Full wwPDB EM Validation Report ⓘ

Apr 21, 2026 – 08:23 AM JST

PDB ID	:	9K4T / pdb_00009k4t
EMDB ID	:	EMD-62069
Title	:	Structure of substrate-engaged human 26S proteasome RP-CP subcomplex in state EB.3
Authors	:	Wu, Z.; Chen, E.; Mao, Y.
Deposited on	:	2024-10-21
Resolution	:	6.10 Å(reported)

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

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

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

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

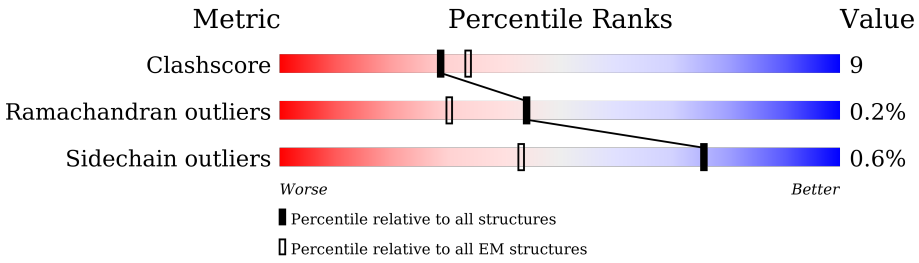
EMDB validation analysis	:	0.0.1.dev132
Mogul	:	1.8.5 (274361), CSD as541be (2020)
MolProbity	:	4-5-2 with Phenix2.0
Buster-report	:	wwPDB partial adaption of 1.1.7 (2018)
Percentile statistics	:	20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics	:	202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ	:	1.9.13
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.49

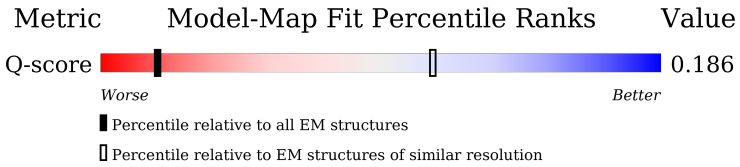
1 Overall quality at a glance (i)

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

The reported resolution of this entry is 6.10 Å.

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





Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
Q-score	-	25397	531 (5.60 - 6.60)

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

Mol	Chain	Length	Quality of chain
1	A	433	36% 70% 23% 6%
2	B	440	35% 65% 24% 10%
3	C	398	41% 67% 28%
4	D	418	35% 65% 25% 9%

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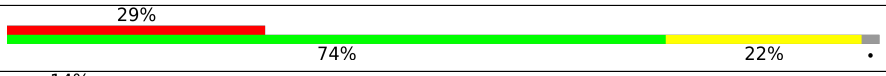
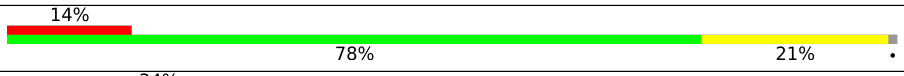
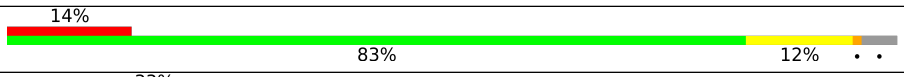
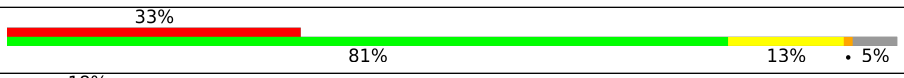
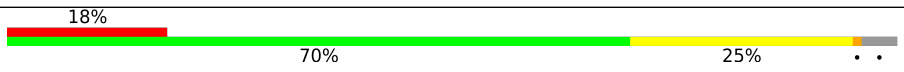
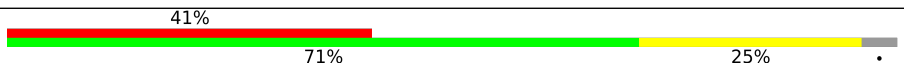
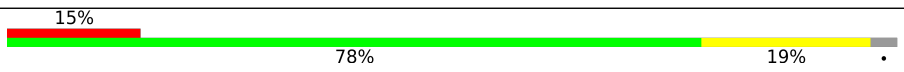
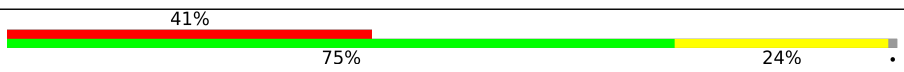
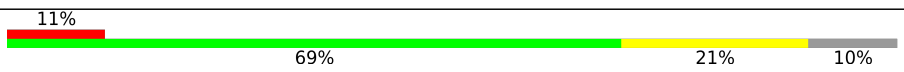
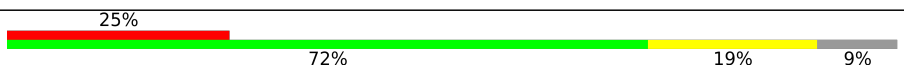
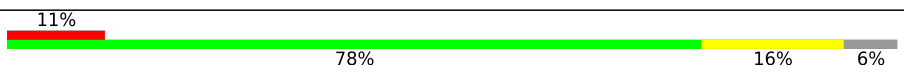
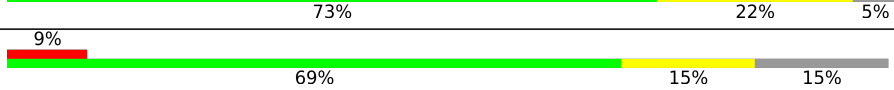
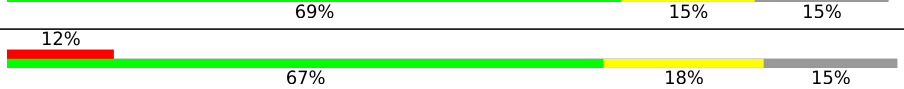
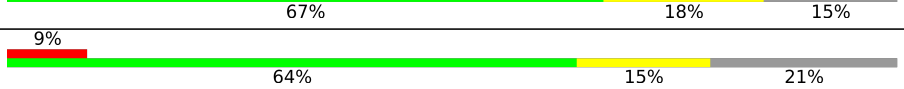
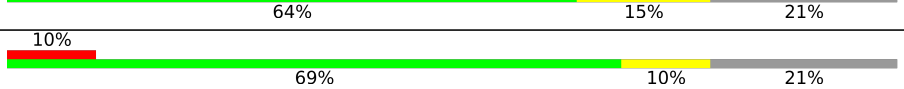
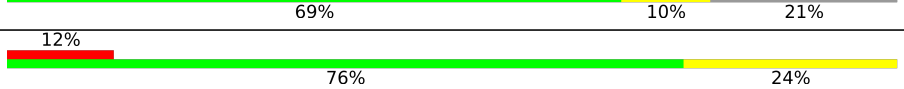
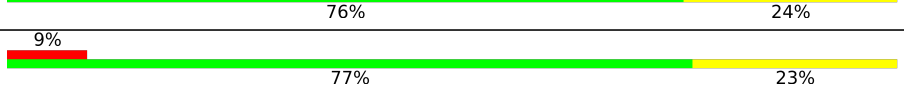
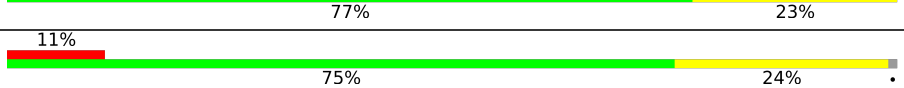
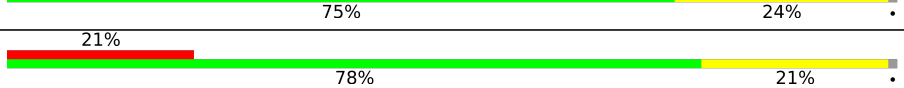
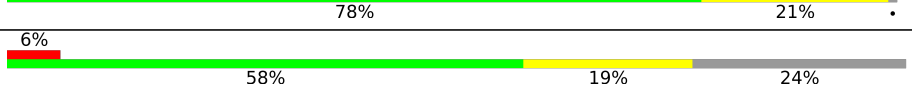
Mol	Chain	Length	Quality of chain
5	E	403	
6	F	439	
7	G	246	
7	g	246	
8	H	234	
8	h	234	
9	I	261	
9	i	261	
10	J	248	
10	j	248	
11	K	241	
11	k	241	
12	L	263	
12	l	263	
13	M	255	
13	m	255	
14	N	239	
14	n	239	
15	O	277	
15	o	277	
16	P	205	
16	p	205	
17	Q	201	
17	q	201	
18	R	263	

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Mol	Chain	Length	Quality of chain
18	r	263	16% 60% 16% 24%
19	S	241	14% 74% 15% 12%
19	s	241	14% 75% 14% 12%
20	T	264	8% 68% 14% 18%
20	t	264	12% 67% 15% 18%
21	U	953	43% 66% 19% 14%
22	V	534	43% 70% 13% 17%
23	W	456	25% 76% 20%
24	X	422	38% 77% 23%
25	Y	389	30% 78% 21%
26	Z	324	40% 66% 22% 12%
27	a	376	45% 81% 19%
28	b	377	29% 32% 16% 49%
29	c	310	37% 66% 26% 7%
30	d	350	53% 55% 18% 27%
31	e	70	43% 61% 10% 29%
32	f	908	50% 72% 21% 7%
33	u	76	45% 76% 20%
33	z	76	26% 46% 42% 12%
34	v	28	75% 82% 14%

2 Entry composition (i)

There are 38 unique types of molecules in this entry. The entry contains 106867 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	406	3164	1992	555	600	17	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	397	3099	1953	525	606	15	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	381	2978	1872	536	554	16	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	380	3039	1923	524	579	13	0	0

- Molecule 5 is a protein called Proteasome 26S subunit, ATPase 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	389	3097	1947	552	581	17	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	415	3251	2038	561	634	18	0	0

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

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	244	Total	C	N	O	S	0	0
			1889	1198	316	362	13		
7	g	240	Total	C	N	O	S	0	0
			1867	1187	312	355	13		

- Molecule 8 is a protein called Proteasome subunit alpha type-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	232	Total	C	N	O	S	0	0
			1805	1152	305	342	6		
8	h	232	Total	C	N	O	S	0	0
			1801	1149	304	342	6		

- Molecule 9 is a protein called Proteasome subunit alpha type-4.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	250	Total	C	N	O	S	1	0
			1958	1236	336	376	10		
9	i	248	Total	C	N	O	S	0	0
			1933	1222	330	371	10		

- Molecule 10 is a protein called Proteasome subunit alpha type-7.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	239	Total	C	N	O	S	0	0
			1880	1179	333	363	5		
10	j	239	Total	C	N	O	S	0	0
			1861	1166	327	363	5		

- Molecule 11 is a protein called Proteasome subunit alpha type-5.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	234	Total	C	N	O	S	0	0
			1777	1117	295	354	11		
11	k	238	Total	C	N	O	S	0	0
			1813	1139	302	361	11		

- Molecule 12 is a protein called Proteasome subunit alpha type-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	238	Total	C	N	O	S	0	0
			1866	1169	336	350	11		
12	l	240	Total	C	N	O	S	0	0
			1876	1175	338	352	11		

- Molecule 13 is a protein called Proteasome subunit alpha type-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	M	240	Total	C	N	O	S	0	0
			1876	1191	321	353	11		
13	m	242	Total	C	N	O	S	0	0
			1890	1200	323	356	11		

- Molecule 14 is a protein called Proteasome subunit beta type-6.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	202	Total	C	N	O	S	0	0
			1514	949	258	295	12		
14	n	202	Total	C	N	O	S	0	0
			1510	947	258	293	12		

- Molecule 15 is a protein called Proteasome subunit beta type-7.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	O	220	Total	C	N	O	S	0	0
			1649	1038	279	320	12		
15	o	220	Total	C	N	O	S	0	0
			1659	1044	283	320	12		

- Molecule 16 is a protein called Proteasome subunit beta type-3.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	P	204	Total	C	N	O	S	0	0
			1587	1010	264	294	19		
16	p	204	Total	C	N	O	S	0	0
			1591	1013	265	294	19		

- Molecule 17 is a protein called Proteasome subunit beta type-2.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	Q	199	Total	C	N	O	S	0	0
			1588	1017	270	292	9		

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Mol	Chain	Residues	Atoms					AltConf	Trace
17	q	199	Total	C	N	O	S	0	0
			1588	1017	270	292	9		

- Molecule 18 is a protein called Proteasome subunit beta type-5.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	R	201	Total	C	N	O	S	0	0
			1559	982	274	294	9		
18	r	201	Total	C	N	O	S	0	0
			1559	982	274	294	9		

- Molecule 19 is a protein called Proteasome subunit beta type-1.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	S	213	Total	C	N	O	S	0	0
			1641	1041	281	309	10		
19	s	213	Total	C	N	O	S	0	0
			1654	1047	284	313	10		

- Molecule 20 is a protein called Proteasome subunit beta type-4.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	T	216	Total	C	N	O	S	0	0
			1683	1062	291	318	12		
20	t	216	Total	C	N	O	S	0	0
			1687	1064	291	320	12		

- Molecule 21 is a protein called 26S proteasome non-ATPase regulatory subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	U	818	Total	C	N	O	S	0	0
			6373	4047	1084	1197	45		

- Molecule 22 is a protein called 26S proteasome non-ATPase regulatory subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	V	444	Total	C	N	O	S	0	0
			3612	2301	645	653	13		

- Molecule 23 is a protein called 26S proteasome non-ATPase regulatory subunit 12.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	W	441	Total	C	N	O	S	0	0
			3596	2277	613	682	24		

- Molecule 24 is a protein called 26S proteasome non-ATPase regulatory subunit 11.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	X	422	Total	C	N	O	S	0	0
			3335	2116	567	639	13		

- Molecule 25 is a protein called 26S proteasome non-ATPase regulatory subunit 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Y	389	Total	C	N	O	S	0	0
			3202	2041	545	598	18		

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

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

- Molecule 27 is a protein called 26S proteasome non-ATPase regulatory subunit 13.

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

- Molecule 28 is a protein called 26S proteasome non-ATPase regulatory subunit 4.

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

- Molecule 29 is a protein called 26S proteasome non-ATPase regulatory subunit 14.

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

- Molecule 30 is a protein called 26S proteasome non-ATPase regulatory subunit 8.

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

- Molecule 31 is a protein called 26S proteasome complex subunit SEM1.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	e	50	Total	C	N	O	0	0
			425	260	65	100		

- Molecule 32 is a protein called 26S proteasome non-ATPase regulatory subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	f	844	Total	C	N	O	S	0	0
			6529	4126	1108	1250	45		

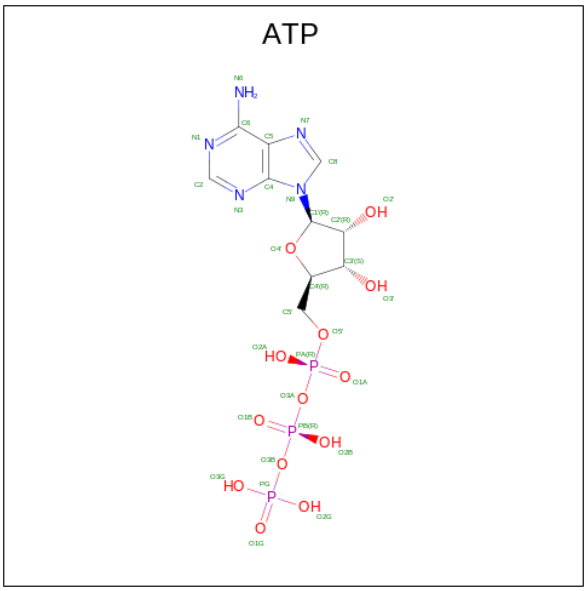
- Molecule 33 is a protein called Ubiquitin.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	u	76	Total	C	N	O	S	0	0
			601	378	105	117	1		
33	z	76	Total	C	N	O	S	0	0
			601	378	105	117	1		

- Molecule 34 is a protein called Substrate.

Mol	Chain	Residues	Atoms				AltConf	Trace
34	v	28	Total	C	N	O	0	0
			143	86	29	28		

- Molecule 35 is ADENOSINE-5'-TRIPHOSPHATE (CCD ID: ATP) (formula: $C_{10}H_{16}N_5O_{13}P_3$) (labeled as "Ligand of Interest" by depositor).

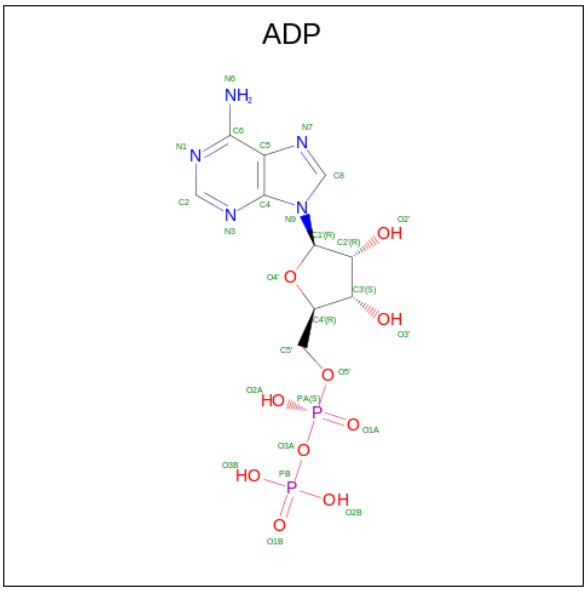


Mol	Chain	Residues	Atoms					AltConf
35	A	1	Total	C	N	O	P	0
			31	10	5	13	3	
35	D	1	Total	C	N	O	P	0
			31	10	5	13	3	
35	F	1	Total	C	N	O	P	0
			31	10	5	13	3	

- Molecule 36 is MAGNESIUM ION (CCD ID: MG) (formula: Mg) (labeled as "Ligand of Interest" by depositor).

Mol	Chain	Residues	Atoms		AltConf
36	A	2	Total	Mg	0
			2	2	
36	D	1	Total	Mg	0
			1	1	

- Molecule 37 is ADENOSINE-5'-DIPHOSPHATE (CCD ID: ADP) (formula: $C_{10}H_{15}N_5O_{10}P_2$) (labeled as "Ligand of Interest" by depositor).



Mol	Chain	Residues	Atoms					AltConf
37	B	1	Total	C	N	O	P	0
			27	10	5	10	2	
37	E	1	Total	C	N	O	P	0
			27	10	5	10	2	

- Molecule 38 is ZINC ION (CCD ID: ZN) (formula: Zn) (labeled as "Ligand of Interest" by depositor).

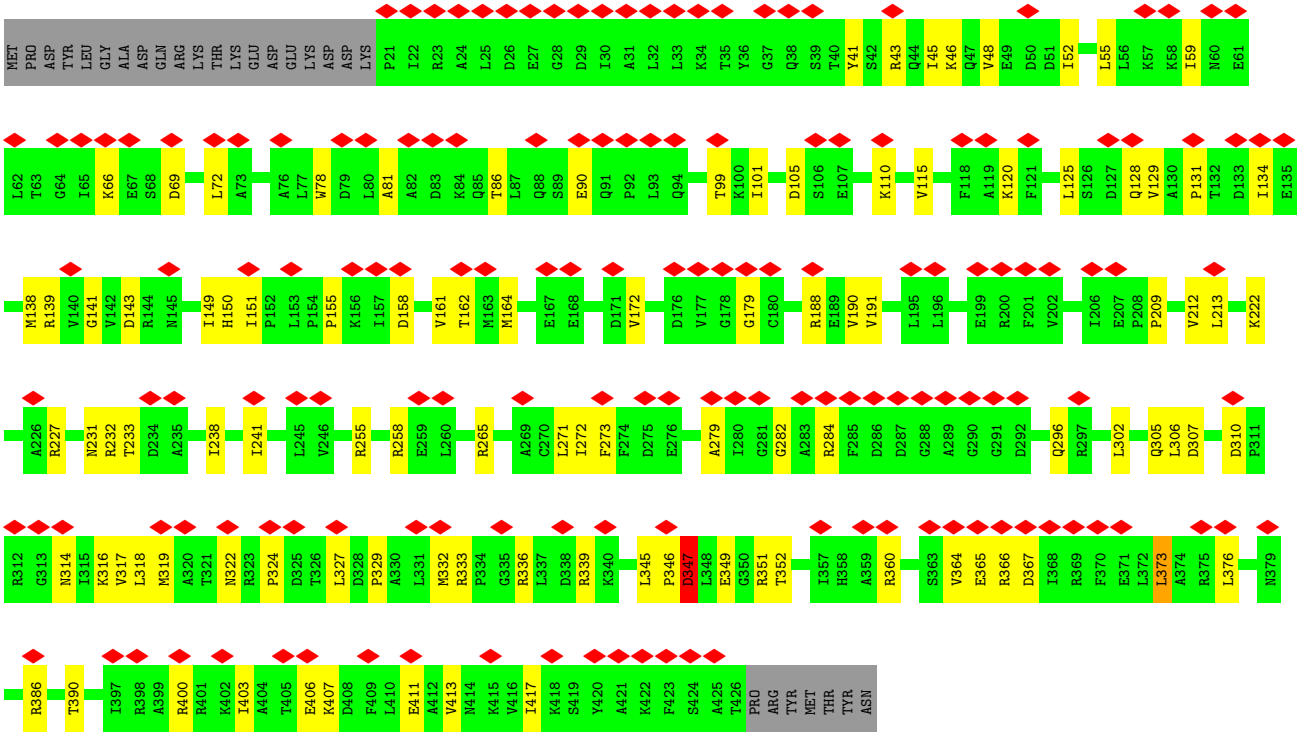
Mol	Chain	Residues	Atoms		AltConf
38	c	1	Total	Zn	0
			1	1	

3 Residue-property plots (i)

These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion in map density. Residues are color-coded according to the number of geometric quality criteria for which they contain at least one outlier: green = 0, yellow = 1, orange = 2 and red = 3 or more. A red diamond above a residue indicates a poor fit to the EM map for this residue (all-atom inclusion < 40%). Stretches of 2 or more consecutive residues without any outlier are shown as a green connector. Residues present in the sample, but not in the model, are shown in grey.

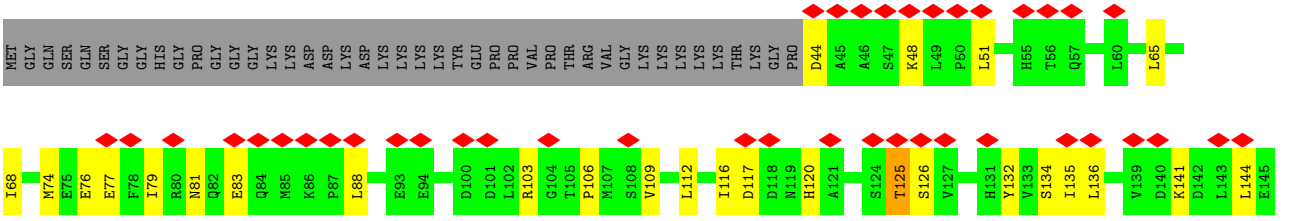
• Molecule 1: 26S proteasome regulatory subunit 7

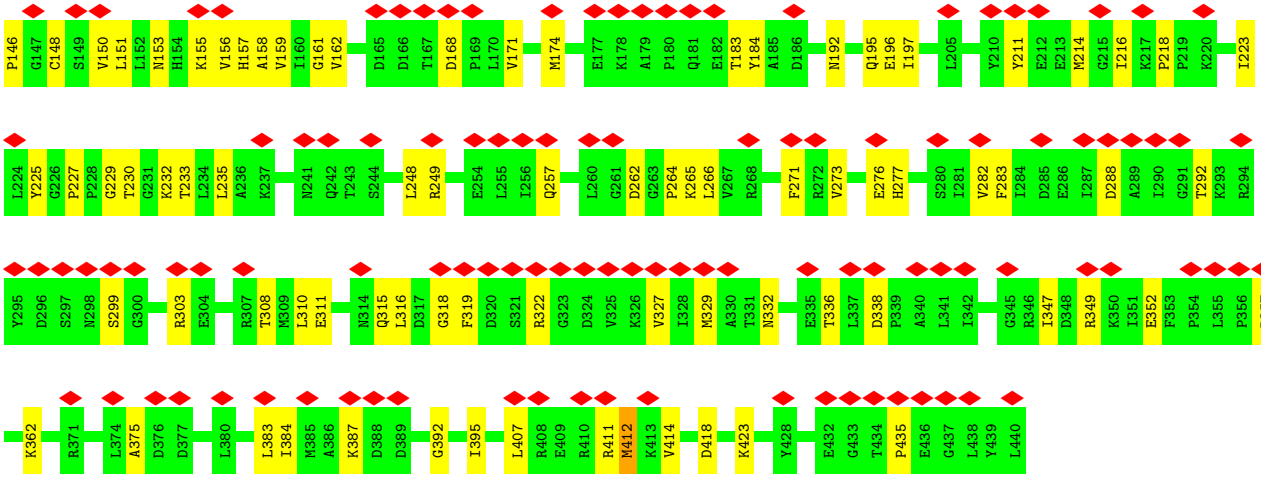
Chain A:



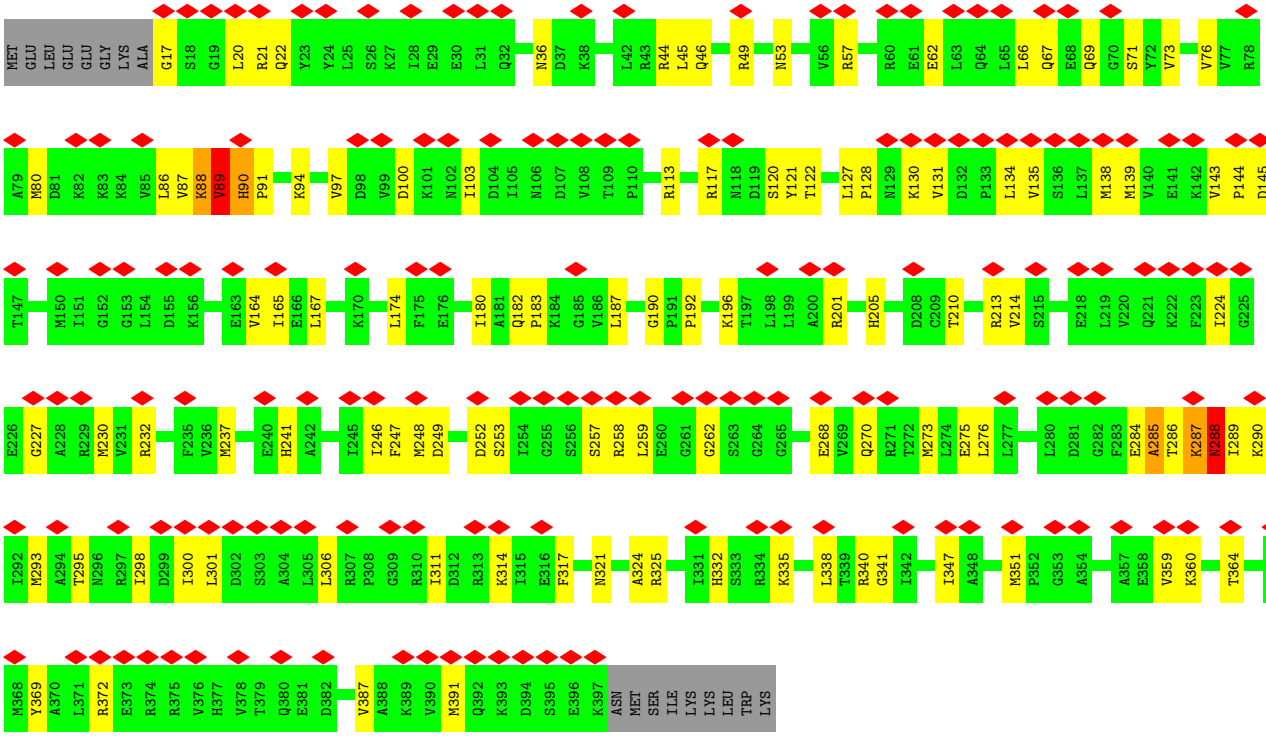
• Molecule 2: 26S proteasome regulatory subunit 4

Chain B:

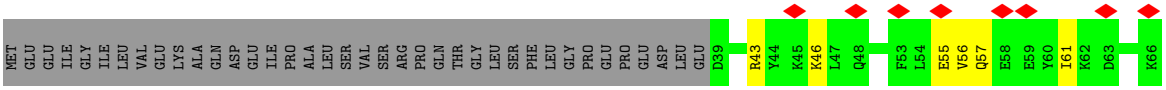


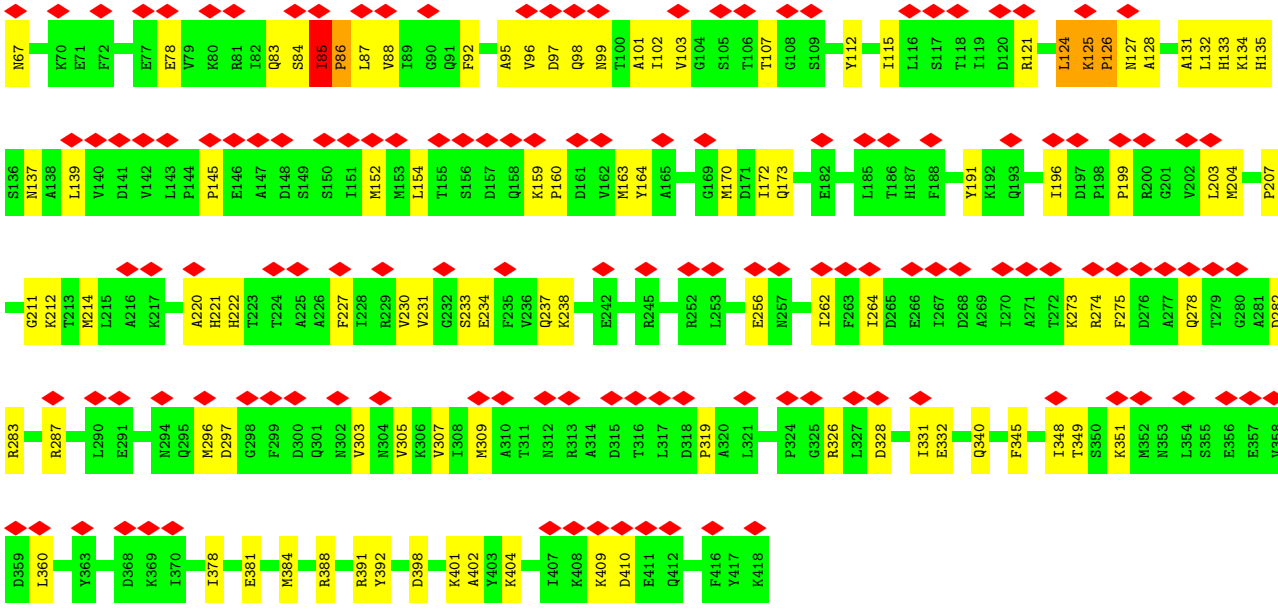


• Molecule 3: 26S proteasome regulatory subunit 8

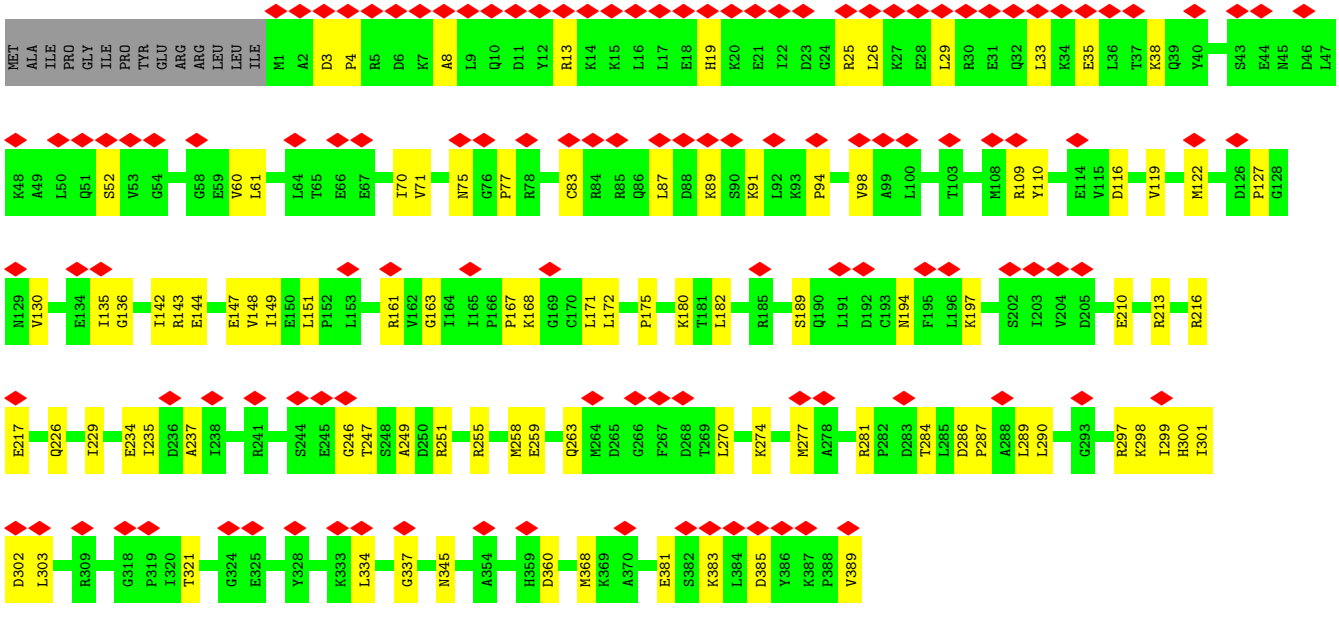


• Molecule 4: 26S proteasome regulatory subunit 6B

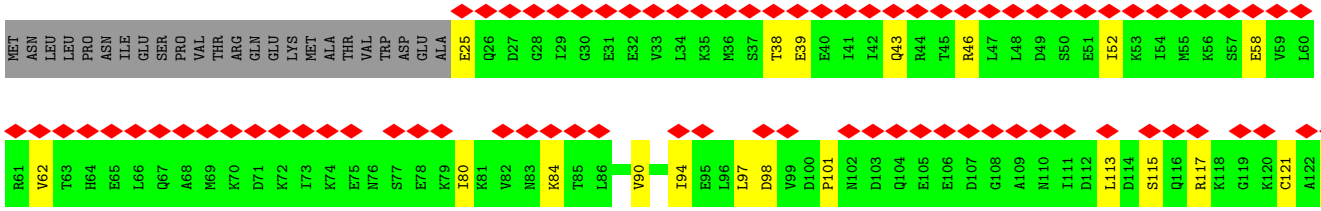


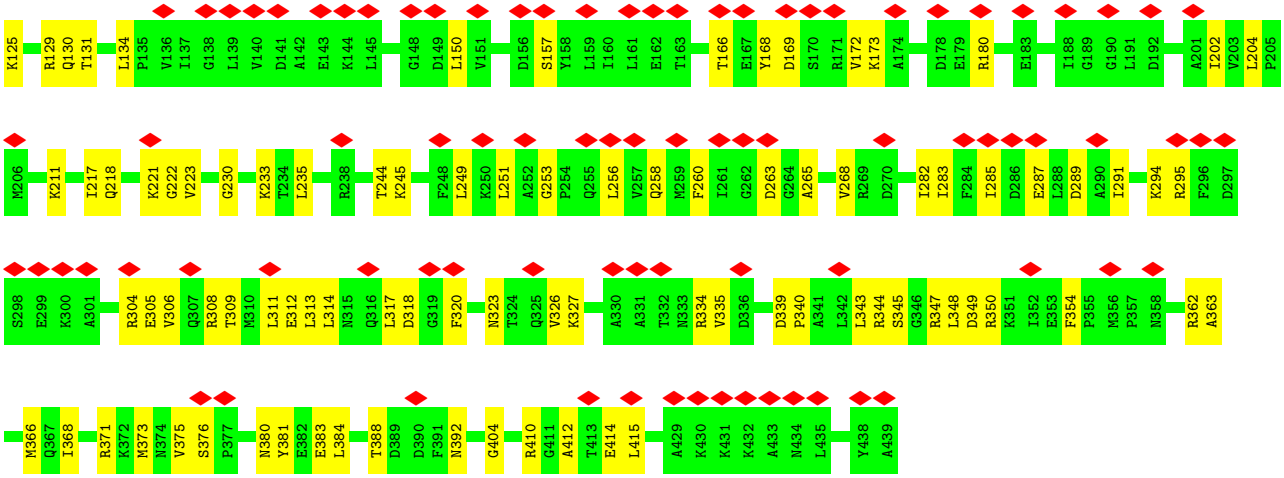


• Molecule 5: Proteasome 26S subunit, ATPase 6

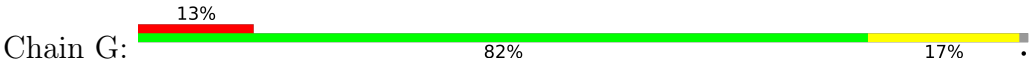


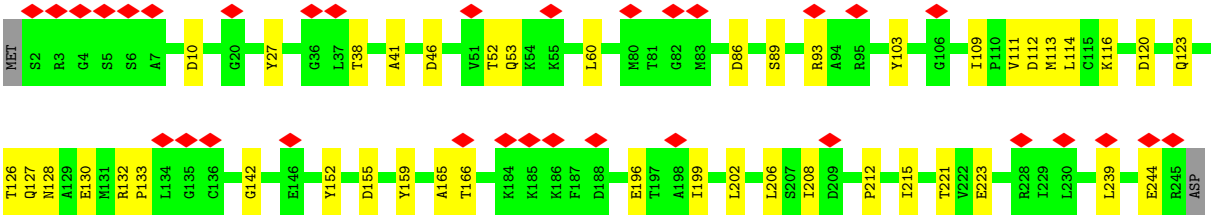
• Molecule 6: 26S proteasome regulatory subunit 6A



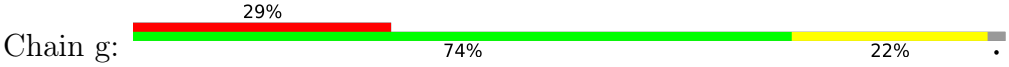


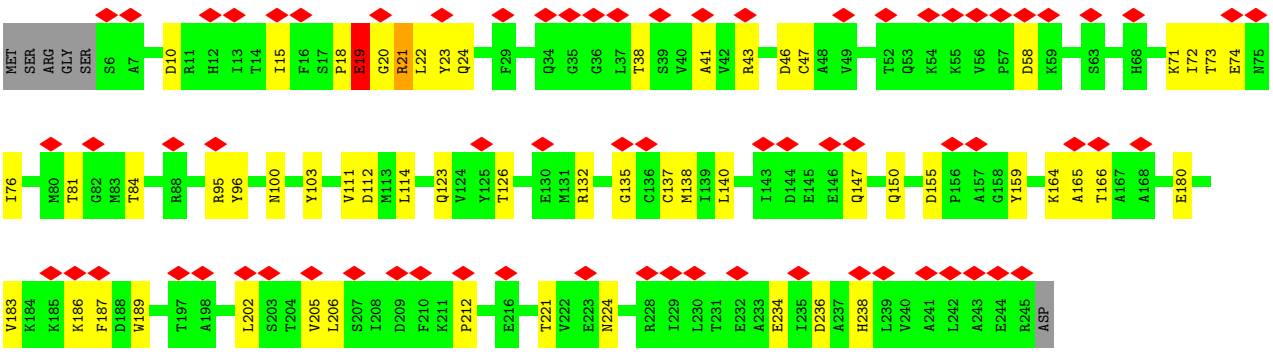
• Molecule 7: Proteasome subunit alpha type-6



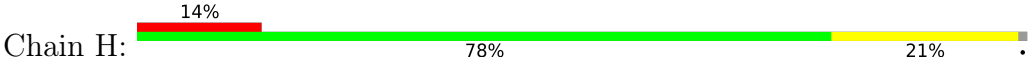


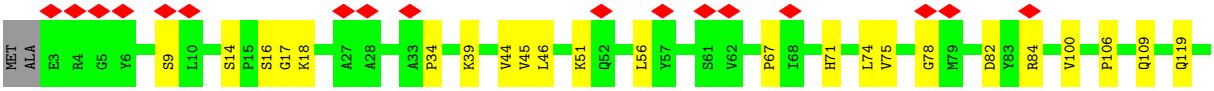
• Molecule 7: Proteasome subunit alpha type-6

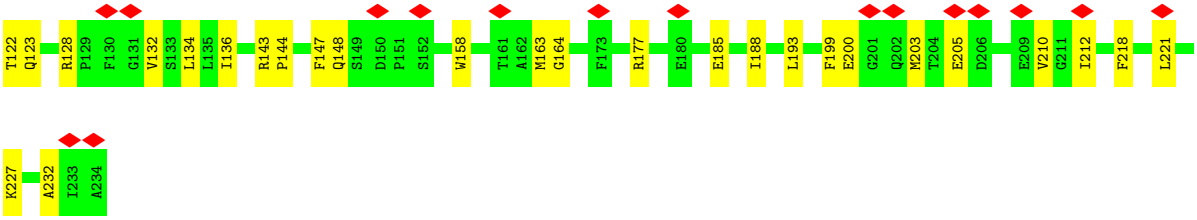




• Molecule 8: Proteasome subunit alpha type-2

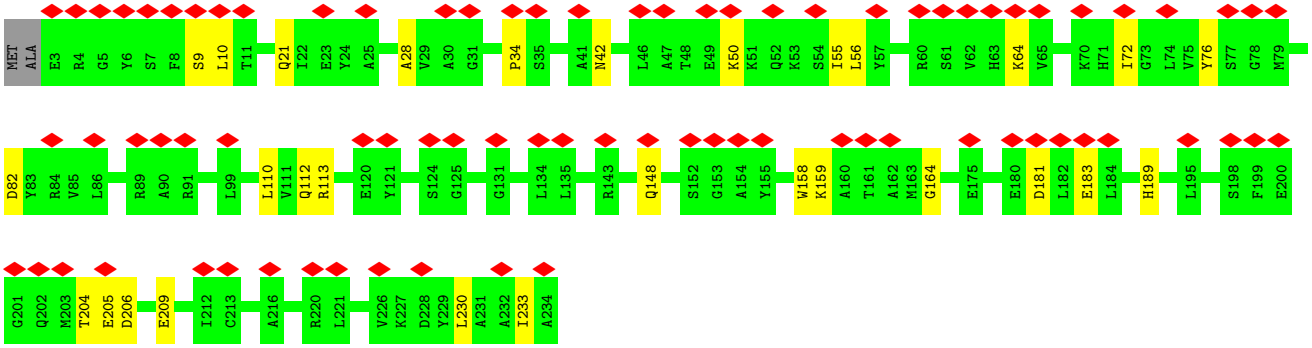






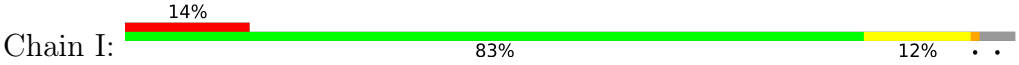
• Molecule 8: Proteasome subunit alpha type-2

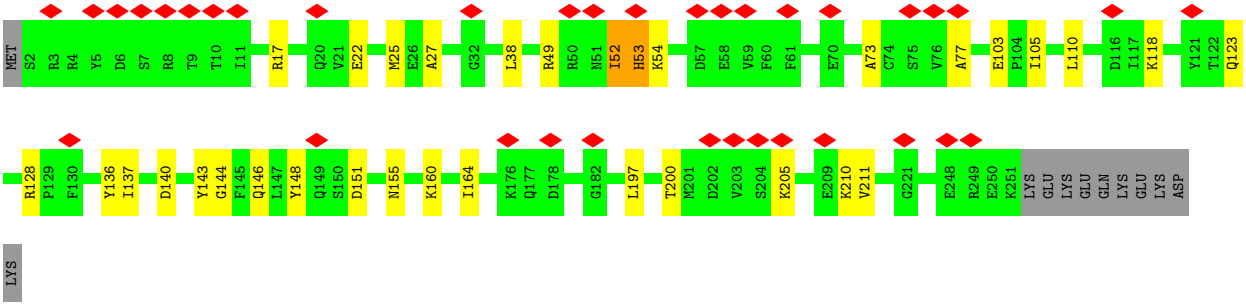
Chain h:



• Molecule 9: Proteasome subunit alpha type-4

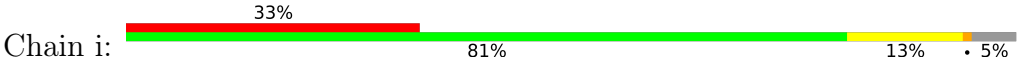
Chain I:

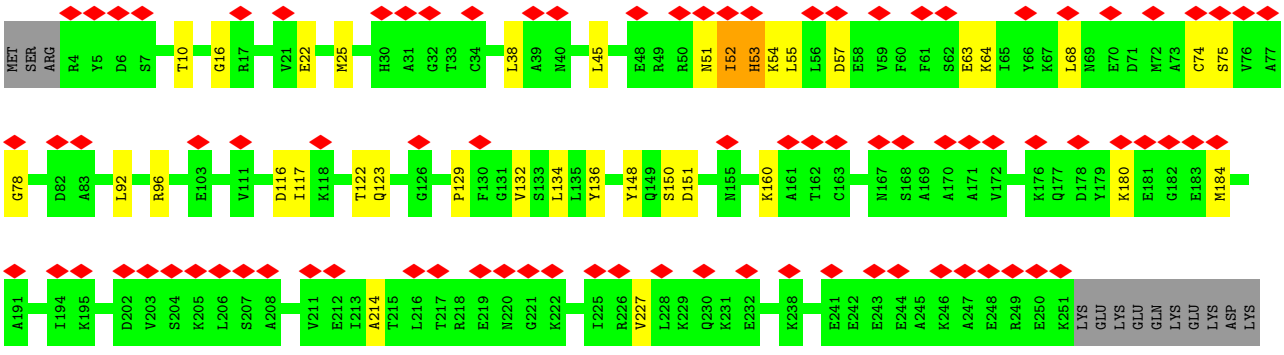




• Molecule 9: Proteasome subunit alpha type-4

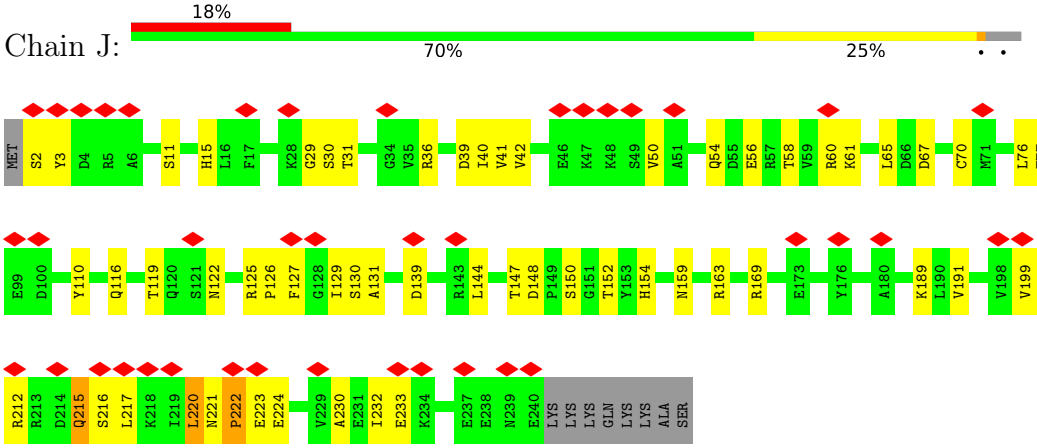
Chain i:





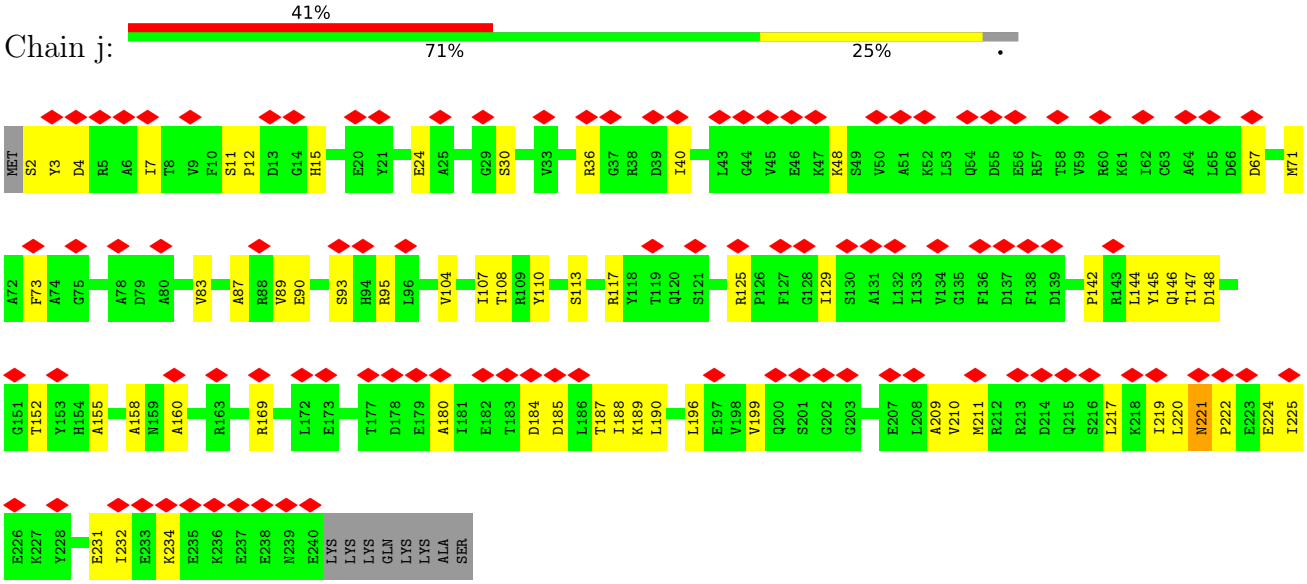
• Molecule 10: Proteasome subunit alpha type-7

Chain J:



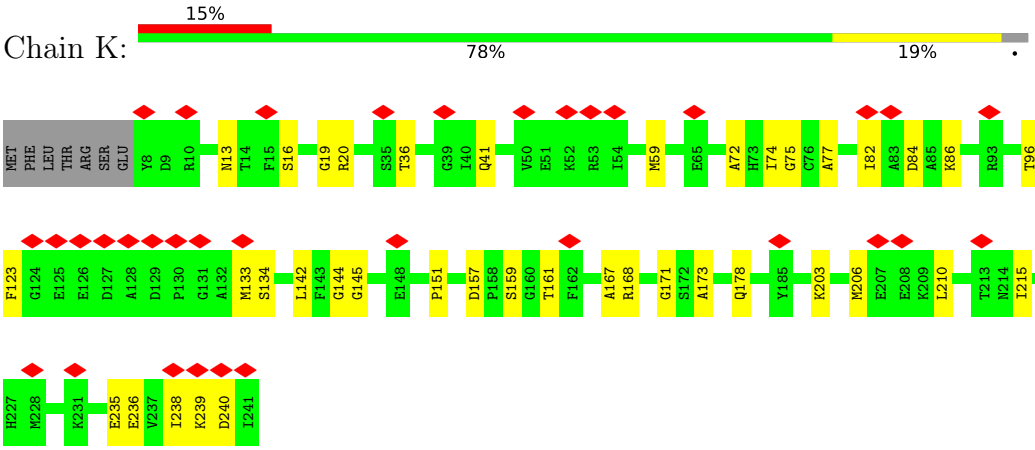
• Molecule 10: Proteasome subunit alpha type-7

Chain j:



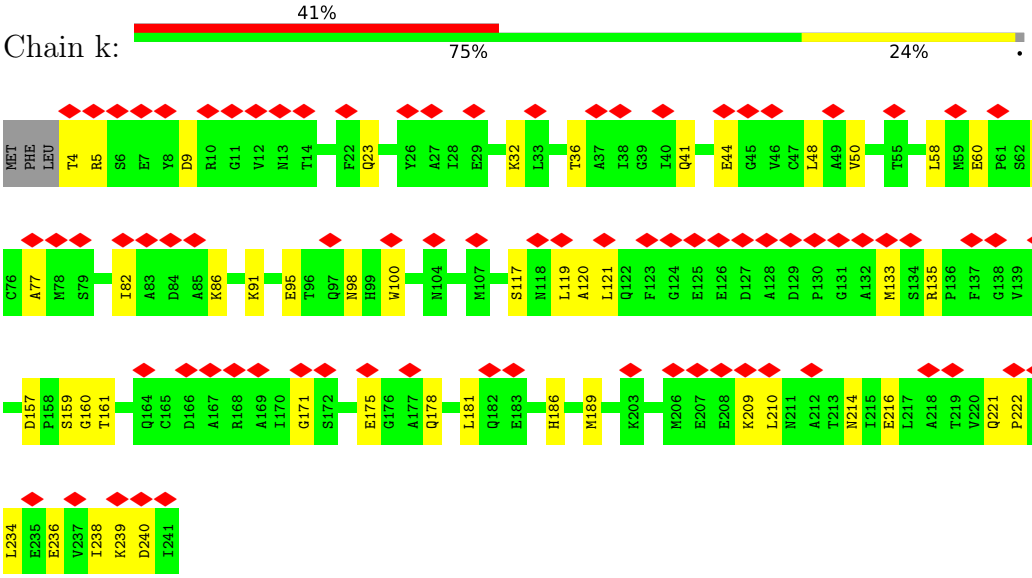
• Molecule 11: Proteasome subunit alpha type-5

Chain K:



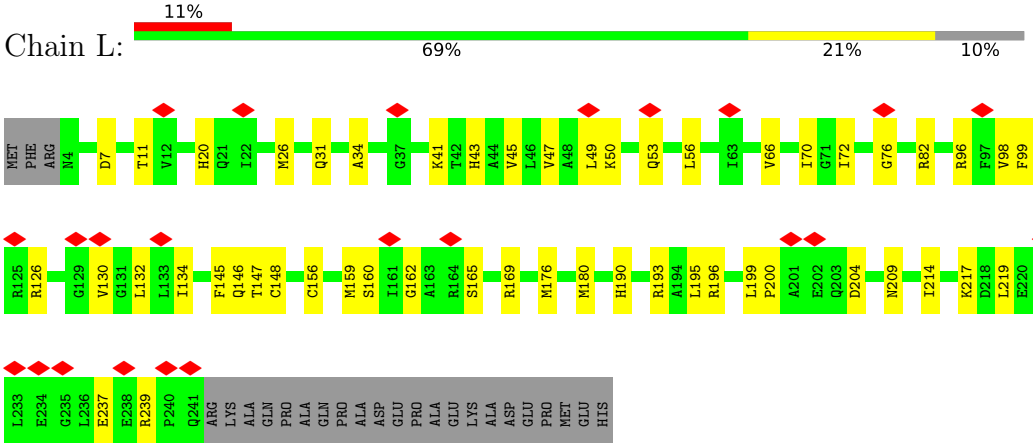
• Molecule 11: Proteasome subunit alpha type-5

Chain k:



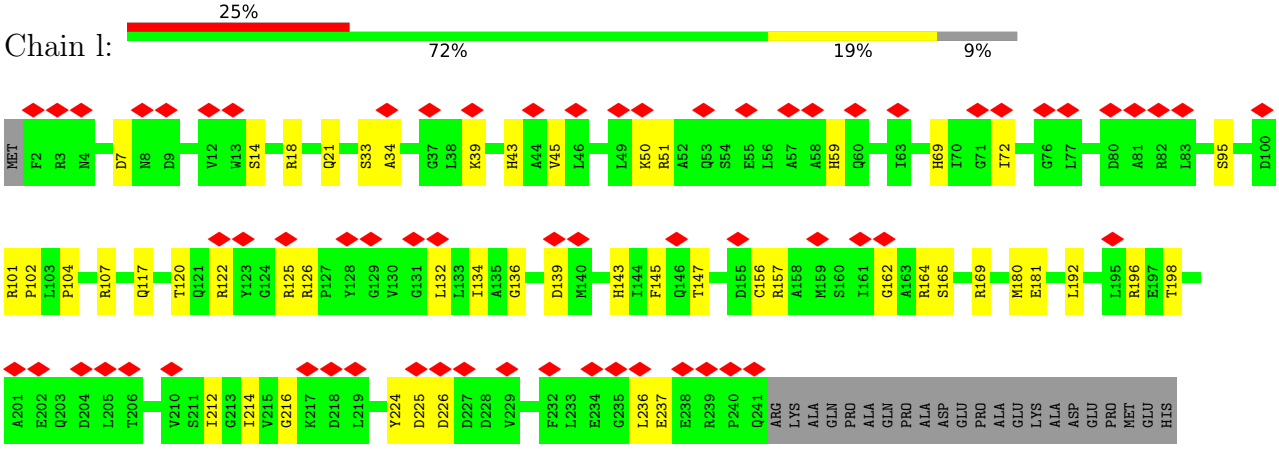
• Molecule 12: Proteasome subunit alpha type-1

Chain L:



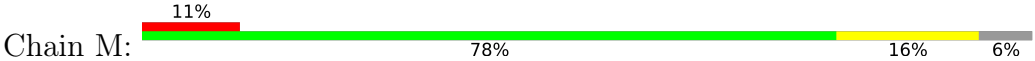
• Molecule 12: Proteasome subunit alpha type-1

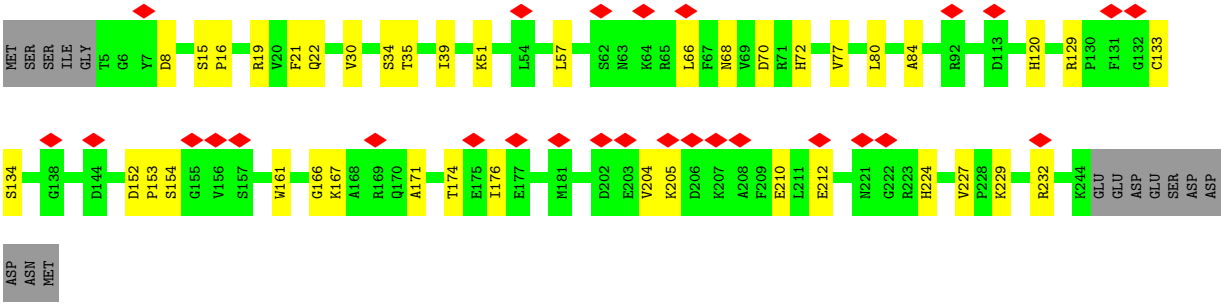
Chain l:



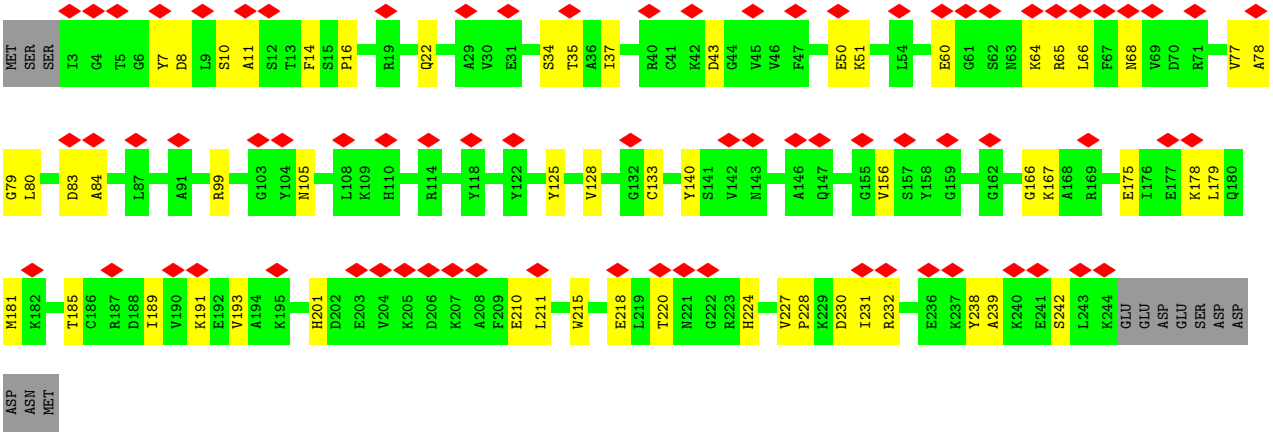
• Molecule 13: Proteasome subunit alpha type-3

Chain M:

