00
7	L	107	ARG	NE-CZ-NH2	5.51	123.06	120.30
3	G	93	ARG	NE-CZ-NH2	5.51	123.05	120.30
18	D	200	ARG	NE-CZ-NH2	5.48	123.04	120.30
10	W	65	ARG	NE-CZ-NH2	5.47	123.04	120.30
25	V	200	ARG	NE-CZ-NH2	5.47	123.04	120.30
4	H	89	ARG	NE-CZ-NH2	5.45	123.03	120.30
27	U	580	ARG	NE-CZ-NH2	5.45	123.03	120.30
20	F	334	ARG	NE-CZ-NH2	5.45	123.02	120.30
27	U	883	ARG	NE-CZ-NH2	5.45	123.03	120.30
6	J	124	ARG	NE-CZ-NH2	5.44	123.02	120.30
25	V	397	ARG	NE-CZ-NH2	5.44	123.02	120.30
4	H	219	ARG	NE-CZ-NH2	5.43	123.02	120.30
1	A	255	ARG	NE-CZ-NH2	5.42	123.01	120.30
23	c	32	TYR	CB-CG-CD1	-5.39	117.77	121.00
12	Y	257	ARG	NE-CZ-NH2	5.38	122.99	120.30
10	W	263	TRP	CA-CB-CG	5.38	123.92	113.70
27	U	584	TYR	CB-CG-CD2	-5.37	117.78	121.00
15	d	342	TYR	CB-CG-CD2	-5.37	117.78	121.00
11	X	314	ARG	NE-CZ-NH2	5.36	122.98	120.30
19	E	223	ARG	NE-CZ-NH2	5.36	122.98	120.30
23	c	161	ARG	NE-CZ-NH2	5.35	122.98	120.30
13	a	352	ARG	NE-CZ-NH2	5.35	122.97	120.30
14	b	130	ARG	NE-CZ-NH2	5.35	122.97	120.30
12	Y	101	ARG	NE-CZ-NH2	5.34	122.97	120.30
25	V	96	ARG	NE-CZ-NH2	5.33	122.96	120.30
21	B	303	ARG	NE-CZ-NH2	5.32	122.96	120.30
1	A	200	ARG	NE-CZ-NH1	-5.32	117.64	120.30
10	W	39	ARG	NE-CZ-NH2	5.32	122.96	120.30
27	U	199	ARG	NE-CZ-NH2	5.32	122.96	120.30
27	U	140	ARG	NE-CZ-NH2	5.31	122.95	120.30
15	d	122	VAL	CA-CB-CG2	5.31	118.86	110.90
18	D	329	ARG	NE-CZ-NH2	5.30	122.95	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	G	11	ARG	NE-CZ-NH2	5.29	122.95	120.30
12	Y	176	ARG	NE-CZ-NH1	-5.28	117.66	120.30
21	B	363	ARG	NE-CZ-NH2	5.26	122.93	120.30
25	V	291	TYR	CB-CG-CD2	-5.26	117.84	121.00
18	D	187	HIS	CB-CA-C	5.24	120.88	110.40
13	a	101	ARG	NE-CZ-NH2	5.24	122.92	120.30
23	c	282	ARG	NE-CZ-NH2	5.24	122.92	120.30
6	J	95	ARG	NE-CZ-NH1	-5.23	117.68	120.30
21	B	346	ARG	NE-CZ-NH2	5.23	122.92	120.30
11	X	87	ARG	NE-CZ-NH2	5.23	122.91	120.30
13	a	339	ARG	NE-CZ-NH2	5.23	122.91	120.30
15	d	268	ARG	NE-CZ-NH2	5.22	122.91	120.30
5	I	91	ARG	NE-CZ-NH2	5.21	122.91	120.30
23	c	279	ASP	CB-CA-C	5.21	120.82	110.40
7	L	18	ARG	NE-CZ-NH2	5.21	122.90	120.30
8	M	25	TYR	CB-CG-CD2	-5.20	117.88	121.00
14	b	21	PHE	CB-CG-CD2	-5.20	117.16	120.80
2	C	21	ARG	NE-CZ-NH2	5.19	122.90	120.30
10	W	144	ARG	NE-CZ-NH2	5.18	122.89	120.30
19	E	30	ARG	NE-CZ-NH2	5.17	122.89	120.30
6	J	88	ARG	NE-CZ-NH2	5.17	122.88	120.30
12	Y	300	ARG	NH1-CZ-NH2	-5.16	113.72	119.40
13	a	24	ARG	NE-CZ-NH2	5.16	122.88	120.30
21	B	167	THR	C-N-CA	5.15	134.58	121.70
21	B	349	ARG	NE-CZ-NH2	5.15	122.88	120.30
1	A	227	ARG	NE-CZ-NH2	5.14	122.87	120.30
19	E	161	ARG	NE-CZ-NH2	5.13	122.87	120.30
27	U	899	ARG	NE-CZ-NH2	5.13	122.87	120.30
20	F	171	ARG	NH1-CZ-NH2	-5.13	113.75	119.40
1	A	360	ARG	NE-CZ-NH2	5.13	122.86	120.30
18	D	283	ARG	CD-NE-CZ	5.11	130.75	123.60
21	B	322	ARG	NE-CZ-NH2	5.10	122.85	120.30
12	Y	312	ARG	NE-CZ-NH2	5.10	122.85	120.30
21	B	168	ASP	N-CA-C	5.10	124.76	111.00
16	u	259	ARG	NE-CZ-NH2	5.06	122.83	120.30
7	L	169	ARG	NE-CZ-NH1	-5.06	117.77	120.30
8	M	114	ARG	NE-CZ-NH2	5.06	122.83	120.30
11	X	74	ARG	NE-CZ-NH2	5.05	122.83	120.30
22	K	26	TYR	CB-CG-CD2	-5.04	117.97	121.00
12	Y	113	ARG	NE-CZ-NH2	5.04	122.82	120.30
10	W	377	ARG	NH1-CZ-NH2	-5.03	113.86	119.40
20	F	46	ARG	NE-CZ-NH2	5.02	122.81	120.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	C	117	ARG	NE-CZ-NH2	5.01	122.81	120.30
13	a	156	TYR	CB-CG-CD1	-5.01	117.99	121.00
10	W	377	ARG	NE-CZ-NH1	5.00	122.80	120.30
13	a	230	ARG	NE-CZ-NH2	5.00	122.80	120.30

There are no chirality outliers.

All (47) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	A	111	TYR	Sidechain
1	A	255	ARG	Sidechain
1	A	351	ARG	Sidechain
1	A	400	ARG	Sidechain
21	B	408	ARG	Sidechain
2	C	148	TYR	Sidechain
2	C	23	TYR	Sidechain
2	C	325	ARG	Sidechain
2	C	369	TYR	Sidechain
2	C	375	ARG	Sidechain
2	C	44	ARG	Sidechain
2	C	57	ARG	Sidechain
18	D	145	PRO	Mainchain
18	D	191	TYR	Sidechain
18	D	326	ARG	Sidechain
18	D	329	ARG	Sidechain
18	D	392	TYR	Sidechain
18	D	60	TYR	Sidechain
20	F	158	TYR	Sidechain
20	F	295	ARG	Sidechain
3	G	159	TYR	Sidechain
3	G	210	PHE	Sidechain
5	I	136	TYR	Sidechain
6	J	110	TYR	Sidechain
6	J	153	TYR	Sidechain
6	J	81	ARG	Sidechain
22	K	185	TYR	Sidechain
27	U	579	ARG	Sidechain
27	U	80	TYR	Sidechain
25	V	232	HIS	Sidechain
25	V	360	TYR	Sidechain
25	V	457	TYR	Sidechain
10	W	174	TYR	Sidechain

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Mol	Chain	Res	Type	Group
10	W	240	TYR	Sidechain
10	W	357	ARG	Sidechain
11	X	201	TYR	Sidechain
12	Y	110	TYR	Sidechain
12	Y	297	ARG	Sidechain
24	Z	79	TYR	Sidechain
13	a	156	TYR	Sidechain
13	a	339	ARG	Sidechain
13	a	60	TYR	Sidechain
23	c	201	TYR	Sidechain
15	d	166	ARG	Sidechain
15	d	241	TYR	Sidechain
26	e	63	HIS	Sidechain
16	u	235	TYR	Sidechain

## 5.2 Too-close contacts [i](#)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	2804	0	2856	156	0
2	C	2884	0	2998	120	0
3	G	1811	0	1783	1	0
4	H	1715	0	1631	15	0
5	I	1895	0	1833	3	0
6	J	1704	0	1517	3	0
7	L	1838	0	1813	3	0
8	M	1839	0	1790	3	0
9	O	355	0	365	0	0
10	W	3570	0	3685	2	0
11	X	2994	0	3097	6	0
12	Y	3127	0	3133	6	0
13	a	2995	0	3012	0	0
14	b	1437	0	1477	0	0
15	d	2188	0	2216	0	0
16	u	1376	0	1324	0	0
17	v	40	0	11	0	0
18	D	2912	0	2953	167	0
19	E	2932	0	3012	274	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
20	F	2877	0	2978	86	0
21	B	2544	0	2597	12	0
22	K	1729	0	1680	1	0
23	c	2145	0	2150	0	0
24	Z	2251	0	2285	9	0
25	V	3525	0	3579	1	0
26	e	349	0	271	0	0
27	U	6331	0	6354	15	0
28	A	27	0	12	10	0
28	B	27	0	12	1	0
28	F	27	0	12	12	0
29	C	31	0	12	9	0
29	D	31	0	12	13	0
29	E	31	0	12	12	0
30	C	1	0	0	0	0
31	c	1	0	0	0	0
All	All	62343	0	62472	839	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 7.

All (839) 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:C:284:GLU:HB3	2:C:287:LYS:CE	1.61	1.28
2:C:284:GLU:CG	2:C:287:LYS:HD3	1.72	1.20
2:C:284:GLU:CB	2:C:287:LYS:HE2	1.77	1.14
1:A:216:GLY:HA3	1:A:343:PHE:HB2	1.30	1.11
2:C:284:GLU:HG3	2:C:287:LYS:CD	1.82	1.08
18:D:211:GLY:HA2	29:D:501:ATP:H5'2	1.34	1.03
2:C:280:LEU:HD21	2:C:310:ARG:HD3	1.34	1.03
18:D:168:GLY:HA3	29:D:501:ATP:HN62	1.21	1.02
1:A:140:VAL:HA	1:A:153:LEU:H	1.29	0.98
2:C:284:GLU:HA	2:C:287:LYS:HG3	1.44	0.97
1:A:358:HIS:CE1	1:A:386:ARG:HG2	2.01	0.95
19:E:291:ARG:HH11	19:E:293:GLY:HA3	1.32	0.93
1:A:140:VAL:HG21	1:A:149:ILE:HD12	1.51	0.92
18:D:258:ALA:HB1	18:D:259:PRO:HD2	1.51	0.91
1:A:346:PRO:HB2	1:A:351:ARG:HG2	1.52	0.90
18:D:156:SER:N	18:D:159:LYS:HE3	1.85	0.90
2:C:266:ASP:HB2	2:C:269:VAL:HB	1.55	0.89

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:C:284:GLU:CB	2:C:287:LYS:CE	2.45	0.88
2:C:284:GLU:HG3	2:C:287:LYS:HD3	0.88	0.88
2:C:113:ARG:HD3	2:C:130:LYS:HG3	1.54	0.88
4:H:148:GLN:NE2	4:H:163:MET:HG3	1.88	0.88
19:E:98:VAL:HG12	19:E:110:TYR:HA	1.56	0.87
1:A:277:ILE:HG22	1:A:321:THR:HB	1.58	0.86
2:C:277:LEU:HA	2:C:280:LEU:HD23	1.55	0.86
18:D:214:MET:HB2	29:D:501:ATP:H5'1	1.58	0.86
2:C:135:VAL:HA	2:C:138:MET:SD	2.16	0.86
18:D:156:SER:N	18:D:159:LYS:CE	2.39	0.85
19:E:181:THR:HG22	19:E:185:ARG:HG3	1.58	0.85
1:A:216:GLY:CA	1:A:343:PHE:HB2	2.06	0.85
19:E:291:ARG:HD2	19:E:292:PRO:HD2	1.58	0.84
19:E:120:TYR:CE2	20:F:147:PRO:HG2	2.13	0.83
19:E:270:LEU:HD12	19:E:270:LEU:H	1.41	0.82
18:D:243:GLY:O	18:D:246:MET:HB3	1.79	0.82
20:F:189:GLY:HA3	28:F:501:ADP:HN62	1.44	0.82
1:A:304:ASN:HA	1:A:336:ARG:HH11	1.43	0.82
1:A:332:MET:HA	1:A:337:LEU:HD12	1.62	0.81
18:D:209:GLY:HA3	19:E:291:ARG:NH2	1.94	0.81
20:F:317:LEU:HD13	20:F:347:ARG:HG2	1.64	0.80
18:D:340:GLN:O	18:D:344:ILE:HG13	1.82	0.79
19:E:312:ILE:HA	19:E:315:ILE:HB	1.64	0.79
19:E:112:PRO:O	19:E:113:ARG:HB2	1.83	0.79
1:A:350:GLY:O	1:A:354:ILE:HG13	1.83	0.78
4:H:148:GLN:HE21	4:H:163:MET:HG3	1.45	0.78
1:A:304:ASN:HA	1:A:336:ARG:NH1	1.99	0.77
2:C:284:GLU:HB3	2:C:287:LYS:HE2	0.81	0.77
18:D:237:GLN:HE21	18:D:242:GLU:HB3	1.50	0.77
19:E:313:LEU:HD12	19:E:343:LEU:HD13	1.64	0.77
20:F:294:LYS:HA	20:F:340:PRO:HD3	1.66	0.76
2:C:283:PHE:CD1	2:C:284:GLU:OE2	2.38	0.76
19:E:168:LYS:NZ	19:E:265:ASP:HB3	2.01	0.76
20:F:224:LEU:HB2	20:F:348:LEU:HD13	1.66	0.75
19:E:240:GLY:O	19:E:286:ASP:HB2	1.87	0.75
1:A:332:MET:HB3	1:A:340:LYS:HE2	1.69	0.75
2:C:235:PHE:CG	2:C:279:GLN:HB3	2.22	0.75
18:D:209:GLY:HA3	19:E:291:ARG:HH21	1.52	0.74
19:E:112:PRO:HG3	20:F:97:LEU:HD21	1.67	0.74
1:A:219:GLY:HA2	1:A:222:LYS:HD3	1.70	0.73
2:C:298:ILE:HD12	2:C:301:LEU:HB3	1.69	0.73