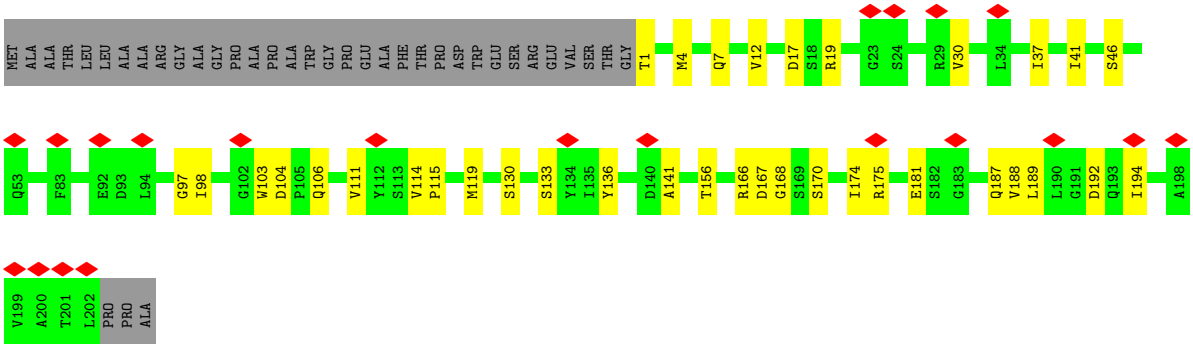




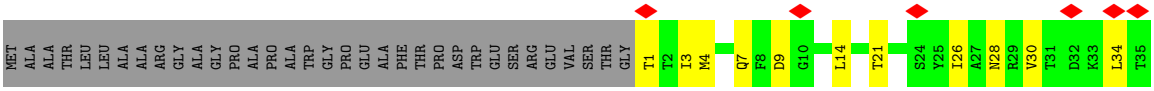
• Molecule 13: Proteasome subunit alpha type-3

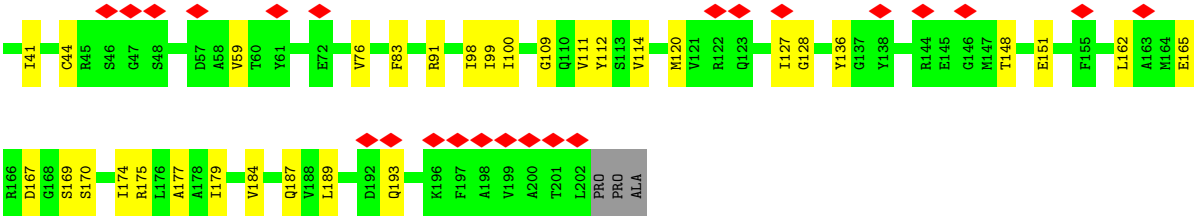


• Molecule 14: Proteasome subunit beta type-6

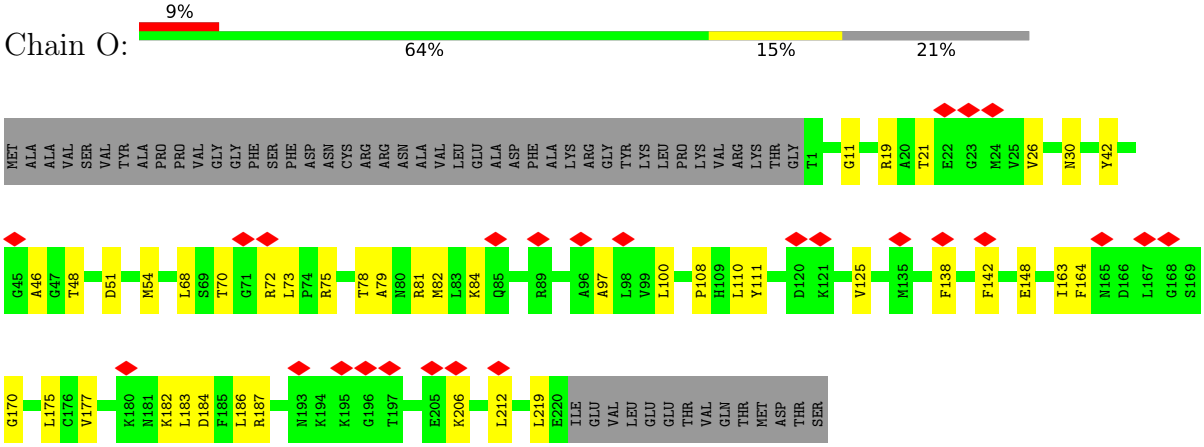


• Molecule 14: Proteasome subunit beta type-6

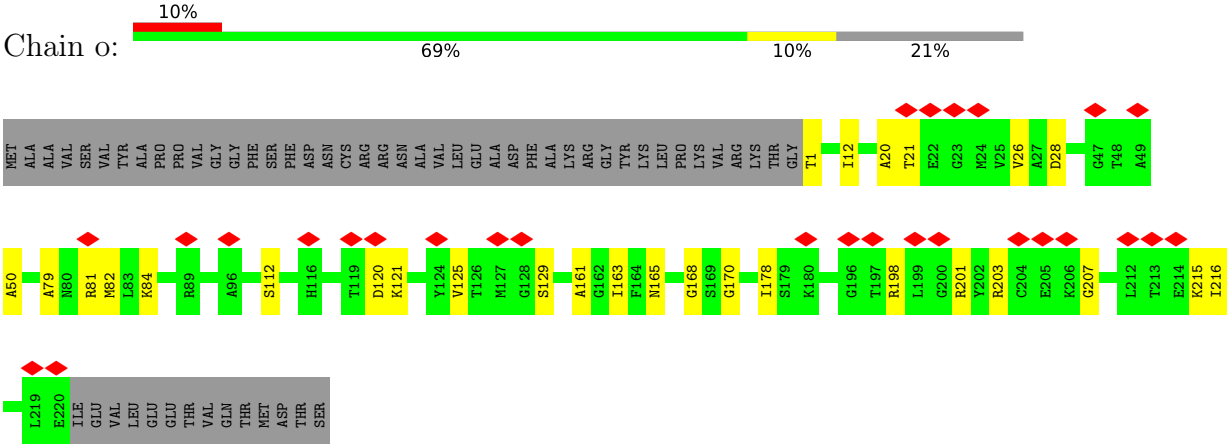




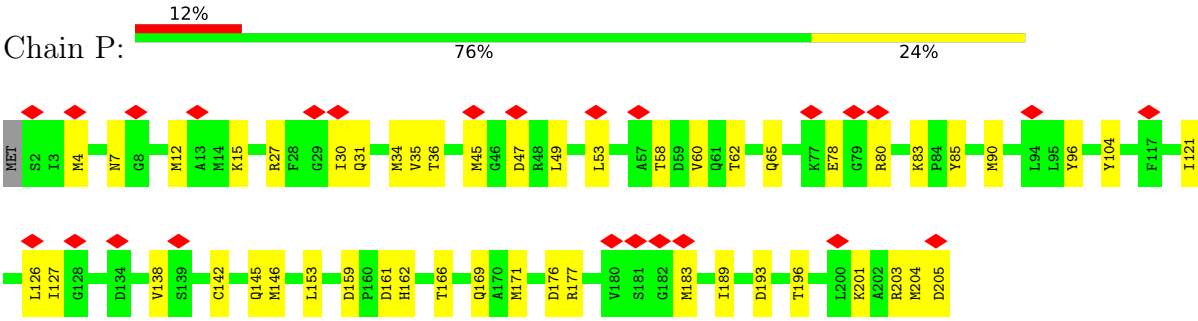
• Molecule 15: Proteasome subunit beta type-7



• Molecule 15: Proteasome subunit beta type-7

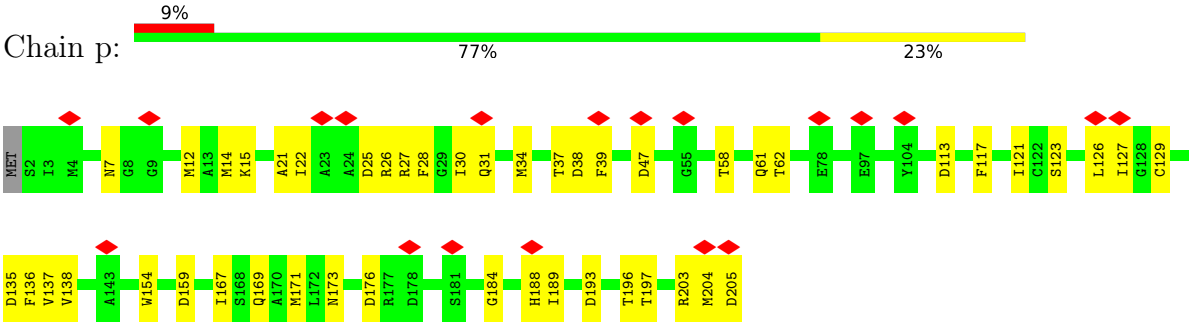


• Molecule 16: Proteasome subunit beta type-3



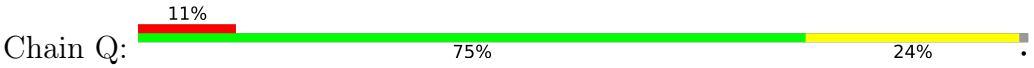
• Molecule 16: Proteasome subunit beta type-3

Chain p:



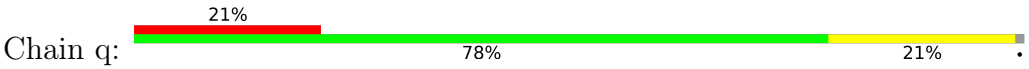
• Molecule 17: Proteasome subunit beta type-2

Chain Q:



• Molecule 17: Proteasome subunit beta type-2

Chain q:

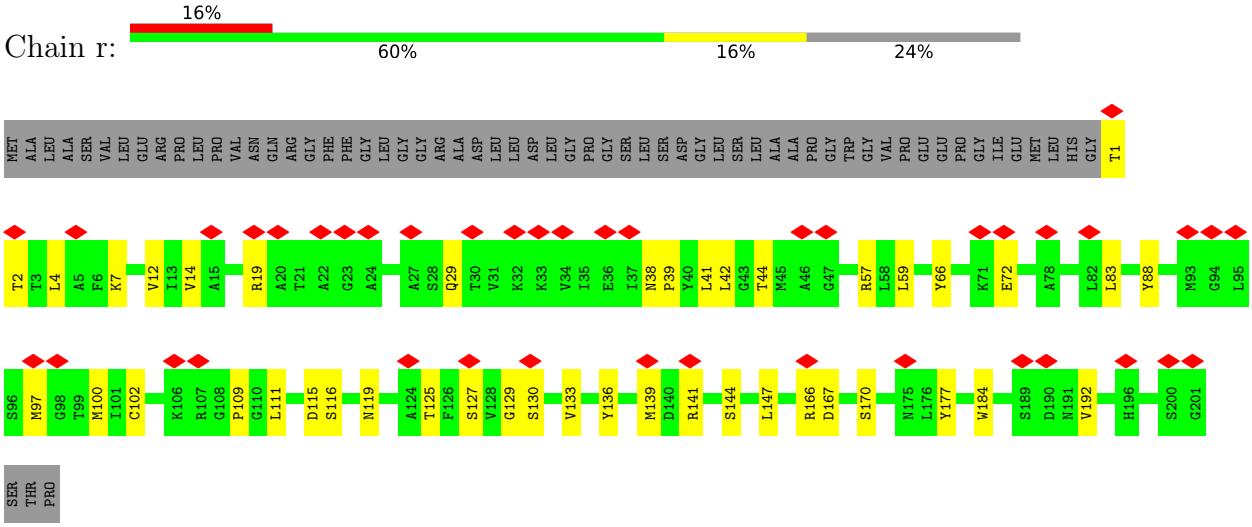


• Molecule 18: Proteasome subunit beta type-5

Chain R:

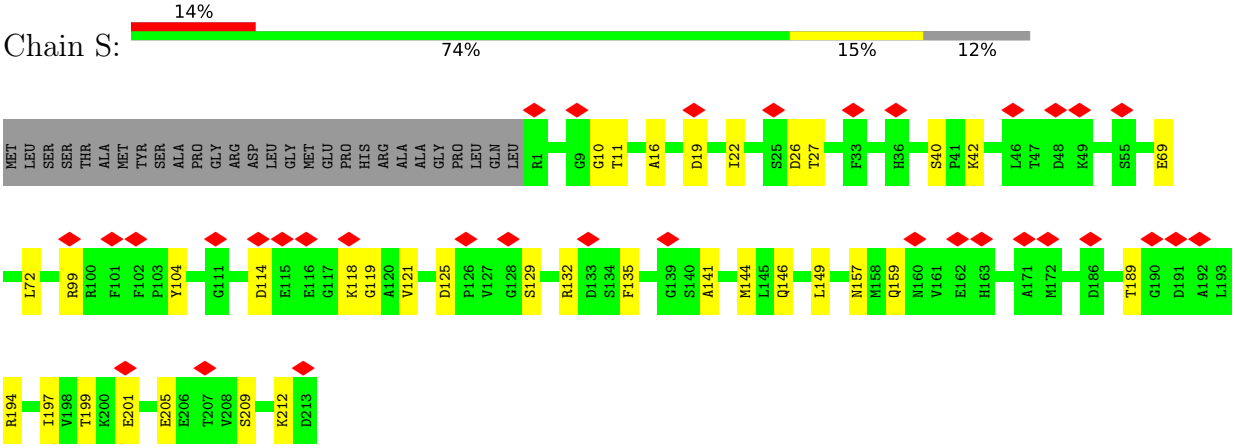
• Molecule 18: Proteasome subunit beta type-5

Chain r:



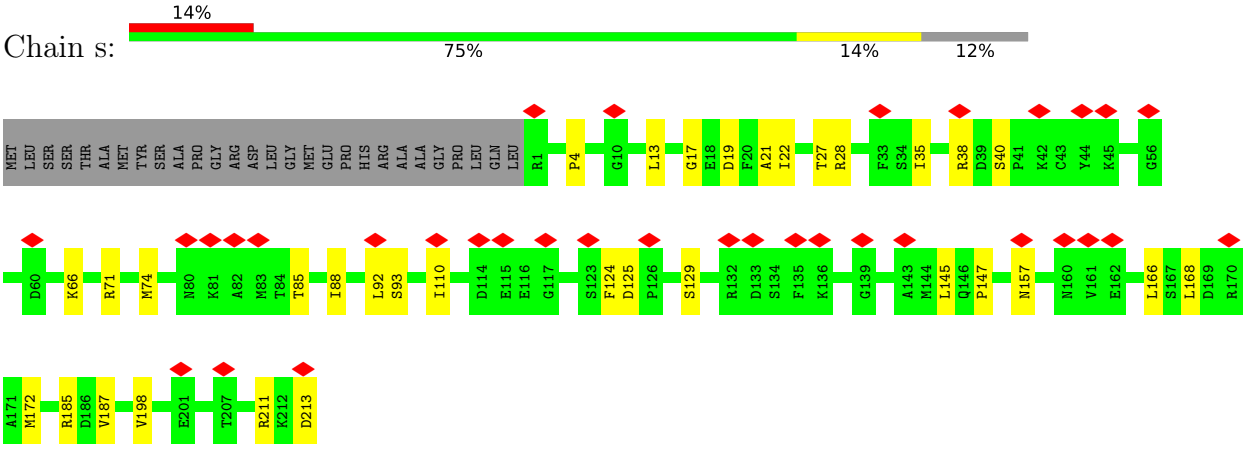
• Molecule 19: Proteasome subunit beta type-1

Chain S:



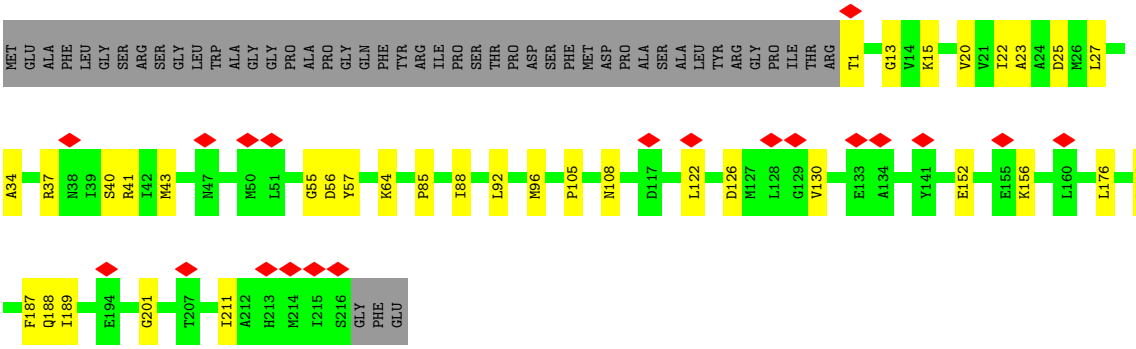
• Molecule 19: Proteasome subunit beta type-1

Chain s:

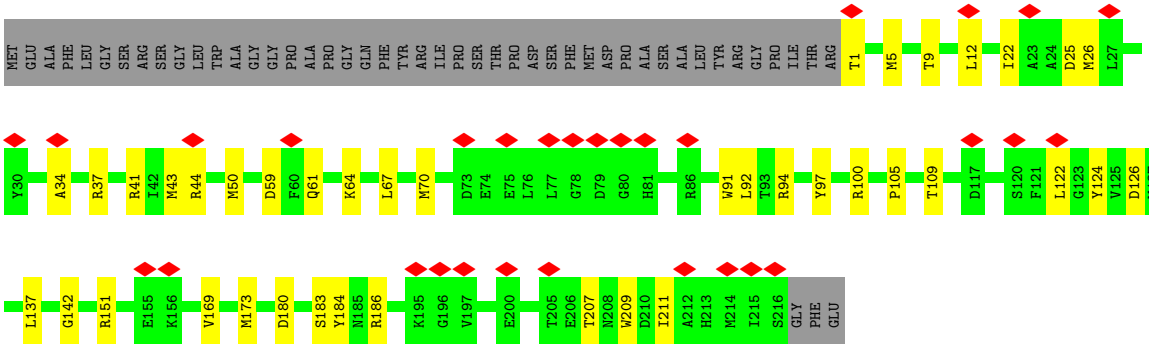


• Molecule 20: Proteasome subunit beta type-4

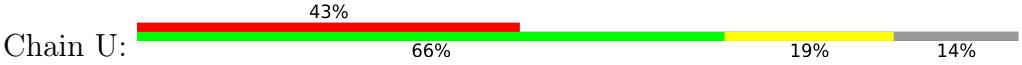
Chain T:

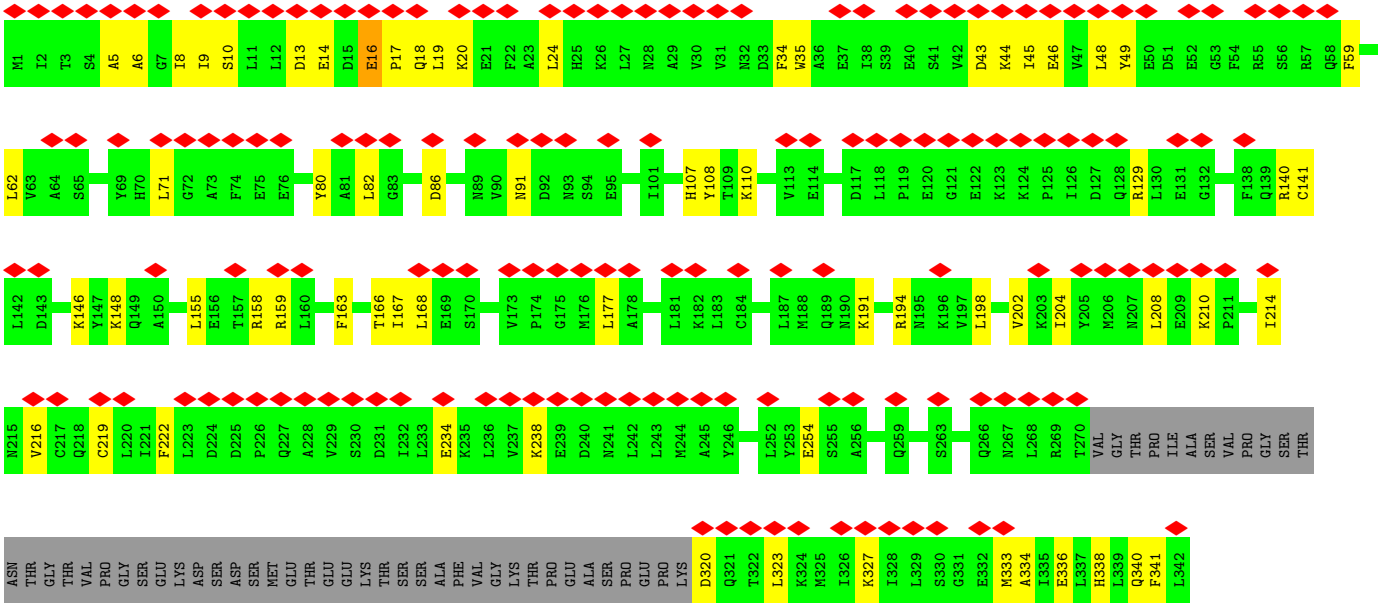


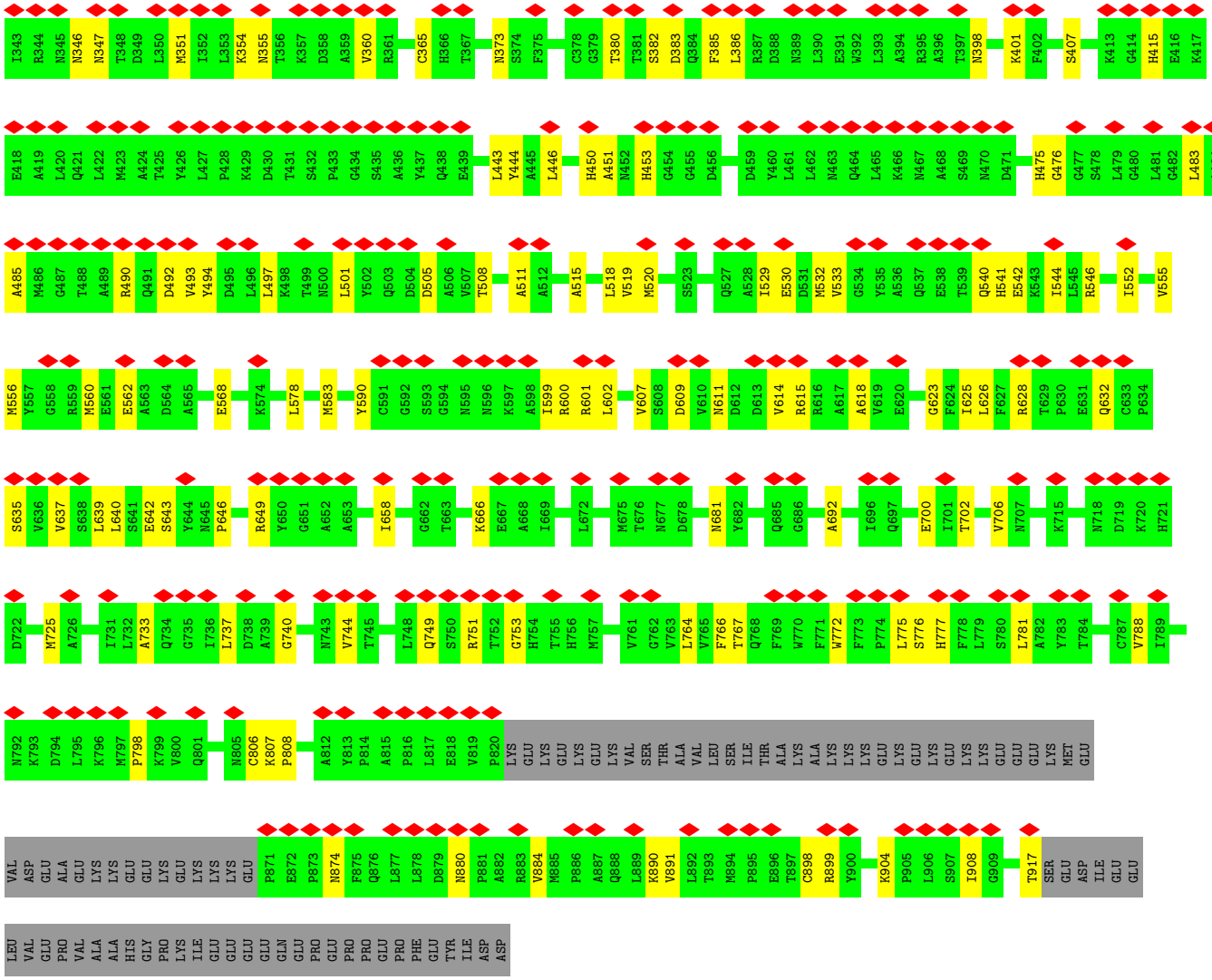
• Molecule 20: Proteasome subunit beta type-4



• Molecule 21: 26S proteasome non-ATPase regulatory subunit 1

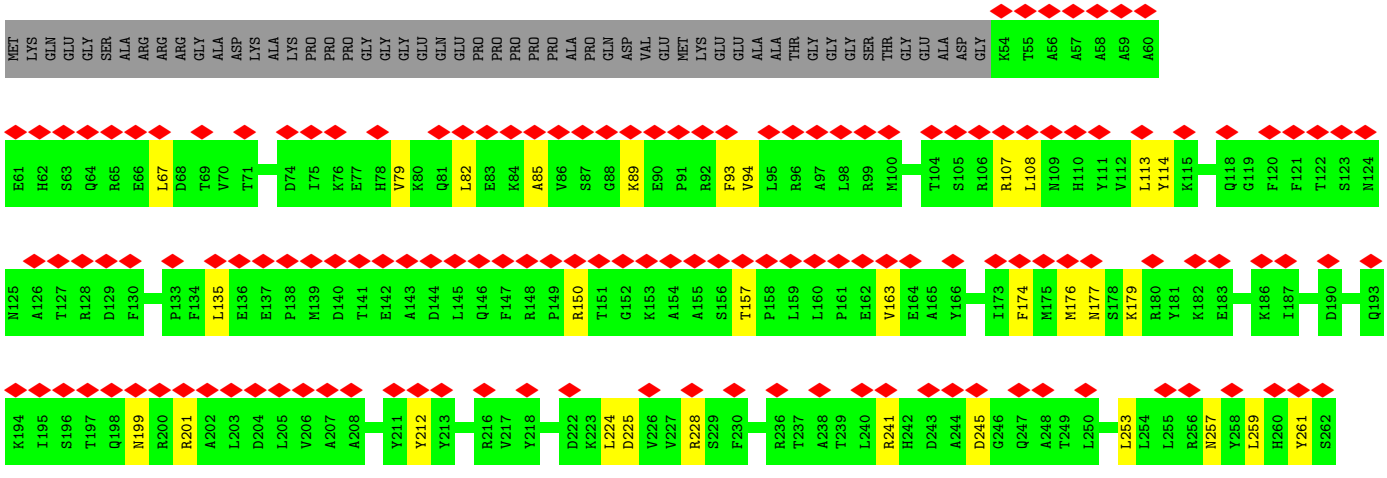


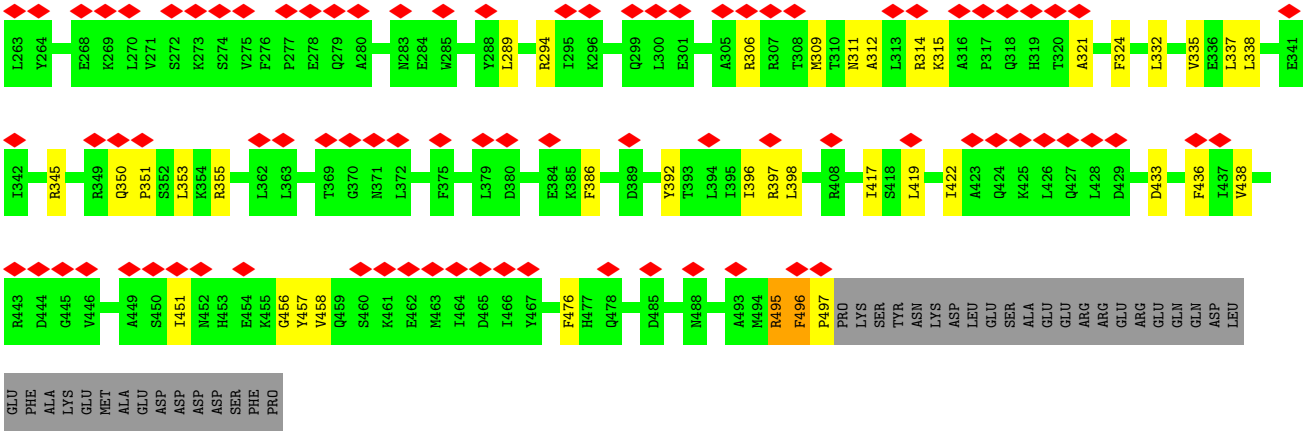




• Molecule 22: 26S proteasome non-ATPase regulatory subunit 3

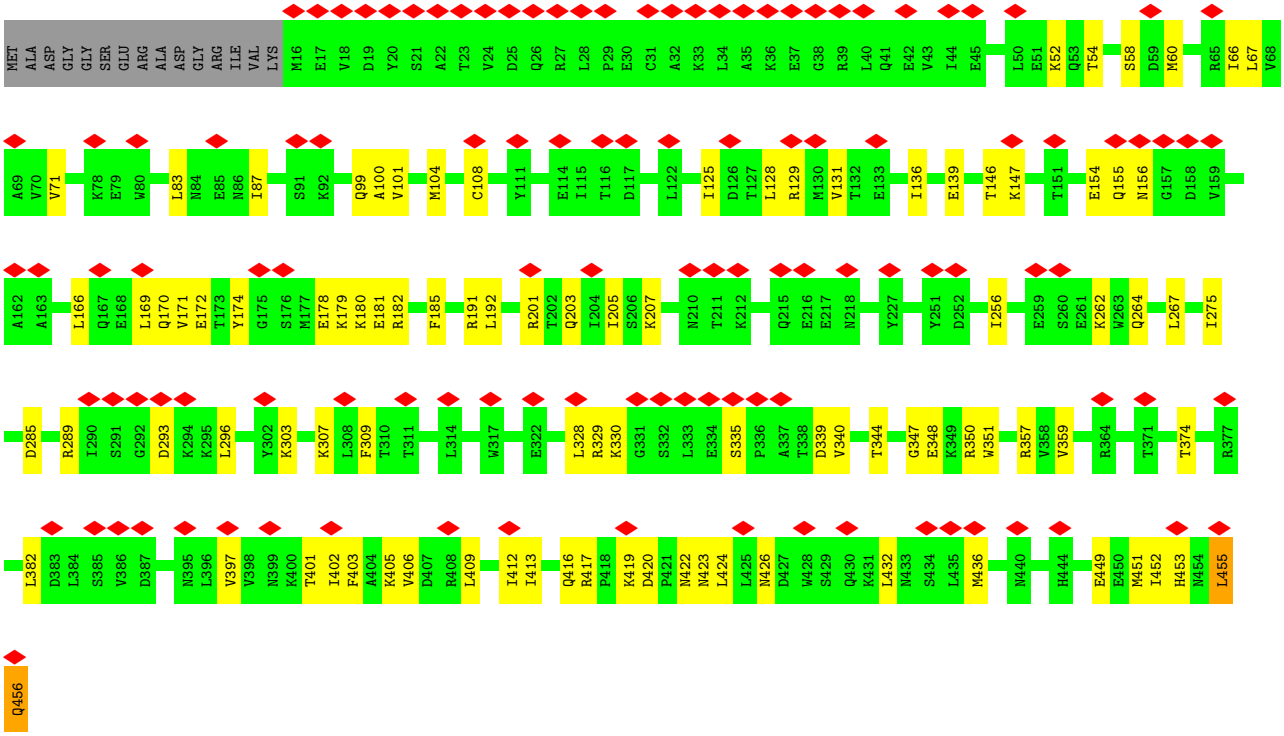
Chain V:





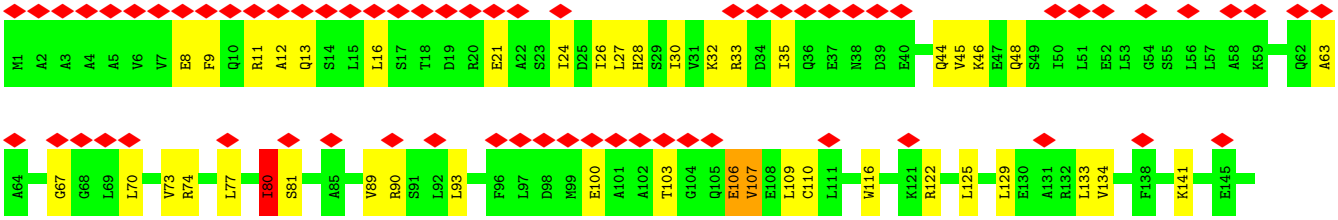
• Molecule 23: 26S proteasome non-ATPase regulatory subunit 12

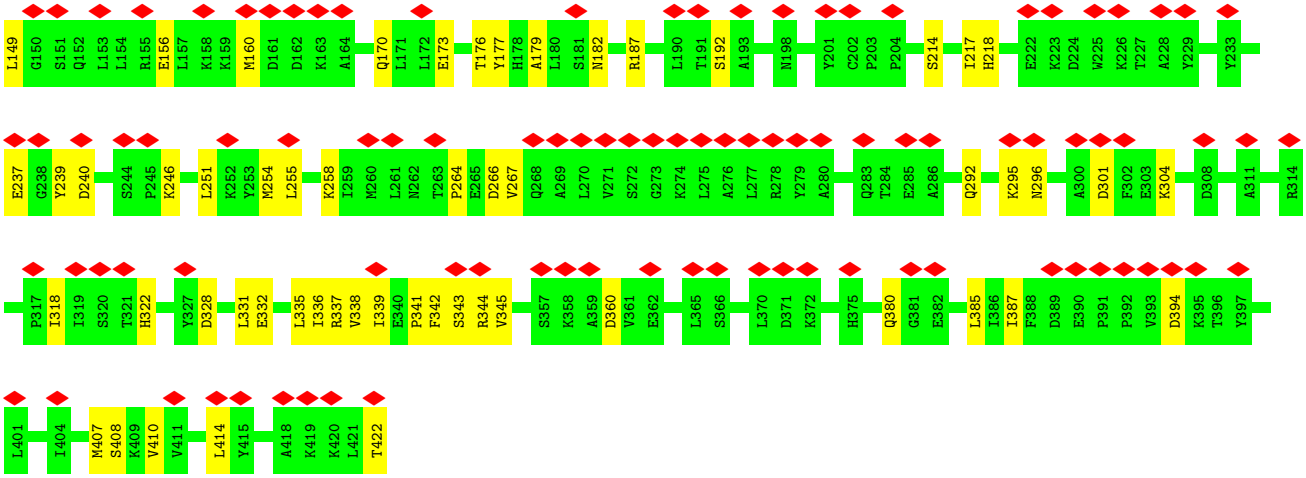
Chain W:



• Molecule 24: 26S proteasome non-ATPase regulatory subunit 11

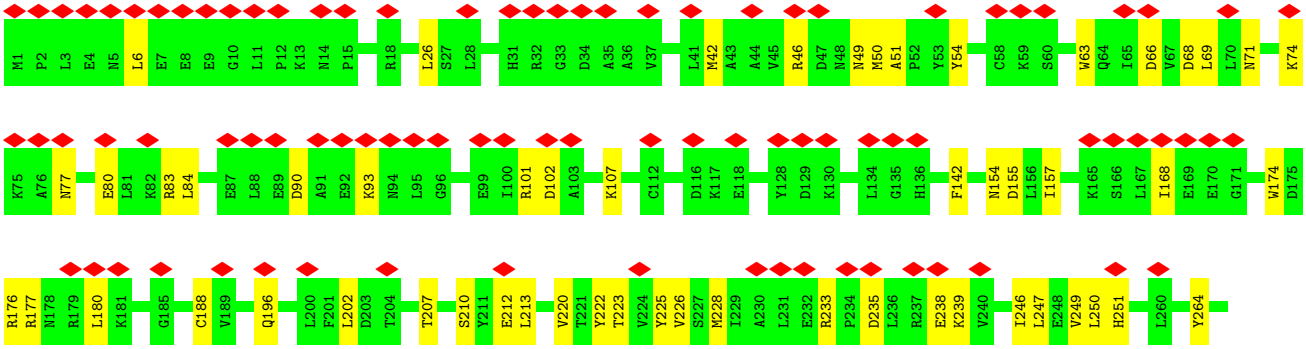
Chain X:





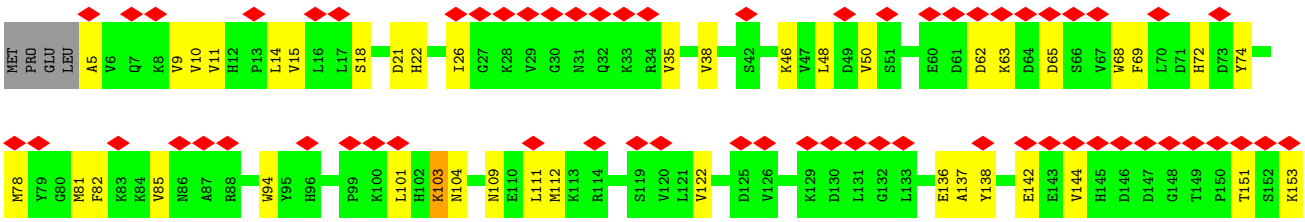
• Molecule 25: 26S proteasome non-ATPase regulatory subunit 6

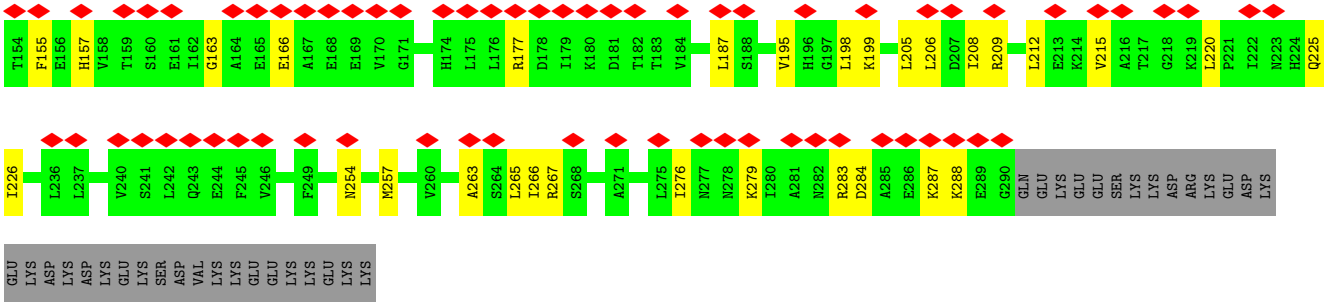
Chain Y:



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

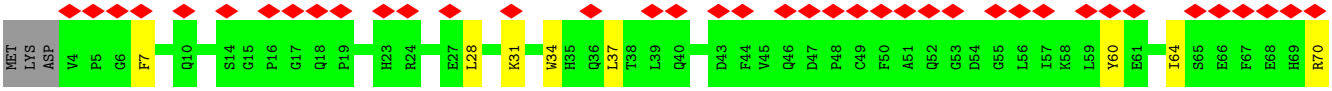
Chain Z:

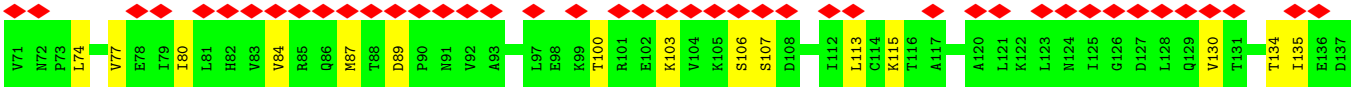


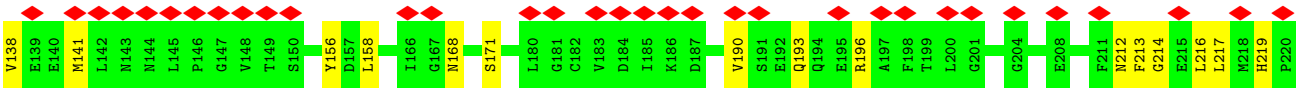


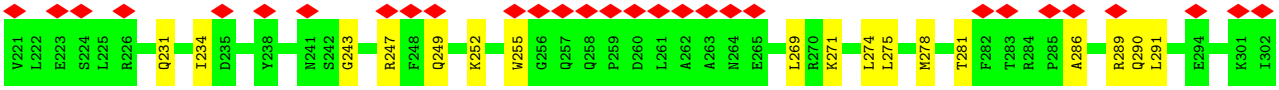
• Molecule 27: 26S proteasome non-ATPase regulatory subunit 13

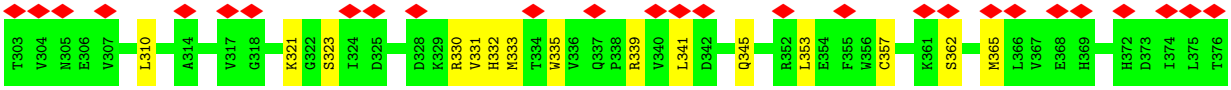
Chain a:





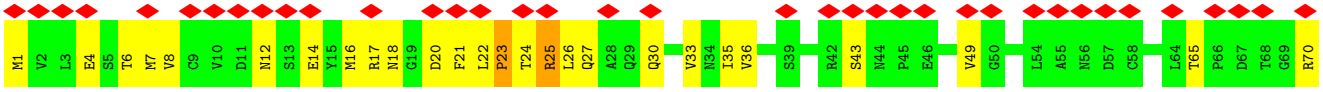


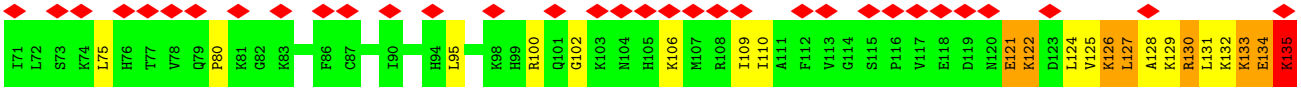


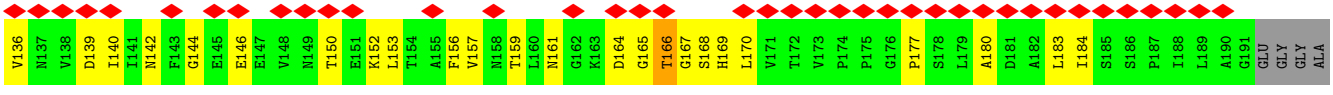


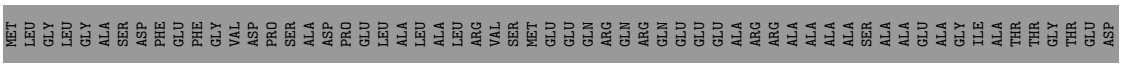
• Molecule 28: 26S proteasome non-ATPase regulatory subunit 4

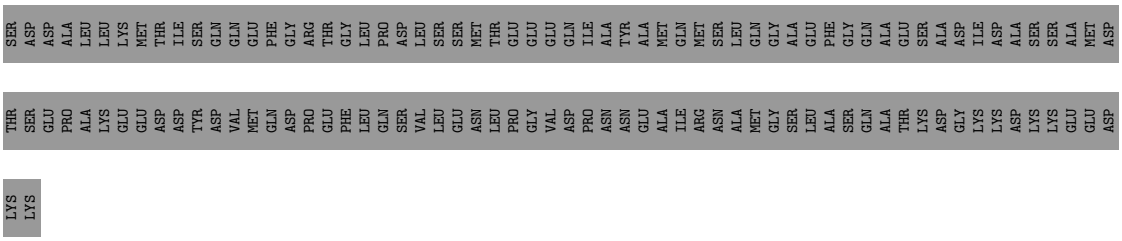
Chain b:





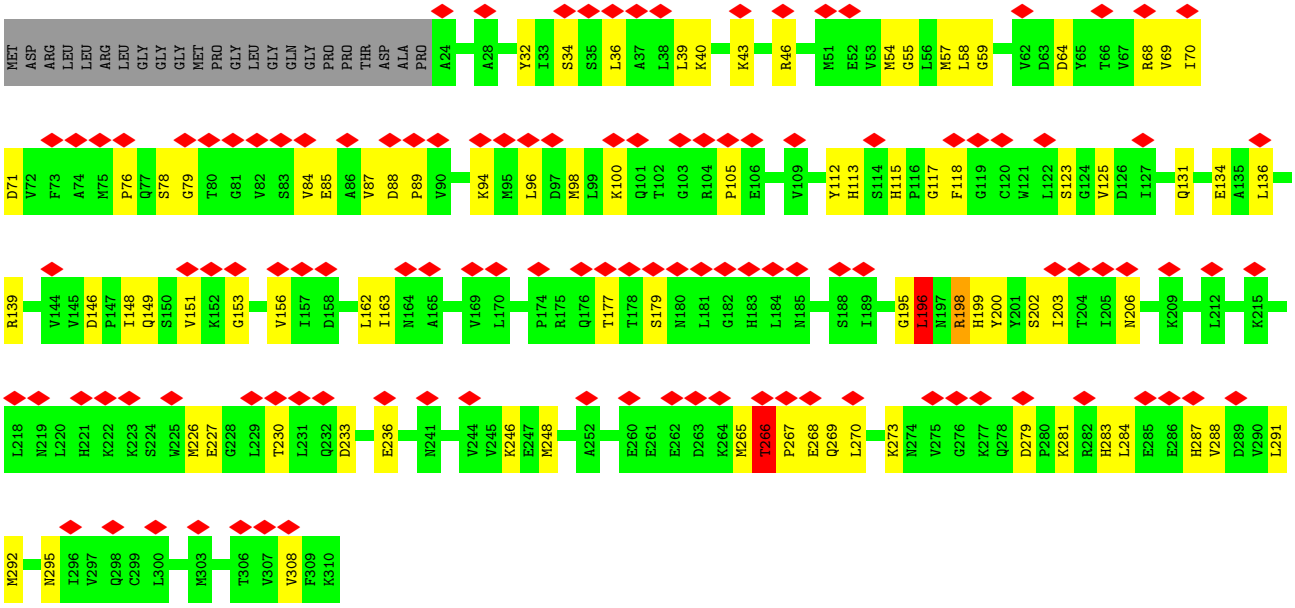






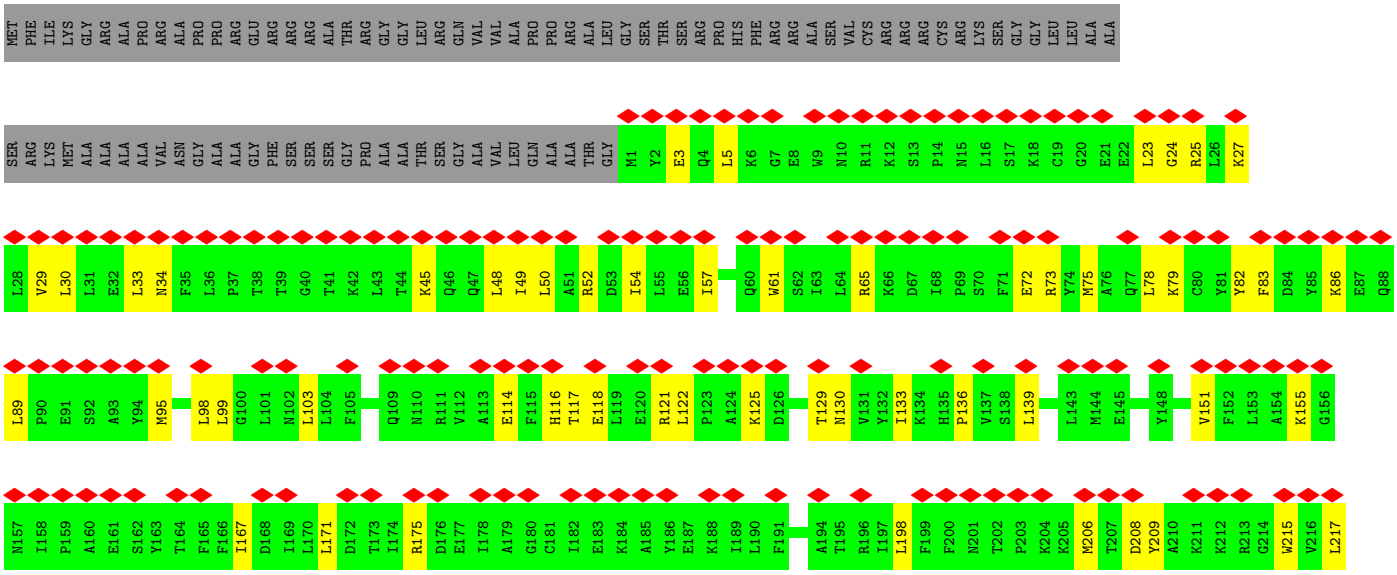
• Molecule 29: 26S proteasome non-ATPase regulatory subunit 14

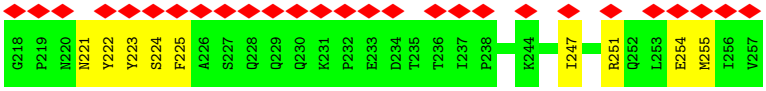
Chain c:



• Molecule 30: 26S proteasome non-ATPase regulatory subunit 8

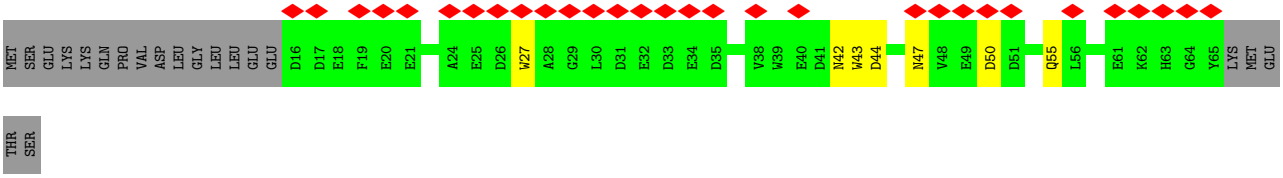
Chain d:





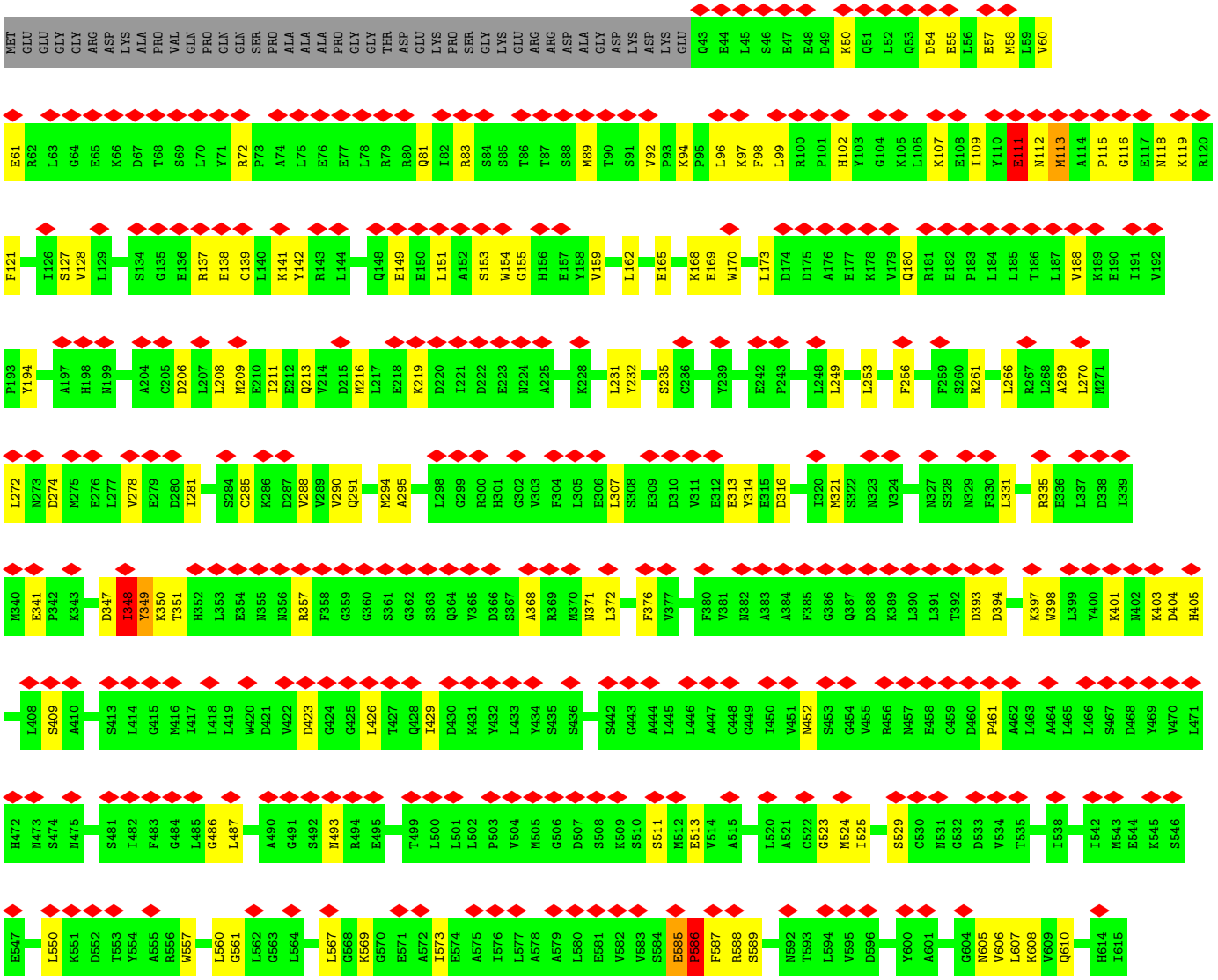
• Molecule 31: 26S proteasome complex subunit SEM1

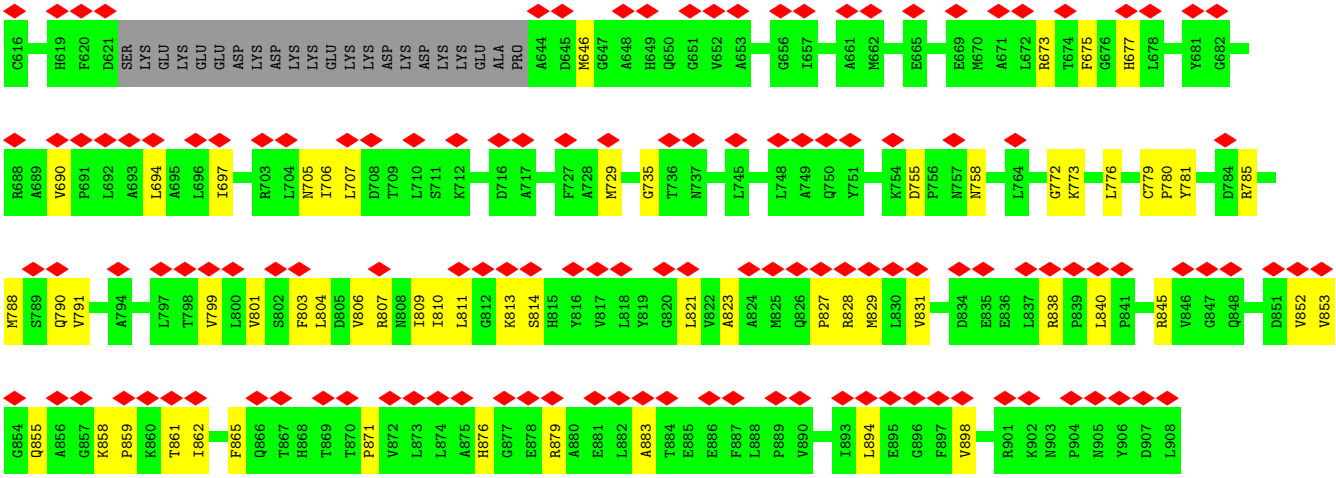
Chain e:



• Molecule 32: 26S proteasome non-ATPase regulatory subunit 2

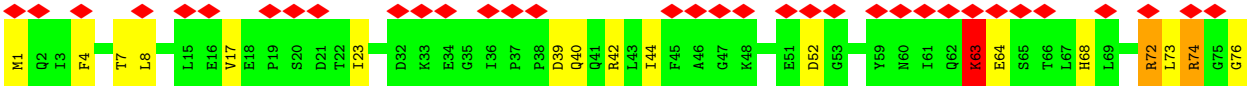
Chain f:





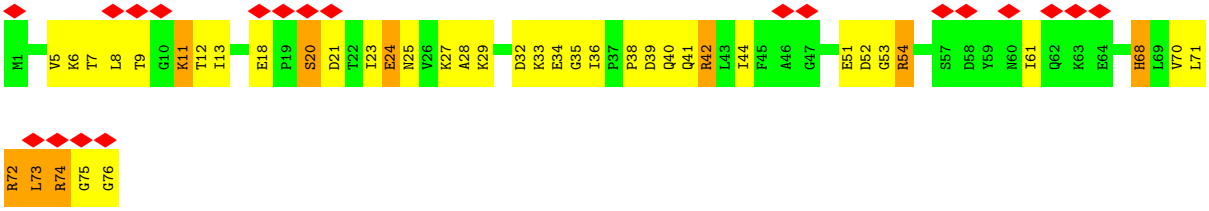
- Molecule 33: Ubiquitin

Chain u:



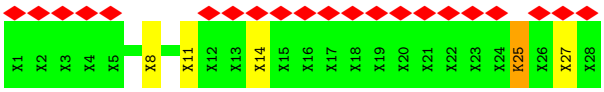
- Molecule 33: Ubiquitin

Chain z:



- Molecule 34: Substrate

Chain v:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	5117	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/Å^2$)	44	Depositor
Minimum defocus (nm)	600	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.017	Depositor
Minimum map value	-0.004	Depositor
Average map value	-0.000	Depositor
Map value standard deviation	0.001	Depositor
Recommended contour level	0.00448	Depositor
Map size (Å)	411.0, 411.0, 411.0	wwPDB
Map dimensions	600, 600, 600	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.685, 0.685, 0.685	Depositor

5 Model quality

5.1 Standard geometry

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

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	0.22	0/3215	0.59	0/4340
2	B	0.20	0/3144	0.53	0/4245
3	C	0.21	0/3017	0.56	4/4058 (0.1%)
4	D	0.24	0/3089	0.55	0/4168
5	E	0.19	0/3145	0.55	2/4233 (0.0%)
6	F	0.19	0/3292	0.53	1/4435 (0.0%)
7	G	0.21	0/1923	0.51	0/2601
7	g	0.20	0/1901	0.49	0/2572
8	H	0.19	0/1844	0.49	0/2499
8	h	0.18	0/1840	0.51	0/2495
9	I	0.22	0/1991	0.51	0/2685
9	i	0.21	0/1963	0.50	0/2650
10	J	0.24	0/1906	0.52	0/2573
10	j	0.22	0/1887	0.52	0/2553
11	K	0.19	0/1804	0.47	0/2436
11	k	0.19	0/1841	0.48	0/2486
12	L	0.21	0/1901	0.48	0/2570
12	l	0.17	0/1911	0.43	0/2584
13	M	0.19	0/1911	0.48	0/2573
13	m	0.18	0/1925	0.48	0/2592
14	N	0.19	0/1540	0.45	0/2085
14	n	0.18	0/1536	0.45	0/2080
15	O	0.19	0/1676	0.48	0/2271
15	o	0.18	0/1686	0.46	0/2282
16	P	0.20	0/1616	0.49	0/2180
16	p	0.24	0/1620	0.58	0/2184
17	Q	0.18	0/1621	0.44	0/2194
17	q	0.18	0/1621	0.46	0/2194
18	R	0.20	0/1590	0.50	0/2147
18	r	0.18	0/1590	0.45	0/2147
19	S	0.18	0/1671	0.50	0/2252
19	s	0.19	0/1684	0.52	0/2268

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	#|Z| >5	RMSZ	#|Z| >5
20	T	0.19	0/1716	0.50	0/2323
20	t	0.18	0/1720	0.46	0/2328
21	U	0.19	0/6488	0.52	2/8782 (0.0%)
22	V	0.18	0/3681	0.47	0/4969
23	W	0.18	0/3644	0.47	0/4901
24	X	0.19	0/3381	0.49	0/4558
25	Y	0.19	0/3261	0.49	1/4393 (0.0%)
26	Z	0.22	0/2324	0.61	0/3150
27	a	0.22	0/3053	0.61	0/4133
28	b	0.36	0/1478	0.63	0/2001
29	c	0.26	0/2302	0.65	0/3110
30	d	0.22	0/2162	0.58	0/2919
31	e	0.17	0/437	0.49	0/595
32	f	0.22	0/6640	0.53	1/8988 (0.0%)
33	u	0.19	0/607	0.43	1/816 (0.1%)
33	z	0.66	0/607	1.08	0/816
34	v	0.01	0/8	0.04	0/8
All	All	0.21	0/108410	0.52	12/146422 (0.0%)

There are no bond length outliers.

All (12) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
21	U	16	GLU	CA-C-N	7.09	128.70	119.84
21	U	16	GLU	C-N-CA	7.09	128.70	119.84
5	E	226	GLN	CA-C-N	-6.33	115.26	121.65
5	E	226	GLN	C-N-CA	-6.33	115.26	121.65
25	Y	225	TYR	N-CA-C	-5.78	105.72	112.89
3	C	285	ALA	CA-C-N	5.28	131.62	121.54
3	C	285	ALA	C-N-CA	5.28	131.62	121.54
3	C	288	ASN	CA-C-N	-5.27	116.66	123.19
3	C	288	ASN	C-N-CA	-5.27	116.66	123.19
32	f	112	ASN	N-CA-C	-5.27	106.16	112.58
6	F	305	GLU	N-CA-C	-5.08	108.11	114.56
33	u	63	LYS	N-CA-C	5.01	116.95	109.59

There are no chirality outliers.

There are no planarity outliers.

5.2 Too-close contacts (i)

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

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	A	3164	0	3200	66	0
2	B	3099	0	3143	73	0
3	C	2978	0	3075	84	0
4	D	3039	0	3076	101	0
5	E	3097	0	3174	73	0
6	F	3251	0	3319	83	0
7	G	1889	0	1885	31	0
7	g	1867	0	1867	42	0
8	H	1805	0	1784	37	0
8	h	1801	0	1773	21	0
9	I	1958	0	1960	23	0
9	i	1933	0	1923	29	0
10	J	1880	0	1892	46	0
10	j	1861	0	1846	41	0
11	K	1777	0	1762	36	0
11	k	1813	0	1796	36	0
12	L	1866	0	1852	38	0
12	l	1876	0	1856	28	0
13	M	1876	0	1861	25	0
13	m	1890	0	1880	34	0
14	N	1514	0	1487	23	0
14	n	1510	0	1483	28	0
15	O	1649	0	1659	29	0
15	o	1659	0	1681	19	0
16	P	1587	0	1598	34	0
16	p	1591	0	1609	34	0
17	Q	1588	0	1584	33	0
17	q	1588	0	1584	29	0
18	R	1559	0	1523	35	0
18	r	1559	0	1523	28	0
19	S	1641	0	1639	23	0
19	s	1654	0	1656	26	0
20	T	1683	0	1662	22	0
20	t	1687	0	1666	31	0
21	U	6373	0	6409	116	0
22	V	3612	0	3682	51	0
23	W	3596	0	3713	68	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
24	X	3335	0	3435	75	0
25	Y	3202	0	3204	59	0
26	Z	2281	0	2312	62	0
27	a	2995	0	3012	44	0
28	b	1458	0	1503	107	0
29	c	2260	0	2276	72	0
30	d	2116	0	2146	45	0
31	e	425	0	328	6	0
32	f	6529	0	6541	128	0
33	u	601	0	629	36	0
33	z	601	0	629	71	0
34	v	143	0	46	7	0
35	A	31	0	12	0	0
35	D	31	0	12	2	0
35	F	31	0	12	2	0
36	A	2	0	0	0	0
36	D	1	0	0	0	0
37	B	27	0	12	2	0
37	E	27	0	12	3	0
38	c	1	0	0	0	0
All	All	106867	0	107203	2018	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 9.

All (2018) 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)
33:u:4:PHE:CE2	33:u:64:GLU:HG2	1.58	1.38
33:u:4:PHE:HE2	33:u:64:GLU:CG	1.59	1.15
32:f:585:GLU:HB2	32:f:586:PRO:HD2	1.35	1.07
24:X:103:THR:HA	24:X:106:GLU:HB2	1.33	1.07
33:u:63:LYS:HE3	33:u:64:GLU:CB	1.85	1.07
33:u:63:LYS:HE3	33:u:64:GLU:HB2	1.37	1.02
33:u:63:LYS:CE	33:u:64:GLU:HB3	1.90	1.01
29:c:89:PRO:HG2	33:u:44:ILE:HD11	1.44	0.99
24:X:103:THR:HA	24:X:106:GLU:CB	1.92	0.99
33:u:63:LYS:HE2	33:u:64:GLU:HB3	1.44	0.97
33:u:64:GLU:O	33:u:64:GLU:CD	2.08	0.96
3:C:44:ARG:HG3	22:V:496:PHE:HE2	1.32	0.95
33:u:42:ARG:HH12	33:u:72:ARG:HG3	1.31	0.95