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:217:PRO:HG2	1:A:220:THR:HB	1.69	0.73
2:C:284:GLU:CG	2:C:287:LYS:CD	2.52	0.73
19:E:182:LEU:HD13	19:E:185:ARG:HH12	1.54	0.73
2:C:284:GLU:CA	2:C:287:LYS:HG3	2.17	0.72
1:A:220:THR:HG21	1:A:381:THR:HB	1.70	0.72
19:E:139:SER:O	19:E:140:GLU:C	2.26	0.72
19:E:97:ARG:HD3	19:E:111:LEU:HB2	1.71	0.72
1:A:382:GLY:HA2	1:A:385:ILE:CG1	2.19	0.72
1:A:224:LEU:O	1:A:227:ARG:N	2.20	0.71
1:A:383:ALA:HB1	1:A:386:ARG:HH11	1.53	0.71
1:A:383:ALA:HA	1:A:386:ARG:NE	2.05	0.71
18:D:236:VAL:HG22	19:E:255:ARG:NH1	2.06	0.71
18:D:209:GLY:C	18:D:211:GLY:H	1.94	0.71
19:E:179:GLY:O	19:E:182:LEU:N	2.24	0.71
19:E:60:VAL:HG13	19:E:94:PRO:HA	1.73	0.70
19:E:264:MET:HG3	19:E:265:ASP:N	2.06	0.70
18:D:167:ILE:HA	18:D:214:MET:HE1	1.73	0.70
18:D:261:ILE:HG23	18:D:306:LYS:HB2	1.72	0.70
2:C:222:LYS:HB2	18:D:239:TYR:CD1	2.26	0.70
1:A:382:GLY:HA2	1:A:385:ILE:HG12	1.73	0.70
20:F:222:GLY:HA3	20:F:347:ARG:O	1.92	0.70
19:E:97:ARG:HD3	19:E:111:LEU:CB	2.22	0.70
19:E:261:LEU:HA	19:E:264:MET:CE	2.22	0.70
20:F:314:LEU:HA	20:F:317:LEU:HD12	1.74	0.70
2:C:286:THR:HA	2:C:289:ILE:HB	1.74	0.69
2:C:280:LEU:HD21	2:C:310:ARG:CD	2.17	0.69
19:E:171:LEU:HD11	19:E:279:THR:HG22	1.74	0.69
19:E:261:LEU:HA	19:E:264:MET:HE2	1.73	0.69
1:A:327:LEU:HD22	1:A:331:LEU:HD23	1.73	0.69
19:E:264:MET:SD	19:E:294:ARG:NH1	2.66	0.69
18:D:242:GLU:HA	18:D:245:ARG:HH22	1.57	0.69
20:F:344:ARG:HH12	20:F:347:ARG:HH11	1.38	0.69
18:D:236:VAL:HG13	19:E:255:ARG:NH2	2.07	0.69
19:E:345:ASN:O	19:E:348:THR:N	2.25	0.69
19:E:342:ASP:HA	20:F:345:SER:HB2	1.74	0.68
1:A:241:ILE:HG13	1:A:275:ASP:HB3	1.76	0.68
1:A:178:GLY:HA3	1:A:354:ILE:HG12	1.74	0.68
2:C:284:GLU:CB	2:C:287:LYS:CD	2.72	0.68
20:F:338:LEU:C	20:F:340:PRO:HD2	2.13	0.68
19:E:186:ALA:O	19:E:187:VAL:C	2.33	0.68
19:E:345:ASN:ND2	20:F:345:SER:HA	2.09	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:D:237:GLN:HB2	18:D:242:GLU:HG3	1.75	0.67
18:D:373:ALA:HB1	19:E:292:PRO:HG2	1.75	0.67
20:F:127:SER:O	20:F:129:ARG:HD3	1.95	0.67
19:E:281:ARG:HB3	19:E:284:THR:HG23	1.76	0.67
1:A:337:LEU:HD12	1:A:340:LYS:HE3	1.75	0.67
19:E:310:LEU:HA	19:E:313:LEU:HB2	1.77	0.67
18:D:212:LYS:C	18:D:214:MET:N	2.46	0.66
2:C:273:MET:O	2:C:276:LEU:HB3	1.95	0.66
1:A:384:GLU:O	1:A:388:VAL:N	2.24	0.66
20:F:189:GLY:CA	28:F:501:ADP:HN62	2.08	0.66
18:D:253:LEU:O	18:D:256:GLU:HG2	1.96	0.66
1:A:220:THR:HG21	1:A:382:GLY:H	1.59	0.66
1:A:346:PRO:HD2	1:A:380:SER:O	1.96	0.66
2:C:247:PHE:CG	2:C:247:PHE:O	2.48	0.66
2:C:280:LEU:HD11	2:C:310:ARG:HG2	1.76	0.66
18:D:249:ASP:HA	18:D:252:ARG:NE	2.11	0.66
18:D:263:PHE:CE1	18:D:265:ASP:HB2	2.31	0.66
19:E:97:ARG:NH2	19:E:114:GLU:O	2.29	0.66
19:E:260:LEU:O	19:E:262:ASN:N	2.29	0.66
19:E:339:ASN:O	19:E:340:GLY:C	2.35	0.66
19:E:241:ARG:HA	19:E:286:ASP:CB	2.26	0.65
20:F:393:GLY:O	20:F:396:CYS:N	2.29	0.65
18:D:168:GLY:HA3	29:D:501:ATP:N6	2.03	0.65
18:D:212:LYS:O	18:D:215:LEU:N	2.30	0.65
19:E:264:MET:HG3	19:E:265:ASP:H	1.62	0.65
18:D:245:ARG:HB3	18:D:245:ARG:CZ	2.26	0.65
2:C:218:GLU:HA	18:D:248:ARG:NH1	2.11	0.65
19:E:345:ASN:HD21	20:F:345:SER:HA	1.61	0.65
19:E:261:LEU:HD21	19:E:288:ALA:HB1	1.78	0.65
1:A:139:ARG:NE	1:A:153:LEU:HB3	2.12	0.65
1:A:337:LEU:HD13	1:A:340:LYS:HG2	1.77	0.65
18:D:156:SER:N	18:D:159:LYS:HE2	2.11	0.64
18:D:235:PHE:HE2	18:D:250:VAL:HG21	1.59	0.64
18:D:257:ASN:O	18:D:258:ALA:HB3	1.97	0.64
29:D:501:ATP:O2A	29:D:501:ATP:H4'	1.98	0.64
19:E:173:TYR:HD2	19:E:282:PRO:HG3	1.63	0.64
20:F:350:ARG:O	20:F:351:LYS:HD3	1.97	0.64
1:A:346:PRO:HB2	1:A:351:ARG:CG	2.28	0.64
18:D:268:ASP:OD1	18:D:268:ASP:N	2.31	0.64
20:F:294:LYS:CA	20:F:340:PRO:HD3	2.27	0.64
18:D:261:ILE:HA	18:D:306:LYS:O	1.98	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:F:341:ALA:O	20:F:342:LEU:C	2.36	0.64
1:A:140:VAL:CG2	1:A:149:ILE:HD12	2.27	0.64
18:D:207:PRO:O	18:D:210:CYS:HB2	1.97	0.64
18:D:169:GLY:O	18:D:171:ASP:N	2.31	0.63
2:C:231:VAL:HG12	2:C:279:GLN:HG3	1.80	0.63
2:C:301:LEU:HD11	2:C:305:LEU:HD21	1.80	0.63
1:A:137:GLY:O	1:A:139:ARG:N	2.32	0.63
1:A:330:ALA:O	1:A:333:ARG:HG2	1.98	0.63
18:D:213:THR:HB	29:D:501:ATP:O3A	1.97	0.63
19:E:112:PRO:HG3	20:F:97:LEU:CD2	2.28	0.63
18:D:167:ILE:HA	18:D:214:MET:CE	2.27	0.63
1:A:139:ARG:HE	1:A:153:LEU:HB3	1.64	0.63
1:A:383:ALA:HA	1:A:386:ARG:HE	1.62	0.63
2:C:296:ASN:HD22	2:C:297:ARG:HH21	1.46	0.63
19:E:340:GLY:O	19:E:341:ALA:C	2.36	0.63
20:F:339:ASP:N	20:F:340:PRO:HD2	2.13	0.63
18:D:209:GLY:O	18:D:211:GLY:N	2.31	0.63
19:E:168:LYS:HE2	19:E:269:THR:HG22	1.80	0.62
19:E:312:ILE:CA	19:E:315:ILE:HB	2.28	0.62
20:F:344:ARG:NH1	20:F:347:ARG:HH11	1.96	0.62
1:A:358:HIS:HE1	1:A:386:ARG:HG2	1.58	0.62
19:E:138:LEU:O	19:E:139:SER:C	2.37	0.62
20:F:394:ALA:O	20:F:397:LYS:N	2.33	0.62
2:C:283:PHE:CG	2:C:284:GLU:N	2.67	0.62
20:F:168:TYR:O	20:F:169:ASP:C	2.36	0.62
18:D:267:ILE:HG13	18:D:271:ALA:HB2	1.80	0.62
19:E:261:LEU:HD23	19:E:264:MET:HE3	1.82	0.62
19:E:291:ARG:CB	19:E:294:ARG:HE	2.12	0.62
19:E:339:ASN:O	19:E:342:ASP:N	2.33	0.62
19:E:179:GLY:O	19:E:180:LYS:C	2.36	0.62
18:D:210:CYS:SG	18:D:335:LEU:HD23	2.40	0.62
20:F:348:LEU:O	20:F:349:ASP:C	2.38	0.62
18:D:268:ASP:HA	18:D:271:ALA:HB3	1.82	0.61
19:E:312:ILE:HB	19:E:343:LEU:HD12	1.81	0.61
19:E:294:ARG:O	19:E:295:LEU:C	2.37	0.61
28:F:501:ADP:H8	28:F:501:ADP:C5'	2.14	0.61
2:C:252:ASP:HB3	2:C:295:THR:HG21	1.81	0.61
19:E:294:ARG:HD3	19:E:294:ARG:H	1.64	0.61
1:A:382:GLY:O	1:A:385:ILE:HB	2.01	0.61
18:D:212:LYS:O	18:D:213:THR:C	2.39	0.61
19:E:182:LEU:HD13	19:E:185:ARG:NH1	2.15	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:F:146:LYS:N	20:F:146:LYS:HD2	2.16	0.61
1:A:221:GLY:O	1:A:222:LYS:C	2.39	0.61
1:A:329:PRO:O	1:A:333:ARG:N	2.33	0.61
1:A:383:ALA:HB1	1:A:386:ARG:NH1	2.16	0.61
18:D:373:ALA:CB	19:E:292:PRO:HG2	2.30	0.61
20:F:393:GLY:O	20:F:394:ALA:C	2.39	0.61
19:E:186:ALA:O	19:E:188:ALA:N	2.34	0.60
2:C:284:GLU:HB3	2:C:287:LYS:CD	2.30	0.60
18:D:341:LYS:HA	18:D:344:ILE:HD12	1.83	0.60
19:E:291:ARG:HG3	19:E:294:ARG:HH21	1.65	0.60
19:E:260:LEU:C	19:E:262:ASN:N	2.55	0.60
4:H:148:GLN:NE2	4:H:163:MET:CG	2.63	0.60
19:E:136:GLY:HA3	29:E:501:ATP:HN62	1.65	0.60
18:D:237:GLN:NE2	18:D:239:TYR:HB3	2.16	0.60
19:E:241:ARG:HG2	19:E:286:ASP:HA	1.84	0.60
18:D:312:ASN:ND2	19:E:242:ARG:HH22	2.00	0.60
19:E:182:LEU:HA	19:E:185:ARG:NH2	2.17	0.60
19:E:184:ALA:O	19:E:186:ALA:N	2.35	0.60
4:H:173:PHE:O	4:H:176:LYS:HB2	2.02	0.59
19:E:255:ARG:O	19:E:258:MET:HB2	2.02	0.59
19:E:261:LEU:C	19:E:264:MET:HG2	2.22	0.59
2:C:283:PHE:CD1	2:C:284:GLU:CD	2.72	0.59
19:E:230:ILE:O	19:E:275:MET:HA	2.03	0.59
19:E:257:LEU:O	19:E:261:LEU:HB2	2.03	0.59
19:E:286:ASP:O	19:E:287:PRO:C	2.39	0.59
2:C:285:ALA:C	2:C:287:LYS:N	2.56	0.59
2:C:296:ASN:O	2:C:297:ARG:HB2	2.02	0.59
1:A:184:ILE:HD12	1:A:225:CYS:SG	2.43	0.59
24:Z:65:ASP:HB3	24:Z:104:ASN:N	2.16	0.59
18:D:242:GLU:O	18:D:243:GLY:C	2.41	0.59
19:E:339:ASN:OD1	19:E:341:ALA:HB3	2.02	0.59
2:C:197:THR:HB	29:C:501:ATP:O2A	2.03	0.58
19:E:135:ILE:C	19:E:137:GLY:H	2.06	0.58
19:E:186:ALA:O	19:E:189:SER:N	2.35	0.58
18:D:235:PHE:C	19:E:255:ARG:HH12	2.07	0.58
18:D:237:GLN:CB	18:D:242:GLU:HG3	2.34	0.58
19:E:136:GLY:N	29:E:501:ATP:N1	2.51	0.58
19:E:223:ARG:HD3	19:E:271:HIS:CD2	2.38	0.58
1:A:223:THR:HB	28:A:501:ADP:O5'	2.03	0.58
20:F:344:ARG:HH12	20:F:347:ARG:NH1	2.00	0.58
1:A:223:THR:O	1:A:224:LEU:C	2.42	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:332:MET:HA	1:A:340:LYS:HE3	1.85	0.58
19:E:345:ASN:O	19:E:346:VAL:C	2.41	0.58
2:C:277:LEU:O	2:C:280:LEU:HG	2.03	0.58
19:E:208:ILE:HA	19:E:252:GLU:OE2	2.02	0.58
2:C:284:GLU:CG	2:C:287:LYS:CE	2.80	0.57
20:F:343:LEU:CD2	20:F:348:LEU:HD12	2.33	0.57
20:F:344:ARG:O	20:F:345:SER:C	2.41	0.57
2:C:133:PRO:HG3	18:D:94:GLU:OE1	2.04	0.57
2:C:222:LYS:HB2	18:D:239:TYR:CE1	2.39	0.57
2:C:248:MET:O	2:C:293:MET:HA	2.03	0.57
2:C:252:ASP:O	2:C:253:SER:C	2.43	0.57
2:C:187:LEU:HD21	2:C:301:LEU:HD23	1.86	0.57
18:D:166:ASP:OD1	18:D:166:ASP:N	2.36	0.57
18:D:254:ALA:O	18:D:255:LYS:C	2.42	0.57
19:E:270:LEU:O	19:E:271:HIS:C	2.43	0.57
19:E:285:LEU:HB2	19:E:290:LEU:HD21	1.86	0.57
19:E:288:ALA:O	19:E:291:ARG:HB2	2.04	0.57
19:E:313:LEU:HD23	19:E:328:TYR:HB3	1.84	0.57
1:A:386:ARG:O	1:A:389:CYS:HB2	2.04	0.57
1:A:218:PRO:O	1:A:219:GLY:C	2.42	0.57
20:F:314:LEU:HG	20:F:347:ARG:NH2	2.19	0.57
27:U:653:ALA:HB2	27:U:675:MET:SD	2.43	0.57
1:A:153:LEU:HD13	1:A:154:PRO:HD2	1.85	0.57
18:D:210:CYS:SG	18:D:334:PRO:O	2.60	0.57
18:D:235:PHE:CE2	18:D:250:VAL:HG21	2.38	0.57
18:D:236:VAL:HG13	19:E:255:ARG:CZ	2.35	0.57
18:D:249:ASP:HA	18:D:252:ARG:HE	1.70	0.57
18:D:263:PHE:HE1	18:D:265:ASP:HB2	1.69	0.57
18:D:209:GLY:C	18:D:211:GLY:N	2.57	0.57
1:A:221:GLY:O	1:A:224:LEU:N	2.38	0.57
19:E:235:ILE:HG22	19:E:278:ALA:O	2.05	0.57
20:F:137:ILE:HD12	20:F:145:LEU:HD11	1.85	0.57
2:C:298:ILE:O	2:C:299:ASP:C	2.43	0.57
19:E:345:ASN:O	19:E:347:CYS:N	2.38	0.57
1:A:277:ILE:HG22	1:A:321:THR:CB	2.33	0.56
2:C:284:GLU:HA	2:C:287:LYS:CG	2.27	0.56
20:F:128:THR:O	20:F:129:ARG:HB2	2.05	0.56
18:D:242:GLU:HA	18:D:245:ARG:NH2	2.19	0.56
18:D:237:GLN:HE21	18:D:242:GLU:CB	2.18	0.56
18:D:266:GLU:OE1	19:E:258:MET:HB3	2.05	0.56
19:E:184:ALA:C	19:E:186:ALA:N	2.57	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:E:254:GLN:O	19:E:258:MET:HG2	2.06	0.56
18:D:254:ALA:HB2	18:D:262:ILE:HD11	1.87	0.56
19:E:231:PHE:HA	19:E:276:ILE:O	2.05	0.56
2:C:285:ALA:H	2:C:287:LYS:HE2	1.71	0.56
1:A:225:CYS:O	1:A:226:ALA:C	2.44	0.56
2:C:251:ILE:O	2:C:252:ASP:C	2.43	0.56
19:E:173:TYR:CD2	19:E:282:PRO:HG3	2.41	0.56
19:E:271:HIS:C	19:E:273:VAL:H	2.09	0.56
19:E:291:ARG:HH11	19:E:293:GLY:CA	2.12	0.56
19:E:120:TYR:CZ	20:F:147:PRO:HG2	2.40	0.56
19:E:308:ALA:HA	19:E:311:ASP:OD2	2.06	0.56
20:F:313:LEU:O	20:F:317:LEU:HG	2.05	0.56
1:A:138:MET:HG3	1:A:140:VAL:HG12	1.87	0.56
1:A:308:GLY:HA3	1:A:335:GLY:HA2	1.88	0.56
18:D:163:MET:HB2	18:D:166:ASP:OD1	2.06	0.56
19:E:264:MET:HG3	19:E:265:ASP:OD1	2.06	0.56
18:D:146:GLU:O	18:D:147:ALA:HB2	2.06	0.55
19:E:241:ARG:HA	19:E:286:ASP:HA	1.88	0.55
19:E:261:LEU:HD11	19:E:288:ALA:CB	2.36	0.55
2:C:223:PHE:H	18:D:239:TYR:HE1	1.54	0.55
18:D:164:TYR:HA	18:D:167:ILE:HG12	1.87	0.55
18:D:231:VAL:HA	18:D:265:ASP:H	1.72	0.55
19:E:258:MET:O	19:E:259:GLU:C	2.44	0.55
1:A:154:PRO:HG3	21:B:116:ILE:HG13	1.89	0.55
1:A:386:ARG:HB2	1:A:386:ARG:NH2	2.21	0.55
18:D:214:MET:HB2	29:D:501:ATP:C5'	2.33	0.55
19:E:269:THR:O	19:E:270:LEU:C	2.44	0.55
1:A:224:LEU:O	1:A:225:CYS:C	2.43	0.55
2:C:296:ASN:HB2	2:C:297:ARG:NH2	2.21	0.55
19:E:136:GLY:CA	19:E:312:ILE:HG12	2.37	0.55
19:E:149:ILE:CD1	19:E:276:ILE:HD11	2.37	0.55
19:E:251:ARG:O	19:E:254:GLN:N	2.40	0.55
19:E:341:ALA:O	19:E:342:ASP:C	2.44	0.55
18:D:245:ARG:HG2	18:D:249:ASP:OD1	2.06	0.55
18:D:258:ALA:O	18:D:259:PRO:C	2.44	0.55
2:C:248:MET:SD	2:C:249:ASP:N	2.79	0.55
20:F:314:LEU:HG	20:F:347:ARG:HH21	1.71	0.55
1:A:96:ALA:HB1	1:A:114:ASN:O	2.07	0.55
19:E:343:LEU:O	19:E:344:ARG:C	2.45	0.55
18:D:235:PHE:HA	18:D:246:MET:SD	2.47	0.54
19:E:313:LEU:HD22	19:E:332:VAL:HG23	1.89	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:E:342:ASP:O	19:E:343:LEU:C	2.45	0.54
2:C:227:GLY:HA3	2:C:272:THR:OG1	2.07	0.54
2:C:298:ILE:O	2:C:301:LEU:N	2.41	0.54
18:D:238:LYS:O	18:D:240:LEU:N	2.40	0.54
18:D:252:ARG:O	18:D:255:LYS:HB3	2.07	0.54
18:D:167:ILE:HD13	18:D:214:MET:HE2	1.90	0.54
20:F:394:ALA:O	20:F:395:GLN:C	2.44	0.54
1:A:217:PRO:O	1:A:219:GLY:N	2.41	0.54
1:A:224:LEU:HD13	28:A:501:ADP:N7	2.22	0.54
1:A:334:PRO:C	1:A:336:ARG:N	2.59	0.54
18:D:231:VAL:HG23	18:D:266:GLU:HB2	1.90	0.54
19:E:178:THR:HG21	19:E:301:ILE:O	2.08	0.54
19:E:181:THR:N	29:E:501:ATP:O2B	2.38	0.54
2:C:132:ASP:O	2:C:133:PRO:C	2.46	0.54
1:A:276:GLU:OE1	1:A:278:ASP:HB3	2.07	0.54
19:E:264:MET:SD	19:E:294:ARG:HD2	2.48	0.54
19:E:342:ASP:CA	20:F:345:SER:HB2	2.37	0.54
1:A:157:ILE:HG22	1:A:157:ILE:O	2.07	0.54
19:E:170:CYS:SG	19:E:297:ARG:O	2.64	0.54
19:E:262:ASN:O	19:E:263:GLN:C	2.46	0.54
19:E:281:ARG:CZ	19:E:386:TYR:HA	2.38	0.54
5:I:118:LYS:O	5:I:122:THR:HG23	2.08	0.54
20:F:230:GLY:C	28:F:501:ADP:H5'2	2.29	0.54
1:A:213:LEU:HB2	1:A:337:LEU:HD21	1.90	0.53
18:D:248:ARG:O	18:D:249:ASP:C	2.47	0.53
19:E:228:CYS:HB3	19:E:273:VAL:HG22	1.89	0.53
2:C:222:LYS:HB2	18:D:239:TYR:HD1	1.68	0.53
20:F:197:GLU:O	20:F:350:ARG:NH1	2.42	0.53
20:F:317:LEU:CD1	20:F:347:ARG:HG2	2.37	0.53
27:U:574:LYS:HE3	27:U:574:LYS:HA	1.90	0.53
1:A:220:THR:HG23	1:A:383:ALA:H	1.73	0.53
18:D:242:GLU:OE2	18:D:246:MET:HB2	2.08	0.53
19:E:287:PRO:O	19:E:288:ALA:C	2.45	0.53
18:D:258:ALA:HB1	18:D:259:PRO:CD	2.33	0.53
19:E:185:ARG:HG2	20:F:320:PHE:CE1	2.44	0.53
19:E:294:ARG:HD3	19:E:294:ARG:N	2.24	0.53
2:C:276:LEU:HG	2:C:277:LEU:HD12	1.91	0.53
19:E:340:GLY:O	19:E:343:LEU:N	2.41	0.53
1:A:140:VAL:HG21	1:A:149:ILE:HG23	1.91	0.53
19:E:260:LEU:C	19:E:262:ASN:H	2.12	0.53
1:A:139:ARG:HH21	1:A:156:LYS:HD2	1.74	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:275:ASP:C	1:A:277:ILE:N	2.60	0.53
2:C:283:PHE:CE1	2:C:284:GLU:OE2	2.52	0.53
19:E:182:LEU:HD22	29:E:501:ATP:H2'	1.90	0.53
19:E:216:ARG:HA	19:E:263:GLN:HE22	1.74	0.53
19:E:291:ARG:HE	19:E:293:GLY:H	1.57	0.53
19:E:291:ARG:HB3	19:E:294:ARG:HE	1.73	0.53
19:E:241:ARG:CA	19:E:286:ASP:HA	2.39	0.53
18:D:267:ILE:HG21	18:D:309:MET:HB3	1.90	0.52
19:E:304:PRO:HG3	19:E:340:GLY:H	1.74	0.52
18:D:207:PRO:HG2	18:D:335:LEU:HG	1.90	0.52
18:D:146:GLU:O	18:D:147:ALA:CB	2.57	0.52
19:E:181:THR:HG22	19:E:185:ARG:CG	2.37	0.52
19:E:242:ARG:NH2	19:E:258:MET:HE1	2.25	0.52
20:F:346:GLY:O	20:F:347:ARG:NE	2.42	0.52
19:E:285:LEU:CB	19:E:290:LEU:HD21	2.40	0.52
20:F:342:LEU:O	20:F:347:ARG:HD2	2.09	0.52
18:D:159:LYS:HB3	18:D:160:PRO:HD2	1.91	0.52
1:A:140:VAL:HB	1:A:152:PRO:HA	1.92	0.52
5:I:179:TYR:CD2	6:J:52:LYS:HE2	2.44	0.52
8:M:229:LYS:HA	8:M:229:LYS:HE2	1.92	0.52
18:D:312:ASN:OD1	18:D:312:ASN:N	2.42	0.52
19:E:313:LEU:HD12	19:E:343:LEU:CD1	2.38	0.52
2:C:266:ASP:HB2	2:C:269:VAL:CB	2.34	0.52
19:E:304:PRO:CD	19:E:340:GLY:H	2.22	0.52
1:A:100:LYS:HE2	20:F:165:PRO:HG2	1.92	0.52
1:A:386:ARG:NH1	21:B:317:ASP:OD2	2.39	0.52
18:D:211:GLY:HA3	29:D:501:ATP:C8	2.45	0.52
18:D:254:ALA:O	18:D:257:ASN:N	2.43	0.52
19:E:269:THR:O	19:E:271:HIS:N	2.43	0.52
19:E:304:PRO:HG3	19:E:340:GLY:N	2.25	0.52
19:E:304:PRO:CG	19:E:340:GLY:H	2.23	0.52
1:A:332:MET:SD	1:A:332:MET:N	2.83	0.51
18:D:372:GLY:O	18:D:375:ILE:HB	2.10	0.51
19:E:344:ARG:O	19:E:345:ASN:C	2.47	0.51
18:D:246:MET:O	18:D:250:VAL:HG23	2.10	0.51
18:D:271:ALA:O	18:D:317:LEU:HA	2.10	0.51
19:E:281:ARG:O	19:E:283:ASP:N	2.43	0.51
27:U:560:MET:HG3	27:U:590:TYR:CD2	2.46	0.51
1:A:337:LEU:CD1	1:A:340:LYS:HE3	2.39	0.51
19:E:111:LEU:O	19:E:112:PRO:C	2.49	0.51
19:E:288:ALA:O	19:E:289:LEU:C	2.49	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:D:265:ASP:OD1	18:D:266:GLU:N	2.44	0.51
19:E:290:LEU:HA	19:E:295:LEU:HG	1.92	0.51
19:E:171:LEU:CB	19:E:295:LEU:HD11	2.40	0.51
18:D:245:ARG:O	18:D:246:MET:C	2.47	0.51
2:C:187:LEU:HA	2:C:293:MET:O	2.11	0.51
19:E:136:GLY:HA2	19:E:312:ILE:HG12	1.92	0.51
19:E:168:LYS:HE2	19:E:269:THR:CG2	2.41	0.51
19:E:180:LYS:N	29:E:501:ATP:O1B	2.42	0.51
1:A:319:MET:SD	1:A:331:LEU:HD11	2.51	0.51
1:A:387:SER:OG	1:A:388:VAL:N	2.42	0.51
18:D:266:GLU:O	18:D:267:ILE:C	2.48	0.51
19:E:138:LEU:CD2	19:E:301:ILE:HG23	2.41	0.51
2:C:132:ASP:HB2	2:C:135:VAL:HG22	1.92	0.51
2:C:255:GLY:O	2:C:301:LEU:HD12	2.11	0.51
19:E:310:LEU:HD21	19:E:314:LYS:HE3	1.93	0.51
19:E:169:GLY:N	19:E:296:ASP:OD1	2.43	0.51
20:F:394:ALA:O	20:F:397:LYS:HB3	2.11	0.51
1:A:347:ASP:O	1:A:351:ARG:HG3	2.11	0.50
1:A:384:GLU:HA	1:A:387:SER:HB3	1.93	0.50
19:E:241:ARG:HG2	19:E:287:PRO:HD3	1.93	0.50
18:D:237:GLN:HG2	18:D:242:GLU:HB3	1.93	0.50
19:E:114:GLU:O	19:E:115:VAL:HG23	2.11	0.50
20:F:128:THR:HB	20:F:130:GLN:HG3	1.92	0.50
2:C:132:ASP:HB2	2:C:135:VAL:HG13	1.94	0.50
19:E:171:LEU:HB3	19:E:295:LEU:HD11	1.93	0.50
2:C:135:VAL:HG11	2:C:233:GLU:HB3	1.93	0.50
2:C:284:GLU:O	2:C:286:THR:N	2.42	0.50
18:D:230:VAL:HG23	18:D:234:GLU:OE1	2.11	0.50
19:E:120:TYR:CD2	20:F:147:PRO:HG2	2.46	0.50
1:A:216:GLY:HA3	1:A:343:PHE:CB	2.21	0.50
18:D:255:LYS:HD2	18:D:303:VAL:HG22	1.94	0.50
19:E:73:ALA:HB3	19:E:77:PRO:O	2.12	0.50
19:E:184:ALA:O	19:E:185:ARG:C	2.49	0.50
19:E:291:ARG:NH1	19:E:293:GLY:HA3	2.14	0.50
20:F:232:GLY:N	28:F:501:ADP:H5'1	2.27	0.50
2:C:133:PRO:HB3	18:D:93:LEU:HB3	1.92	0.50
2:C:268:GLU:O	2:C:269:VAL:C	2.50	0.50
18:D:372:GLY:O	18:D:373:ALA:C	2.49	0.50
19:E:181:THR:O	19:E:184:ALA:HB3	2.12	0.50
21:B:380:LEU:HB2	21:B:384:ILE:HD11	1.94	0.50
1:A:386:ARG:HB2	1:A:386:ARG:HH21	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:E:343:LEU:N	19:E:343:LEU:HD23	2.26	0.49
1:A:335:GLY:O	1:A:336:ARG:NH2	2.45	0.49
19:E:178:THR:O	19:E:179:GLY:C	2.51	0.49
19:E:241:ARG:HA	19:E:286:ASP:HB2	1.93	0.49
19:E:171:LEU:HD11	19:E:279:THR:CG2	2.42	0.49
1:A:221:GLY:HA2	28:A:501:ADP:C4	2.48	0.49
2:C:252:ASP:HB3	2:C:295:THR:CG2	2.42	0.49
8:M:215:TRP:CZ2	8:M:219:LEU:HD11	2.47	0.49
19:E:138:LEU:HB3	19:E:141:GLN:HB2	1.95	0.49
19:E:228:CYS:O	19:E:273:VAL:HA	2.13	0.49
19:E:282:PRO:HG2	19:E:388:PRO:HA	1.95	0.49
19:E:291:ARG:HD2	19:E:292:PRO:CD	2.37	0.49
1:A:330:ALA:HA	1:A:333:ARG:CG	2.42	0.49
27:U:74:PHE:CG	27:U:103:LYS:HE2	2.48	0.49
27:U:162:VAL:O	27:U:166:THR:HG23	2.13	0.49
19:E:178:THR:C	19:E:180:LYS:N	2.65	0.49
19:E:241:ARG:HA	19:E:286:ASP:CA	2.42	0.49
20:F:344:ARG:HH11	20:F:346:GLY:H	1.60	0.49
24:Z:65:ASP:HB3	24:Z:103:LYS:C	2.32	0.49
1:A:138:MET:O	1:A:139:ARG:HB3	2.12	0.49
1:A:221:GLY:CA	28:A:501:ADP:C4	2.96	0.49
2:C:275:GLU:O	2:C:276:LEU:C	2.51	0.49
19:E:239:GLY:O	19:E:286:ASP:N	2.37	0.49
19:E:281:ARG:NH2	19:E:386:TYR:HA	2.28	0.49
19:E:304:PRO:HG3	19:E:340:GLY:CA	2.42	0.49
19:E:135:ILE:O	19:E:315:ILE:HD13	2.13	0.49
19:E:180:LYS:N	29:E:501:ATP:PB	2.86	0.49
1:A:216:GLY:C	1:A:322:ASN:HD21	2.17	0.49
3:G:108:GLU:CD	3:G:108:GLU:H	2.17	0.49
20:F:344:ARG:HG2	20:F:345:SER:H	1.78	0.49
1:A:321:THR:C	1:A:323:ARG:H	2.16	0.48
18:D:217:LYS:HG2	18:D:229:ARG:NH1	2.28	0.48
20:F:126:THR:OG1	20:F:130:GLN:N	2.45	0.48
1:A:222:LYS:HZ3	1:A:320:ALA:HB1	1.77	0.48
19:E:97:ARG:HD3	19:E:111:LEU:HB3	1.93	0.48
19:E:231:PHE:HD1	19:E:276:ILE:O	1.96	0.48
2:C:301:LEU:CD1	2:C:305:LEU:HD21	2.43	0.48
2:C:113:ARG:HD3	2:C:130:LYS:CG	2.34	0.48
4:H:160:ALA:HB2	4:H:178:TYR:CE1	2.47	0.48
19:E:219:PHE:CE2	19:E:263:GLN:HB3	2.48	0.48
19:E:258:MET:HE2	19:E:258:MET:HA	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:E:261:LEU:HD23	19:E:264:MET:CE	2.43	0.48
19:E:269:THR:HA	19:E:271:HIS:ND1	2.28	0.48
1:A:215:PHE:O	1:A:342:GLU:HA	2.13	0.48
1:A:358:HIS:NE2	1:A:386:ARG:HG2	2.27	0.48
4:H:172:THR:O	4:H:173:PHE:C	2.51	0.48
2:C:198:LEU:HD22	29:C:501:ATP:C4	2.49	0.48
18:D:245:ARG:O	18:D:248:ARG:HG2	2.13	0.48
20:F:143:GLU:C	20:F:145:LEU:H	2.17	0.48
1:A:219:GLY:HA2	28:A:501:ADP:O3B	2.14	0.48
1:A:220:THR:O	1:A:222:LYS:N	2.42	0.48
18:D:212:LYS:O	18:D:214:MET:N	2.46	0.48
18:D:237:GLN:OE1	18:D:238:LYS:N	2.46	0.48
18:D:245:ARG:HB3	18:D:245:ARG:NH2	2.28	0.48
20:F:365:ILE:HG12	28:F:501:ADP:C6	2.49	0.48
1:A:386:ARG:NH2	21:B:317:ASP:OD2	2.47	0.48
18:D:212:LYS:N	29:D:501:ATP:O1A	2.36	0.48
19:E:271:HIS:C	19:E:273:VAL:N	2.66	0.48
18:D:244:PRO:O	18:D:247:VAL:HB	2.14	0.48
18:D:270:ILE:HG22	18:D:285:VAL:HG23	1.96	0.48
18:D:398:ASP:HA	18:D:401:LYS:HE3	1.96	0.48
29:C:501:ATP:H8	29:C:501:ATP:O1A	1.97	0.48
18:D:255:LYS:HE2	18:D:303:VAL:HG13	1.96	0.48
19:E:312:ILE:HB	19:E:343:LEU:CD1	2.43	0.48
20:F:233:LYS:N	28:F:501:ADP:O1A	2.47	0.48
20:F:344:ARG:HH22	20:F:347:ARG:NH1	2.12	0.48
28:F:501:ADP:H8	28:F:501:ADP:H5'1	1.79	0.48
1:A:178:GLY:CA	1:A:354:ILE:HG12	2.42	0.47
1:A:354:ILE:O	1:A:357:ILE:HB	2.14	0.47
1:A:216:GLY:HA2	1:A:343:PHE:O	2.14	0.47
1:A:222:LYS:O	1:A:223:THR:C	2.51	0.47
1:A:322:ASN:C	1:A:323:ARG:HD3	2.34	0.47
19:E:177:GLY:O	19:E:341:ALA:HB2	2.14	0.47
19:E:313:LEU:CD2	19:E:328:TYR:HB3	2.45	0.47
1:A:156:LYS:HB3	1:A:156:LYS:HE3	1.62	0.47
18:D:162:VAL:HG13	18:D:218:ALA:HA	1.95	0.47
18:D:252:ARG:O	18:D:253:LEU:C	2.51	0.47
18:D:311:THR:HG21	18:D:314:ALA:HB2	1.95	0.47
19:E:175:PRO:O	19:E:180:LYS:HD3	2.15	0.47
19:E:260:LEU:HA	19:E:263:GLN:HB2	1.96	0.47
1:A:275:ASP:O	1:A:276:GLU:C	2.52	0.47
1:A:322:ASN:HB3	1:A:323:ARG:HD3	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:D:207:PRO:O	18:D:208:PRO:C	2.53	0.47
18:D:168:GLY:CA	29:D:501:ATP:HN62	2.10	0.47
19:E:136:GLY:HA3	29:E:501:ATP:N6	2.29	0.47
19:E:181:THR:O	19:E:184:ALA:N	2.48	0.47
1:A:187:LEU:HD23	1:A:225:CYS:SG	2.54	0.47
1:A:308:GLY:HA3	1:A:335:GLY:CA	2.45	0.47
2:C:266:ASP:O	2:C:267:SER:C	2.53	0.47
4:H:177:ARG:HG2	11:X:160:MET:HB3	1.97	0.47
1:A:330:ALA:HA	1:A:333:ARG:HG2	1.97	0.47
11:X:156:GLU:HA	11:X:159:LYS:HD3	1.96	0.47
11:X:161:ASP:O	11:X:163:LYS:N	2.48	0.47
18:D:267:ILE:HG23	18:D:311:THR:OG1	2.15	0.47
18:D:372:GLY:O	18:D:375:ILE:N	2.48	0.47
19:E:290:LEU:O	19:E:291:ARG:C	2.53	0.47
20:F:146:LYS:O	20:F:147:PRO:C	2.53	0.47
1:A:213:LEU:HD22	1:A:337:LEU:HD11	1.97	0.47
2:C:130:LYS:HB3	2:C:130:LYS:HE3	1.47	0.47
18:D:247:VAL:O	18:D:250:VAL:HB	2.15	0.47
24:Z:65:ASP:CG	24:Z:103:LYS:HB2	2.36	0.47
1:A:333:ARG:HG3	1:A:334:PRO:N	2.31	0.46
1:A:386:ARG:HE	28:A:501:ADP:H1'	1.80	0.46
18:D:170:MET:HB3	18:D:173:GLN:OE1	2.15	0.46
18:D:257:ASN:O	18:D:258:ALA:CB	2.63	0.46
18:D:371:SER:O	18:D:372:GLY:C	2.53	0.46
2:C:296:ASN:HB2	2:C:297:ARG:HH22	1.80	0.46
19:E:215:ILE:HD12	19:E:256:THR:HG22	1.96	0.46
19:E:250:ASP:O	19:E:251:ARG:C	2.54	0.46
1:A:347:ASP:N	1:A:347:ASP:OD1	2.48	0.46
19:E:88:ASP:O	19:E:92:LEU:HG	2.14	0.46
19:E:242:ARG:HD3	19:E:258:MET:CE	2.46	0.46
2:C:131:VAL:O	2:C:132:ASP:C	2.54	0.46
18:D:266:GLU:CD	19:E:258:MET:HB3	2.36	0.46
19:E:342:ASP:N	20:F:345:SER:HB2	2.30	0.46
20:F:222:GLY:O	20:F:349:ASP:HB2	2.15	0.46
20:F:344:ARG:HB3	20:F:344:ARG:CZ	2.45	0.46
1:A:345:LEU:HD22	1:A:380:SER:C	2.36	0.46
2:C:257:SER:O	2:C:258:ARG:HB3	2.15	0.46
18:D:242:GLU:HG3	18:D:243:GLY:N	2.30	0.46
19:E:269:THR:C	19:E:271:HIS:N	2.68	0.46
20:F:339:ASP:N	20:F:340:PRO:CD	2.77	0.46
2:C:83:LYS:H	2:C:105:ILE:CD1	2.29	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:E:289:LEU:O	19:E:291:ARG:N	2.48	0.46
18:D:251:PHE:O	18:D:252:ARG:C	2.54	0.46
19:E:270:LEU:H	19:E:270:LEU:CD1	2.19	0.46
19:E:295:LEU:O	19:E:296:ASP:C	2.52	0.46
19:E:295:LEU:HD12	19:E:298:LYS:HG3	1.98	0.46
1:A:275:ASP:CG	1:A:276:GLU:H	2.19	0.46
2:C:220:VAL:HG21	2:C:269:VAL:HA	1.96	0.46
7:L:116:THR:HA	7:L:128:TYR:CE1	2.51	0.46
18:D:207:PRO:HD2	18:D:333:PHE:O	2.16	0.46
19:E:177:GLY:HA3	20:F:344:ARG:HD2	1.97	0.46
19:E:343:LEU:HD23	19:E:343:LEU:H	1.81	0.46
1:A:220:THR:CG2	1:A:383:ALA:H	2.28	0.46
2:C:280:LEU:HD12	2:C:280:LEU:C	2.36	0.46
1:A:386:ARG:O	1:A:387:SER:C	2.55	0.46
2:C:113:ARG:CD	2:C:130:LYS:HG3	2.36	0.46
2:C:247:PHE:O	2:C:248:MET:C	2.54	0.46
19:E:250:ASP:OD2	19:E:251:ARG:NH2	2.49	0.46
19:E:261:LEU:HD11	19:E:288:ALA:HB1	1.96	0.46
2:C:251:ILE:O	2:C:255:GLY:N	2.41	0.45
18:D:245:ARG:NE	18:D:249:ASP:OD2	2.45	0.45
19:E:312:ILE:CB	19:E:343:LEU:HD12	2.46	0.45
19:E:378:LYS:HE3	19:E:378:LYS:HA	1.98	0.45
24:Z:65:ASP:HA	24:Z:104:ASN:HB2	1.96	0.45
1:A:276:GLU:O	1:A:278:ASP:N	2.49	0.45
4:H:38:ILE:HB	4:H:178:TYR:CE1	2.52	0.45
5:I:179:TYR:CG	6:J:52:LYS:HE2	2.50	0.45
18:D:169:GLY:C	18:D:171:ASP:N	2.70	0.45
18:D:245:ARG:HA	18:D:248:ARG:NH2	2.30	0.45
18:D:374:ASP:OD1	19:E:292:PRO:HG3	2.16	0.45
19:E:60:VAL:CG1	19:E:95:GLY:H	2.30	0.45
19:E:98:VAL:CG1	19:E:110:TYR:HA	2.36	0.45
19:E:135:ILE:C	19:E:137:GLY:N	2.70	0.45
1:A:309:PHE:CE1	1:A:334:PRO:HB3	2.51	0.45
1:A:386:ARG:NE	28:A:501:ADP:H1'	2.31	0.45
2:C:358:GLU:CD	2:C:358:GLU:H	2.20	0.45
29:C:501:ATP:O1G	18:D:323:ARG:NH1	2.49	0.45
18:D:209:GLY:HA2	18:D:212:LYS:NZ	2.31	0.45
20:F:201:ALA:HB2	20:F:350:ARG:HH11	1.80	0.45
20:F:397:LYS:HD2	28:F:501:ADP:H1'	1.97	0.45
2:C:285:ALA:C	2:C:287:LYS:H	2.18	0.45
18:D:167:ILE:HB	18:D:174:LYS:CE	2.47	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:D:244:PRO:HD3	18:D:284:GLU:OE2	2.17	0.45
19:E:182:LEU:O	19:E:183:LEU:C	2.55	0.45
19:E:280:ASN:O	19:E:281:ARG:HG2	2.16	0.45
24:Z:252:LYS:HE2	24:Z:252:LYS:HA	1.98	0.45
10:W:143:ALA:HB2	10:W:174:TYR:CE2	2.52	0.45
18:D:214:MET:O	18:D:215:LEU:C	2.55	0.45
19:E:171:LEU:HD21	19:E:279:THR:HG21	1.97	0.45
19:E:291:ARG:CZ	19:E:294:ARG:NE	2.80	0.45
1:A:222:LYS:HD3	28:A:501:ADP:O3B	2.17	0.45
1:A:354:ILE:CG2	1:A:385:ILE:HG21	2.47	0.45
12:Y:108:ALA:HB1	12:Y:124:PHE:CD1	2.51	0.45
29:D:501:ATP:O2A	19:E:291:ARG:NH2	2.49	0.45
19:E:136:GLY:CA	29:E:501:ATP:N1	2.80	0.45
27:U:74:PHE:CD2	27:U:103:LYS:HE2	2.51	0.45
1:A:382:GLY:HA2	1:A:385:ILE:HG13	1.98	0.45
2:C:266:ASP:OD2	2:C:270:GLN:HB2	2.17	0.45
19:E:341:ALA:HB1	20:F:345:SER:HB3	1.98	0.45
2:C:251:ILE:O	2:C:253:SER:N	2.50	0.45
19:E:215:ILE:CD1	19:E:256:THR:HG22	2.47	0.45
19:E:313:LEU:HD22	19:E:332:VAL:CG2	2.47	0.45
1:A:97:ARG:HA	1:A:97:ARG:HD3	1.45	0.45
2:C:250:GLU:HG2	18:D:294:ASN:HD21	1.82	0.45
19:E:97:ARG:NH1	19:E:115:VAL:HG22	2.31	0.45
19:E:262:ASN:C	19:E:264:MET:N	2.69	0.45
19:E:311:ASP:O	19:E:312:ILE:C	2.55	0.45
2:C:258:ARG:HG3	2:C:270:GLN:CD	2.37	0.44
19:E:342:ASP:O	19:E:345:ASN:HB2	2.17	0.44
1:A:140:VAL:HB	1:A:151:ILE:O	2.18	0.44
2:C:198:LEU:HD13	29:C:501:ATP:O2'	2.17	0.44
2:C:245:ILE:HA	2:C:290:LYS:O	2.17	0.44
19:E:215:ILE:HG21	19:E:259:GLU:HG2	1.99	0.44
19:E:291:ARG:CD	19:E:292:PRO:HD2	2.40	0.44
2:C:300:ILE:O	2:C:302:ASP:N	2.50	0.44
2:C:300:ILE:O	2:C:301:LEU:C	2.56	0.44
18:D:235:PHE:HA	18:D:246:MET:CE	2.48	0.44
1:A:221:GLY:O	1:A:223:THR:N	2.49	0.44
2:C:192:PRO:HB3	2:C:296:ASN:OD1	2.17	0.44
2:C:284:GLU:O	2:C:285:ALA:HB3	2.17	0.44
18:D:229:ARG:NH2	19:E:266:GLY:O	2.50	0.44
18:D:251:PHE:O	18:D:254:ALA:HB3	2.17	0.44
19:E:139:SER:O	19:E:141:GLN:N	2.50	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:E:253:ILE:HA	19:E:256:THR:HG1	1.82	0.44
2:C:298:ILE:HD12	2:C:301:LEU:CB	2.43	0.44
4:H:74:LEU:HD11	4:H:134:LEU:HD13	1.99	0.44
19:E:138:LEU:HD21	19:E:301:ILE:HG23	1.99	0.44
19:E:256:THR:O	19:E:259:GLU:N	2.50	0.44
19:E:282:PRO:HB2	19:E:389:VAL:HG13	1.99	0.44
20:F:344:ARG:NH2	20:F:347:ARG:HH11	2.15	0.44
1:A:222:LYS:NZ	1:A:320:ALA:HB1	2.32	0.44
2:C:132:ASP:HB2	2:C:135:VAL:CG2	2.47	0.44
19:E:263:GLN:O	19:E:267:PHE:CZ	2.71	0.44
19:E:294:ARG:O	19:E:296:ASP:N	2.49	0.44
27:U:253:TYR:CZ	27:U:331:GLY:HA3	2.52	0.44
1:A:358:HIS:CE1	1:A:386:ARG:CG	2.88	0.44
18:D:242:GLU:CD	18:D:246:MET:HB2	2.38	0.44
20:F:344:ARG:HH22	20:F:347:ARG:HH11	1.63	0.44
1:A:157:ILE:O	1:A:157:ILE:CG2	2.65	0.44
1:A:331:LEU:O	1:A:337:LEU:HG	2.18	0.44
2:C:113:ARG:HH21	2:C:130:LYS:HB2	1.83	0.44
19:E:344:ARG:HH11	20:F:218:GLN:HB2	1.82	0.44
21:B:369:THR:HG21	21:B:380:LEU:HD11	1.99	0.44
24:Z:225:GLN:HA	24:Z:228:TYR:CD1	2.53	0.44
1:A:275:ASP:O	1:A:277:ILE:N	2.50	0.44
18:D:269:ALA:HB2	19:E:258:MET:HG3	1.99	0.44
1:A:330:ALA:C	1:A:336:ARG:HD3	2.38	0.43
7:L:193:ARG:HG2	7:L:237:GLU:H	1.82	0.43
18:D:266:GLU:C	18:D:268:ASP:N	2.70	0.43
19:E:264:MET:SD	19:E:294:ARG:HG3	2.58	0.43
29:E:501:ATP:O2A	29:E:501:ATP:H4'	2.17	0.43
20:F:140:VAL:CG2	20:F:145:LEU:HD21	2.48	0.43
20:F:224:LEU:HD22	20:F:348:LEU:CD1	2.47	0.43
20:F:350:ARG:C	20:F:351:LYS:HD3	2.37	0.43
27:U:926:GLU:H	27:U:927:PRO:HD2	1.82	0.43
1:A:345:LEU:HD12	1:A:379:ASN:HB3	1.99	0.43
19:E:131:SER:H	19:E:134:GLU:HB2	1.83	0.43
19:E:183:LEU:O	19:E:186:ALA:HB3	2.17	0.43
19:E:339:ASN:OD1	20:F:344:ARG:HD2	2.18	0.43
1:A:216:GLY:O	1:A:322:ASN:ND2	2.50	0.43
1:A:275:ASP:CG	1:A:276:GLU:N	2.71	0.43
2:C:247:PHE:CE2	2:C:249:ASP:HB2	2.53	0.43
2:C:251:ILE:C	2:C:253:SER:N	2.69	0.43
2:C:266:ASP:O	2:C:269:VAL:N	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:327:LEU:HB3	1:A:332:MET:SD	2.58	0.43
2:C:132:ASP:HB2	2:C:135:VAL:CG1	2.49	0.43
19:E:135:ILE:O	19:E:137:GLY:N	2.43	0.43
19:E:312:ILE:N	19:E:315:ILE:HD12	2.33	0.43
20:F:141:ASP:HB2	20:F:144:LYS:HG2	2.01	0.43
20:F:341:ALA:O	20:F:343:LEU:N	2.50	0.43
21:B:168:ASP:HA	21:B:169:PRO:HD3	1.83	0.43
24:Z:272:LEU:O	24:Z:275:LEU:HB3	2.18	0.43
1:A:384:GLU:O	1:A:385:ILE:C	2.56	0.43
4:H:38:ILE:HB	4:H:178:TYR:HE1	1.84	0.43
18:D:248:ARG:HG3	18:D:249:ASP:N	2.34	0.43
19:E:291:ARG:CG	19:E:294:ARG:HE	2.30	0.43
19:E:310:LEU:CA	19:E:313:LEU:HB2	2.46	0.43
20:F:392:ASN:N	20:F:395:GLN:OE1	2.51	0.43
1:A:153:LEU:HD22	1:A:153:LEU:HA	1.77	0.43
2:C:257:SER:HA	2:C:302:ASP:OD2	2.18	0.43
12:Y:245:GLU:CD	12:Y:245:GLU:H	2.20	0.43
19:E:262:ASN:O	19:E:265:ASP:N	2.52	0.43
19:E:268:ASP:OD1	19:E:268:ASP:N	2.51	0.43
27:U:398:ASN:HA	27:U:437:TYR:CZ	2.53	0.43
1:A:241:ILE:CG1	1:A:275:ASP:HB3	2.48	0.43
2:C:195:GLY:N	29:C:501:ATP:O1B	2.50	0.43
19:E:113:ARG:HG2	19:E:114:GLU:N	2.33	0.43
19:E:149:ILE:HD12	19:E:276:ILE:HD11	2.00	0.43
19:E:175:PRO:HG2	19:E:303:LEU:HG	2.01	0.43
20:F:397:LYS:CD	28:F:501:ADP:H1'	2.49	0.43
21:B:113:GLU:C	21:B:114:GLU:HG2	2.39	0.43
1:A:277:ILE:HG22	1:A:321:THR:CG2	2.49	0.43
1:A:384:GLU:H	1:A:384:GLU:HG3	1.65	0.43
2:C:277:LEU:O	2:C:281:ASP:N	2.47	0.43
4:H:184:LEU:HA	4:H:187:ALA:HB3	2.00	0.43
6:J:35:VAL:HG12	6:J:158:ALA:HB1	2.01	0.43
11:X:157:LEU:HD23	11:X:160:MET:HE1	2.00	0.43
18:D:294:ASN:HA	18:D:298:GLY:HA3	2.01	0.43
19:E:132:TYR:HA	19:E:135:ILE:CD1	2.49	0.43
19:E:289:LEU:O	19:E:290:LEU:C	2.56	0.43
11:X:391:PRO:HA	11:X:392:PRO:HD3	1.90	0.42
18:D:372:GLY:HA3	29:D:501:ATP:C8	2.54	0.42
24:Z:188:SER:O	24:Z:192:THR:HG23	2.19	0.42
2:C:135:VAL:CA	2:C:138:MET:SD	3.00	0.42
19:E:264:MET:SD	19:E:294:ARG:CD	3.08	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:B:362:LYS:HA	21:B:384:ILE:HD13	2.01	0.42
1:A:382:GLY:O	1:A:386:ARG:HG3	2.19	0.42
2:C:268:GLU:HA	2:C:271:ARG:HB3	2.00	0.42
18:D:374:ASP:OD1	19:E:292:PRO:CG	2.67	0.42
19:E:136:GLY:HA3	19:E:312:ILE:HG12	2.00	0.42
21:B:305:ILE:HD12	21:B:305:ILE:H	1.84	0.42
27:U:713:TYR:CE2	27:U:733:ALA:HB1	2.54	0.42
1:A:218:PRO:O	1:A:220:THR:N	2.52	0.42
2:C:301:LEU:HD12	2:C:301:LEU:HA	1.80	0.42
11:X:172:LEU:HD13	11:X:172:LEU:O	2.18	0.42
20:F:128:THR:HA	20:F:129:ARG:CZ	2.50	0.42
20:F:344:ARG:HG2	20:F:345:SER:N	2.34	0.42
28:F:501:ADP:C5'	28:F:501:ADP:C8	2.99	0.42
1:A:78:TRP:CD1	21:B:138:PHE:HA	2.54	0.42
2:C:223:PHE:N	18:D:239:TYR:HE1	2.15	0.42
8:M:195:LYS:HE3	8:M:238:TYR:CE2	2.54	0.42
20:F:140:VAL:HG21	20:F:145:LEU:HD21	2.01	0.42
18:D:162:VAL:HG11	18:D:217:LYS:HB2	2.01	0.42
19:E:253:ILE:HG22	19:E:254:GLN:N	2.34	0.42
1:A:303:ILE:O	1:A:336:ARG:NE	2.50	0.42
2:C:132:ASP:OD1	2:C:132:ASP:N	2.51	0.42
4:H:160:ALA:HB1	4:H:174:LEU:HD13	2.02	0.42
18:D:241:GLY:O	18:D:244:PRO:HD2	2.20	0.42
1:A:179:GLY:O	1:A:181:LYS:N	2.50	0.42
1:A:354:ILE:HA	1:A:357:ILE:HD12	2.01	0.42
1:A:384:GLU:HA	1:A:387:SER:CB	2.50	0.42
18:D:344:ILE:HG13	18:D:344:ILE:H	1.69	0.42
27:U:705:LYS:HE2	27:U:705:LYS:HA	2.02	0.42
12:Y:51:ALA:HB3	12:Y:52:PRO:HD3	2.02	0.42
18:D:244:PRO:O	18:D:245:ARG:C	2.57	0.42
24:Z:22:HIS:CE1	24:Z:55:ALA:HB1	2.55	0.42
27:U:108:TYR:CE2	27:U:112:CYS:SG	3.13	0.42
1:A:225:CYS:O	1:A:228:ALA:N	2.53	0.42
19:E:261:LEU:HD23	19:E:264:MET:SD	2.59	0.42
19:E:295:LEU:HD22	19:E:295:LEU:HA	1.81	0.42
20:F:126:THR:HG1	20:F:130:GLN:H	1.68	0.42
1:A:95:VAL:HG13	1:A:153:LEU:HG	2.01	0.41
1:A:221:GLY:O	28:A:501:ADP:H5'2	2.20	0.41
1:A:276:GLU:O	1:A:276:GLU:HG3	2.20	0.41
1:A:332:MET:HA	1:A:340:LYS:CE	2.49	0.41
18:D:212:LYS:HE2	18:D:212:LYS:HB2	1.93	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:D:266:GLU:O	18:D:269:ALA:N	2.52	0.41
19:E:105:LEU:HD12	19:E:105:LEU:N	2.35	0.41
19:E:255:ARG:O	19:E:258:MET:CB	2.67	0.41
19:E:289:LEU:O	19:E:295:LEU:HB2	2.20	0.41
25:V:296:LYS:HA	25:V:296:LYS:HE3	2.02	0.41
1:A:330:ALA:O	1:A:333:ARG:N	2.53	0.41
7:L:24:TYR:CG	22:K:17:PRO:HA	2.55	0.41
27:U:419:ALA:HA	27:U:422:LEU:HB3	2.02	0.41
1:A:179:GLY:C	1:A:181:LYS:H	2.23	0.41
1:A:345:LEU:HD13	1:A:380:SER:N	2.35	0.41
1:A:322:ASN:HD22	1:A:322:ASN:HA	1.69	0.41
2:C:246:ILE:HG22	2:C:248:MET:H	1.86	0.41
4:H:175:GLU:O	4:H:176:LYS:C	2.57	0.41
12:Y:124:PHE:CD1	12:Y:140:ILE:HG21	2.55	0.41
19:E:73:ALA:O	19:E:74:THR:C	2.58	0.41
19:E:312:ILE:O	19:E:313:LEU:C	2.57	0.41
20:F:344:ARG:CZ	20:F:347:ARG:HH11	2.33	0.41
1:A:221:GLY:N	28:A:501:ADP:O2A	2.54	0.41
2:C:235:PHE:CD2	2:C:279:GLN:HB3	2.55	0.41
18:D:211:GLY:CA	29:D:501:ATP:C8	3.04	0.41
19:E:179:GLY:N	29:E:501:ATP:C8	2.88	0.41
29:E:501:ATP:N3	29:E:501:ATP:C2'	2.83	0.41
20:F:220:PRO:HA	20:F:349:ASP:OD2	2.21	0.41
2:C:195:GLY:HA2	29:C:501:ATP:C8	2.55	0.41
2:C:253:SER:OG	2:C:254:ILE:N	2.52	0.41
4:H:148:GLN:HE22	4:H:163:MET:HG3	1.81	0.41
18:D:237:GLN:OE1	18:D:239:TYR:N	2.53	0.41
18:D:242:GLU:OE1	18:D:246:MET:HB2	2.21	0.41
19:E:114:GLU:C	19:E:115:VAL:HG23	2.41	0.41
19:E:262:ASN:HD22	19:E:262:ASN:HA	1.65	0.41
1:A:276:GLU:C	1:A:278:ASP:N	2.74	0.41
2:C:266:ASP:O	2:C:269:VAL:HB	2.20	0.41
29:C:501:ATP:PG	18:D:323:ARG:HH11	2.44	0.41
4:H:38:ILE:HG22	4:H:160:ALA:HB1	2.02	0.41
18:D:244:PRO:O	18:D:247:VAL:N	2.54	0.41
19:E:250:ASP:O	19:E:252:GLU:N	2.54	0.41
19:E:253:ILE:O	19:E:256:THR:N	2.54	0.41
19:E:303:LEU:CD2	19:E:339:ASN:HB3	2.50	0.41
21:B:190:LEU:HD12	28:B:501:ADP:HN61	1.86	0.41
2:C:328:ILE:HG12	29:C:501:ATP:N1	2.34	0.41
12:Y:128:TYR:CE2	12:Y:137:ARG:HA	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:E:295:LEU:CD1	19:E:298:LYS:HG3	2.51	0.41
27:U:926:GLU:H	27:U:927:PRO:CD	2.34	0.41
1:A:98:CYS:CB	1:A:138:MET:HB3	2.51	0.41
1:A:321:THR:C	1:A:323:ARG:N	2.73	0.41
1:A:331:LEU:HA	1:A:336:ARG:HB3	2.03	0.41
2:C:247:PHE:O	2:C:247:PHE:CD2	2.73	0.41
18:D:167:ILE:HB	18:D:174:LYS:HE3	2.03	0.41
18:D:167:ILE:HG22	18:D:169:GLY:H	1.86	0.41
18:D:232:GLY:O	18:D:235:PHE:HD1	2.04	0.41
18:D:235:PHE:C	19:E:255:ARG:NH1	2.71	0.41
19:E:56:ILE:HD13	20:F:131:THR:O	2.21	0.41
20:F:206:MET:SD	20:F:327:LYS:HE3	2.61	0.41
1:A:220:THR:CG2	1:A:382:GLY:H	2.30	0.41
2:C:216:GLY:HA2	2:C:248:MET:HE1	2.03	0.41
10:W:59:ASP:HB3	10:W:63:THR:H	1.85	0.41
19:E:168:LYS:HZ1	19:E:265:ASP:HB3	1.79	0.41
19:E:281:ARG:C	19:E:283:ASP:N	2.72	0.41
20:F:224:LEU:HD22	20:F:348:LEU:HD12	2.03	0.41
1:A:139:ARG:HD2	1:A:156:LYS:HZ3	1.86	0.40
2:C:233:GLU:O	2:C:236:VAL:N	2.38	0.40
2:C:274:LEU:O	2:C:277:LEU:HB2	2.21	0.40
18:D:249:ASP:HA	18:D:252:ARG:CZ	2.52	0.40
18:D:248:ARG:NH1	18:D:291:GLU:OE1	2.52	0.40
18:D:248:ARG:HB3	18:D:291:GLU:OE2	2.21	0.40
18:D:349:THR:HB	18:D:354:LEU:CD1	2.52	0.40
18:D:381:GLU:OE1	19:E:297:ARG:NH1	2.49	0.40
19:E:77:PRO:HG2	19:E:79:TYR:CE1	2.56	0.40
19:E:95:GLY:O	19:E:97:ARG:N	2.54	0.40
19:E:169:GLY:O	19:E:296:ASP:HB2	2.21	0.40
20:F:189:GLY:HA3	28:F:501:ADP:N6	2.24	0.40
21:B:189:GLY:HA3	21:B:360:THR:HG22	2.03	0.40
27:U:368:ALA:HB2	27:U:728:PHE:CD2	2.56	0.40
18:D:89:ILE:HG12	18:D:143:LEU:HD11	2.02	0.40
18:D:238:LYS:O	18:D:239:TYR:C	2.59	0.40
19:E:215:ILE:CG2	19:E:259:GLU:HG2	2.51	0.40
19:E:344:ARG:CZ	19:E:348:THR:OG1	2.69	0.40
2:C:248:MET:SD	2:C:248:MET:C	3.00	0.40
12:Y:128:TYR:CE1	12:Y:163:LYS:HE3	2.57	0.40
19:E:200:SER:HB2	19:E:234:GLU:O	2.22	0.40
19:E:233:ASP:O	19:E:234:GLU:HB2	2.21	0.40
2:C:258:ARG:HD3	2:C:258:ARG:N	2.37	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:D:167:ILE:CG2	18:D:174:LYS:HE3	2.51	0.40
19:E:180:LYS:HG2	29:E:501:ATP:O1B	2.22	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	357/433 (82%)	282 (79%)	55 (15%)	20 (6%)	1	18
2	C	360/406 (89%)	294 (82%)	44 (12%)	22 (6%)	1	16
3	G	236/246 (96%)	211 (89%)	23 (10%)	2 (1%)	16	53
4	H	228/234 (97%)	216 (95%)	12 (5%)	0	100	100
5	I	246/261 (94%)	222 (90%)	24 (10%)	0	100	100
6	J	237/248 (96%)	211 (89%)	22 (9%)	4 (2%)	7	37
7	L	234/263 (89%)	210 (90%)	20 (8%)	4 (2%)	7	37
8	M	236/255 (92%)	209 (89%)	24 (10%)	3 (1%)	10	43
9	O	42/277 (15%)	39 (93%)	3 (7%)	0	100	100
10	W	436/456 (96%)	410 (94%)	23 (5%)	3 (1%)	19	56
11	X	376/422 (89%)	349 (93%)	20 (5%)	7 (2%)	6	35
12	Y	378/389 (97%)	362 (96%)	15 (4%)	1 (0%)	37	71
13	a	371/376 (99%)	322 (87%)	40 (11%)	9 (2%)	5	31
14	b	185/377 (49%)	164 (89%)	19 (10%)	2 (1%)	12	46
15	d	267/350 (76%)	249 (93%)	16 (6%)	2 (1%)	19	56
16	u	170/289 (59%)	153 (90%)	13 (8%)	4 (2%)	5	31
18	D	362/418 (87%)	298 (82%)	47 (13%)	17 (5%)	2	20
19	E	364/389 (94%)	291 (80%)	47 (13%)	26 (7%)	1	13