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:u:4:PHE:HE2	33:u:64:GLU:HG2	0.77	0.93
28:b:130:ARG:HB2	33:z:71:LEU:HG	1.52	0.90
33:u:63:LYS:CE	33:u:64:GLU:CB	2.47	0.89
24:X:103:THR:CA	24:X:106:GLU:HB2	2.04	0.88
28:b:129:LYS:HB3	33:z:36:ILE:HG12	1.56	0.87
33:u:42:ARG:NH1	33:u:72:ARG:HG3	1.89	0.86
28:b:129:LYS:HG3	33:z:36:ILE:HG12	1.59	0.85
26:Z:63:LYS:HD3	33:z:73:LEU:HG	1.59	0.83
28:b:129:LYS:CG	33:z:36:ILE:HG12	2.10	0.82
33:z:24:GLU:HG2	33:z:53:GLY:H	1.45	0.82
28:b:134:GLU:HA	33:z:9:THR:HB	1.64	0.79
28:b:125:VAL:HG13	33:z:40:GLN:HE21	1.48	0.79
3:C:90:HIS:HB3	3:C:91:PRO:HD3	1.65	0.79
23:W:340:VAL:HA	23:W:350:ARG:HH11	1.48	0.79
28:b:129:LYS:HD2	28:b:132:LYS:HD2	1.64	0.78
28:b:129:LYS:CB	33:z:36:ILE:HG12	2.14	0.78
29:c:96:LEU:HD12	33:u:8:LEU:HD22	1.66	0.77
32:f:137:ARG:HH21	32:f:168:LYS:HE2	1.49	0.77
33:u:64:GLU:O	33:u:64:GLU:OE1	2.03	0.77
23:W:452:ILE:HG22	26:Z:103:LYS:HD3	1.65	0.76
28:b:122:LYS:NZ	33:z:39:ASP:HB2	2.01	0.75
3:C:44:ARG:HG3	22:V:496:PHE:CE2	2.19	0.75
15:O:163:ILE:HG12	15:O:170:GLY:HA2	1.68	0.74
3:C:190:GLY:HA3	3:C:317:PHE:HB2	1.70	0.74
22:V:85:ALA:HB2	22:V:93:PHE:HB2	1.70	0.73
10:j:222:PRO:HA	10:j:225:ILE:HD12	1.70	0.73
4:D:84:SER:O	4:D:85:ILE:HB	1.89	0.73
28:b:122:LYS:HG3	33:z:40:GLN:NE2	2.04	0.73
28:b:122:LYS:HG3	33:z:40:GLN:HE22	1.53	0.72
9:i:53:HIS:CG	9:i:54:LYS:H	2.07	0.72
9:i:53:HIS:NE2	9:i:55:LEU:HB2	2.04	0.72
3:C:227:GLY:HA2	3:C:230:MET:HE3	1.70	0.71
33:z:24:GLU:CG	33:z:53:GLY:H	2.03	0.71
21:U:398:ASN:H	21:U:401:LYS:HE2	1.56	0.71
9:I:143:TYR:HB2	9:I:146:GLN:HE21	1.56	0.71
28:b:22:LEU:HB2	28:b:23:PRO:HD3	1.71	0.71
1:A:400:ARG:H	32:f:89:MET:HE2	1.56	0.70
6:F:260:PHE:HE1	34:v:8:UNK:O	1.74	0.70
22:V:82:LEU:HD23	22:V:94:VAL:HG12	1.73	0.70
16:P:15:LYS:HE3	16:P:121:ILE:HG12	1.74	0.70
11:K:13:ASN:HB3	12:L:126:ARG:HB3	1.74	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:R:139:MET:O	18:R:143:TYR:HB2	1.91	0.70
4:D:92:PHE:HE2	4:D:125:LYS:HD2	1.56	0.69
28:b:126:LYS:HD3	33:z:40:GLN:OE1	1.91	0.69
28:b:134:GLU:HB3	28:b:136:VAL:HG23	1.74	0.69
3:C:232:ARG:HH12	3:C:275:GLU:HB3	1.58	0.69
4:D:125:LYS:N	4:D:126:PRO:HD3	2.06	0.69
30:d:86:LYS:HG2	30:d:89:LEU:HD22	1.75	0.69
3:C:87:VAL:HG12	3:C:89:VAL:H	1.57	0.69
17:Q:143:LEU:O	17:Q:147:TYR:HB2	1.94	0.68
3:C:286:THR:C	3:C:288:ASN:H	2.00	0.68
11:k:41:GLN:HE21	11:k:151:PRO:HB2	1.56	0.68
24:X:103:THR:OG1	24:X:107:VAL:HG12	1.93	0.68
21:U:475:HIS:HD2	21:U:511:ALA:HB2	1.57	0.68
33:z:42:ARG:HE	33:z:44:ILE:HD11	1.59	0.68
28:b:128:ALA:HB2	28:b:156:PHE:CE1	2.28	0.67
5:E:237:ALA:HB1	6:F:308:ARG:HG3	1.74	0.67
29:c:125:VAL:CG1	33:u:74:ARG:HG3	2.23	0.67
33:z:73:LEU:HD23	33:z:74:ARG:H	1.59	0.67
29:c:125:VAL:HB	33:u:76:GLY:H	1.60	0.67
16:P:12:MET:HG2	16:P:171:MET:HE2	1.76	0.67
21:U:208:LEU:HD23	21:U:210:LYS:H	1.58	0.67
27:a:243:GLY:HA2	27:a:275:LEU:HG	1.76	0.67
32:f:94:LYS:HA	32:f:97:LYS:HD3	1.76	0.67
10:J:50:VAL:HB	10:J:54:GLN:HB2	1.77	0.67
18:r:125:THR:HB	18:r:139:MET:HE1	1.77	0.67
25:Y:223:THR:HA	25:Y:226:VAL:CG1	2.24	0.67
17:Q:117:TYR:HB3	17:Q:125:ALA:HB3	1.75	0.67
23:W:340:VAL:HA	23:W:350:ARG:NH1	2.10	0.66
27:a:28:LEU:HA	27:a:31:LYS:HE2	1.76	0.66
6:F:375:VAL:HG22	6:F:415:LEU:HD12	1.78	0.66
13:m:35:THR:HA	13:m:166:GLY:HA3	1.77	0.66
11:K:77:ALA:HB3	11:K:142:LEU:HB2	1.77	0.66
22:V:108:LEU:HD23	22:V:174:PHE:HB2	1.76	0.66
33:u:42:ARG:NH1	33:u:72:ARG:CG	2.58	0.66
28:b:125:VAL:O	28:b:129:LYS:HG2	1.95	0.66
29:c:195:GLY:O	29:c:196:LEU:C	2.37	0.66
28:b:125:VAL:CG1	33:z:40:GLN:HE21	2.08	0.66
4:D:152:MET:HE1	5:E:94:PRO:HB2	1.77	0.66
24:X:122:ARG:HG2	24:X:125:LEU:H	1.61	0.66
4:D:230:VAL:HB	4:D:264:ILE:HG13	1.75	0.66
22:V:79:VAL:HA	22:V:82:LEU:HD12	1.77	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:172:GLU:HA	23:W:182:ARG:HD3	1.76	0.66
3:C:262:GLY:HA2	3:C:270:GLN:HE22	1.60	0.66
10:J:76:LEU:H	10:J:129:ILE:HG22	1.61	0.65
22:V:351:PRO:O	22:V:355:ARG:NH1	2.30	0.65
24:X:103:THR:C	24:X:106:GLU:HB2	2.22	0.65
25:Y:315:THR:HA	25:Y:353:ILE:HA	1.78	0.65
5:E:4:PRO:HG2	5:E:8:ALA:H	1.62	0.65
5:E:148:VAL:HG13	5:E:149:ILE:HG23	1.79	0.65
24:X:380:GLN:HB2	25:Y:314:LEU:HA	1.78	0.65
11:k:36:THR:HA	11:k:171:GLY:HA3	1.78	0.65
1:A:101:ILE:HD12	1:A:138:MET:HB3	1.79	0.65
28:b:132:LYS:HD3	33:z:34:GLU:HB3	1.79	0.65
27:a:84:VAL:HA	27:a:87:MET:HG3	1.79	0.65
7:g:81:THR:HB	7:g:137:CYS:HB3	1.79	0.65
21:U:483:LEU:HD11	21:U:781:LEU:HD11	1.78	0.65
9:i:63:GLU:HG3	9:i:64:LYS:HG3	1.78	0.65
13:M:80:LEU:H	13:M:133:CYS:HB3	1.62	0.65
16:P:189:ILE:HB	16:P:196:THR:HB	1.79	0.65
28:b:129:LYS:HE3	28:b:159:THR:HB	1.78	0.65
4:D:86:PRO:HB2	4:D:134:LYS:HD2	1.78	0.64
15:o:163:ILE:HG12	15:o:170:GLY:HA2	1.79	0.64
23:W:60:MET:SD	23:W:99:GLN:NE2	2.70	0.64
28:b:24:THR:HG22	28:b:26:LEU:H	1.63	0.64
1:A:373:LEU:HD12	1:A:413:VAL:HG11	1.80	0.64
3:C:387:VAL:HG12	3:C:391:MET:HE2	1.77	0.64
4:D:84:SER:C	4:D:86:PRO:HD2	2.22	0.64
24:X:141:LYS:HE2	24:X:179:ALA:HB1	1.79	0.64
28:b:4:GLU:HA	28:b:106:LYS:H	1.61	0.64
17:q:95:ARG:HD2	17:q:96:THR:HG23	1.78	0.64
28:b:35:ILE:HD12	28:b:184:ILE:HD13	1.80	0.64
4:D:115:ILE:HG22	4:D:139:LEU:HD12	1.78	0.64
20:T:188:GLN:HG2	20:T:201:GLY:HA3	1.80	0.64
4:D:199:PRO:HB3	4:D:328:ASP:HB2	1.79	0.64
9:I:49:ARG:NH2	9:I:211:VAL:O	2.31	0.64
20:T:56:ASP:O	20:T:108:ASN:ND2	2.30	0.64
24:X:177:TYR:HB3	24:X:182:ASN:HB3	1.80	0.64
32:f:72:ARG:HH12	32:f:118:ASN:H	1.46	0.63
32:f:861:THR:HB	32:f:879:ARG:HH11	1.63	0.63
1:A:272:ILE:HB	1:A:317:VAL:HG22	1.80	0.63
22:V:321:ALA:HB1	22:V:324:PHE:HB3	1.80	0.63
25:Y:222:TYR:O	25:Y:226:VAL:HG12	1.96	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:f:755:ASP:OD2	32:f:758:ASN:ND2	2.31	0.63
2:B:357:ASP:OD2	2:B:358:GLU:N	2.31	0.63
4:D:124:LEU:C	4:D:126:PRO:HD3	2.23	0.63
30:d:24:GLY:HA2	30:d:27:LYS:HG3	1.78	0.63
4:D:99:ASN:HA	4:D:115:ILE:HG12	1.80	0.63
23:W:174:TYR:O	23:W:182:ARG:NH2	2.32	0.63
28:b:25:ARG:HH21	28:b:144:GLY:HA3	1.64	0.63
28:b:129:LYS:HB3	33:z:36:ILE:CG1	2.26	0.63
6:F:318:ASP:OD2	6:F:344:ARG:NH2	2.31	0.63
25:Y:361:SER:O	25:Y:365:GLN:NE2	2.32	0.63
20:t:122:LEU:HG	20:t:137:LEU:HD12	1.81	0.63
16:P:7:ASN:O	16:P:27:ARG:NH1	2.32	0.63
22:V:177:ASN:O	22:V:179:LYS:NZ	2.31	0.63
23:W:449:GLU:HA	23:W:452:ILE:HD12	1.80	0.63
32:f:585:GLU:CB	32:f:586:PRO:HD2	2.21	0.63
26:Z:225:GLN:HG3	26:Z:226:ILE:HG12	1.81	0.63
28:b:129:LYS:CE	28:b:159:THR:HB	2.29	0.63
2:B:109:VAL:HG21	3:C:94:LYS:HZ3	1.64	0.63
32:f:585:GLU:H	32:f:585:GLU:CD	2.06	0.63
32:f:791:VAL:HG12	32:f:823:ALA:HB1	1.81	0.63
13:m:50:GLU:OE2	13:m:201:HIS:ND1	2.29	0.63
18:r:14:VAL:HB	18:r:177:TYR:HB2	1.80	0.63
6:F:304:ARG:O	6:F:308:ARG:NH1	2.32	0.62
28:b:122:LYS:HE2	33:z:39:ASP:OD1	1.98	0.62
1:A:212:VAL:HG22	1:A:339:ARG:HB2	1.79	0.62
12:L:41:LYS:O	12:L:217:LYS:NZ	2.32	0.62
18:R:97:MET:HE1	18:R:114:VAL:HG12	1.82	0.62
22:V:67:LEU:HD11	22:V:107:ARG:HB3	1.81	0.62
29:c:288:VAL:HG12	29:c:292:MET:HE1	1.82	0.62
24:X:12:ALA:HB2	24:X:26:ILE:HG21	1.82	0.62
25:Y:297:ARG:HA	25:Y:300:ARG:HD2	1.81	0.62
26:Z:195:VAL:HG12	26:Z:199:LYS:HE2	1.81	0.62
33:u:23:ILE:HB	33:u:52:ASP:HA	1.81	0.62
32:f:569:LYS:HD2	32:f:573:ILE:HD11	1.81	0.62
8:h:50:LYS:NZ	8:h:209:GLU:OE1	2.33	0.62
20:t:124:TYR:HB2	20:t:137:LEU:HD13	1.81	0.62
2:B:232:LYS:NZ	2:B:332:ASN:OD1	2.33	0.62
26:Z:263:ALA:HB1	29:c:288:VAL:HG13	1.80	0.62
8:H:45:VAL:HG23	8:H:212:ILE:HG12	1.80	0.62
8:H:71:HIS:HA	8:H:218:PHE:H	1.64	0.62
16:p:189:ILE:HB	16:p:196:THR:HB	1.82	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:126:PRO:HG2	4:D:128:ALA:HB2	1.80	0.61
12:L:160:SER:O	12:L:169:ARG:NH1	2.28	0.61
22:V:228:ARG:HH22	22:V:261:TYR:HB2	1.65	0.61
11:k:9:ASP:O	11:k:23:GLN:NE2	2.33	0.61
4:D:87:LEU:HA	4:D:132:LEU:O	2.00	0.61
14:N:30:VAL:O	14:N:175:ARG:NH2	2.33	0.61
14:N:104:ASP:OD2	14:N:106:GLN:NE2	2.33	0.61
2:B:74:MET:SD	32:f:610:GLN:NE2	2.74	0.61
21:U:415:HIS:O	21:U:450:HIS:NE2	2.33	0.61
8:H:51:LYS:NZ	8:H:199:PHE:O	2.33	0.61
13:M:68:ASN:OD1	13:M:224:HIS:ND1	2.33	0.61
25:Y:238:GLU:HG3	25:Y:239:LYS:HG3	1.81	0.61
28:b:122:LYS:NZ	33:z:40:GLN:OE1	2.34	0.61
1:A:302:LEU:O	1:A:306:LEU:HB2	2.00	0.61
9:I:53:HIS:CG	9:I:54:LYS:H	2.17	0.61
12:L:196:ARG:O	12:L:239:ARG:NH1	2.34	0.61
5:E:61:LEU:HD12	5:E:70:ILE:HG12	1.83	0.61
11:K:36:THR:HA	11:K:171:GLY:HA3	1.83	0.61
12:L:26:MET:HE1	12:L:148:CYS:HB3	1.83	0.61
17:Q:64:VAL:HG13	17:Q:75:LEU:HD12	1.82	0.61
21:U:808:PRO:HD3	21:U:874:ASN:HA	1.81	0.61
30:d:247:ILE:O	30:d:251:ARG:HG3	2.01	0.61
19:s:35:ILE:HB	20:t:151:ARG:HH12	1.63	0.61
4:D:234:GLU:O	4:D:237:GLN:NE2	2.34	0.61
32:f:139:CYS:HB2	32:f:165:GLU:HG3	1.82	0.61
20:t:1:THR:N	20:t:105:PRO:O	2.34	0.61
25:Y:210:SER:HB3	25:Y:213:LEU:HD23	1.82	0.61
32:f:371:ASN:ND2	32:f:401:LYS:O	2.34	0.61
1:A:314:ASN:OD1	1:A:316:LYS:NZ	2.33	0.61
21:U:155:LEU:O	21:U:158:ARG:NH1	2.34	0.61
32:f:151:LEU:HD21	32:f:162:LEU:HD13	1.81	0.61
4:D:170:MET:SD	4:D:340:GLN:NE2	2.74	0.60
23:W:147:LYS:HD2	23:W:185:PHE:HE1	1.66	0.60
28:b:161:ASN:HB2	28:b:166:THR:H	1.65	0.60
32:f:845:ARG:HB3	32:f:865:PHE:HB2	1.82	0.60
7:g:18:PRO:O	7:g:19:GLU:HB2	2.01	0.60
4:D:103:VAL:HG11	4:D:139:LEU:HD21	1.82	0.60
21:U:490:ARG:NH2	21:U:492:ASP:OD2	2.34	0.60
29:c:195:GLY:O	29:c:198:ARG:HB2	2.00	0.60
11:k:209:LYS:O	11:k:214:ASN:ND2	2.34	0.60
20:t:37:ARG:O	20:t:186:ARG:NH1	2.33	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:154:HIS:HB3	11:K:59:MET:HE1	1.84	0.60
15:O:177:VAL:HB	15:O:184:ASP:HB2	1.82	0.60
21:U:890:LYS:HG3	21:U:891:VAL:HG13	1.82	0.60
10:j:211:MET:HB2	10:j:217:LEU:HD13	1.84	0.60
12:l:117:GLN:NE2	13:m:83:ASP:OD1	2.35	0.60
12:l:196:ARG:NH1	12:l:237:GLU:O	2.34	0.60
14:n:28:ASN:ND2	15:o:120:ASP:OD1	2.34	0.60
24:X:408:SER:OG	25:Y:379:ARG:NH1	2.34	0.60
32:f:838:ARG:HH12	32:f:840:LEU:HB2	1.66	0.60
19:s:27:THR:HB	19:s:40:SER:H	1.66	0.60
4:D:173:GLN:NE2	4:D:332:GLU:O	2.35	0.60
7:G:113:MET:HE3	15:O:70:THR:HA	1.84	0.60
19:S:157:ASN:ND2	16:p:176:ASP:OD2	2.29	0.60
11:K:82:ILE:O	11:K:86:LYS:NZ	2.35	0.60
18:R:161:TYR:OH	18:R:196:HIS:ND1	2.33	0.60
13:m:211:LEU:O	13:m:232:ARG:NH2	2.34	0.60
5:E:297:ARG:HE	5:E:299:ILE:HD11	1.67	0.60
21:U:214:ILE:HD12	21:U:904:LYS:HZ1	1.66	0.60
25:Y:247:LEU:O	25:Y:251:HIS:ND1	2.28	0.60
19:s:21:ALA:HB3	19:s:198:VAL:HB	1.83	0.60
7:G:244:GLU:O	23:W:52:LYS:NZ	2.34	0.60
12:L:176:MET:HE3	13:M:57:LEU:HD23	1.83	0.60
28:b:122:LYS:HG2	33:z:75:GLY:O	2.02	0.60
32:f:83:ARG:NH2	32:f:149:GLU:OE1	2.35	0.60
12:l:14:SER:HB2	12:l:18:ARG:H	1.67	0.60
1:A:66:LYS:NZ	1:A:69:ASP:OD1	2.34	0.59
5:E:109:ARG:NH2	6:F:113:LEU:O	2.35	0.59
16:P:83:LYS:HD3	16:P:85:TYR:H	1.67	0.59
25:Y:235:ASP:O	25:Y:239:LYS:NZ	2.35	0.59
28:b:65:THR:HG21	28:b:70:ARG:HD3	1.84	0.59
30:d:118:GLU:OE2	30:d:121:ARG:NH1	2.35	0.59
10:J:116:GLN:NE2	11:K:84:ASP:OD1	2.35	0.59
20:T:152:GLU:OE1	20:T:156:LYS:NZ	2.35	0.59
9:i:25:MET:HE1	9:i:151:ASP:HB3	1.83	0.59
2:B:183:THR:HG22	2:B:184:TYR:H	1.67	0.59
2:B:435:PRO:HB2	9:I:25:MET:HE1	1.83	0.59
21:U:351:MET:HA	21:U:354:LYS:HB2	1.83	0.59
8:H:123:GLN:NE2	9:I:128:ARG:O	2.35	0.59
15:O:78:THR:HG22	15:O:82:MET:HE1	1.83	0.59
19:S:194:ARG:NH1	19:S:205:GLU:OE1	2.35	0.59
24:X:21:GLU:HA	24:X:24:ILE:HD12	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:c:100:LYS:HG3	29:c:105:PRO:HD3	1.84	0.59
11:k:149:LYS:HE3	11:k:152:GLN:HE21	1.67	0.59
11:K:203:LYS:HG3	11:K:206:MET:HE2	1.83	0.59
13:m:34:SER:OG	13:m:65:ARG:NH1	2.34	0.59
5:E:246:GLY:O	5:E:251:ARG:NH1	2.34	0.59
26:Z:266:ILE:HD12	29:c:248:MET:HE2	1.84	0.59
26:Z:287:LYS:HG3	26:Z:288:LYS:HD3	1.84	0.59
16:p:14:MET:HB3	16:p:21:ALA:HB3	1.85	0.59
4:D:98:GLN:OE1	4:D:121:ARG:NH2	2.29	0.59
5:E:175:PRO:O	5:E:180:LYS:NZ	2.35	0.59
18:R:21:THR:HA	18:R:27:ALA:H	1.68	0.59
21:U:700:GLU:H	21:U:706:VAL:HG21	1.65	0.59
23:W:293:ASP:HB3	23:W:296:LEU:HB2	1.85	0.59
23:W:403:PHE:O	23:W:417:ARG:NH2	2.35	0.59
5:E:247:THR:HG22	5:E:249:ALA:H	1.67	0.59
13:M:204:VAL:HG13	13:M:205:LYS:HG3	1.84	0.59
28:b:122:LYS:CE	33:z:39:ASP:OD1	2.51	0.59
32:f:113:MET:HG2	32:f:119:LYS:HD3	1.83	0.59
32:f:585:GLU:HB2	32:f:586:PRO:CD	2.23	0.59
18:R:61:ARG:NH1	18:R:62:GLN:OE1	2.36	0.59
25:Y:142:PHE:HE2	25:Y:176:ARG:HD2	1.65	0.59
32:f:785:ARG:NH1	32:f:876:HIS:O	2.36	0.59
9:i:53:HIS:HE2	9:i:55:LEU:HB2	1.67	0.59
33:z:73:LEU:HD23	33:z:74:ARG:HE	1.67	0.59
1:A:172:VAL:O	1:A:231:ASN:ND2	2.31	0.59
3:C:45:LEU:HB3	4:D:61:ILE:HG21	1.85	0.59
3:C:139:MET:HG3	3:C:214:VAL:HA	1.85	0.59
5:E:83:CYS:HB2	5:E:89:LYS:HE2	1.84	0.59
23:W:256:ILE:HA	23:W:262:LYS:HE3	1.85	0.59
29:c:100:LYS:HE3	29:c:105:PRO:HG3	1.84	0.59
30:d:23:LEU:O	30:d:27:LYS:HG2	2.02	0.59
32:f:348:ILE:O	32:f:349:TYR:C	2.46	0.59
3:C:20:LEU:HD12	3:C:21:ARG:HG3	1.83	0.58
9:i:53:HIS:CE1	9:i:55:LEU:HB2	2.37	0.58
10:j:40:ILE:HD11	10:j:210:VAL:HB	1.84	0.58
11:k:100:TRP:O	18:r:57:ARG:NH2	2.36	0.58
5:E:98:VAL:HG12	5:E:110:TYR:HA	1.86	0.58
28:b:133:LYS:HD3	33:z:7:THR:HG21	1.84	0.58
29:c:131:GLN:HA	29:c:134:GLU:HG2	1.84	0.58
1:A:364:VAL:O	1:A:366:ARG:NH1	2.36	0.58
22:V:496:PHE:HB2	22:V:497:PRO:HD3	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:c:36:LEU:HD11	29:c:71:ASP:HA	1.85	0.58
32:f:151:LEU:HB3	32:f:159:VAL:HG22	1.85	0.58
32:f:894:LEU:HA	32:f:898:VAL:HG21	1.85	0.58
10:J:36:ARG:HA	10:J:41:VAL:HG12	1.85	0.58
16:P:34:MET:O	18:r:166:ARG:NH1	2.37	0.58
32:f:398:TRP:HA	32:f:401:LYS:HD3	1.84	0.58
12:l:7:ASP:OD1	12:l:21:GLN:NE2	2.36	0.58
3:C:143:VAL:O	3:C:201:ARG:NH2	2.36	0.58
24:X:187:ARG:HE	24:X:217:ILE:HG22	1.69	0.58
12:l:95:SER:OG	12:l:101:ARG:NH1	2.37	0.58
3:C:145:ASP:OD1	3:C:201:ARG:NH2	2.36	0.58
6:F:124:ILE:HD12	6:F:134:LEU:HD21	1.84	0.58
12:L:196:ARG:NH1	12:L:237:GLU:O	2.37	0.58
18:R:154:ASP:OD1	18:R:157:ARG:NH2	2.37	0.58
12:l:165:SER:OG	12:l:169:ARG:NH1	2.36	0.58
28:b:161:ASN:HB2	28:b:166:THR:N	2.18	0.58
32:f:83:ARG:NH1	32:f:153:SER:OG	2.33	0.58
32:f:266:LEU:HD11	32:f:278:VAL:HG22	1.86	0.58
12:l:39:LYS:NZ	12:l:156:CYS:O	2.36	0.58
3:C:57:ARG:HH22	21:U:649:ARG:HD3	1.69	0.58
9:I:123:GLN:NE2	10:J:125:ARG:O	2.37	0.58
11:K:100:TRP:O	18:R:57:ARG:NH2	2.37	0.58
19:S:99:ARG:NH1	19:S:104:TYR:OH	2.36	0.58
24:X:103:THR:HA	24:X:106:GLU:OE1	2.04	0.58
29:c:233:ASP:HB3	29:c:236:GLU:HG3	1.85	0.58
14:n:174:ILE:HB	14:n:189:LEU:HB2	1.85	0.58
21:U:14:GLU:O	21:U:20:LYS:NZ	2.35	0.58
33:z:27:LYS:NZ	33:z:41:GLN:HB2	2.18	0.58
1:A:265:ARG:NH1	1:A:310:ASP:OD2	2.37	0.58
3:C:88:LYS:O	3:C:88:LYS:NZ	2.27	0.58
21:U:198:LEU:HD21	21:U:219:CYS:HB2	1.85	0.58
22:V:355:ARG:HD2	31:e:27:TRP:HB2	1.86	0.58
29:c:270:LEU:HA	29:c:273:LYS:HG2	1.85	0.58
14:n:98:ILE:HB	14:n:114:VAL:HB	1.86	0.58
16:p:7:ASN:O	16:p:27:ARG:NH1	2.36	0.58
14:N:46:SER:OG	14:N:97:GLY:O	2.22	0.57
21:U:666:LYS:NZ	21:U:702:THR:O	2.29	0.57
27:a:249:GLN:HA	27:a:252:LYS:HB2	1.85	0.57
28:b:130:ARG:CZ	33:z:71:LEU:HB2	2.34	0.57
16:p:37:THR:HG21	16:p:204:MET:HE1	1.86	0.57
20:T:25:ASP:OD1	20:T:41:ARG:NH2	2.37	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:d:49:ILE:HD12	30:d:52:ARG:HH21	1.69	0.57
32:f:266:LEU:HD12	32:f:269:ALA:HB3	1.85	0.57
22:V:199:ASN:OD1	22:V:201:ARG:NH1	2.37	0.57
24:X:9:PHE:HE2	24:X:45:VAL:HG13	1.69	0.57
12:l:72:ILE:HB	12:l:132:LEU:HD11	1.86	0.57
14:n:14:LEU:HB2	14:n:177:ALA:HB3	1.85	0.57
3:C:49:ARG:HD2	21:U:639:LEU:HD21	1.86	0.57
3:C:273:MET:HA	3:C:276:LEU:HD12	1.85	0.57
24:X:332:GLU:HA	24:X:335:LEU:HB2	1.86	0.57
16:p:58:THR:O	17:q:85:ARG:NH2	2.37	0.57
11:K:235:GLU:HA	11:K:238:ILE:HB	1.87	0.57
12:L:72:ILE:HB	12:L:132:LEU:HD11	1.85	0.57
13:M:134:SER:HB2	13:M:153:PRO:HD3	1.87	0.57
29:c:40:LYS:HD3	29:c:43:LYS:HE3	1.85	0.57
11:k:216:GLU:HB3	11:k:228:MET:HE1	1.87	0.57
20:t:61:GLN:HA	20:t:64:LYS:HD3	1.87	0.57
5:E:136:GLY:O	37:E:401:ADP:N6	2.37	0.57
28:b:129:LYS:CD	28:b:132:LYS:HD2	2.34	0.57
3:C:80:MET:HE1	3:C:86:LEU:HB2	1.87	0.57
4:D:83:GLN:C	4:D:85:ILE:H	2.12	0.57
12:L:76:GLY:HA3	12:L:130:VAL:HA	1.86	0.57
21:U:798:PRO:O	21:U:880:ASN:ND2	2.37	0.57
25:Y:188:CYS:SG	25:Y:196:GLN:NE2	2.76	0.57
27:a:135:ILE:HG12	27:a:158:LEU:HD13	1.86	0.57
9:i:92:LEU:HB3	9:i:96:ARG:HH21	1.69	0.57
4:D:274:ARG:NH2	4:D:282:ASP:OD2	2.37	0.57
16:P:58:THR:O	17:Q:85:ARG:NH2	2.38	0.57
17:Q:162:LYS:O	18:r:141:ARG:NH2	2.37	0.57
18:R:38:ASN:HD21	18:R:41:LEU:HD23	1.68	0.57
8:h:42:ASN:ND2	8:h:183:GLU:OE2	2.37	0.57
10:j:7:ILE:O	11:k:135:ARG:NH2	2.38	0.57
1:A:233:THR:HG23	1:A:271:LEU:HD12	1.87	0.57
2:B:387:LYS:HD2	10:J:200:GLN:HE21	1.69	0.57
4:D:388:ARG:NH1	5:E:144:GLU:OE2	2.37	0.57
10:J:65:LEU:H	10:J:70:CYS:HA	1.70	0.57
20:T:25:ASP:HA	20:T:187:PHE:HA	1.87	0.57
8:h:50:LYS:HE2	8:h:64:LYS:HD2	1.86	0.57
11:k:82:ILE:O	11:k:86:LYS:NZ	2.37	0.57
20:t:9:THR:O	20:t:41:ARG:NH1	2.36	0.57
15:O:72:ARG:HH12	15:O:75:ARG:HG3	1.70	0.57
18:R:192:VAL:HG11	16:p:205:ASP:HB3	1.87	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:b:133:LYS:HB2	33:z:9:THR:OG1	2.05	0.57
30:d:3:GLU:HB2	30:d:25:ARG:HD3	1.86	0.57
21:U:628:ARG:NH1	21:U:749:GLN:OE1	2.37	0.56
29:c:76:PRO:HG2	29:c:87:VAL:HG21	1.86	0.56
32:f:295:ALA:HB1	32:f:321:MET:HB3	1.87	0.56
3:C:286:THR:O	3:C:289:ILE:N	2.33	0.56
8:H:185:GLU:HA	8:H:188:ILE:HD12	1.87	0.56
16:P:145:GLN:HG3	19:s:147:PRO:HG2	1.87	0.56
16:p:15:LYS:HE3	16:p:121:ILE:HG12	1.86	0.56
2:B:192:ASN:OD1	2:B:195:GLN:NE2	2.37	0.56
3:C:246:ILE:HB	3:C:291:VAL:HG12	1.85	0.56
4:D:95:ALA:HA	4:D:101:ALA:HA	1.87	0.56
10:J:220:LEU:HD13	10:J:224:GLU:HB2	1.87	0.56
16:P:65:GLN:OE1	17:Q:86:ARG:NH2	2.38	0.56
16:P:203:ARG:NH2	16:P:205:ASP:OD2	2.37	0.56
18:R:39:PRO:HA	18:R:184:TRP:HE1	1.70	0.56
28:b:129:LYS:NZ	28:b:159:THR:HB	2.20	0.56
28:b:134:GLU:C	28:b:136:VAL:H	2.12	0.56
32:f:341:GLU:O	32:f:773:LYS:NZ	2.38	0.56
10:j:146:GLN:NE2	10:j:147:THR:O	2.38	0.56
6:F:180:ARG:NH1	6:F:244:THR:O	2.38	0.56
8:H:67:PRO:HG2	15:O:68:LEU:HD11	1.87	0.56
25:Y:374:ASP:HA	25:Y:377:LEU:HD12	1.87	0.56
29:c:162:LEU:HD12	29:c:200:TYR:HB3	1.87	0.56
9:i:53:HIS:CG	9:i:54:LYS:N	2.74	0.56
3:C:253:SER:HB3	3:C:300:ILE:HD11	1.87	0.56
9:I:53:HIS:CG	9:I:54:LYS:N	2.72	0.56
28:b:129:LYS:HA	28:b:132:LYS:HB2	1.87	0.56
15:o:1:THR:N	15:o:168:GLY:O	2.37	0.56
4:D:92:PHE:CE2	4:D:125:LYS:HA	2.40	0.56
7:G:221:THR:HG22	7:G:223:GLU:H	1.70	0.56
17:Q:68:LYS:HD3	17:Q:74:GLU:HG3	1.88	0.56
32:f:673:ARG:O	32:f:677:HIS:ND1	2.33	0.56
19:s:85:THR:HA	19:s:88:ILE:HD12	1.87	0.56
21:U:540:GLN:HB2	29:c:68:ARG:HH22	1.69	0.56
21:U:625:ILE:HG13	21:U:626:LEU:HG	1.88	0.56
25:Y:360:ASP:OD2	25:Y:363:ASN:ND2	2.37	0.56
7:g:43:ARG:HH21	7:g:164:LYS:HG2	1.70	0.56
2:B:120:HIS:HA	2:B:134:SER:HA	1.88	0.56
2:B:387:LYS:HA	10:J:200:GLN:HG3	1.87	0.56
3:C:284:GLU:O	3:C:287:LYS:HG3	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:180:ARG:HH12	6:F:245:LYS:HA	1.71	0.56
11:K:74:ILE:HG12	11:K:145:GLY:HA3	1.87	0.56
20:T:1:THR:N	20:T:105:PRO:O	2.39	0.56
25:Y:168:ILE:HD12	25:Y:180:LEU:HD13	1.87	0.56
30:d:78:LEU:HD13	30:d:98:LEU:HD21	1.88	0.56
32:f:288:VAL:HA	32:f:291:GLN:HB2	1.88	0.56
7:G:212:PRO:HD3	7:G:239:LEU:HD13	1.88	0.56
12:L:225:ASP:H	12:L:228:ASP:HB3	1.71	0.56
28:b:129:LYS:C	28:b:131:LEU:N	2.62	0.56
30:d:114:GLU:HA	30:d:117:THR:HG22	1.88	0.56
2:B:151:LEU:HB2	2:B:161:GLY:H	1.71	0.56
7:G:38:THR:O	7:G:52:THR:OG1	2.24	0.56
9:I:38:LEU:HD23	9:I:160:LYS:HG2	1.87	0.56
11:K:203:LYS:HD2	11:K:210:LEU:HD22	1.87	0.56
18:R:44:THR:HG1	18:R:100:MET:H	1.54	0.56
29:c:58:LEU:HB3	29:c:71:ASP:HB3	1.87	0.56
32:f:735:GLY:O	32:f:828:ARG:NH1	2.39	0.56
11:k:71:ASP:OD1	11:k:74:ILE:N	2.40	0.56
16:p:62:THR:OG1	17:q:85:ARG:NH2	2.37	0.56
5:E:234:GLU:HB2	6:F:311:LEU:HD13	1.88	0.55
16:P:35:VAL:HG12	16:P:36:THR:HG23	1.88	0.55
22:V:350:GLN:HB2	22:V:353:LEU:HB3	1.87	0.55
28:b:6:THR:HB	28:b:49:VAL:HG22	1.88	0.55
30:d:175:ARG:NH2	30:d:198:LEU:O	2.40	0.55
18:r:38:ASN:OD1	18:r:41:LEU:N	2.40	0.55
2:B:112:LEU:HD12	2:B:148:CYS:HB2	1.88	0.55
25:Y:349:LYS:O	25:Y:351:ASN:N	2.38	0.55
7:g:155:ASP:OD1	7:g:159:TYR:N	2.38	0.55
11:k:121:LEU:HD23	11:k:160:GLY:HA3	1.87	0.55
33:z:71:LEU:HD22	33:z:71:LEU:N	2.20	0.55
3:C:57:ARG:NH2	21:U:643:SER:O	2.39	0.55
4:D:170:MET:HE3	4:D:172:ILE:HB	1.87	0.55
4:D:388:ARG:HD2	5:E:143:ARG:HE	1.72	0.55
8:H:143:ARG:NH1	8:H:144:PRO:O	2.39	0.55
29:c:125:VAL:HG21	34:v:25:LYS:HE2	1.88	0.55
30:d:72:GLU:HA	30:d:75:MET:HG2	1.87	0.55
11:k:221:GLN:HB3	11:k:224:GLN:HG2	1.89	0.55
17:q:143:LEU:O	17:q:147:TYR:HB2	2.07	0.55
16:P:62:THR:OG1	17:Q:85:ARG:NH2	2.39	0.55
28:b:134:GLU:C	28:b:136:VAL:N	2.64	0.55
32:f:55:GLU:OE2	32:f:81:GLN:NE2	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:g:165:ALA:HB3	8:h:56:LEU:HD22	1.89	0.55
10:j:113:SER:HB2	10:j:117:ARG:HH12	1.70	0.55
1:A:227:ARG:NH2	2:B:318:GLY:O	2.38	0.55
7:G:123:GLN:NE2	8:H:82:ASP:OD1	2.39	0.55
21:U:772:TRP:HB3	21:U:775:LEU:HD12	1.89	0.55
23:W:146:THR:HG21	23:W:169:LEU:HD21	1.88	0.55
27:a:74:LEU:HD22	27:a:113:LEU:HD21	1.88	0.55
30:d:122:LEU:HB3	30:d:125:LYS:HB2	1.87	0.55
3:C:286:THR:O	3:C:288:ASN:N	2.33	0.55
4:D:345:PHE:HB3	4:D:360:LEU:HD21	1.87	0.55
5:E:194:ASN:O	5:E:229:ILE:N	2.33	0.55
23:W:201:ARG:HE	23:W:205:ILE:HD11	1.72	0.55
27:a:278:MET:O	27:a:339:ARG:NH2	2.39	0.55
32:f:394:ASP:O	32:f:397:LYS:NZ	2.40	0.55
20:t:109:THR:HG23	20:t:126:ASP:HA	1.88	0.55
4:D:159:LYS:HB3	4:D:221:HIS:HD2	1.72	0.55
4:D:283:ARG:HB3	4:D:287:ARG:HH21	1.70	0.55
21:U:451:ALA:O	21:U:453:HIS:ND1	2.39	0.55
22:V:345:ARG:HH21	31:e:43:TRP:HA	1.70	0.55
25:Y:101:ARG:NH1	25:Y:102:ASP:OD1	2.39	0.55
27:a:247:ARG:HH22	27:a:269:LEU:HD22	1.72	0.55