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
20	F	361/439 (82%)	301 (83%)	46 (13%)	14 (4%)	2	22
21	B	318/440 (72%)	265 (83%)	43 (14%)	10 (3%)	3	26
22	K	224/241 (93%)	200 (89%)	20 (9%)	4 (2%)	7	36
23	c	265/424 (62%)	231 (87%)	29 (11%)	5 (2%)	6	35
24	Z	278/324 (86%)	252 (91%)	23 (8%)	3 (1%)	12	46
25	V	435/534 (82%)	378 (87%)	43 (10%)	14 (3%)	3	26
26	e	37/70 (53%)	32 (86%)	5 (14%)	0	100	100
27	U	803/953 (84%)	717 (89%)	64 (8%)	22 (3%)	4	29
All	All	7806/9514 (82%)	6868 (88%)	740 (10%)	198 (2%)	7	30

All (198) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	A	138	MET
1	A	180	CYS
1	A	218	PRO
1	A	222	LYS
1	A	224	LEU
1	A	366	ARG
2	C	85	VAL
2	C	242	ALA
6	J	73	PHE
11	X	123	THR
13	a	69	HIS
13	a	187	ASP
15	d	332	SER
18	D	85	ILE
18	D	147	ALA
18	D	210	CYS
18	D	239	TYR
19	E	139	SER
19	E	288	ALA
19	E	345	ASN
19	E	346	VAL
20	F	86	LEU
20	F	169	ASP
20	F	279	ALA
20	F	324	THR
20	F	347	ARG

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
23	c	279	ASP
25	V	318	GLN
27	U	145	HIS
27	U	416	GLU
1	A	100	LYS
1	A	378	PRO
2	C	141	GLU
2	C	223	PHE
2	C	257	SER
2	C	295	THR
2	C	299	ASP
3	G	66	VAL
6	J	52	LYS
7	L	226	ASP
11	X	45	VAL
11	X	310	ARG
11	X	394	ASP
13	a	166	ILE
14	b	186	SER
15	d	328	THR
18	D	146	GLU
18	D	149	SER
18	D	170	MET
18	D	316	THR
19	E	74	THR
19	E	75	ASN
19	E	85	ARG
19	E	113	ARG
19	E	116	ASP
19	E	140	GLU
19	E	187	VAL
19	E	268	ASP
19	E	271	HIS
19	E	340	GLY
20	F	170	SER
20	F	345	SER
20	F	349	ASP
21	B	169	PRO
21	B	274	ALA
21	B	413	LYS
22	K	53	ARG
22	K	208	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
23	c	175	ARG
24	Z	66	SER
25	V	158	PRO
25	V	264	TYR
25	V	267	ALA
27	U	560	MET
27	U	666	LYS
27	U	814	PRO
27	U	920	ASP
1	A	79	ASP
1	A	110	LYS
1	A	269	ALA
2	C	133	PRO
7	L	69	HIS
8	M	54	LEU
10	W	169	LEU
11	X	162	ASP
13	a	16	PRO
16	u	285	LYS
18	D	208	PRO
18	D	237	GLN
19	E	96	THR
19	E	208	ILE
19	E	261	LEU
20	F	374	ASN
20	F	433	ALA
21	B	92	GLN
21	B	386	ALA
24	Z	224	HIS
25	V	55	THR
25	V	224	LEU
25	V	371	ASN
27	U	146	LYS
27	U	172	ASP
27	U	504	ASP
27	U	792	ASN
27	U	926	GLU
1	A	160	THR
1	A	219	GLY
1	A	225	CYS
1	A	336	ARG
2	C	91	PRO

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	C	100	ASP
2	C	103	ILE
2	C	113	ARG
2	C	121	TYR
2	C	267	SER
2	C	297	ARG
2	C	301	LEU
2	C	355	SER
3	G	145	GLU
8	M	167	LYS
11	X	393	VAL
11	X	418	ALA
13	a	70	ARG
13	a	143	ASN
13	a	149	THR
13	a	213	PHE
13	a	215	GLU
14	b	79	GLN
18	D	259	PRO
18	D	317	LEU
19	E	115	VAL
19	E	180	LYS
19	E	185	ARG
19	E	186	ALA
19	E	291	ARG
19	E	321	THR
20	F	52	ILE
20	F	209	LYS
20	F	257	VAL
21	B	164	MET
21	B	187	ILE
23	c	138	GLU
25	V	57	ALA
25	V	193	GLN
25	V	317	PRO
25	V	322	VAL
27	U	89	ASN
27	U	812	ALA
1	A	72	LEU
1	A	174	TYR
2	C	122	THR
2	C	243	PRO

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
2	C	284	GLU
6	J	120	GLN
7	L	68	ASN
7	L	77	LEU
10	W	19	ASP
12	Y	388	ASN
16	u	278	PHE
16	u	279	LYS
18	D	84	SER
18	D	159	LYS
18	D	258	ALA
19	E	269	THR
19	E	341	ALA
20	F	180	ARG
25	V	30	PRO
25	V	223	LYS
25	V	396	ILE
27	U	171	ASN
27	U	362	ASN
27	U	697	GLN
27	U	811	PHE
27	U	883	ARG
1	A	276	GLU
1	A	334	PRO
8	M	201	HIS
10	W	133	GLU
18	D	406	VAL
21	B	214	MET
22	K	229	PHE
27	U	34	PHE
27	U	534	GLY
6	J	198	VAL
27	U	454	GLY
1	A	159	PRO
2	C	269	VAL
16	u	119	ILE
19	E	77	PRO
2	C	220	VAL
21	B	201	VAL
23	c	280	PRO
18	D	303	VAL
21	B	207	HIS

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Mol	Chain	Res	Type
24	Z	240	VAL
27	U	808	PRO
22	K	12	VAL
23	c	187	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	305/372 (82%)	275 (90%)	30 (10%)	6 23
2	C	320/352 (91%)	286 (89%)	34 (11%)	5 22
3	G	191/210 (91%)	182 (95%)	9 (5%)	22 46
4	H	168/191 (88%)	159 (95%)	9 (5%)	18 42
5	I	191/221 (86%)	182 (95%)	9 (5%)	22 46
6	J	152/211 (72%)	144 (95%)	8 (5%)	19 43
7	L	197/224 (88%)	189 (96%)	8 (4%)	26 49
8	M	190/212 (90%)	185 (97%)	5 (3%)	41 62
9	O	41/228 (18%)	41 (100%)	0	100 100
10	W	403/416 (97%)	388 (96%)	15 (4%)	29 52
11	X	325/362 (90%)	308 (95%)	17 (5%)	19 43
12	Y	335/344 (97%)	326 (97%)	9 (3%)	40 61
13	a	333/336 (99%)	313 (94%)	20 (6%)	16 39
14	b	165/312 (53%)	155 (94%)	10 (6%)	15 39
15	d	237/294 (81%)	231 (98%)	6 (2%)	42 63
16	u	156/253 (62%)	148 (95%)	8 (5%)	20 44
18	D	318/366 (87%)	283 (89%)	35 (11%)	5 21
19	E	324/341 (95%)	297 (92%)	27 (8%)	9 31
20	F	315/379 (83%)	297 (94%)	18 (6%)	17 41
21	B	284/385 (74%)	266 (94%)	18 (6%)	15 38

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
22	K	187/203 (92%)	179 (96%)	8 (4%)	25	48
23	c	240/359 (67%)	221 (92%)	19 (8%)	10	32
24	Z	254/295 (86%)	240 (94%)	14 (6%)	18	42
25	V	379/460 (82%)	361 (95%)	18 (5%)	22	46
26	e	37/63 (59%)	33 (89%)	4 (11%)	5	21
27	U	691/816 (85%)	653 (94%)	38 (6%)	18	42
All	All	6738/8205 (82%)	6342 (94%)	396 (6%)	19	40

All (396) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	72	LEU
1	A	88	GLN
1	A	97	ARG
1	A	114	ASN
1	A	139	ARG
1	A	143	ASP
1	A	151	ILE
1	A	153	LEU
1	A	156	LYS
1	A	160	THR
1	A	195	LEU
1	A	206	ILE
1	A	215	PHE
1	A	225	CYS
1	A	232	ARG
1	A	239	ARG
1	A	247	GLN
1	A	280	ILE
1	A	284	ARG
1	A	299	MET
1	A	309	PHE
1	A	322	ASN
1	A	323	ARG
1	A	333	ARG
1	A	336	ARG
1	A	341	ILE
1	A	366	ARG
1	A	371	GLU
1	A	403	ILE

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	A	422	LYS
2	C	29	GLU
2	C	49	ARG
2	C	64	GLN
2	C	65	LEU
2	C	72	TYR
2	C	78	ARG
2	C	86	LEU
2	C	113	ARG
2	C	117	ARG
2	C	120	SER
2	C	130	LYS
2	C	131	VAL
2	C	132	ASP
2	C	134	LEU
2	C	135	VAL
2	C	142	LYS
2	C	213	ARG
2	C	220	VAL
2	C	221	GLN
2	C	229	ARG
2	C	239	ARG
2	C	240	GLU
2	C	248	MET
2	C	250	GLU
2	C	258	ARG
2	C	275	GLU
2	C	276	LEU
2	C	280	LEU
2	C	284	GLU
2	C	297	ARG
2	C	298	ILE
2	C	321	ASN
2	C	326	LEU
2	C	337	ASN
3	G	19	GLU
3	G	71	LYS
3	G	72	ILE
3	G	107	TYR
3	G	155	ASP
3	G	159	TYR
3	G	160	TYR

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	G	173	THR
3	G	193	GLN
4	H	49	GLU
4	H	86	LEU
4	H	89	ARG
4	H	123	GLN
4	H	174	LEU
4	H	177	ARG
4	H	186	ASP
4	H	206	ASP
4	H	219	ARG
5	I	38	LEU
5	I	44	LEU
5	I	50	ARG
5	I	56	LEU
5	I	127	LYS
5	I	136	TYR
5	I	156	TYR
5	I	223	THR
5	I	240	HIS
6	J	39	ASP
6	J	43	LEU
6	J	60	ARG
6	J	61	LYS
6	J	68	ASN
6	J	71	MET
6	J	86	ARG
6	J	200	GLN
7	L	26	MET
7	L	39	LYS
7	L	123	TYR
7	L	146	GLN
7	L	176	MET
7	L	214	ILE
7	L	228	ASP
7	L	234	GLU
8	M	50	GLU
8	M	59	GLU
8	M	72	HIS
8	M	209	PHE
8	M	213	LEU
10	W	33	LYS

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
10	W	53	GLN
10	W	60	MET
10	W	73	MET
10	W	85	GLU
10	W	137	TYR
10	W	139	GLU
10	W	167	GLN
10	W	172	GLU
10	W	219	THR
10	W	221	LYS
10	W	274	VAL
10	W	346	GLU
10	W	415	PHE
10	W	454	ASN
11	X	57	LEU
11	X	115	GLU
11	X	118	LYS
11	X	129	LEU
11	X	132	ARG
11	X	159	LYS
11	X	160	MET
11	X	187	ARG
11	X	194	ARG
11	X	233	TYR
11	X	234	GLU
11	X	292	GLN
11	X	295	LYS
11	X	297	ARG
11	X	385	LEU
11	X	396	THR
11	X	403	THR
12	Y	42	MET
12	Y	82	LYS
12	Y	83	ARG
12	Y	130	LYS
12	Y	231	LEU
12	Y	286	TRP
12	Y	292	TYR
12	Y	299	MET
12	Y	360	ASP
13	a	24	ARG
13	a	25	LEU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
13	a	31	LYS
13	a	34	TRP
13	a	54	ASP
13	a	69	HIS
13	a	70	ARG
13	a	80	ILE
13	a	89	ASP
13	a	122	LYS
13	a	127	ASP
13	a	136	GLU
13	a	166	ILE
13	a	171	SER
13	a	251	LEU
13	a	290	GLN
13	a	335	TRP
13	a	339	ARG
13	a	363	MET
13	a	373	ASP
14	b	12	ASN
14	b	52	ILE
14	b	79	GLN
14	b	83	LYS
14	b	94	HIS
14	b	95	LEU
14	b	135	LYS
14	b	141	ILE
14	b	145	GLU
14	b	181	ASP
15	d	237	MET
15	d	260	ILE
15	d	299	MET
15	d	302	TYR
15	d	306	ARG
15	d	321	GLN
16	u	152	LYS
16	u	173	GLN
16	u	180	MET
16	u	206	PHE
16	u	221	THR
16	u	254	GLU
16	u	273	THR
16	u	287	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
18	D	47	LEU
18	D	60	TYR
18	D	61	ILE
18	D	83	GLN
18	D	94	GLU
18	D	107	THR
18	D	127	ASN
18	D	146	GLU
18	D	148	ASP
18	D	151	ILE
18	D	159	LYS
18	D	166	ASP
18	D	175	GLN
18	D	184	PRO
18	D	200	ARG
18	D	205	TYR
18	D	231	VAL
18	D	236	VAL
18	D	238	LYS
18	D	242	GLU
18	D	245	ARG
18	D	256	GLU
18	D	267	ILE
18	D	268	ASP
18	D	273	LYS
18	D	297	ASP
18	D	311	THR
18	D	312	ASN
18	D	323	ARG
18	D	328	ASP
18	D	329	ARG
18	D	353	ASN
18	D	384	MET
18	D	390	ASN
18	D	404	LYS
19	E	15	LYS
19	E	50	LEU
19	E	56	ILE
19	E	97	ARG
19	E	98	VAL
19	E	103	THR
19	E	114	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
19	E	130	VAL
19	E	138	LEU
19	E	197	LYS
19	E	251	ARG
19	E	253	ILE
19	E	256	THR
19	E	261	LEU
19	E	267	PHE
19	E	269	THR
19	E	275	MET
19	E	291	ARG
19	E	294	ARG
19	E	295	LEU
19	E	313	LEU
19	E	322	LYS
19	E	343	LEU
19	E	360	ASP
19	E	378	LYS
19	E	383	LYS
19	E	387	LYS
20	F	74	LYS
20	F	88	TYR
20	F	129	ARG
20	F	141	ASP
20	F	146	LYS
20	F	163	THR
20	F	184	GLN
20	F	194	GLN
20	F	196	GLN
20	F	197	GLU
20	F	211	LYS
20	F	236	LEU
20	F	250	LYS
20	F	347	ARG
20	F	382	GLU
20	F	415	LEU
20	F	434	ASN
20	F	438	TYR
21	B	114	GLU
21	B	140	ASP
21	B	168	ASP
21	B	177	GLU

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
21	B	202	GLU
21	B	203	LEU
21	B	217	LYS
21	B	249	ARG
21	B	255	LEU
21	B	258	LYS
21	B	277	HIS
21	B	333	ARG
21	B	346	ARG
21	B	364	ILE
21	B	369	THR
21	B	424	GLU
21	B	430	LYS
21	B	431	GLN
22	K	33	LEU
22	K	101	PHE
22	K	190	THR
22	K	206	MET
22	K	217	LEU
22	K	228	MET
22	K	233	GLU
22	K	236	GLU
23	c	54	MET
23	c	92	GLN
23	c	104	ARG
23	c	107	MET
23	c	128	ASN
23	c	136	LEU
23	c	148	ILE
23	c	156	VAL
23	c	163	ILE
23	c	178	THR
23	c	208	ARG
23	c	216	MET
23	c	220	LEU
23	c	226	MET
23	c	255	TYR
23	c	256	ASN
23	c	262	GLU
23	c	264	LYS
23	c	277	LYS
24	Z	64	ASP

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<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
24	Z	66	SER
24	Z	73	ASP
24	Z	77	ASN
24	Z	81	MET
24	Z	104	ASN
24	Z	109	ASN
24	Z	121	LEU
24	Z	165	GLU
24	Z	209	ARG
24	Z	225	GLN
24	Z	228	TYR
24	Z	229	GLN
24	Z	256	GLN
25	V	40	GLU
25	V	61	GLU
25	V	77	GLU
25	V	92	ARG
25	V	182	LYS
25	V	194	LYS
25	V	201	ARG
25	V	213	TYR
25	V	224	LEU
25	V	230	PHE
25	V	231	LEU
25	V	270	LEU
25	V	271	VAL
25	V	288	TYR
25	V	296	LYS
25	V	309	MET
25	V	440	LYS
25	V	457	TYR
26	e	18	GLU
26	e	47	ASN
26	e	51	ASP
26	e	56	LEU
27	U	26	LYS
27	U	44	LYS
27	U	69	TYR
27	U	75	GLU
27	U	88	PHE
27	U	89	ASN
27	U	105	ILE

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Mol	Chain	Res	Type
27	U	111	GLN
27	U	139	GLN
27	U	140	ARG
27	U	155	LEU
27	U	156	GLU
27	U	162	VAL
27	U	199	ARG
27	U	216	VAL
27	U	231	ASP
27	U	248	ILE
27	U	254	GLU
27	U	258	GLN
27	U	337	LEU
27	U	344	ARG
27	U	352	ILE
27	U	357	LYS
27	U	361	ARG
27	U	366	HIS
27	U	369	THR
27	U	373	ASN
27	U	417	LYS
27	U	524	LYS
27	U	554	LEU
27	U	574	LYS
27	U	602	LEU
27	U	683	VAL
27	U	694	ILE
27	U	721	HIS
27	U	770	TRP
27	U	802	TYR
27	U	883	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (12) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	150	HIS
1	A	322	ASN
1	A	353	HIS
2	C	296	ASN
10	W	454	ASN
11	X	44	GLN
11	X	375	HIS

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Mol	Chain	Res	Type
13	a	69	HIS
18	D	312	ASN
18	D	353	ASN
21	B	242	GLN
25	V	329	HIS

### 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 8 ligands modelled in this entry, 2 are monoatomic - leaving 6 for Mogul analysis.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. 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  $|Z| > 2$  is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z  > 2$	Counts	RMSZ	$\# Z  > 2$
29	ATP	C	501	30	28,33,33	0.74	1 (3%)	34,52,52	0.91	2 (5%)
29	ATP	E	501	-	28,33,33	0.77	1 (3%)	34,52,52	0.88	1 (2%)
29	ATP	D	501	-	28,33,33	0.78	1 (3%)	34,52,52	0.82	1 (2%)
28	ADP	A	501	-	24,29,29	0.72	0	29,45,45	0.78	1 (3%)
28	ADP	F	501	-	24,29,29	0.74	0	29,45,45	0.73	0
28	ADP	B	501	-	24,29,29	1.30	2 (8%)	29,45,45	1.45	3 (10%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
29	ATP	C	501	30	-	3/18/38/38	0/3/3/3
29	ATP	E	501	-	-	3/18/38/38	0/3/3/3
29	ATP	D	501	-	-	4/18/38/38	0/3/3/3
28	ADP	A	501	-	-	5/12/32/32	0/3/3/3
28	ADP	F	501	-	-	4/12/32/32	0/3/3/3
28	ADP	B	501	-	-	1/12/32/32	0/3/3/3

All (5) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
28	B	501	ADP	PA-O3A	-3.11	1.56	1.59
28	B	501	ADP	O4'-C1'	2.50	1.44	1.40
29	E	501	ATP	C1'-N9	-2.25	1.44	1.49
29	D	501	ATP	C1'-N9	-2.04	1.44	1.49
29	C	501	ATP	C1'-N9	-2.00	1.45	1.49

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
28	B	501	ADP	C4-C5-N7	4.73	114.34	109.34
28	B	501	ADP	O2A-PA-O3A	3.56	116.89	107.27
29	C	501	ATP	C4'-O4'-C1'	-2.63	107.52	109.92
28	B	501	ADP	O3B-PB-O3A	2.42	112.75	104.64
29	E	501	ATP	C5-C6-N6	2.32	123.84	120.31
29	C	501	ATP	C5-C6-N6	2.29	123.80	120.31
28	A	501	ADP	C5-C6-N6	2.25	123.75	120.31
29	D	501	ATP	C5-C6-N6	2.18	123.63	120.31

There are no chirality outliers.