2:B:411:ARG:NH2	2:B:418:ASP:OD1	2.40	0.55
10:J:189:LYS:HA	10:J:232:ILE:HD11	1.89	0.55
17:Q:45:LEU:HB2	17:Q:103:LEU:HB2	1.89	0.55
20:T:37:ARG:NH1	14:n:165:GLU:OE2	2.40	0.55
24:X:237:GLU:HA	24:X:240:ASP:HB2	1.87	0.55
32:f:493:ASN:ND2	32:f:529:SER:OG	2.39	0.55
6:F:221:LYS:NZ	6:F:326:VAL:O	2.39	0.55
9:I:52:ILE:O	9:I:53:HIS:C	2.49	0.55
14:N:98:ILE:HB	14:N:114:VAL:HG13	1.88	0.55
23:W:405:LYS:HA	24:X:342:PHE:HA	1.88	0.55
23:W:451:MET:O	23:W:455:LEU:HG	2.06	0.55
24:X:422:THR:O	26:Z:279:LYS:NZ	2.40	0.55
29:c:117:GLY:N	29:c:146:ASP:OD1	2.37	0.55
30:d:99:LEU:HB3	30:d:133:ILE:HD11	1.89	0.55
2:B:196:GLU:OE1	2:B:349:ARG:NH1	2.40	0.54
6:F:363:ALA:HA	6:F:366:MET:HE2	1.88	0.54
7:G:111:VAL:HG21	7:G:142:GLY:HA3	1.90	0.54
13:m:80:LEU:H	13:m:133:CYS:HB3	1.72	0.54
8:H:74:LEU:HD12	8:H:134:LEU:HD12	1.90	0.54
15:O:148:GLU:OE2	15:O:182:LYS:NZ	2.40	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:g:132:ARG:HH21	13:m:14:PHE:HZ	1.55	0.54
1:A:360:ARG:HD2	32:f:858:LYS:HD2	1.89	0.54
5:E:147:GLU:HA	5:E:151:LEU:HD12	1.88	0.54
6:F:43:GLN:HA	6:F:46:ARG:HG2	1.88	0.54
19:S:119:GLY:O	19:S:132:ARG:NH2	2.41	0.54
23:W:154:GLU:OE2	23:W:191:ARG:NH1	2.31	0.54
9:i:136:TYR:HB2	9:i:148:TYR:HB2	1.90	0.54
9:i:180:LYS:HB2	9:i:184:MET:HE3	1.89	0.54
33:u:4:PHE:CD2	33:u:64:GLU:HG2	2.32	0.54
6:F:101:PRO:HA	6:F:115:SER:HB2	1.89	0.54
6:F:366:MET:HE3	6:F:381:TYR:HD1	1.73	0.54
11:K:168:ARG:NH2	12:L:53:GLN:OE1	2.41	0.54
24:X:107:VAL:O	24:X:110:CYS:HB2	2.07	0.54
26:Z:26:ILE:HD11	26:Z:35:VAL:HG22	1.89	0.54
32:f:351:THR:HG21	32:f:357:ARG:HH22	1.73	0.54
5:E:61:LEU:HB2	5:E:70:ILE:HG23	1.90	0.54
6:F:295:ARG:HH12	6:F:311:LEU:HD11	1.72	0.54
11:K:107:MET:N	11:K:107:MET:SD	2.80	0.54
11:K:157:ASP:OD1	11:K:161:THR:N	2.40	0.54
28:b:1:MET:N	28:b:43:SER:O	2.41	0.54
28:b:134:GLU:HG2	28:b:136:VAL:HG23	1.90	0.54
29:c:115:HIS:HB3	29:c:118:PHE:HB2	1.89	0.54
1:A:255:ARG:HH21	1:A:258:ARG:NH1	2.06	0.54
3:C:62:GLU:HG2	3:C:66:LEU:HD13	1.89	0.54
3:C:127:LEU:HD22	4:D:96:VAL:HG21	1.90	0.54
3:C:182:GLN:NE2	3:C:285:ALA:O	2.39	0.54
4:D:92:PHE:HE2	4:D:125:LYS:HA	1.72	0.54
11:K:117:SER:OG	12:L:82:ARG:NH1	2.40	0.54
23:W:406:VAL:HA	23:W:413:ILE:HG22	1.88	0.54
25:Y:308:LEU:O	25:Y:358:ARG:NH2	2.41	0.54
28:b:134:GLU:OE2	33:z:9:THR:HG22	2.08	0.54
12:l:180:MET:HG2	12:l:181:GLU:HG2	1.89	0.54
10:J:31:THR:OG1	10:J:163:ARG:O	2.23	0.54
11:k:133:MET:HG3	11:k:135:ARG:H	1.73	0.54
1:A:279:ALA:HB2	2:B:310:LEU:HD23	1.90	0.54
4:D:96:VAL:HG23	4:D:102:ILE:HD11	1.89	0.54
6:F:113:LEU:HA	6:F:117:ARG:HH22	1.73	0.54
6:F:306:VAL:O	6:F:309:THR:OG1	2.25	0.54
10:j:189:LYS:HA	10:j:232:ILE:HD11	1.89	0.54
13:m:228:PRO:HD2	13:m:231:ILE:HD12	1.89	0.54
7:G:112:ASP:HB3	7:G:152:TYR:CZ	2.43	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:200:PRO:O	12:L:239:ARG:NH2	2.40	0.54
24:X:74:ARG:HH22	24:X:116:TRP:HB2	1.72	0.54
27:a:77:VAL:HA	27:a:80:ILE:HG22	1.89	0.54
11:k:44:GLU:O	11:k:221:GLN:NE2	2.41	0.54
11:k:48:LEU:HD21	11:k:77:ALA:HB2	1.90	0.54
4:D:126:PRO:HG2	4:D:128:ALA:CB	2.38	0.54
7:G:103:TYR:O	15:O:81:ARG:NH2	2.41	0.54
11:K:36:THR:HG1	11:K:173:ALA:H	1.53	0.54
21:U:351:MET:HE3	21:U:355:ASN:HB3	1.90	0.54
23:W:170:GLN:NE2	23:W:172:GLU:OE1	2.41	0.54
24:X:8:GLU:HA	24:X:11:ARG:HG2	1.88	0.54
11:k:41:GLN:HB2	11:k:153:LEU:HB2	1.90	0.54
16:p:159:ASP:N	16:p:159:ASP:OD1	2.39	0.54
17:q:107:TYR:HA	17:q:113:PRO:HA	1.90	0.54
4:D:92:PHE:HA	4:D:103:VAL:HG12	1.89	0.53
5:E:281:ARG:HD3	6:F:295:ARG:HD2	1.89	0.53
6:F:129:ARG:NH2	34:v:14:UNK:CB	2.70	0.53
10:J:42:VAL:HG22	10:J:210:VAL:HG12	1.90	0.53
11:K:20:ARG:HD2	12:L:31:GLN:HE22	1.73	0.53
12:L:103:LEU:HD23	12:L:108:LEU:HD12	1.90	0.53
21:U:82:LEU:O	21:U:129:ARG:NE	2.39	0.53
29:c:78:SER:HB3	29:c:85:GLU:HG2	1.90	0.53
32:f:809:ILE:HG23	32:f:814:SER:HB2	1.89	0.53
7:g:234:GLU:O	7:g:238:HIS:ND1	2.33	0.53
10:j:36:ARG:HE	10:j:144:LEU:HB3	1.71	0.53
19:s:17:GLY:HA2	19:s:166:LEU:HD11	1.90	0.53
33:z:18:GLU:N	33:z:21:ASP:OD2	2.41	0.53
12:L:165:SER:OG	12:L:169:ARG:NH1	2.40	0.53
18:R:25:TYR:OH	19:S:146:GLN:OE1	2.21	0.53
21:U:10:SER:HB2	30:d:73:ARG:HG3	1.90	0.53
22:V:311:ASN:OD1	22:V:314:ARG:NH1	2.40	0.53
29:c:279:ASP:OD1	29:c:279:ASP:N	2.41	0.53
30:d:79:LYS:HD3	30:d:83:PHE:HE1	1.73	0.53
7:g:103:TYR:O	15:o:81:ARG:NH2	2.42	0.53
20:t:97:TYR:HA	20:t:100:ARG:HG2	1.88	0.53
6:F:222:GLY:O	6:F:349:ASP:N	2.42	0.53
16:P:183:MET:HG3	16:P:204:MET:HA	1.90	0.53
20:T:20:VAL:HG11	20:T:122:LEU:HD13	1.89	0.53
24:X:27:LEU:HD13	24:X:30:ILE:HD12	1.90	0.53
32:f:285:CYS:O	32:f:291:GLN:NE2	2.41	0.53
33:z:42:ARG:HG3	33:z:72:ARG:NE	2.22	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:21:THR:HG22	15:O:26:VAL:HG22	1.90	0.53
16:P:138:VAL:HB	16:P:146:MET:HE2	1.90	0.53
18:R:107:ARG:NH1	18:R:109:PRO:O	2.42	0.53
22:V:150:ARG:NH1	22:V:157:THR:O	2.41	0.53
33:z:23:ILE:HG12	33:z:54:ARG:O	2.08	0.53
12:L:11:THR:HA	13:M:129:ARG:HD3	1.91	0.53
13:M:66:LEU:HD12	13:M:212:GLU:HG2	1.91	0.53
15:O:81:ARG:HD2	15:O:84:LYS:HD3	1.91	0.53
33:u:44:ILE:HB	33:u:68:HIS:HB2	1.91	0.53
2:B:229:GLY:HA2	37:B:501:ADP:H5'1	1.91	0.53
3:C:248:MET:HE1	3:C:291:VAL:HB	1.90	0.53
13:M:8:ASP:O	13:M:22:GLN:NE2	2.36	0.53
25:Y:387:ILE:HG23	26:Z:279:LYS:HE2	1.91	0.53
14:n:4:MET:HG2	14:n:127:ILE:HG22	1.90	0.53
17:Q:83:PHE:O	17:Q:87:ASN:ND2	2.41	0.53
26:Z:142:GLU:OE2	26:Z:153:LYS:NZ	2.42	0.53
29:c:125:VAL:CB	33:u:76:GLY:H	2.22	0.53
2:B:299:SER:HA	2:B:303:ARG:HB2	1.89	0.53
15:O:138:PHE:O	15:O:142:PHE:HB2	2.09	0.53
19:S:27:THR:HB	19:S:40:SER:H	1.74	0.53
21:U:383:ASP:HB3	21:U:386:LEU:HB3	1.91	0.53
28:b:133:LYS:NZ	33:z:11:LYS:HD3	2.24	0.53
3:C:183:PRO:O	3:C:290:LYS:NZ	2.41	0.53
5:E:144:GLU:O	5:E:297:ARG:NH2	2.42	0.53
6:F:94:ILE:HD12	6:F:123:VAL:HG12	1.90	0.53
6:F:313:LEU:O	6:F:317:LEU:HB2	2.09	0.53
21:U:320:ASP:HB2	21:U:323:LEU:HD23	1.90	0.53
1:A:105:ASP:HB2	1:A:110:LYS:HB2	1.91	0.53
10:J:148:ASP:OD1	10:J:152:THR:N	2.42	0.53
16:P:4:MET:HE1	16:P:104:TYR:HB3	1.91	0.53
21:U:749:GLN:HE22	21:U:753:GLY:HA2	1.72	0.53
27:a:321:LYS:HB2	27:a:335:TRP:HB3	1.90	0.53
30:d:5:LEU:HD11	30:d:50:LEU:HD23	1.91	0.53
31:e:50:ASP:OD1	31:e:55:GLN:NE2	2.39	0.53
32:f:60:VAL:HG13	32:f:109:ILE:HG21	1.91	0.53
32:f:331:LEU:HB3	32:f:335:ARG:HH12	1.74	0.53
9:i:22:GLU:HA	9:i:25:MET:HB2	1.90	0.53
2:B:153:ASN:O	2:B:157:HIS:ND1	2.42	0.52
7:G:120:ASP:OD1	8:H:84:ARG:NH1	2.42	0.52
12:l:132:LEU:HB3	12:l:147:THR:HB	1.91	0.52
16:p:12:MET:HG3	16:p:171:MET:HE1	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:192:ASN:O	2:B:195:GLN:NE2	2.42	0.52
6:F:289:ASP:OD1	6:F:289:ASP:N	2.40	0.52
10:J:11:SER:OG	10:J:15:HIS:N	2.42	0.52
12:L:146:GLN:HG2	12:L:159:MET:HG2	1.90	0.52
21:U:623:GLY:HA3	21:U:658:ILE:HG13	1.91	0.52
29:c:265:MET:O	29:c:269:GLN:HB2	2.09	0.52
32:f:845:ARG:NH2	32:f:883:ALA:O	2.42	0.52
7:g:137:CYS:SG	7:g:138:MET:N	2.83	0.52
17:q:53:THR:HG22	17:q:100:VAL:HG12	1.90	0.52
19:s:125:ASP:OD1	19:s:129:SER:N	2.43	0.52
4:D:401:LYS:HA	4:D:404:LYS:HB2	1.90	0.52
5:E:180:LYS:HG2	5:E:301:ILE:HD12	1.90	0.52
20:T:15:LYS:HG2	20:T:20:VAL:HG22	1.92	0.52
21:U:609:ASP:O	21:U:615:ARG:NH1	2.32	0.52
24:X:422:THR:OXT	26:Z:283:ARG:NE	2.41	0.52
25:Y:202:LEU:HD11	25:Y:239:LYS:HD2	1.91	0.52
10:j:158:ALA:HB3	11:k:58:LEU:HD21	1.92	0.52
3:C:53:ASN:ND2	21:U:642:GLU:O	2.42	0.52
25:Y:345:CYS:HA	25:Y:356:THR:HA	1.91	0.52
27:a:271:LYS:HD3	27:a:274:LEU:HD21	1.91	0.52
27:a:281:THR:OG1	27:a:289:ARG:NH1	2.43	0.52
28:b:124:LEU:HD21	28:b:152:LYS:HB3	1.90	0.52
28:b:133:LYS:HZ2	33:z:11:LYS:HD3	1.74	0.52
28:b:134:GLU:HG2	28:b:136:VAL:CG2	2.40	0.52
7:G:155:ASP:OD1	7:G:159:TYR:N	2.42	0.52
20:T:27:LEU:HD22	20:T:184:TYR:HB2	1.92	0.52
20:T:55:GLY:HA3	20:T:108:ASN:HA	1.89	0.52
27:a:138:VAL:HA	27:a:141:MET:HG2	1.91	0.52
28:b:26:LEU:HD11	28:b:80:PRO:HG3	1.92	0.52
33:z:71:LEU:N	33:z:71:LEU:CD2	2.73	0.52
1:A:141:GLY:N	1:A:151:ILE:O	2.40	0.52
7:G:89:SER:HB2	7:G:93:ARG:HH12	1.75	0.52
11:K:123:PHE:HB3	11:K:133:MET:HG3	1.92	0.52
12:L:34:ALA:HA	12:L:162:GLY:HA3	1.91	0.52
21:U:334:ALA:O	21:U:338:HIS:ND1	2.43	0.52
22:V:309:MET:HE1	22:V:332:LEU:HB2	1.92	0.52
9:i:51:ASN:C	9:i:52:ILE:HG13	2.35	0.52
12:l:164:ARG:NH1	12:l:198:THR:O	2.42	0.52
12:L:132:LEU:H	12:L:147:THR:HB	1.75	0.52
17:Q:19:ARG:NH1	17:Q:179:SER:OG	2.41	0.52
28:b:126:LYS:HG3	33:z:40:GLN:HB3	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:d:217:LEU:HB2	30:d:222:TYR:HE1	1.75	0.52
18:r:19:ARG:HH21	18:r:29:GLN:HE22	1.58	0.52
2:B:135:ILE:HA	2:B:159:VAL:HB	1.92	0.52
4:D:55:GLU:OE1	21:U:600:ARG:NH2	2.43	0.52
9:I:140:ASP:OD2	9:I:146:GLN:NE2	2.42	0.52
23:W:171:VAL:HG12	23:W:182:ARG:HG3	1.90	0.52
8:h:204:THR:OG1	8:h:206:ASP:OD1	2.26	0.52
16:p:169:GLN:O	16:p:173:ASN:ND2	2.43	0.52
18:r:39:PRO:HA	18:r:184:TRP:HE1	1.75	0.52
18:r:66:TYR:OH	18:r:72:GLU:OE2	2.25	0.52
4:D:86:PRO:CB	4:D:134:LYS:HD2	2.40	0.52
5:E:26:LEU:HD11	6:F:58:GLU:HB2	1.92	0.52
5:E:182:LEU:HD22	37:E:401:ADP:H2'	1.92	0.52
6:F:313:LEU:O	6:F:317:LEU:CB	2.58	0.52
17:Q:197:PRO:HD2	17:q:199:GLN:H	1.74	0.52
32:f:266:LEU:HG	32:f:270:LEU:HG	1.91	0.52
12:l:33:SER:OG	12:l:51:ARG:NE	2.41	0.52
3:C:134:LEU:HD22	3:C:230:MET:HA	1.91	0.52
4:D:191:TYR:HA	4:D:196:ILE:HD12	1.92	0.52
5:E:237:ALA:HB2	6:F:311:LEU:HD12	1.92	0.52
6:F:334:ARG:HE	6:F:335:VAL:H	1.56	0.52
8:H:16:SER:OG	8:H:18:LYS:NZ	2.36	0.52
15:O:212:LEU:HD21	16:P:201:LYS:HD3	1.92	0.52
32:f:99:LEU:HA	32:f:102:HIS:HB2	1.92	0.52
3:C:86:LEU:HD21	3:C:94:LYS:HE2	1.92	0.51
4:D:87:LEU:HD13	4:D:131:ALA:HB1	1.91	0.51
16:P:193:ASP:N	16:P:193:ASP:OD1	2.42	0.51
19:S:114:ASP:OD1	19:S:118:LYS:N	2.40	0.51
26:Z:82:PHE:HA	26:Z:85:VAL:HG12	1.91	0.51
29:c:59:GLY:HA3	29:c:69:VAL:HA	1.93	0.51
32:f:231:LEU:HG	32:f:853:VAL:HG22	1.92	0.51
19:S:209:SER:OG	19:S:212:LYS:NZ	2.39	0.51
20:T:126:ASP:OD1	20:T:130:VAL:N	2.43	0.51
26:Z:166:GLU:OE2	29:c:46:ARG:NE	2.40	0.51
30:d:139:LEU:HD11	30:d:151:VAL:HG13	1.92	0.51
10:j:113:SER:HB2	10:j:117:ARG:NH1	2.26	0.51
12:l:45:VAL:HG12	12:l:214:ILE:HG12	1.92	0.51
14:n:7:GLN:NE2	14:n:109:GLY:O	2.43	0.51
1:A:255:ARG:HH21	1:A:258:ARG:HH11	1.57	0.51
1:A:329:PRO:HA	1:A:332:MET:HE2	1.91	0.51
2:B:214:MET:HE1	2:B:216:ILE:HD12	1.92	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:C:351:MET:HE1	3:C:359:VAL:HG22	1.91	0.51
17:Q:25:ILE:HD11	17:q:134:TYR:HB3	1.92	0.51
24:X:70:LEU:HD13	24:X:109:LEU:HD23	1.91	0.51
27:a:34:TRP:HD1	28:b:18:ASN:HA	1.76	0.51
14:n:9:ASP:OD1	14:n:9:ASP:N	2.43	0.51
16:p:28:PHE:HB2	16:p:39:PHE:HB2	1.93	0.51
17:q:19:ARG:HD2	17:q:179:SER:HB3	1.91	0.51
1:A:72:LEU:HD11	2:B:103:ARG:HH22	1.76	0.51
1:A:307:ASP:OD2	1:A:333:ARG:NH2	2.41	0.51
3:C:248:MET:HE2	3:C:293:MET:HB2	1.92	0.51
3:C:286:THR:C	3:C:288:ASN:N	2.67	0.51
4:D:231:VAL:HG11	5:E:216:ARG:HH21	1.74	0.51
8:H:34:PRO:HA	8:H:164:GLY:HA3	1.92	0.51
22:V:315:LYS:O	25:Y:382:LYS:NZ	2.34	0.51
25:Y:228:MET:HE1	25:Y:299:MET:HG3	1.92	0.51
25:Y:356:THR:OG1	25:Y:358:ARG:NH1	2.39	0.51
28:b:12:ASN:HB2	28:b:80:PRO:HA	1.92	0.51
17:q:85:ARG:HD2	17:q:124:LEU:HD23	1.93	0.51
1:A:238:ILE:N	1:A:271:LEU:O	2.41	0.51
8:H:177:ARG:HH11	24:X:160:MET:HB3	1.74	0.51
15:O:46:ALA:HB3	15:O:97:ALA:HB3	1.92	0.51
16:P:53:LEU:HD22	16:P:60:VAL:HG13	1.93	0.51
30:d:122:LEU:HD22	30:d:125:LYS:HG3	1.91	0.51
32:f:376:PHE:HE1	32:f:409:SER:HB3	1.76	0.51
17:q:78:THR:HG1	17:q:116:TYR:HH	1.58	0.51
4:D:238:LYS:HD3	34:v:11:UNK:CB	2.40	0.51
4:D:296:MET:HE1	4:D:326:ARG:HB3	1.93	0.51
10:J:127:PHE:HB3	10:J:129:ILE:HG12	1.93	0.51
15:O:30:ASN:O	15:O:187:ARG:NH2	2.44	0.51
18:R:130:SER:OG	18:R:167:ASP:OD2	2.28	0.51
23:W:155:GLN:NE2	23:W:156:ASN:OD1	2.42	0.51
32:f:803:PHE:HA	32:f:806:VAL:HB	1.91	0.51
32:f:827:PRO:HB2	32:f:829:MET:HG3	1.93	0.51
21:U:346:ASN:HD22	21:U:347:ASN:N	2.09	0.51
7:g:202:LEU:O	7:g:206:LEU:HB2	2.11	0.51
33:z:42:ARG:HG3	33:z:72:ARG:CZ	2.41	0.51
14:N:30:VAL:HG11	20:t:211:ILE:HG23	1.93	0.51
21:U:540:GLN:HB2	29:c:68:ARG:HH12	1.76	0.51
33:u:39:ASP:O	33:u:42:ARG:NH1	2.44	0.51
4:D:204:MET:HE1	4:D:331:ILE:HD12	1.93	0.51
13:M:8:ASP:HB3	13:M:21:PHE:HD2	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:N:166:ARG:NH1	20:t:34:ALA:O	2.43	0.51
19:S:26:ASP:HB3	19:S:189:THR:HG23	1.93	0.51
24:X:103:THR:HA	24:X:106:GLU:CD	2.36	0.51
31:e:44:ASP:OD1	31:e:47:ASN:ND2	2.42	0.51
33:z:7:THR:C	33:z:9:THR:H	2.19	0.51
1:A:120:LYS:HE3	6:F:90:VAL:HG21	1.93	0.51
4:D:126:PRO:C	4:D:128:ALA:N	2.67	0.51
7:G:46:ASP:OD1	7:G:46:ASP:N	2.42	0.51
13:M:39:ILE:HD11	13:M:176:ILE:HG12	1.93	0.51
21:U:234:GLU:HG2	21:U:238:LYS:HE3	1.93	0.51
23:W:179:LYS:HD2	23:W:182:ARG:HH12	1.76	0.51
24:X:103:THR:HA	24:X:106:GLU:CG	2.41	0.51
29:c:291:LEU:O	29:c:295:ASN:ND2	2.44	0.51
7:g:96:TYR:O	7:g:100:ASN:ND2	2.44	0.51
15:o:20:ALA:HB3	15:o:28:ASP:HB3	1.92	0.51
4:D:78:GLU:OE2	26:Z:177:ARG:NH1	2.39	0.50
9:I:77:ALA:HB2	9:I:164:ILE:HD12	1.91	0.50
21:U:568:GLU:HA	21:U:601:ARG:HH22	1.77	0.50
25:Y:282:MET:HE1	25:Y:292:TYR:HA	1.93	0.50
25:Y:314:LEU:O	25:Y:354:VAL:N	2.42	0.50
27:a:7:PHE:HE2	27:a:60:TYR:HB2	1.76	0.50
27:a:286:ALA:HA	27:a:289:ARG:HE	1.76	0.50
32:f:831:VAL:HG22	32:f:871:PRO:HB3	1.92	0.50
7:g:147:GLN:NE2	7:g:150:GLN:OE1	2.44	0.50
9:i:16:GLY:HA3	10:j:24:GLU:HB2	1.92	0.50
13:m:37:ILE:HD11	13:m:193:VAL:HG23	1.91	0.50
25:Y:314:LEU:HD21	25:Y:319:MET:HE3	1.93	0.50
28:b:157:VAL:HG21	28:b:170:LEU:HB2	1.93	0.50
17:q:41:LYS:HD2	17:q:107:TYR:HD2	1.75	0.50
5:E:135:ILE:HD11	5:E:142:ILE:HD11	1.94	0.50
25:Y:347:ILE:HG13	25:Y:354:VAL:HG22	1.92	0.50
28:b:14:GLU:OE2	28:b:17:ARG:NH2	2.42	0.50
28:b:24:THR:C	28:b:26:LEU:N	2.68	0.50
28:b:129:LYS:HE2	33:z:35:GLY:C	2.36	0.50
2:B:112:LEU:HB3	2:B:146:PRO:HA	1.92	0.50
3:C:298:ILE:HG12	3:C:314:LYS:HZ1	1.77	0.50
24:X:296:ASN:O	24:X:337:ARG:NH1	2.43	0.50
25:Y:71:ASN:HA	25:Y:74:LYS:HG2	1.94	0.50
28:b:100:ARG:NH1	28:b:102:GLY:O	2.45	0.50
12:l:125:ARG:NH1	12:l:126:ARG:O	2.44	0.50
1:A:190:VAL:HG11	1:A:212:VAL:HG21	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:383:LEU:HD22	2:B:423:LYS:HD2	1.92	0.50
10:J:36:ARG:HB2	10:J:144:LEU:HD23	1.92	0.50
12:L:190:HIS:CG	12:L:193:ARG:HH21	2.28	0.50
17:Q:181:ARG:HG2	17:Q:190:ASP:HA	1.92	0.50
26:Z:205:LEU:HD13	27:a:357:CYS:HA	1.93	0.50
26:Z:276:ILE:HD12	26:Z:279:LYS:HE3	1.92	0.50
30:d:23:LEU:HG	30:d:27:LYS:HE2	1.92	0.50
30:d:171:LEU:HD22	30:d:175:ARG:HH12	1.76	0.50
7:G:202:LEU:O	7:G:206:LEU:HB2	2.11	0.50
10:J:221:ASN:C	10:J:223:GLU:H	2.20	0.50
11:K:75:GLY:N	11:K:144:GLY:O	2.41	0.50
11:K:167:ALA:HB3	12:L:56:LEU:HD13	1.94	0.50
15:O:46:ALA:N	15:O:97:ALA:O	2.43	0.50
18:R:4:LEU:HA	18:R:127:SER:HA	1.94	0.50
18:R:166:ARG:NH1	16:p:34:MET:O	2.45	0.50
19:S:141:ALA:HB1	19:S:144:MET:HB3	1.93	0.50
26:Z:10:VAL:O	26:Z:50:VAL:N	2.44	0.50
29:c:125:VAL:CG2	34:v:25:LYS:HE2	2.41	0.50
32:f:675:PHE:HB3	32:f:690:VAL:HG13	1.92	0.50
16:P:176:ASP:OD2	19:s:157:ASN:ND2	2.37	0.50
18:R:144:SER:OG	18:R:145:TYR:N	2.44	0.50
20:T:23:ALA:HB2	20:T:189:ILE:HD12	1.93	0.50
21:U:163:PHE:O	21:U:166:THR:OG1	2.29	0.50
21:U:505:ASP:HB3	21:U:508:THR:HG22	1.93	0.50
21:U:542:GLU:OE1	21:U:546:ARG:NH1	2.45	0.50
23:W:432:LEU:HA	23:W:436:MET:HE2	1.93	0.50
23:W:455:LEU:O	23:W:456:GLN:C	2.55	0.50
24:X:343:SER:HA	24:X:387:ILE:HB	1.94	0.50
11:k:157:ASP:OD1	11:k:161:THR:N	2.44	0.50
11:k:186:HIS:H	11:k:189:MET:HE1	1.77	0.50
16:p:26:ARG:N	16:p:184:GLY:O	2.44	0.50
18:r:1:THR:N	18:r:130:SER:OG	2.38	0.50
4:D:88:VAL:HG23	4:D:132:LEU:HB2	1.93	0.50
4:D:88:VAL:O	4:D:132:LEU:HB2	2.11	0.50
12:L:98:VAL:HG12	12:L:99:PHE:HD1	1.77	0.50
14:N:1:THR:O	14:N:130:SER:N	2.45	0.50
24:X:35:ILE:HD12	24:X:46:LYS:HD2	1.94	0.50
15:o:1:THR:O	15:o:129:SER:N	2.45	0.50
33:u:1:MET:N	33:u:17:VAL:O	2.36	0.50
33:z:27:LYS:HZ3	33:z:41:GLN:HB2	1.76	0.50
3:C:224:ILE:HG12	3:C:268:GLU:HG2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:L:226:ASP:OD1	12:L:226:ASP:N	2.45	0.50
17:Q:2:GLU:HG3	17:Q:47:VAL:HB	1.94	0.50
32:f:211:ILE:HG23	32:f:213:GLN:H	1.77	0.50
32:f:349:TYR:O	32:f:350:LYS:C	2.53	0.50
7:g:123:GLN:NE2	8:h:82:ASP:OD1	2.45	0.50
13:m:65:ARG:HH21	13:m:78:ALA:HA	1.77	0.50
33:z:20:SER:O	33:z:21:ASP:C	2.55	0.50
11:K:20:ARG:NH1	12:L:31:GLN:OE1	2.45	0.49
17:Q:48:GLY:HA3	17:Q:100:VAL:HA	1.94	0.49
24:X:13:GLN:HA	24:X:16:LEU:HG	1.94	0.49
27:a:34:TRP:HZ3	27:a:64:ILE:HG23	1.77	0.49
32:f:115:PRO:HA	32:f:119:LYS:HG2	1.93	0.49
12:l:43:HIS:CD2	12:l:216:GLY:HA3	2.46	0.49
12:l:192:LEU:HD13	12:l:236:LEU:HD11	1.94	0.49
19:s:28:ARG:NH1	19:s:187:VAL:O	2.45	0.49
33:u:4:PHE:CE2	33:u:64:GLU:CG	2.49	0.49
33:u:42:ARG:CZ	33:u:72:ARG:HG2	2.42	0.49
2:B:362:LYS:HG2	2:B:384:ILE:HD13	1.94	0.49
4:D:348:ILE:HD11	35:D:501:ATP:H2	1.77	0.49
27:a:100:THR:HA	27:a:103:LYS:HG2	1.93	0.49
29:c:149:GLN:HB2	29:c:156:VAL:HG21	1.94	0.49
19:s:211:ARG:NH2	19:s:213:ASP:OD2	2.45	0.49
1:A:367:ASP:HB2	1:A:406:GLU:HG3	1.94	0.49
4:D:391:ARG:NH2	4:D:398:ASP:OD2	2.45	0.49
5:E:197:LYS:HE3	6:F:320:PHE:HB2	1.94	0.49
24:X:301:ASP:HA	24:X:304:LYS:HE3	1.95	0.49
32:f:393:ASP:N	32:f:393:ASP:OD1	2.44	0.49
32:f:607:LEU:HA	32:f:610:GLN:HG2	1.95	0.49
7:g:221:THR:HG23	7:g:224:ASN:H	1.77	0.49
13:m:215:TRP:HE1	13:m:220:THR:HB	1.78	0.49
16:p:113:ASP:HB3	16:p:117:PHE:H	1.78	0.49
17:q:8:GLN:HE21	17:q:113:PRO:HG2	1.77	0.49
4:D:203:LEU:HA	4:D:309:MET:HB2	1.94	0.49
7:G:165:ALA:HB3	8:H:56:LEU:HD22	1.95	0.49
8:H:9:SER:OG	8:H:123:GLN:O	2.30	0.49
13:M:30:VAL:HG21	13:M:153:PRO:HG2	1.95	0.49
17:Q:5:ILE:HD11	17:Q:143:LEU:HD11	1.94	0.49
23:W:401:THR:HG23	23:W:402:ILE:HD12	1.94	0.49
25:Y:155:ASP:OD1	25:Y:155:ASP:N	2.45	0.49
27:a:216:LEU:HA	27:a:219:HIS:HB2	1.94	0.49
8:h:112:GLN:HE22	8:h:113:ARG:HH21	1.58	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:r:42:LEU:HB2	18:r:102:CYS:HB2	1.93	0.49
19:s:4:PRO:O	20:t:100:ARG:NH2	2.44	0.49
4:D:133:HIS:HB3	4:D:137:ASN:H	1.78	0.49
5:E:3:ASP:OD1	5:E:3:ASP:N	2.46	0.49
6:F:294:LYS:HA	6:F:339:ASP:HB3	1.95	0.49
16:P:169:GLN:NE2	19:s:157:ASN:O	2.42	0.49
20:T:27:LEU:HD11	20:T:34:ALA:HB1	1.93	0.49
23:W:275:ILE:HD12	23:W:309:PHE:HD2	1.76	0.49
23:W:397:VAL:HG11	24:X:341:PRO:HB3	1.94	0.49
30:d:208:ASP:OD1	30:d:209:TYR:N	2.46	0.49
5:E:161:ARG:NH2	23:W:139:GLU:OE2	2.39	0.49
5:E:300:HIS:NE2	5:E:302:ASP:OD1	2.46	0.49
6:F:291:ILE:HG23	6:F:306:VAL:HG13	1.95	0.49
7:G:123:GLN:O	7:G:126:THR:OG1	2.25	0.49
23:W:453:HIS:HA	26:Z:103:LYS:NZ	2.28	0.49
28:b:129:LYS:HB3	33:z:36:ILE:CD1	2.42	0.49
29:c:55:GLY:HA3	29:c:112:TYR:CZ	2.47	0.49
32:f:55:GLU:HA	32:f:58:MET:HE2	1.94	0.49
32:f:781:TYR:HB3	32:f:785:ARG:HA	1.93	0.49
14:n:91:ARG:NH1	20:t:59:ASP:OD1	2.46	0.49
17:q:64:VAL:HG13	17:q:75:LEU:HD12	1.94	0.49
33:z:75:GLY:O	33:z:76:GLY:C	2.55	0.49
1:A:139:ARG:HD3	1:A:155:PRO:HA	1.95	0.49
1:A:161:VAL:HA	1:A:164:MET:HE3	1.94	0.49
5:E:60:VAL:HA	5:E:71:VAL:HG12	1.93	0.49
6:F:376:SER:HB3	6:F:414:GLU:HG3	1.94	0.49
14:N:141:ALA:HB2	14:n:162:LEU:HD11	1.93	0.49
15:O:100:LEU:O	15:O:111:TYR:N	2.40	0.49
23:W:344:THR:HG23	23:W:347:GLY:H	1.78	0.49
12:l:136:GLY:O	12:l:143:HIS:N	2.43	0.49
14:n:7:GLN:HB2	14:n:111:VAL:HG23	1.94	0.49
19:s:168:LEU:HG	19:s:172:MET:HE1	1.95	0.49
2:B:223:ILE:HG13	2:B:347:ILE:HG21	1.95	0.49
6:F:268:VAL:HG11	6:F:313:LEU:HD21	1.93	0.49
10:J:89:VAL:O	10:J:92:GLN:NE2	2.45	0.49
23:W:419:LYS:HE2	23:W:423:ASN:HB3	1.95	0.49
25:Y:50:MET:O	25:Y:54:TYR:N	2.44	0.49
32:f:707:LEU:HA	32:f:729:MET:HE1	1.95	0.49
32:f:801:VAL:HG23	32:f:804:LEU:HD12	1.94	0.49
16:p:126:LEU:HG	16:p:127:ILE:HG23	1.93	0.49
17:q:45:LEU:HB3	17:q:103:LEU:HB2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:392:TYR:HD1	23:W:136:ILE:HG12	1.77	0.49
12:L:7:ASP:HA	12:L:20:HIS:HB2	1.95	0.49
17:Q:144:ASP:OD2	18:r:166:ARG:NH2	2.45	0.49
30:d:45:LYS:HA	30:d:48:LEU:HB2	1.94	0.49
4:D:207:PRO:O	4:D:212:LYS:NZ	2.44	0.49
4:D:351:LYS:NZ	5:E:163:GLY:O	2.35	0.49
7:G:86:ASP:OD1	13:M:120:HIS:NE2	2.42	0.49
9:I:155:ASN:OD1	10:J:77:THR:OG1	2.31	0.49
26:Z:144:VAL:HG22	26:Z:151:THR:HA	1.94	0.49
27:a:100:THR:HG22	27:a:103:LYS:HE2	1.93	0.49
29:c:151:VAL:HG13	29:c:153:GLY:H	1.78	0.49
30:d:251:ARG:HH11	30:d:255:MET:HE1	1.78	0.49
4:D:303:VAL:HG12	4:D:305:VAL:HG23	1.95	0.48
5:E:33:LEU:HD22	6:F:62:VAL:HG13	1.95	0.48
15:O:42:TYR:HE2	15:O:183:LEU:HD11	1.78	0.48
21:U:16:GLU:HB2	21:U:20:LYS:HB2	1.95	0.48
23:W:374:THR:HG22	23:W:412:ILE:HG13	1.95	0.48
24:X:103:THR:CA	24:X:106:GLU:OE1	2.61	0.48
24:X:214:SER:O	24:X:218:HIS:ND1	2.46	0.48
27:a:28:LEU:HD23	27:a:37:LEU:HA	1.95	0.48
27:a:214:GLY:HA2	27:a:217:LEU:HD13	1.95	0.48
32:f:585:GLU:O	32:f:587:PHE:N	2.46	0.48
7:g:187:PHE:HB2	7:g:189:TRP:CE2	2.47	0.48
10:j:155:ALA:HB3	11:k:63:SER:HB2	1.94	0.48
12:l:50:LYS:HB3	12:l:59:HIS:HB3	1.95	0.48
13:m:125:TYR:HB2	13:m:128:VAL:HG22	1.95	0.48
18:r:44:THR:OG1	18:r:100:MET:N	2.44	0.48
3:C:252:ASP:N	3:C:252:ASP:OD1	2.47	0.48
4:D:145:PRO:HB2	4:D:256:GLU:HG3	1.95	0.48
14:N:19:ARG:NH1	14:N:168:GLY:O	2.46	0.48
15:O:164:PHE:O	19:s:38:ARG:NH2	2.46	0.48
16:P:142:CYS:HB2	16:P:145:GLN:HE21	1.78	0.48
17:Q:21:ALA:O	17:Q:28:MET:N	2.46	0.48
22:V:85:ALA:HB3	22:V:94:VAL:HG13	1.94	0.48
22:V:438:VAL:HG11	22:V:451:ILE:HD13	1.94	0.48
24:X:44:GLN:HG3	24:X:48:GLN:HE22	1.77	0.48
26:Z:81:MET:HE2	29:c:94:LYS:HD2	1.95	0.48
26:Z:212:LEU:HA	26:Z:215:VAL:HG12	1.95	0.48
28:b:126:LYS:HZ1	33:z:74:ARG:HA	1.78	0.48
32:f:403:LYS:HG2	32:f:404:ASP:H	1.78	0.48
9:i:53:HIS:CE1	9:i:55:LEU:H	2.31	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:t:25:ASP:OD1	20:t:26:MET:N	2.46	0.48