All (20) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
28	A	501	ADP	C5'-O5'-PA-O1A
28	A	501	ADP	C5'-O5'-PA-O3A
28	A	501	ADP	C4'-C5'-O5'-PA
28	A	501	ADP	O4'-C4'-C5'-O5'

*Continued on next page...*

*Continued from previous page...*

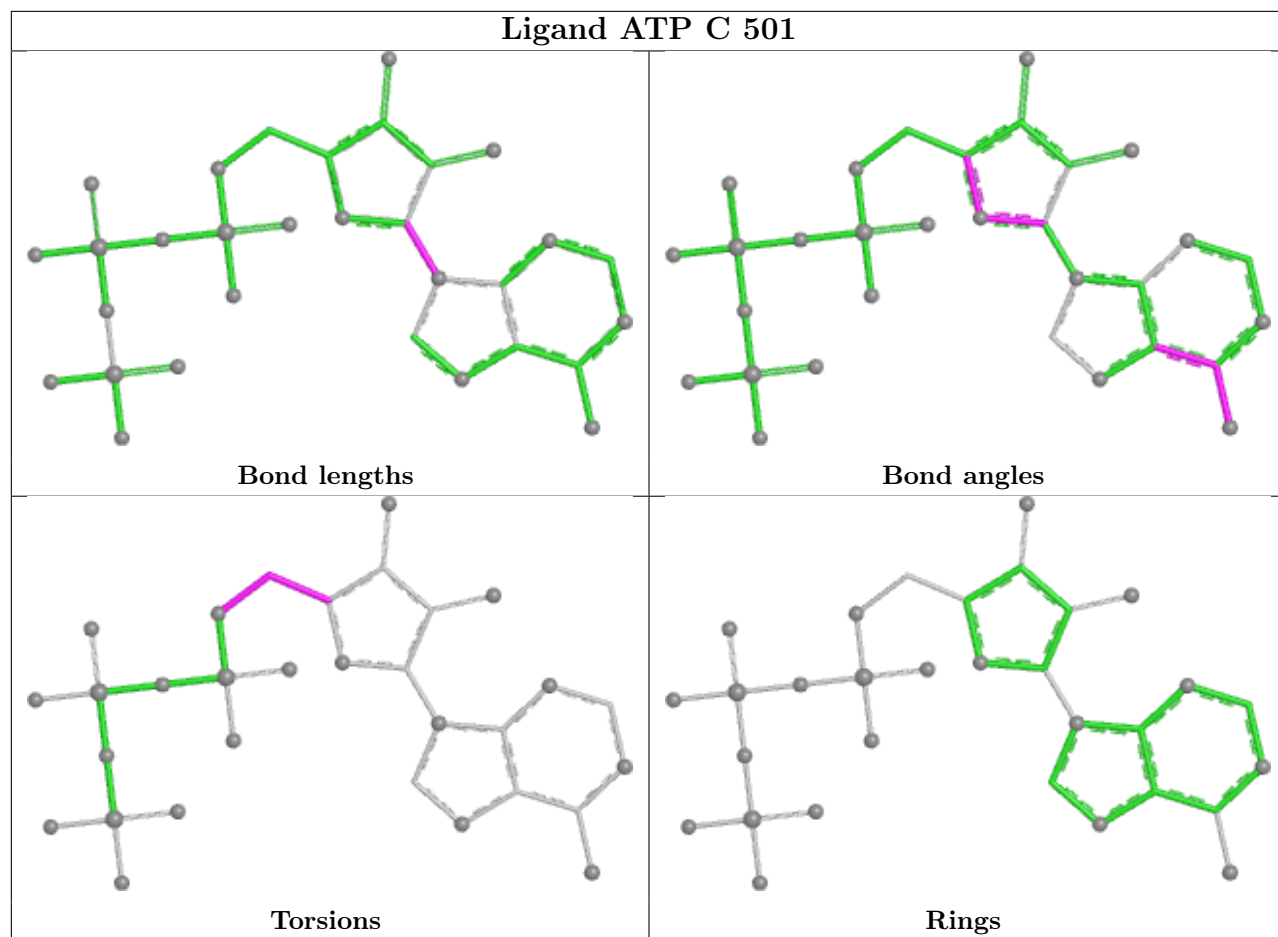
Mol	Chain	Res	Type	Atoms
28	A	501	ADP	C3'-C4'-C5'-O5'
28	F	501	ADP	C4'-C5'-O5'-PA
29	D	501	ATP	C5'-O5'-PA-O1A
29	D	501	ATP	C4'-C5'-O5'-PA
29	E	501	ATP	C4'-C5'-O5'-PA
29	D	501	ATP	O4'-C4'-C5'-O5'
29	D	501	ATP	C3'-C4'-C5'-O5'
28	F	501	ADP	O4'-C4'-C5'-O5'
28	F	501	ADP	C3'-C4'-C5'-O5'
29	E	501	ATP	C3'-C4'-C5'-O5'
29	E	501	ATP	O4'-C4'-C5'-O5'
28	F	501	ADP	PB-O3A-PA-O5'
29	C	501	ATP	O4'-C4'-C5'-O5'
29	C	501	ATP	C4'-C5'-O5'-PA
29	C	501	ATP	C3'-C4'-C5'-O5'
28	B	501	ADP	C4'-C5'-O5'-PA

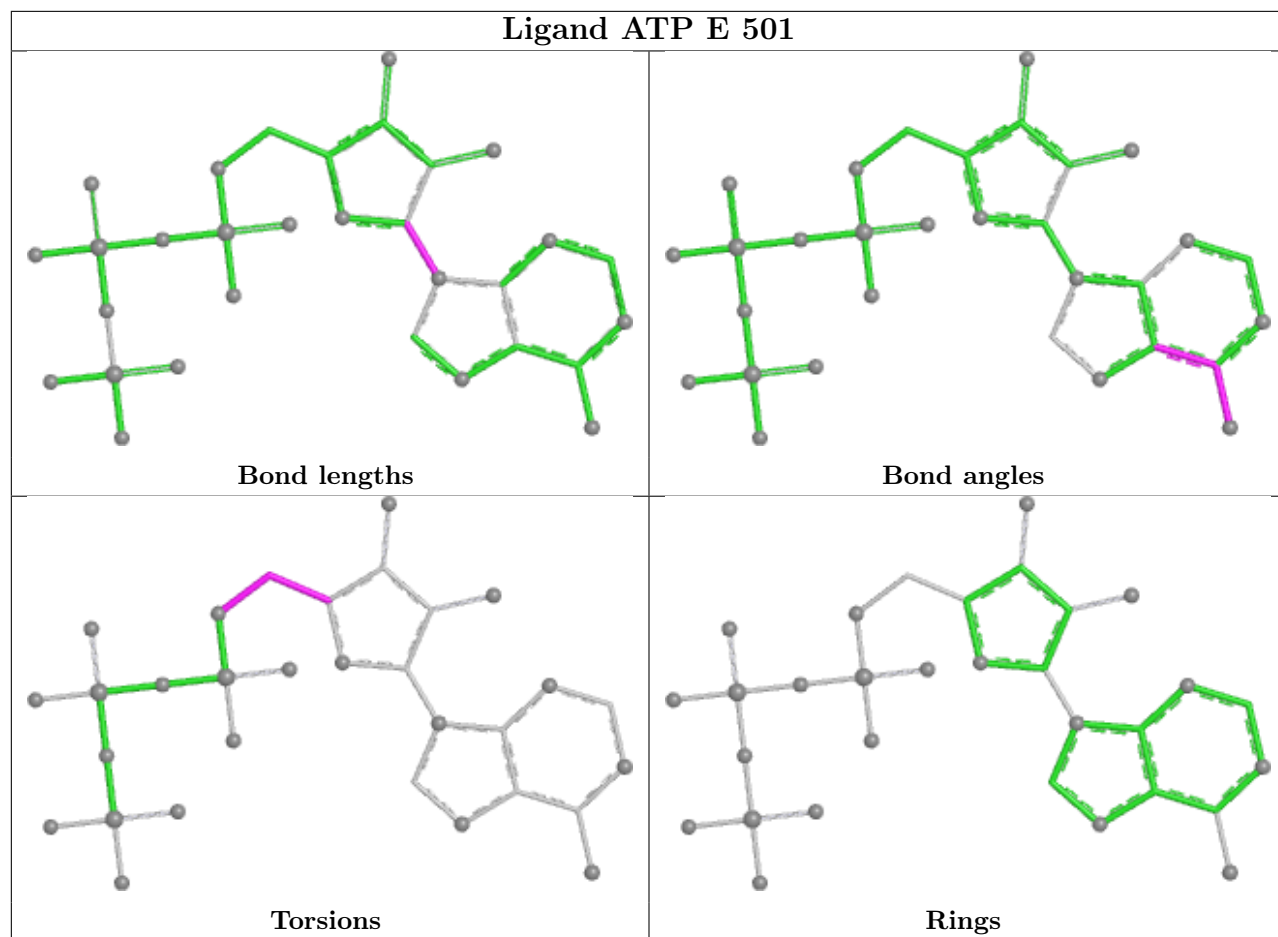
There are no ring outliers.

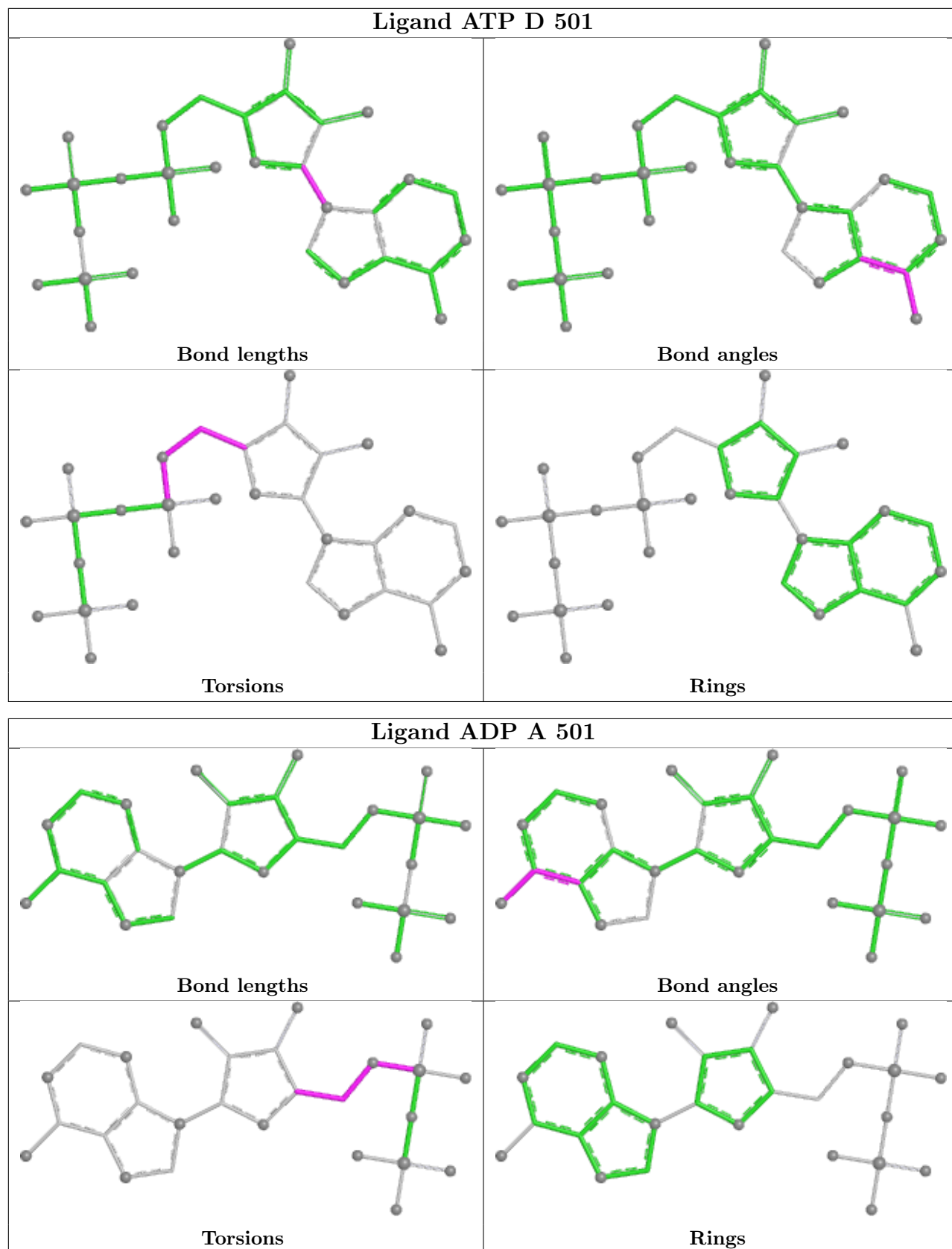
6 monomers are involved in 57 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
29	C	501	ATP	9	0
29	E	501	ATP	12	0
29	D	501	ATP	13	0
28	A	501	ADP	10	0
28	F	501	ADP	12	0
28	B	501	ADP	1	0

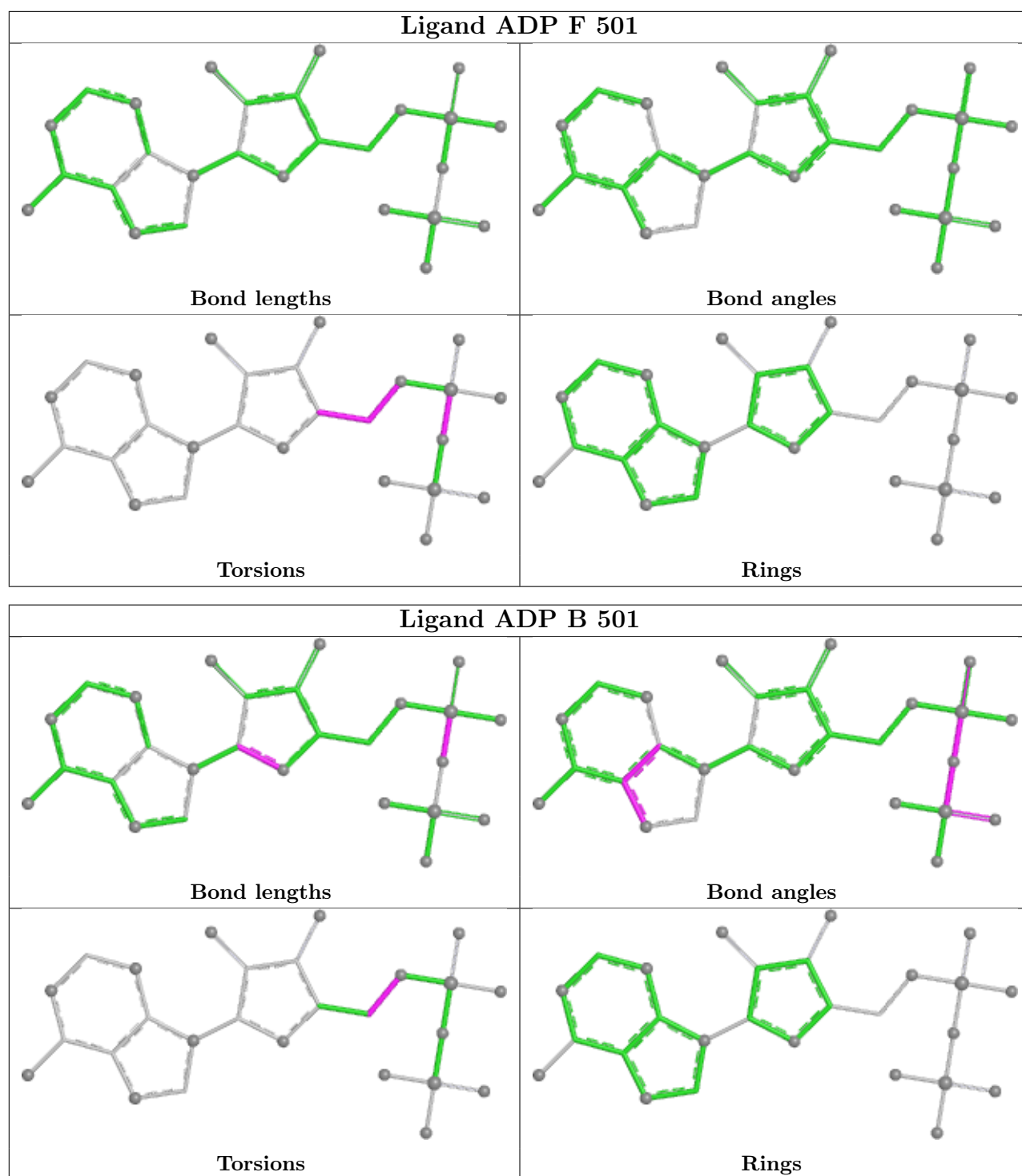
The following is a two-dimensional graphical depiction of Mogul quality analysis of bond lengths, bond angles, torsion angles, and ring geometry for all instances of the Ligand of Interest. In addition, ligands with molecular weight > 250 and outliers as shown on the validation Tables will also be included. For torsion angles, if less than 5% of the Mogul distribution of torsion angles is within 10 degrees of the torsion angle in question, then that torsion angle is considered an outlier. Any bond that is central to one or more torsion angles identified as an outlier by Mogul will be highlighted in the graph. For rings, the root-mean-square deviation (RMSD) between the ring in question and similar rings identified by Mogul is calculated over all ring torsion angles. If the average RMSD is greater than 60 degrees and the minimal RMSD between the ring in question and any Mogul-identified rings is also greater than 60 degrees, then that ring is considered an outlier. The outliers are highlighted in purple. The color gray indicates Mogul did not find sufficient equivalents in the CSD to analyse the geometry.











## 5.7 Other polymers [\(i\)](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues

There are no chain breaks in this entry.

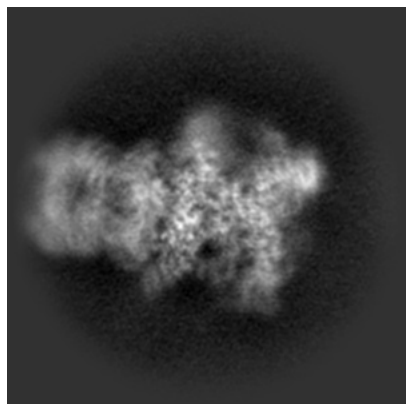
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-47723. These allow visual inspection of the internal detail of the map and identification of artifacts.

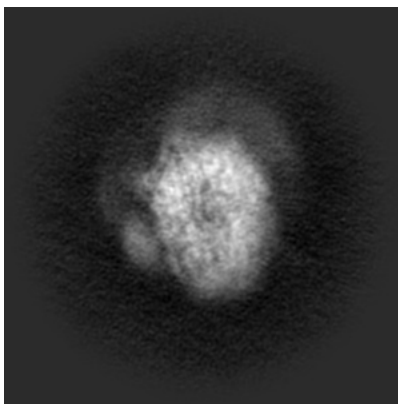
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

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

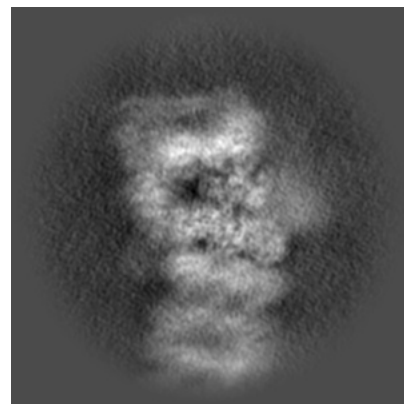
#### 6.1.1 Primary map



X

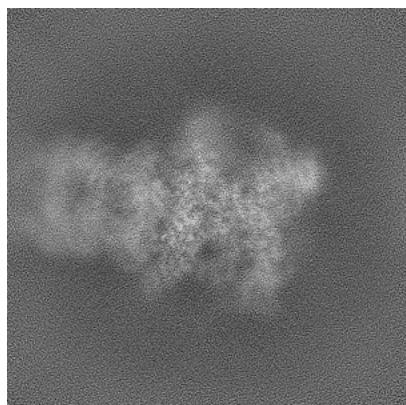


Y

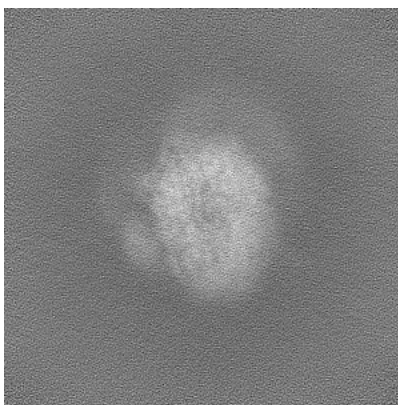


Z

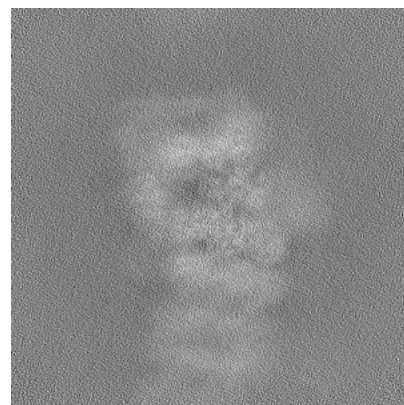
#### 6.1.2 Raw map



X



Y

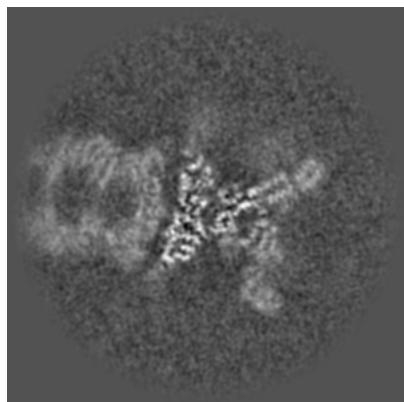


Z

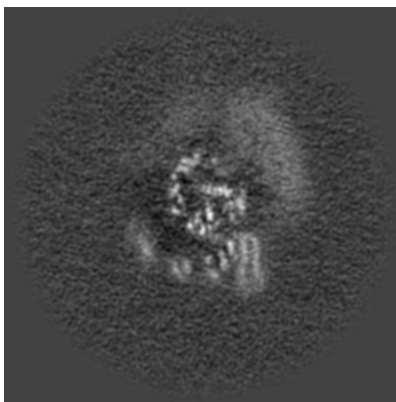
The images above show the map projected in three orthogonal directions.

## 6.2 Central slices [i](#)

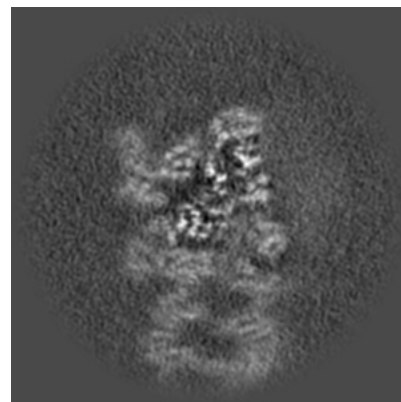
### 6.2.1 Primary map



X Index: 170



Y Index: 170

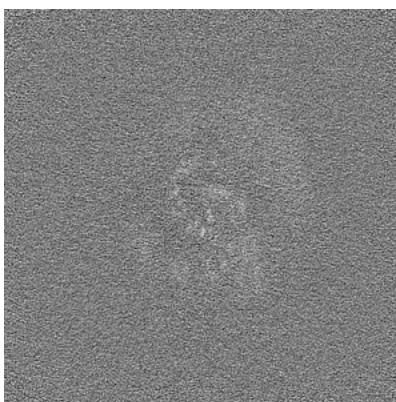


Z Index: 170

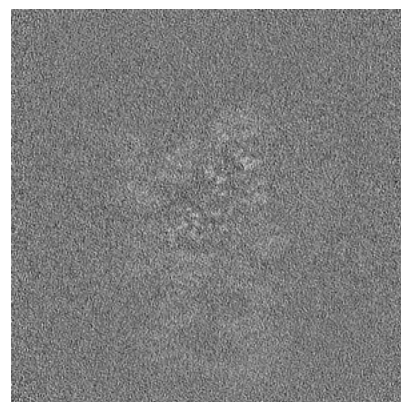
### 6.2.2 Raw map



X Index: 170



Y Index: 170

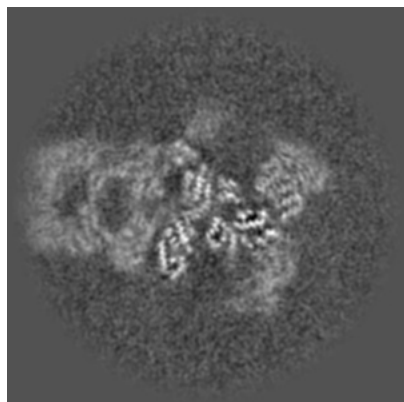


Z Index: 170

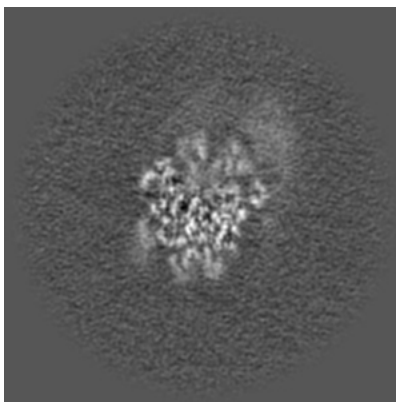
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

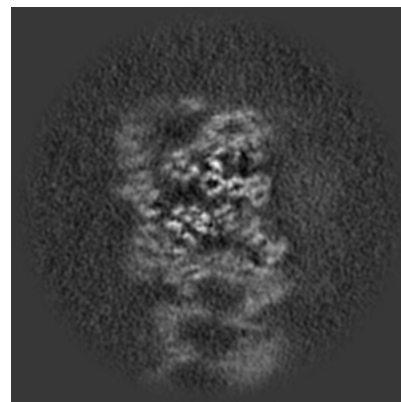
### 6.3.1 Primary map



X Index: 185

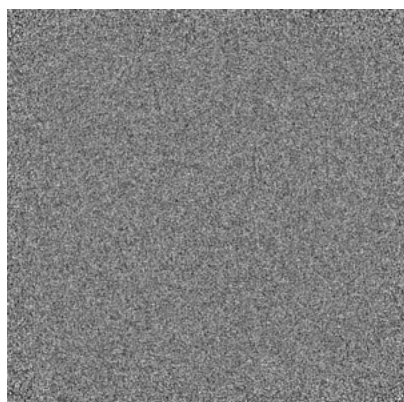


Y Index: 152

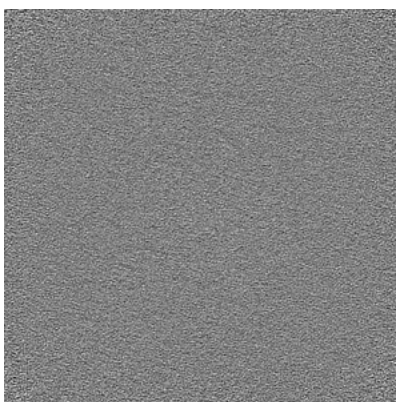


Z Index: 180

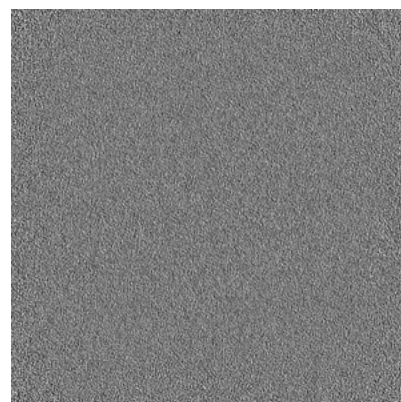
### 6.3.2 Raw map



X Index: 0



Y Index: 0



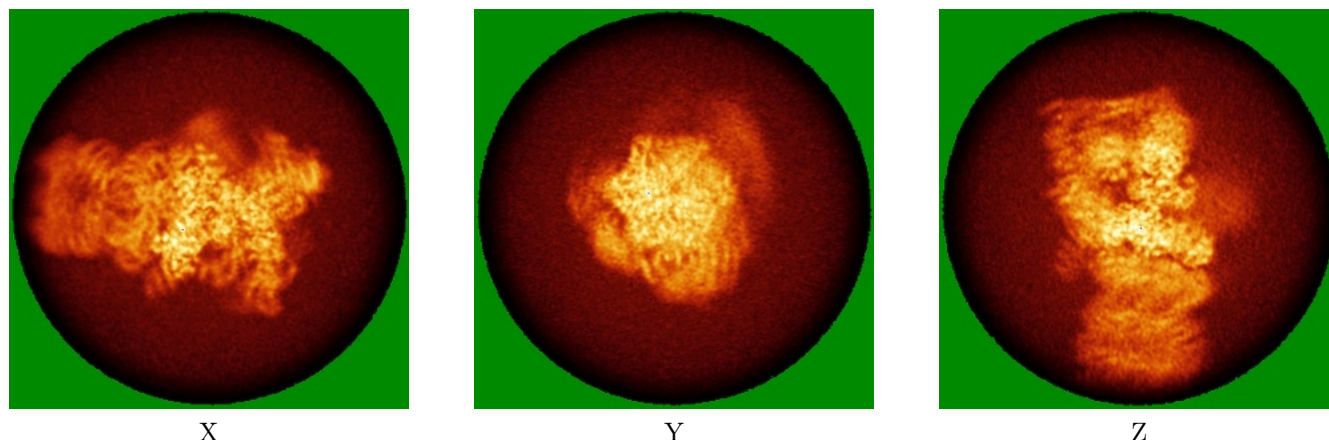
Z Index: 0

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

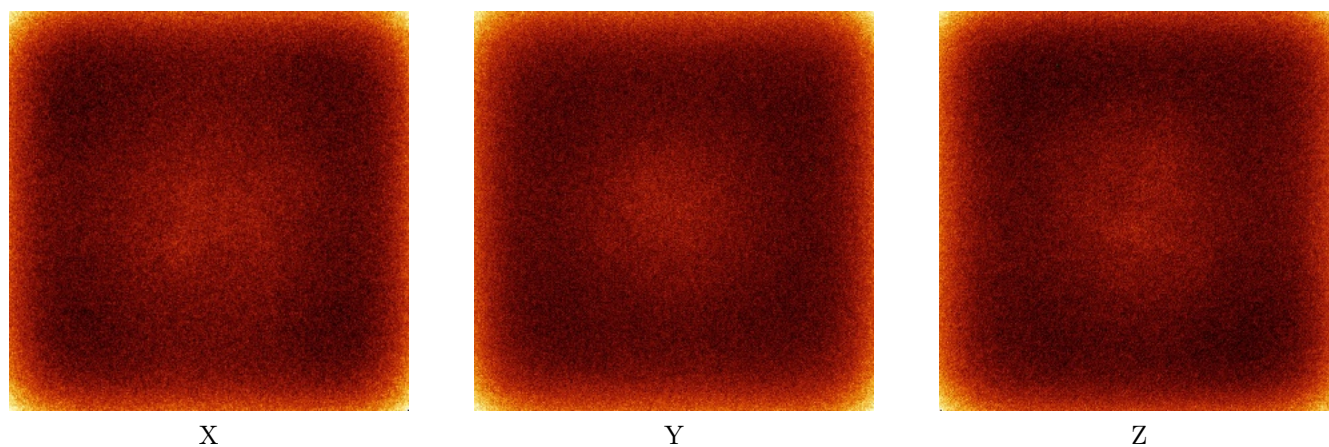


## 6.4 Orthogonal standard-deviation projections (False-color) [i](#)

### 6.4.1 Primary map



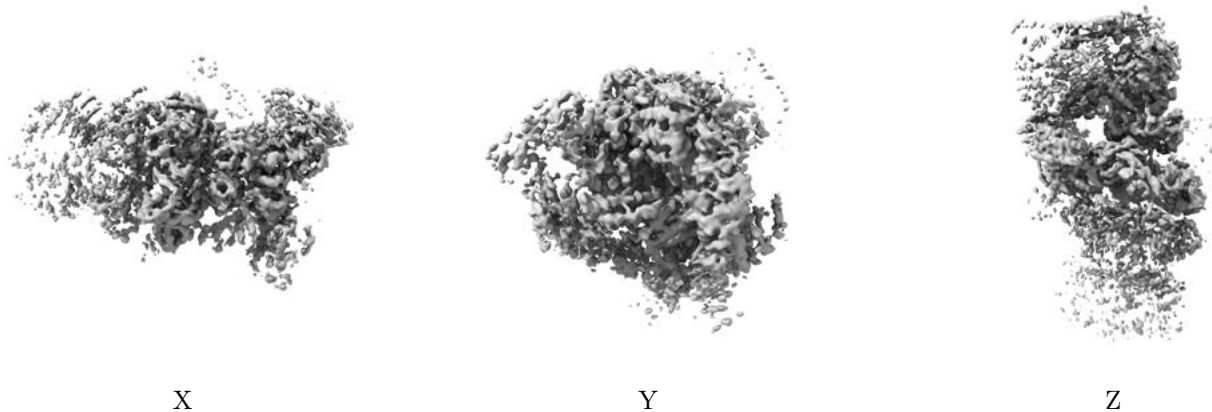
### 6.4.2 Raw map



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

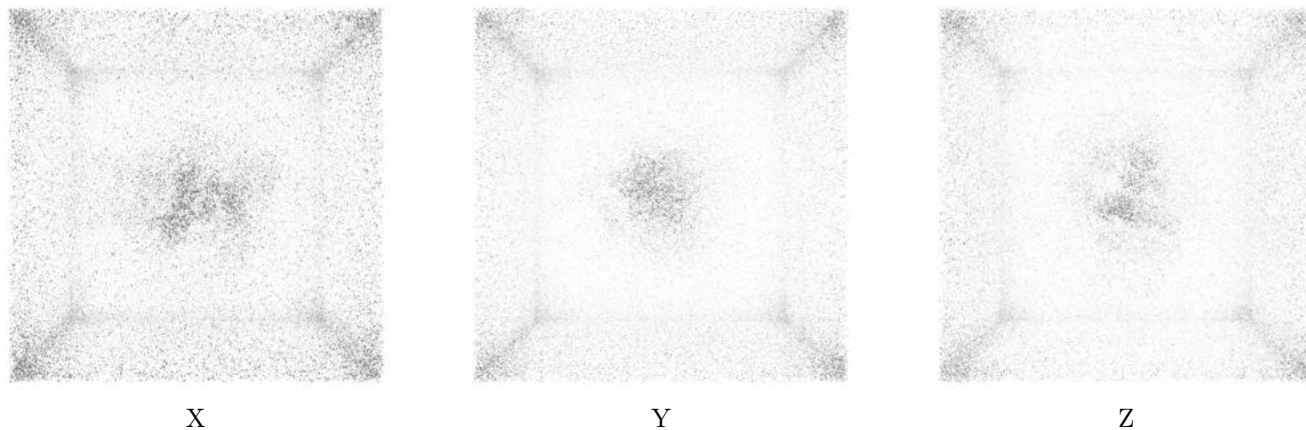
## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.13. 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



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.

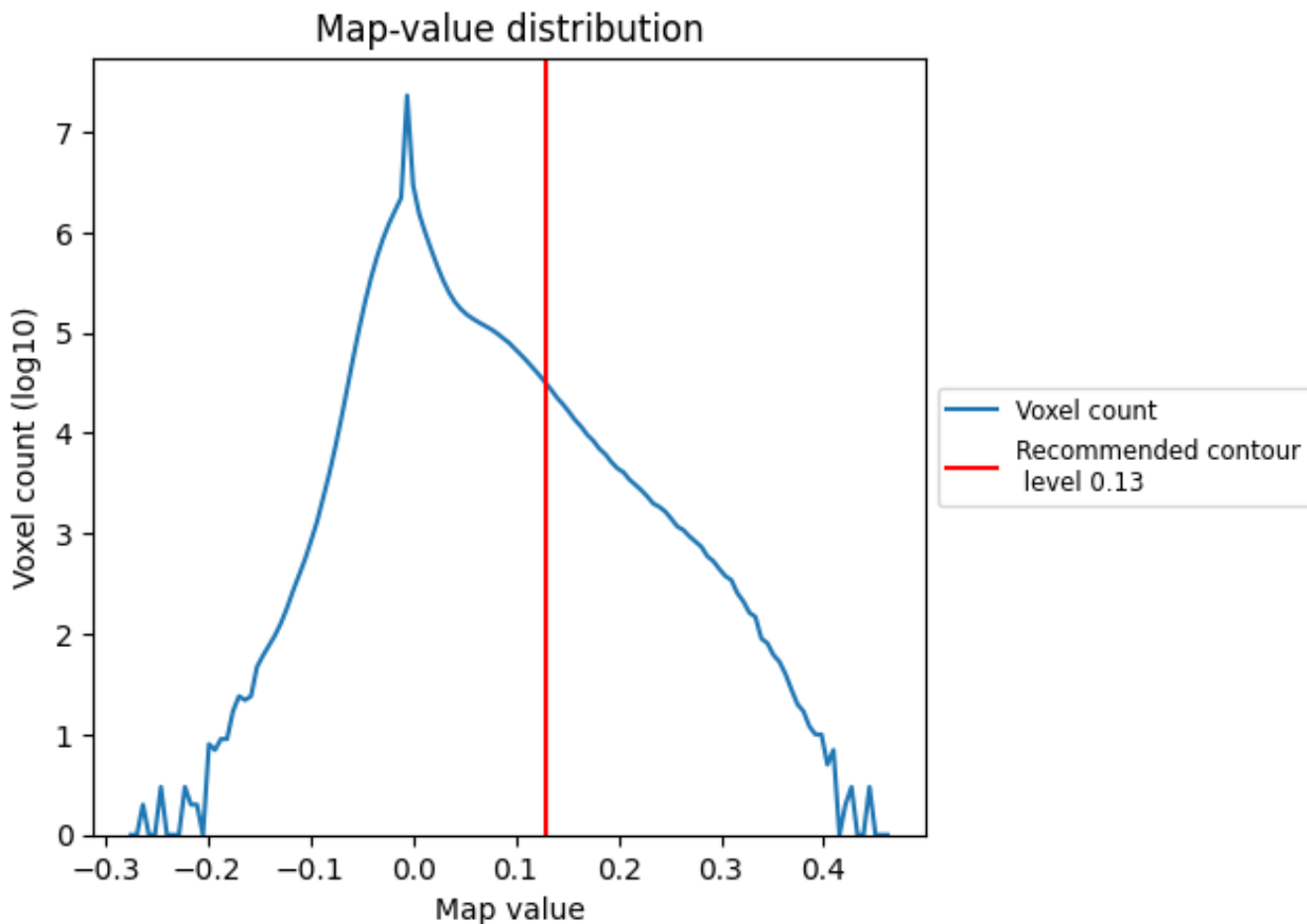
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

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

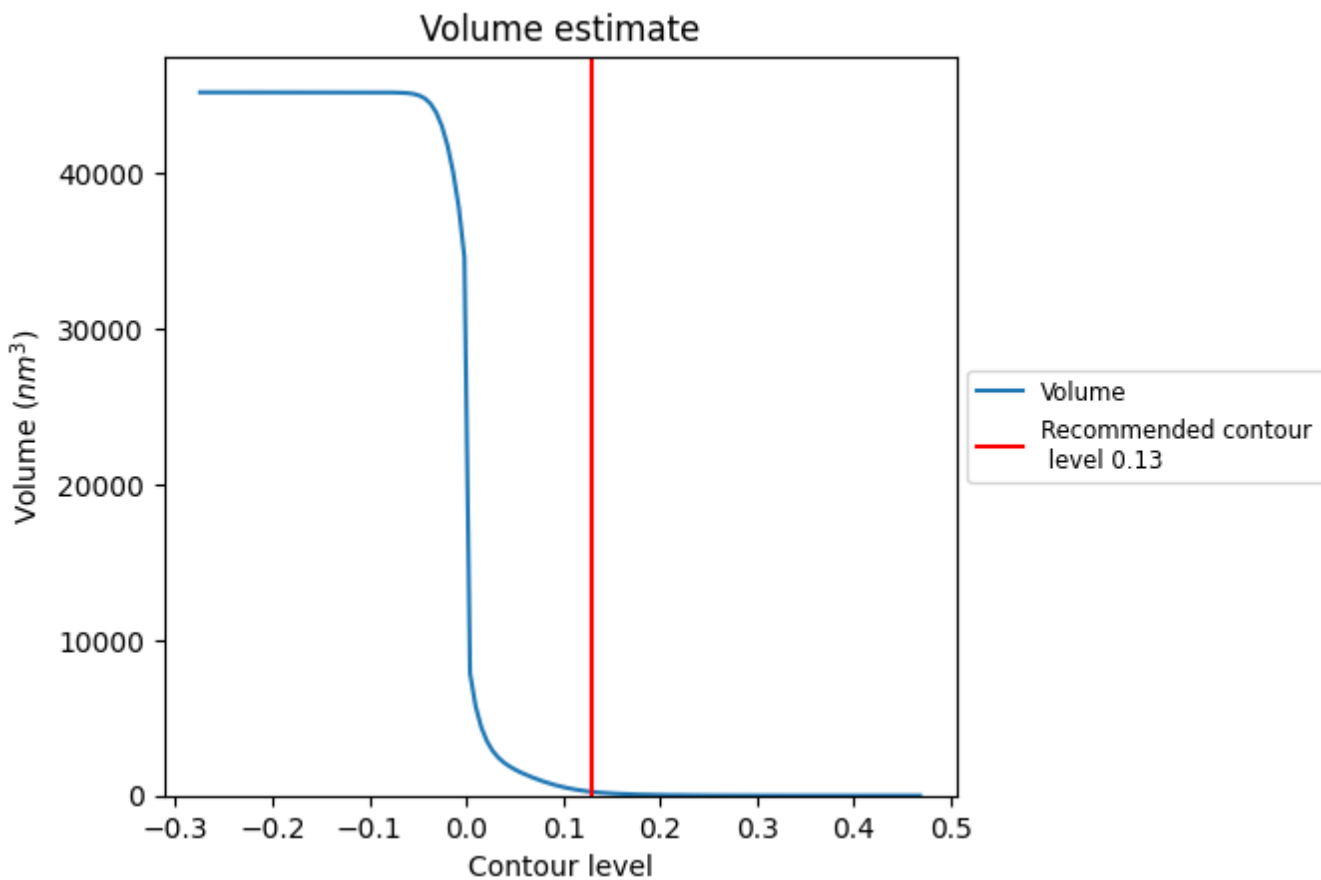
### 7.1 Map-value distribution [i](#)



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



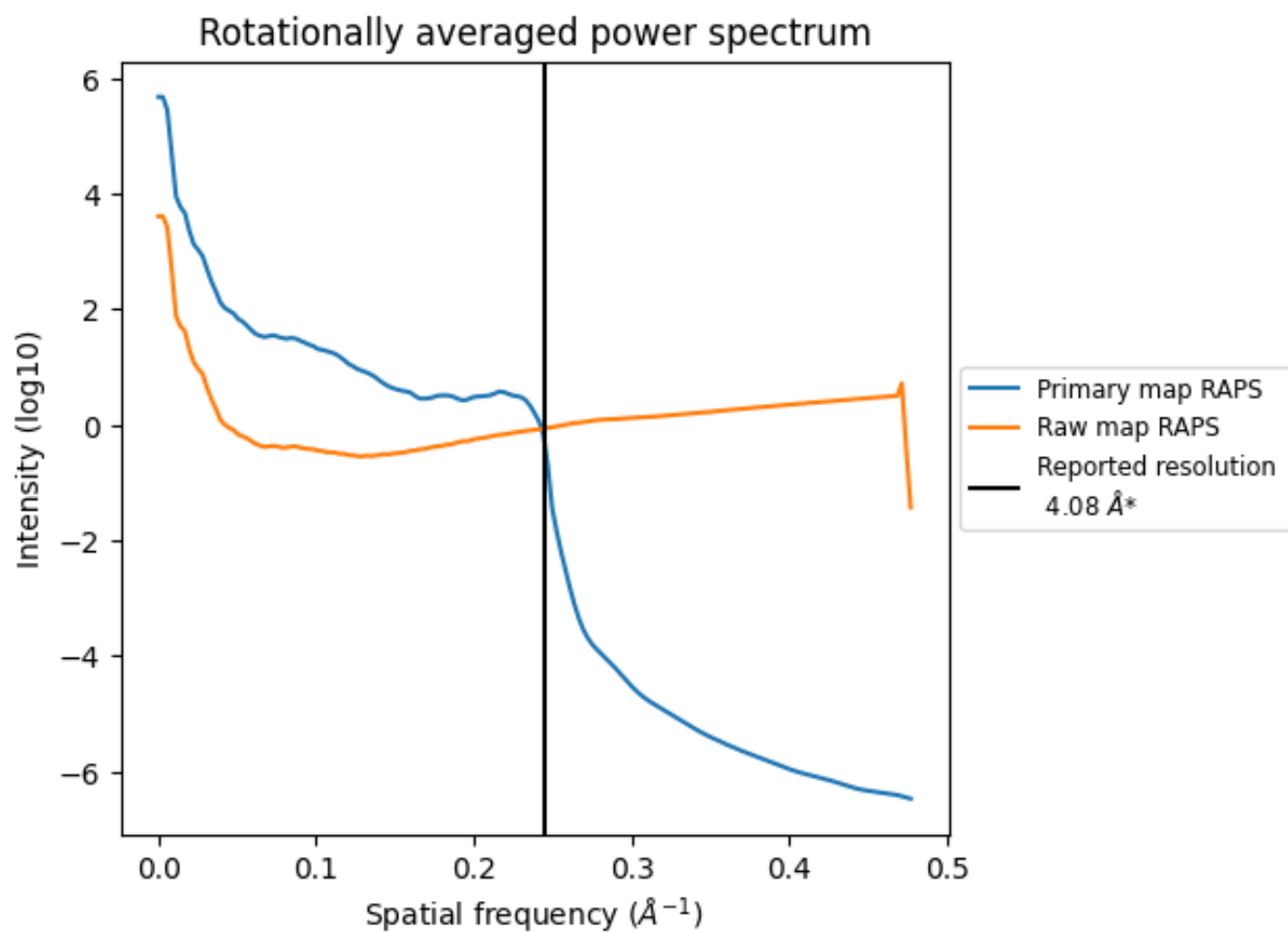
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 239  $\text{nm}^3$ ; this corresponds to an approximate mass of 216 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

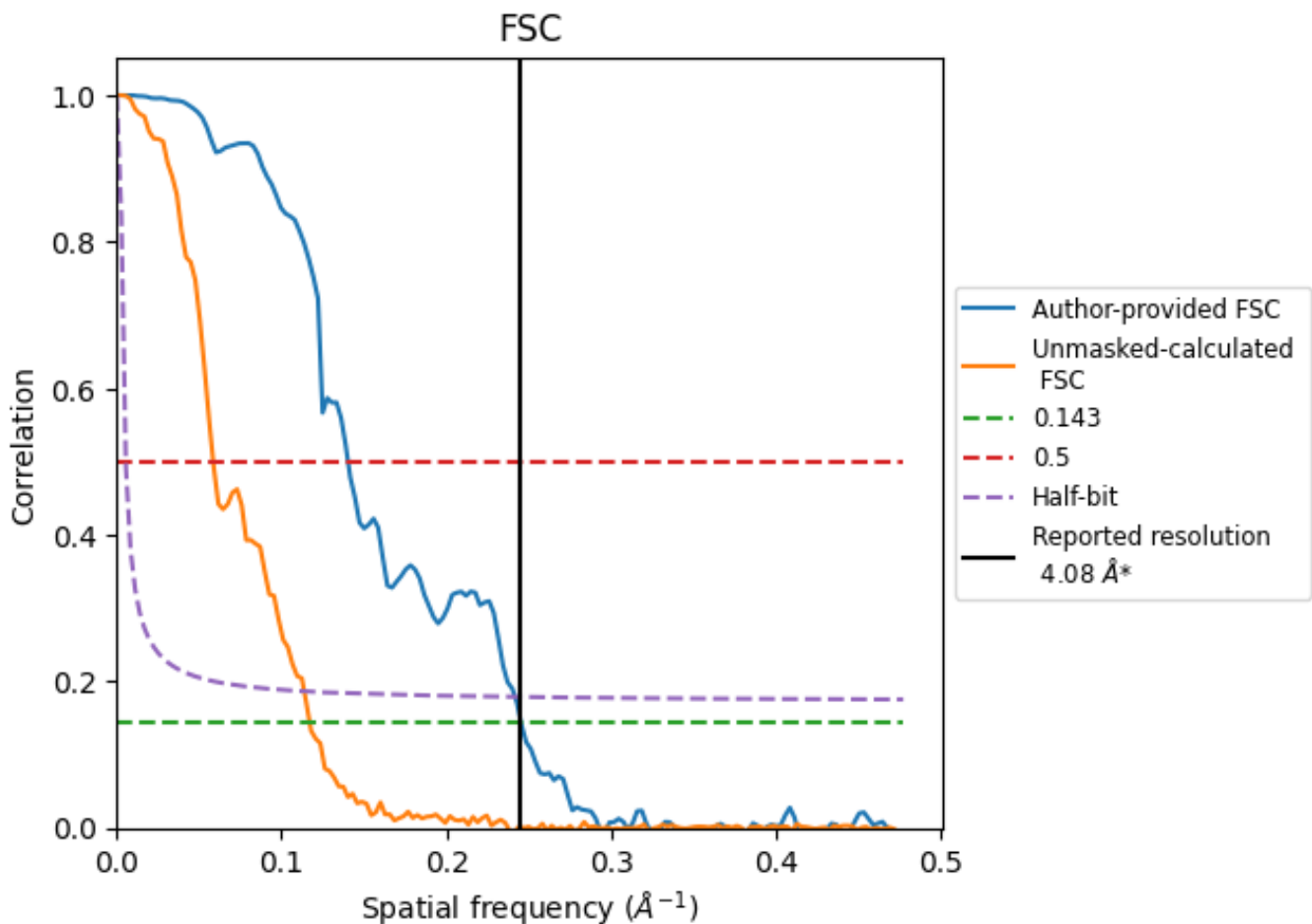


\*Reported resolution corresponds to spatial frequency of 0.245 Å<sup>-1</sup>

## 8 Fourier-Shell correlation [i](#)

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 [i](#)



\*Reported resolution corresponds to spatial frequency of 0.245 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

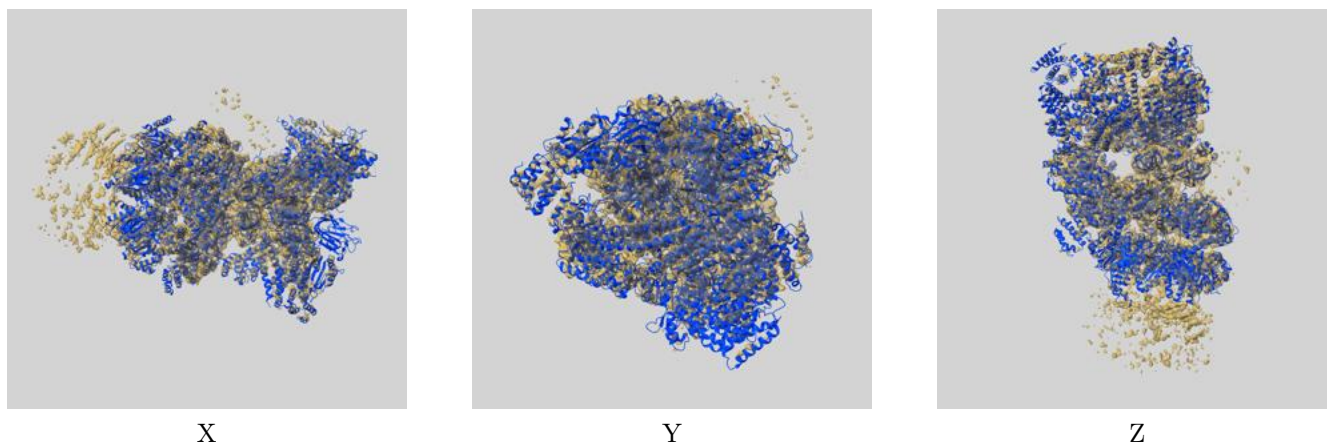
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	4.08	-	-
Author-provided FSC curve	4.08	7.13	4.14
Unmasked-calculated*	8.54	17.06	8.80

\*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 8.54 differs from the reported value 4.08 by more than 10 %

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

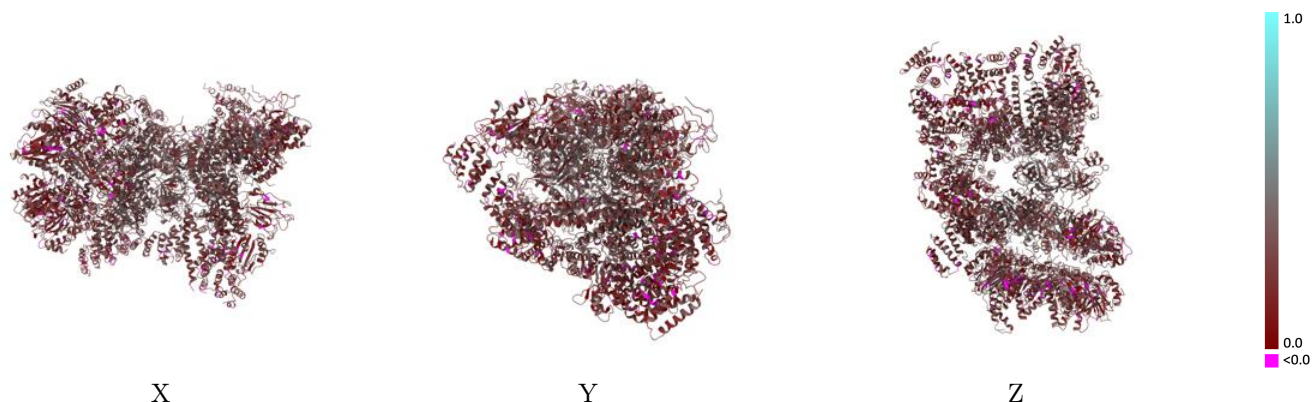
This section contains information regarding the fit between EMDB map EMD-47723 and PDB model 9E8K. Per-residue inclusion information can be found in section 3 on page 13.

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



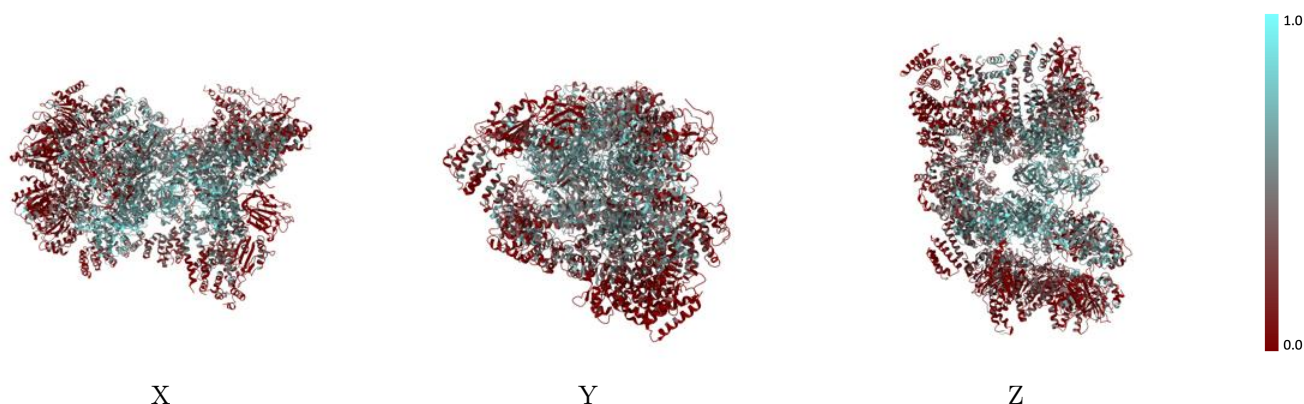
The images above show the 3D surface view of the map at the recommended contour level 0.13 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

## 9.2 Q-score mapped to coordinate model [i](#)



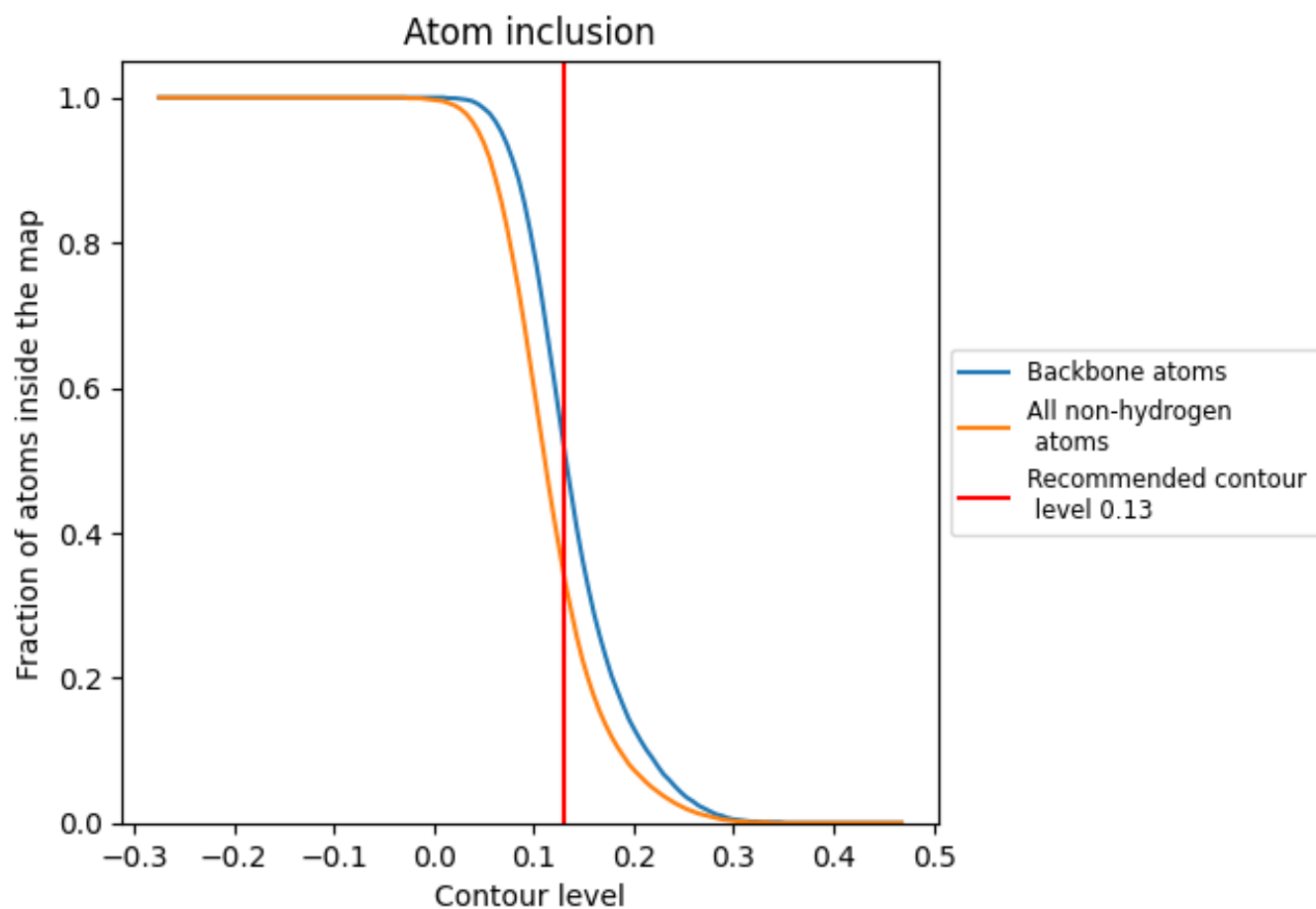
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

## 9.3 Atom inclusion mapped to coordinate model [i](#)



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.13).

























































## 9.4 Atom inclusion [i](#)



At the recommended contour level, 52% of all backbone atoms, 34% 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 (0.13) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.3430	 0.2620
A	 0.3920	 0.2420
B	 0.3960	 0.2580
C	 0.5950	 0.3160
D	 0.6160	 0.3330
E	 0.6270	 0.3390
F	 0.5870	 0.3050
G	 0.2660	 0.2590
H	 0.2790	 0.2690
I	 0.1800	 0.2330
J	 0.1860	 0.2640
K	 0.2000	 0.2440
L	 0.1710	 0.2110
M	 0.1690	 0.2180
O	 0.1280	 0.2720
U	 0.3590	 0.2640
V	 0.2100	 0.2310
W	 0.1910	 0.2220
X	 0.3270	 0.2560
Y	 0.3890	 0.2430
Z	 0.4890	 0.2900
a	 0.2340	 0.2330
b	 0.1990	 0.2370
c	 0.6030	 0.3140
d	 0.0720	 0.2180
e	 0.1740	 0.2760
u	 0.0080	 0.2300
v	 0.7500	 0.4260