3:C:144:PRO:HB2	3:C:205:HIS:HB2	1.95	0.48
8:H:177:ARG:HH21	8:H:193:LEU:HD21	1.78	0.48
22:V:225:ASP:OD1	22:V:225:ASP:N	2.45	0.48
9:i:45:LEU:HD13	9:i:75:SER:HB3	1.94	0.48
9:i:134:LEU:N	9:i:150:SER:OG	2.42	0.48
33:z:29:LYS:HA	33:z:32:ASP:OD2	2.13	0.48
1:A:86:THR:HG22	2:B:136:LEU:HD11	1.94	0.48
4:D:97:ASP:OD1	4:D:97:ASP:N	2.45	0.48
10:J:56:GLU:O	10:J:60:ARG:NH1	2.46	0.48
15:O:48:THR:HB	15:O:51:ASP:HB2	1.95	0.48
17:Q:1:MET:HE1	17:Q:133:GLY:HA2	1.95	0.48
21:U:35:TRP:CZ3	21:U:71:LEU:HA	2.48	0.48
15:o:215:LYS:NZ	15:o:216:ILE:O	2.45	0.48
6:F:230:GLY:HA3	6:F:392:ASN:HD22	1.78	0.48
9:I:136:TYR:HB2	9:I:148:TYR:HB2	1.93	0.48
9:I:205:LYS:O	9:I:210:LYS:NZ	2.37	0.48
13:M:51:LYS:O	13:M:210:GLU:N	2.46	0.48
7:g:81:THR:O	7:g:137:CYS:N	2.44	0.48
9:i:38:LEU:HD12	9:i:160:LYS:HA	1.95	0.48
13:m:215:TRP:CE3	13:m:227:VAL:HG22	2.49	0.48
5:E:171:LEU:HB3	5:E:298:LYS:HG3	1.95	0.48
9:I:118:LYS:NZ	9:I:151:ASP:O	2.47	0.48
14:N:174:ILE:HB	14:N:189:LEU:HB2	1.95	0.48
23:W:416:GLN:O	23:W:417:ARG:NH1	2.45	0.48
23:W:453:HIS:HD2	26:Z:103:LYS:HE3	1.79	0.48
28:b:180:ALA:HA	28:b:183:LEU:HD13	1.94	0.48
10:j:160:ALA:O	10:j:169:ARG:NH2	2.46	0.48
5:E:167:PRO:O	5:E:274:LYS:NZ	2.47	0.48
18:R:22:ALA:N	18:R:25:TYR:O	2.43	0.48
28:b:33:VAL:HA	28:b:36:VAL:HG22	1.96	0.48
11:k:157:ASP:OD2	11:k:159:SER:OG	2.31	0.48
1:A:365:GLU:HB3	1:A:406:GLU:HG2	1.95	0.48
3:C:321:ASN:H	3:C:324:ALA:HB3	1.77	0.48
3:C:340:ARG:HE	3:C:341:GLY:H	1.60	0.48
4:D:409:LYS:HD2	5:E:389:VAL:HB	1.95	0.48
13:M:34:SER:HA	13:M:167:LYS:HE2	1.96	0.48
15:O:72:ARG:NH1	15:O:73:LEU:O	2.44	0.48
21:U:24:LEU:HD21	21:U:48:LEU:HD21	1.95	0.48
19:s:13:LEU:HD22	19:s:145:LEU:HD13	1.95	0.48
3:C:167:LEU:HD11	3:C:174:LEU:HD12	1.96	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:206:LYS:HD2	16:P:161:ASP:HB3	1.96	0.48
7:g:20:GLY:CA	8:h:28:ALA:HB2	2.44	0.48
16:p:61:GLN:HE22	17:q:124:LEU:H	1.61	0.48
9:I:73:ALA:HB3	9:I:137:ILE:HD11	1.96	0.48
22:V:495:ARG:HD3	22:V:495:ARG:HA	1.56	0.48
23:W:449:GLU:OE2	23:W:453:HIS:NE2	2.47	0.48
28:b:121:GLU:O	28:b:124:LEU:HG	2.13	0.48
7:g:10:ASP:O	7:g:24:GLN:NE2	2.47	0.48
10:j:4:ASP:OD1	10:j:4:ASP:N	2.46	0.48
19:s:35:ILE:O	20:t:151:ARG:NH2	2.47	0.48
20:t:207:THR:OG1	20:t:209:TRP:NE1	2.46	0.48
33:u:42:ARG:CZ	33:u:72:ARG:CG	2.92	0.48
1:A:284:ARG:HH11	1:A:296:GLN:HG2	1.79	0.47
2:B:168:ASP:N	2:B:168:ASP:OD1	2.44	0.47
3:C:213:ARG:HA	3:C:247:PHE:HB3	1.95	0.47
4:D:43:ARG:HA	4:D:46:LYS:HG2	1.95	0.47
4:D:87:LEU:HD22	4:D:131:ALA:HB1	1.95	0.47
4:D:208:PRO:HA	4:D:212:LYS:HZ1	1.78	0.47
5:E:116:ASP:HB2	5:E:217:GLU:HG2	1.96	0.47
5:E:130:VAL:O	5:E:189:SER:OG	2.23	0.47
5:E:171:LEU:HA	5:E:277:MET:HB2	1.95	0.47
7:G:41:ALA:HB3	7:G:166:THR:HB	1.96	0.47
10:J:148:ASP:OD2	10:J:150:SER:OG	2.32	0.47
12:L:41:LYS:HG2	12:L:180:MET:HE3	1.95	0.47
20:T:211:ILE:HG23	14:n:30:VAL:HG11	1.96	0.47
21:U:611:ASN:HB3	21:U:614:VAL:HG12	1.95	0.47
21:U:788:VAL:HG13	21:U:884:VAL:HG11	1.95	0.47
26:Z:63:LYS:HD3	33:z:73:LEU:CG	2.35	0.47
26:Z:69:PHE:HE2	28:b:95:LEU:HD23	1.79	0.47
29:c:163:ILE:HG22	29:c:199:HIS:C	2.39	0.47
18:r:2:THR:HA	18:r:129:GLY:HA3	1.96	0.47
1:A:273:PHE:HD1	1:A:318:LEU:HB2	1.79	0.47
17:Q:137:PHE:HB3	18:r:133:VAL:HG21	1.95	0.47
21:U:529:ILE:O	21:U:533:VAL:N	2.33	0.47
21:U:583:MET:HE1	21:U:602:LEU:HG	1.95	0.47
28:b:129:LYS:NZ	33:z:35:GLY:O	2.47	0.47
32:f:274:ASP:N	32:f:274:ASP:OD1	2.45	0.47
14:n:1:THR:N	14:n:169:SER:O	2.47	0.47
1:A:41:TYR:HB3	1:A:45:ILE:HG12	1.96	0.47
2:B:76:GLU:HA	2:B:79:ILE:HG22	1.95	0.47
3:C:130:LYS:HG3	3:C:131:VAL:H	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:F:265:ALA:HA	6:F:312:GLU:HG2	1.96	0.47
6:F:366:MET:HE1	6:F:384:LEU:HB2	1.96	0.47
8:H:203:MET:N	8:H:203:MET:SD	2.87	0.47
12:L:66:VAL:HB	12:L:70:ILE:HG23	1.96	0.47
26:Z:15:VAL:HA	26:Z:18:SER:HB3	1.96	0.47
28:b:122:LYS:O	33:z:40:GLN:NE2	2.48	0.47
29:c:198:ARG:O	29:c:199:HIS:HB2	2.14	0.47
32:f:50:LYS:O	32:f:54:ASP:N	2.46	0.47
32:f:557:TRP:HA	32:f:560:LEU:HD12	1.96	0.47
32:f:605:ASN:HB3	32:f:608:LYS:HB2	1.96	0.47
7:g:205:VAL:HG13	7:g:206:LEU:HD12	1.96	0.47
16:p:203:ARG:NH2	16:p:205:ASP:OD2	2.45	0.47
20:t:67:LEU:HA	20:t:70:MET:HE3	1.96	0.47
1:A:128:GLN:HG3	1:A:129:VAL:HG13	1.96	0.47
1:A:386:ARG:HH11	1:A:390:THR:HG21	1.79	0.47
23:W:178:GLU:HB3	23:W:181:GLU:HB2	1.97	0.47
28:b:134:GLU:CB	28:b:136:VAL:HG23	2.42	0.47
32:f:405:HIS:CE1	32:f:813:LYS:HB3	2.48	0.47
1:A:143:ASP:HB2	1:A:150:HIS:CE1	2.50	0.47
4:D:159:LYS:NZ	4:D:220:ALA:O	2.39	0.47
6:F:373:MET:HE1	6:F:404:GLY:HA3	1.95	0.47
7:G:112:ASP:N	7:G:112:ASP:OD1	2.47	0.47
8:H:119:GLN:O	8:H:122:THR:OG1	2.28	0.47
20:T:40:SER:O	20:T:57:TYR:OH	2.27	0.47
21:U:637:VAL:HA	21:U:640:LEU:HD13	1.95	0.47
28:b:166:THR:C	28:b:168:SER:H	2.22	0.47
8:h:189:HIS:HB3	8:h:233:ILE:HD11	1.95	0.47
9:i:52:ILE:O	9:i:53:HIS:C	2.57	0.47
2:B:316:LEU:O	2:B:322:ARG:NH2	2.35	0.47
6:F:204:LEU:HD21	6:F:211:LYS:HD2	1.97	0.47
11:K:157:ASP:OD2	11:K:159:SER:OG	2.31	0.47
19:S:135:PHE:HB2	19:S:149:LEU:HD21	1.97	0.47
21:U:541:HIS:HB2	21:U:544:ILE:HG22	1.97	0.47
27:a:87:MET:HE1	27:a:89:ASP:HB3	1.96	0.47
9:i:68:LEU:HD11	9:i:74:CYS:HB2	1.96	0.47
17:q:9:GLY:N	17:q:12:TYR:O	2.44	0.47
19:s:66:LYS:HE2	20:t:94:ARG:HD2	1.97	0.47
1:A:336:ARG:NH1	35:F:501:ATP:O3G	2.38	0.47
4:D:56:VAL:HG21	21:U:599:ILE:HG23	1.97	0.47
4:D:67:ASN:ND2	21:U:607:VAL:O	2.48	0.47
4:D:88:VAL:HG22	4:D:133:HIS:O	2.14	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:214:MET:HE1	35:D:501:ATP:C4	2.50	0.47
5:E:87:LEU:O	5:E:91:LYS:NZ	2.47	0.47
14:N:192:ASP:OD1	14:N:192:ASP:N	2.48	0.47
22:V:338:LEU:HG	22:V:398:LEU:HD12	1.96	0.47
23:W:267:LEU:HD21	23:W:296:LEU:HA	1.97	0.47
24:X:335:LEU:HA	24:X:338:VAL:HG22	1.95	0.47
24:X:394:ASP:OD1	24:X:394:ASP:N	2.45	0.47
25:Y:246:ILE:HG22	25:Y:250:LEU:HD23	1.97	0.47
26:Z:198:LEU:HD11	29:c:308:VAL:HG21	1.96	0.47
28:b:126:LYS:HE2	28:b:126:LYS:HB2	1.51	0.47
28:b:134:GLU:CA	33:z:9:THR:HB	2.37	0.47
30:d:61:TRP:HB3	30:d:65:ARG:HH21	1.79	0.47
32:f:96:LEU:HD11	32:f:128:VAL:HG12	1.97	0.47
9:i:74:CYS:SG	9:i:75:SER:N	2.87	0.47
12:l:134:ILE:HB	12:l:145:PHE:HB2	1.96	0.47
16:p:38:ASP:N	16:p:38:ASP:OD1	2.47	0.47
16:p:47:ASP:OD1	16:p:47:ASP:N	2.43	0.47
6:F:217:ILE:HG13	6:F:218:GLN:H	1.78	0.47
7:G:89:SER:HB2	7:G:93:ARG:NH1	2.30	0.47
8:H:74:LEU:HD11	8:H:136:ILE:HG13	1.96	0.47
12:L:47:VAL:HG12	12:L:195:LEU:HD22	1.95	0.47
18:R:87:VAL:HG11	18:R:97:MET:HE2	1.96	0.47
23:W:409:LEU:HD21	24:X:344:ARG:HG2	1.96	0.47
26:Z:68:TRP:CD1	26:Z:104:ASN:HD21	2.33	0.47
27:a:252:LYS:HA	27:a:255:TRP:HE3	1.78	0.47
27:a:290:GLN:HG2	27:a:330:ARG:HD3	1.97	0.47
27:a:341:LEU:HD13	27:a:345:GLN:HB2	1.95	0.47
29:c:57:MET:HB3	29:c:69:VAL:HG21	1.96	0.47
29:c:79:GLY:HA2	29:c:84:VAL:HA	1.97	0.47
29:c:113:HIS:NE2	29:c:115:HIS:HE1	1.99	0.47
9:i:78:GLY:HA3	9:i:132:VAL:HG22	1.95	0.47
10:j:184:ASP:O	10:j:187:THR:OG1	2.31	0.47
15:o:21:THR:HG22	15:o:26:VAL:HA	1.97	0.47
2:B:174:MET:HG3	2:B:248:LEU:HD22	1.97	0.47
4:D:381:GLU:HA	4:D:384:MET:HG2	1.97	0.47
5:E:286:ASP:HB3	5:E:289:LEU:HD23	1.96	0.47
6:F:222:GLY:HA3	6:F:348:LEU:HA	1.97	0.47
10:J:40:ILE:HD11	10:J:210:VAL:HB	1.97	0.47
21:U:643:SER:O	21:U:649:ARG:NH1	2.37	0.47
21:U:681:ASN:ND2	21:U:725:MET:SD	2.88	0.47
22:V:228:ARG:NH2	22:V:257:ASN:O	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:W:339:ASP:OD1	23:W:339:ASP:N	2.48	0.47
28:b:139:ASP:OD1	28:b:169:HIS:N	2.46	0.47
30:d:33:LEU:HG	30:d:34:ASN:HD22	1.78	0.47
32:f:216:MET:HB2	32:f:219:LYS:HZ3	1.78	0.47
11:k:178:GLN:HA	11:k:181:LEU:HD12	1.97	0.47
18:r:7:LYS:HD2	18:r:109:PRO:HB2	1.97	0.47
33:z:54:ARG:H	33:z:54:ARG:HG2	1.47	0.47
5:E:13:ARG:NH2	6:F:25:GLU:HB2	2.30	0.47
15:O:219:LEU:HD13	16:P:47:ASP:HB3	1.96	0.47
21:U:6:ALA:HA	21:U:9:ILE:HG22	1.97	0.47
21:U:380:THR:HG23	21:U:382:SER:H	1.79	0.47
27:a:168:ASN:ND2	27:a:171:SER:OG	2.41	0.47
7:g:180:GLU:HA	7:g:183:VAL:HG12	1.97	0.47
1:A:241:ILE:HD11	2:B:319:PHE:HZ	1.79	0.46
2:B:116:ILE:HG22	2:B:117:ASP:H	1.79	0.46
2:B:288:ASP:OD1	2:B:288:ASP:N	2.46	0.46
4:D:86:PRO:HB2	4:D:134:LYS:CD	2.42	0.46
24:X:345:VAL:O	24:X:385:LEU:N	2.47	0.46
28:b:8:VAL:HA	28:b:110:ILE:HG13	1.97	0.46
29:c:281:LYS:H	29:c:284:LEU:HD23	1.81	0.46
32:f:113:MET:O	32:f:119:LYS:NZ	2.46	0.46
32:f:404:ASP:N	32:f:404:ASP:OD1	2.48	0.46
32:f:586:PRO:O	32:f:587:PHE:C	2.59	0.46
32:f:803:PHE:HE1	32:f:810:ILE:HG13	1.80	0.46
11:k:60:GLU:OE1	11:k:63:SER:N	2.48	0.46
12:l:212:ILE:HB	12:l:224:TYR:HB2	1.97	0.46
13:m:64:LYS:NZ	13:m:66:LEU:O	2.41	0.46
3:C:20:LEU:HD22	21:U:141:CYS:HA	1.97	0.46
6:F:129:ARG:HH21	34:v:14:UNK:CB	2.28	0.46
8:H:17:GLY:HA3	9:I:27:ALA:HB2	1.97	0.46
14:N:7:GLN:HA	14:N:12:VAL:HG12	1.97	0.46
21:U:43:ASP:OD1	21:U:43:ASP:N	2.47	0.46
21:U:46:GLU:OE1	21:U:80:TYR:OH	2.26	0.46
21:U:202:VAL:HB	21:U:216:VAL:HG22	1.95	0.46
23:W:285:ASP:HB3	23:W:289:ARG:HH22	1.80	0.46
13:m:34:SER:HA	13:m:167:LYS:HE3	1.97	0.46
20:t:43:MET:HG2	20:t:64:LYS:HG2	1.96	0.46
6:F:150:LEU:HD12	6:F:166:THR:HA	1.97	0.46
8:H:14:SER:OG	8:H:18:LYS:N	2.48	0.46
15:O:19:ARG:NH2	19:s:213:ASP:OD2	2.48	0.46
23:W:264:GLN:OE1	23:W:335:SER:OG	2.30	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:c:57:MET:N	29:c:57:MET:SD	2.88	0.46
32:f:780:PRO:HB2	32:f:788:MET:HE1	1.97	0.46
15:o:120:ASP:OD2	15:o:121:LYS:N	2.48	0.46
2:B:150:VAL:HA	2:B:162:VAL:HA	1.97	0.46
3:C:340:ARG:HG3	25:Y:6:LEU:HD13	1.97	0.46
4:D:278:GLN:HE22	4:D:283:ARG:HD3	1.80	0.46
6:F:318:ASP:HB3	6:F:347:ARG:HE	1.81	0.46
10:J:67:ASP:OD1	10:J:67:ASP:N	2.49	0.46
22:V:306:ARG:HB2	22:V:335:VAL:HG11	1.97	0.46
27:a:323:SER:O	27:a:332:HIS:N	2.48	0.46
29:c:266:THR:O	29:c:268:GLU:N	2.48	0.46
30:d:82:TYR:CG	30:d:95:MET:HE1	2.50	0.46
32:f:155:GLY:O	32:f:194:TYR:OH	2.34	0.46
7:g:47:CYS:HA	7:g:221:THR:HA	1.96	0.46
7:g:72:ILE:HA	7:g:95:ARG:HE	1.80	0.46
8:h:159:LYS:HE3	9:i:57:ASP:HA	1.97	0.46
33:z:24:GLU:OE2	33:z:53:GLY:HA2	2.16	0.46
5:E:360:ASP:N	5:E:360:ASP:OD1	2.46	0.46
10:J:199:VAL:HG22	10:J:202:GLY:H	1.81	0.46
11:K:167:ALA:O	11:K:178:GLN:NE2	2.40	0.46
11:K:221:GLN:HB3	11:K:224:GLN:HG3	1.96	0.46
11:K:240:ASP:OD1	11:K:240:ASP:N	2.47	0.46
12:L:146:GLN:HE22	12:L:156:CYS:HB2	1.80	0.46
14:N:115:PRO:HD2	14:N:119:MET:HB3	1.97	0.46
28:b:24:THR:HB	28:b:27:GLN:OE1	2.15	0.46
32:f:586:PRO:C	32:f:588:ARG:N	2.73	0.46
15:o:198:ARG:NH2	16:p:154:TRP:O	2.42	0.46
20:t:5:MET:N	20:t:5:MET:SD	2.88	0.46
4:D:126:PRO:C	4:D:128:ALA:H	2.23	0.46
14:N:187:GLN:NE2	14:N:188:VAL:O	2.48	0.46
19:S:10:GLY:HA3	19:S:42:LYS:HE2	1.96	0.46
23:W:348:GLU:O	23:W:351:TRP:HB3	2.16	0.46
25:Y:26:LEU:HD13	25:Y:63:TRP:HH2	1.81	0.46
29:c:96:LEU:CD1	33:u:8:LEU:HD22	2.43	0.46
29:c:177:THR:HG23	29:c:179:SER:H	1.80	0.46
32:f:511:SER:OG	32:f:513:GLU:OE1	2.30	0.46
7:g:41:ALA:N	7:g:166:THR:O	2.43	0.46
13:m:8:ASP:O	13:m:22:GLN:NE2	2.48	0.46
33:z:44:ILE:HD12	33:z:70:VAL:HG21	1.98	0.46
4:D:163:MET:SD	4:D:222:HIS:NE2	2.89	0.46
4:D:297:ASP:OD1	4:D:326:ARG:NE	2.48	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:10:ASP:OD1	7:G:10:ASP:N	2.49	0.46
13:M:70:ASP:OD2	13:M:72:HIS:NE2	2.49	0.46
20:T:92:LEU:HB3	20:T:96:MET:HE1	1.98	0.46
21:U:16:GLU:HA	21:U:17:PRO:HD3	1.79	0.46
22:V:289:LEU:HB3	22:V:312:ALA:HB2	1.96	0.46
23:W:351:TRP:HA	23:W:351:TRP:CE3	2.51	0.46
25:Y:42:MET:O	25:Y:46:ARG:NH1	2.48	0.46
32:f:550:LEU:HD11	32:f:585:GLU:HG2	1.96	0.46
15:o:50:ALA:HB2	16:p:129:CYS:HB2	1.97	0.46
10:J:2:SER:OG	10:J:3:TYR:N	2.45	0.46
11:K:96:THR:HA	11:K:107:MET:HE1	1.98	0.46
19:S:125:ASP:OD1	19:S:129:SER:N	2.49	0.46
25:Y:49:ASN:OD1	25:Y:77:ASN:ND2	2.49	0.46
26:Z:38:VAL:HA	26:Z:94:TRP:HA	1.98	0.46
29:c:202:SER:OG	29:c:203:ILE:N	2.48	0.46
32:f:487:LEU:HA	32:f:524:MET:HE1	1.97	0.46
7:g:46:ASP:N	7:g:46:ASP:OD1	2.48	0.46
8:h:55:ILE:H	8:h:55:ILE:HD12	1.81	0.46
10:j:87:ALA:HA	10:j:90:GLU:HG3	1.96	0.46
13:m:68:ASN:OD1	13:m:224:HIS:ND1	2.36	0.46
13:m:140:TYR:OH	13:m:218:GLU:OE1	2.25	0.46
15:o:12:ILE:HB	15:o:178:ILE:HB	1.97	0.46
3:C:90:HIS:CB	3:C:91:PRO:HD3	2.40	0.46
3:C:325:ARG:HD2	3:C:351:MET:HE3	1.97	0.46
3:C:338:LEU:O	25:Y:207:THR:OG1	2.27	0.46
5:E:119:VAL:HA	5:E:122:MET:HE2	1.98	0.46
6:F:98:ASP:OD1	6:F:98:ASP:N	2.48	0.46
9:I:103:GLU:OE2	17:Q:76:SER:OG	2.29	0.46
10:J:30:SER:HB2	10:J:61:LYS:HZ2	1.81	0.46
17:Q:8:GLN:HA	17:Q:13:VAL:HA	1.97	0.46
21:U:373:ASN:HD22	21:U:385:PHE:HD2	1.62	0.46
22:V:113:LEU:HB3	22:V:135:LEU:HD22	1.97	0.46
28:b:27:GLN:HA	28:b:30:GLN:HB3	1.98	0.46
28:b:135:LYS:O	28:b:136:VAL:C	2.58	0.46
7:g:84:THR:HB	13:m:156:VAL:HG22	1.98	0.46
1:A:48:VAL:HG11	2:B:65:LEU:HB3	1.96	0.46
11:K:203:LYS:HA	11:K:206:MET:HG2	1.98	0.46
15:O:79:ALA:HA	15:O:82:MET:HE2	1.98	0.46
16:P:205:ASP:HB3	18:r:192:VAL:HG11	1.99	0.46
19:S:11:THR:HG21	19:S:141:ALA:HB3	1.96	0.46
21:U:254:GLU:OE2	21:U:751:ARG:NH1	2.49	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:X:414:LEU:HD22	26:Z:276:ILE:HG21	1.98	0.46
25:Y:220:VAL:HG21	25:Y:249:VAL:HG21	1.97	0.46
28:b:127:LEU:C	28:b:129:LYS:N	2.73	0.46
29:c:283:HIS:HB3	29:c:287:HIS:CE1	2.51	0.46
30:d:45:LYS:O	30:d:49:ILE:HG12	2.16	0.46
32:f:151:LEU:HA	32:f:154:TRP:HE3	1.82	0.46
10:j:148:ASP:OD1	10:j:152:THR:N	2.40	0.46
11:k:117:SER:HA	11:k:120:ALA:HB3	1.98	0.46
11:k:240:ASP:OD1	11:k:240:ASP:N	2.49	0.46
15:o:112:SER:HB3	15:o:125:VAL:HG11	1.98	0.46
5:E:383:LYS:HG2	5:E:385:ASP:H	1.81	0.45
6:F:311:LEU:HD23	6:F:314:LEU:HD12	1.98	0.45
8:H:136:ILE:HB	8:H:147:PHE:HB2	1.98	0.45
11:K:215:ILE:HD11	11:K:238:ILE:HD11	1.98	0.45
29:c:88:ASP:N	29:c:88:ASP:OD1	2.48	0.45
29:c:89:PRO:HG2	33:u:44:ILE:CD1	2.32	0.45
30:d:224:SER:OG	30:d:225:PHE:N	2.48	0.45
32:f:426:LEU:HA	32:f:429:ILE:HD12	1.98	0.45
13:m:185:THR:O	13:m:189:ILE:HG12	2.16	0.45
14:n:41:ILE:HG12	14:n:76:VAL:HG12	1.98	0.45
16:p:123:SER:HB3	16:p:137:VAL:HB	1.97	0.45
20:t:44:ARG:HA	20:t:50:MET:HG2	1.96	0.45
1:A:190:VAL:HG13	1:A:191:VAL:HG23	1.98	0.45
2:B:271:PHE:HD1	2:B:315:GLN:HG3	1.80	0.45
3:C:249:ASP:N	3:C:249:ASP:OD1	2.49	0.45
5:E:251:ARG:O	5:E:255:ARG:HD3	2.15	0.45
5:E:321:THR:OG1	5:E:360:ASP:O	2.34	0.45
6:F:169:ASP:HB3	6:F:172:VAL:HG23	1.98	0.45
7:G:116:LYS:HE2	8:H:84:ARG:HD2	1.99	0.45
10:J:42:VAL:HG11	10:J:191:VAL:HG21	1.98	0.45
12:L:49:LEU:HD22	12:L:199:LEU:HD21	1.98	0.45
12:l:69:HIS:CE1	12:l:102:PRO:HB3	2.50	0.45
17:q:4:LEU:HD12	17:q:132:HIS:HB2	1.98	0.45
2:B:225:TYR:CE2	2:B:352:GLU:HG2	2.52	0.45
3:C:88:LYS:HB3	3:C:88:LYS:HE3	1.48	0.45
3:C:117:ARG:HB3	3:C:122:THR:H	1.82	0.45
4:D:107:THR:HG22	5:E:77:PRO:HG3	1.99	0.45
20:T:176:LEU:O	20:T:180:ASP:HB3	2.15	0.45
21:U:13:ASP:OD1	21:U:44:LYS:NZ	2.48	0.45
29:c:125:VAL:CG1	33:u:74:ARG:CG	2.94	0.45
29:c:125:VAL:HG12	33:u:74:ARG:HG3	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:g:132:ARG:NH2	7:g:135:GLY:H	2.15	0.45
10:j:30:SER:OG	10:j:48:LYS:NZ	2.40	0.45
17:q:143:LEU:O	17:q:147:TYR:CB	2.65	0.45
18:r:59:LEU:HD22	18:r:83:LEU:HD22	1.98	0.45
6:F:223:VAL:HG22	6:F:350:ARG:HB2	1.97	0.45
17:Q:11:ASP:N	17:Q:11:ASP:OD1	2.47	0.45
18:R:1:THR:HA	18:R:33:LYS:HZ2	1.81	0.45
20:T:43:MET:HE2	20:T:64:LYS:HD2	1.96	0.45
21:U:338:HIS:HA	21:U:341:PHE:HB3	1.99	0.45
21:U:520:MET:HG3	21:U:555:VAL:HG23	1.98	0.45
23:W:87:ILE:HG22	23:W:131:VAL:HG21	1.99	0.45
27:a:291:LEU:HB3	27:a:331:VAL:HB	1.97	0.45
28:b:166:THR:C	28:b:168:SER:N	2.73	0.45
32:f:107:LYS:O	32:f:111:GLU:HB2	2.17	0.45
32:f:606:VAL:HG23	32:f:607:LEU:HG	1.97	0.45
11:k:236:GLU:HA	11:k:239:LYS:HE3	1.97	0.45
4:D:345:PHE:O	4:D:349:THR:OG1	2.27	0.45
5:E:281:ARG:HH21	5:E:284:THR:HB	1.82	0.45
6:F:125:LYS:HA	6:F:131:THR:HA	1.98	0.45
11:K:101:PHE:HB2	18:R:61:ARG:HD2	1.98	0.45
15:O:26:VAL:O	19:s:185:ARG:NH1	2.45	0.45
21:U:515:ALA:HA	21:U:518:LEU:HD12	1.98	0.45
24:X:103:THR:CB	24:X:106:GLU:OE1	2.64	0.45
28:b:129:LYS:HE3	28:b:159:THR:O	2.17	0.45
32:f:368:ALA:O	32:f:372:LEU:N	2.47	0.45
12:l:139:ASP:N	12:l:139:ASP:OD1	2.48	0.45
2:B:264:PRO:HG3	2:B:308:THR:HA	1.98	0.45
4:D:87:LEU:HD23	4:D:132:LEU:O	2.17	0.45
21:U:490:ARG:HB2	21:U:493:VAL:HG12	1.98	0.45
28:b:122:LYS:CE	33:z:39:ASP:HB2	2.46	0.45
32:f:127:SER:HB2	32:f:142:TYR:HB2	1.99	0.45
10:j:3:TYR:HD2	10:j:12:PRO:HD3	1.80	0.45
1:A:360:ARG:HH11	32:f:858:LYS:HG3	1.81	0.45
3:C:237:MET:HB2	3:C:241:HIS:CE1	2.51	0.45
4:D:211:GLY:HA2	4:D:214:MET:HE3	1.98	0.45
5:E:303:LEU:HD13	5:E:337:GLY:HA2	1.99	0.45
7:G:60:LEU:O	13:M:161:TRP:N	2.34	0.45
10:J:29:GLY:O	10:J:163:ARG:N	2.40	0.45
12:L:7:ASP:OD1	12:L:7:ASP:N	2.48	0.45
17:Q:143:LEU:O	17:Q:147:TYR:CB	2.64	0.45
17:Q:192:ASP:OD1	17:Q:192:ASP:N	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:V:89:LYS:HB2	22:V:89:LYS:HE3	1.86	0.45
26:Z:74:TYR:O	26:Z:78:MET:HG3	2.17	0.45
29:c:195:GLY:O	29:c:198:ARG:N	2.50	0.45
31:e:42:ASN:OD1	31:e:43:TRP:N	2.48	0.45
7:g:73:THR:HB	7:g:76:ILE:HB	1.98	0.45
11:k:4:THR:OG1	11:k:5:ARG:N	2.48	0.45
1:A:407:LYS:NZ	1:A:411:GLU:OE2	2.50	0.45
4:D:264:ILE:HD13	4:D:309:MET:HE1	1.99	0.45
5:E:210:GLU:N	5:E:213:ARG:HH21	2.15	0.45
6:F:113:LEU:HD13	6:F:117:ARG:HH22	1.82	0.45
7:G:206:LEU:HB3	7:G:208:ILE:HG13	1.99	0.45
9:I:140:ASP:OD1	9:I:144:GLY:N	2.50	0.45
12:L:134:ILE:HB	12:L:145:PHE:HB2	1.98	0.45
18:R:127:SER:HB3	18:R:136:TYR:CE1	2.51	0.45
28:b:132:LYS:HB3	28:b:133:LYS:HE2	1.99	0.45
28:b:133:LYS:H	28:b:133:LYS:HG2	1.40	0.45
32:f:694:LEU:HA	32:f:697:ILE:HG22	1.99	0.45
7:g:10:ASP:HB3	7:g:23:TYR:HB2	1.98	0.45
9:i:123:GLN:NE2	10:j:125:ARG:O	2.50	0.45
11:k:210:LEU:HD21	11:k:238:ILE:HD12	1.99	0.45
13:m:79:GLY:HA3	13:m:133:CYS:HA	1.99	0.45
14:n:44:CYS:HB2	14:n:99:ILE:HB	1.98	0.45
33:z:73:LEU:HD23	33:z:74:ARG:NE	2.32	0.45
1:A:282:GLY:HA3	1:A:327:LEU:HA	1.98	0.45
2:B:392:GLY:HA2	2:B:395:ILE:HD12	1.98	0.45
5:E:172:LEU:N	5:E:277:MET:O	2.44	0.45
6:F:249:LEU:HB3	6:F:283:ILE:HG12	1.99	0.45
21:U:191:LYS:HD2	21:U:194:ARG:HE	1.82	0.45
27:a:190:VAL:O	27:a:193:GLN:N	2.49	0.45
29:c:125:VAL:HG11	33:u:74:ARG:HG3	1.98	0.45
30:d:206:MET:SD	30:d:206:MET:N	2.84	0.45
32:f:307:LEU:HB2	32:f:314:TYR:CE1	2.51	0.45
12:l:122:ARG:HG2	13:m:128:VAL:HG12	1.99	0.45
16:p:30:ILE:HG22	16:p:31:GLN:H	1.82	0.45
18:r:12:VAL:HG21	18:r:111:LEU:HD13	1.98	0.45
33:z:25:ASN:O	33:z:28:ALA:HB3	2.17	0.45
2:B:125:THR:OG1	2:B:126:SER:N	2.48	0.45
4:D:378:ILE:HG23	4:D:402:ALA:HB1	1.99	0.45
10:J:119:THR:HA	10:J:126:PRO:HG3	1.99	0.45
24:X:28:HIS:O	24:X:32:LYS:HB2	2.16	0.45
24:X:332:GLU:O	24:X:336:ILE:N	2.46	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:174:TRP:CD1	25:Y:177:ARG:HH21	2.35	0.45
27:a:156:TYR:HE2	27:a:196:ARG:HH21	1.64	0.45
15:o:81:ARG:HD2	15:o:84:LYS:HD3	1.98	0.45
16:p:167:ILE:O	16:p:171:MET:HG2	2.16	0.45
18:r:1:THR:O	18:r:130:SER:N	2.50	0.45
33:u:63:LYS:CE	33:u:64:GLU:HB2	2.20	0.45
1:A:59:ILE:HD11	2:B:76:GLU:HB3	1.99	0.44
1:A:376:LEU:HB2	1:A:417:ILE:HD11	1.99	0.44
2:B:227:PRO:O	2:B:230:THR:OG1	2.26	0.44
10:J:139:ASP:OD1	10:J:139:ASP:N	2.50	0.44
10:J:159:ASN:OD1	10:J:169:ARG:NH2	2.34	0.44
14:N:103:TRP:CZ2	14:N:181:GLU:HG3	2.52	0.44
16:P:30:ILE:HG22	16:P:31:GLN:H	1.83	0.44
21:U:146:LYS:HE2	21:U:148:LYS:HB2	1.98	0.44
22:V:355:ARG:HH11	31:e:27:TRP:HB2	1.81	0.44
25:Y:154:ASN:HA	25:Y:157:ILE:HB	1.99	0.44
26:Z:11:VAL:O	26:Z:163:GLY:N	2.40	0.44
26:Z:225:GLN:HG3	26:Z:226:ILE:H	1.81	0.44
28:b:133:LYS:HZ1	33:z:34:GLU:HG3	1.82	0.44
29:c:64:ASP:HA	29:c:139:ARG:HH22	1.82	0.44
32:f:269:ALA:HA	32:f:272:LEU:HB2	2.00	0.44
13:m:239:ALA:HA	13:m:242:SER:HB3	1.98	0.44
18:r:97:MET:H	18:r:116:SER:HB3	1.83	0.44
1:A:90:GLU:OE1	2:B:155:LYS:NZ	2.50	0.44
3:C:192:PRO:HA	3:C:196:LYS:HD2	1.98	0.44
3:C:332:HIS:CD2	3:C:360:LYS:HD2	2.52	0.44
5:E:52:SER:O	6:F:157:SER:OG	2.35	0.44
5:E:148:VAL:HB	5:E:297:ARG:HH22	1.81	0.44
6:F:168:TYR:HB2	6:F:173:LYS:HE2	2.00	0.44
14:N:174:ILE:HD12	14:N:194:ILE:HG12	1.97	0.44
21:U:108:TYR:OH	21:U:159:ARG:NH2	2.43	0.44
26:Z:103:LYS:HD2	26:Z:103:LYS:HA	1.81	0.44
26:Z:109:ASN:HD22	26:Z:155:PHE:HE1	1.64	0.44
32:f:803:PHE:CE1	32:f:810:ILE:HG13	2.53	0.44
7:g:21:ARG:HD3	7:g:22:LEU:C	2.43	0.44
10:j:108:THR:HG21	10:j:145:TYR:HB2	1.99	0.44
14:n:3:ILE:O	14:n:128:GLY:N	2.48	0.44
14:n:167:ASP:HB3	14:n:170:SER:HB2	1.98	0.44
20:t:43:MET:HE3	20:t:44:ARG:H	1.82	0.44
2:B:375:ALA:H	2:B:414:VAL:HB	1.82	0.44
3:C:335:LYS:HA	25:Y:174:TRP:CD1	2.52	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:85:ILE:O	4:D:87:LEU:N	2.50	0.44
6:F:311:LEU:HD23	6:F:311:LEU:HA	1.82	0.44
7:G:53:GLN:HA	7:G:215:ILE:HA	1.98	0.44
8:H:210:VAL:HB	8:H:221:LEU:HD12	1.99	0.44
23:W:452:ILE:HD13	26:Z:101:LEU:HG	1.99	0.44
24:X:170:GLN:NE2	24:X:192:SER:OG	2.43	0.44
24:X:264:PRO:HG2	24:X:295:LYS:HG2	1.98	0.44
32:f:313:GLU:HG3	32:f:316:ASP:HB2	1.99	0.44
32:f:486:GLY:HA2	32:f:525:ILE:HD11	1.99	0.44
32:f:772:GLY:HA3	32:f:776:LEU:HG	1.98	0.44
7:g:112:ASP:OD1	7:g:112:ASP:N	2.51	0.44
8:h:181:ASP:N	8:h:181:ASP:OD1	2.48	0.44
11:k:91:LYS:HD2	11:k:119:LEU:HD23	1.99	0.44
13:m:51:LYS:O	13:m:210:GLU:N	2.40	0.44
17:q:83:PHE:O	17:q:87:ASN:ND2	2.51	0.44
19:s:71:ARG:HA	19:s:74:MET:HG3	1.98	0.44
20:t:25:ASP:H	20:t:41:ARG:HH21	1.64	0.44
33:z:38:PRO:C	33:z:40:GLN:N	2.72	0.44
1:A:78:TRP:HA	1:A:81:ALA:HB3	1.98	0.44
1:A:179:GLY:O	1:A:346:PRO:HB3	2.17	0.44
13:M:152:ASP:OD2	13:M:154:SER:OG	2.29	0.44
22:V:212:TYR:HD1	22:V:253:LEU:HD21	1.82	0.44
23:W:178:GLU:HG2	23:W:180:LYS:H	1.83	0.44
24:X:335:LEU:HD22	24:X:339:ILE:HD11	1.98	0.44
25:Y:68:ASP:N	25:Y:68:ASP:OD1	2.50	0.44
26:Z:94:TRP:HB3	26:Z:112:MET:HE3	1.99	0.44
32:f:72:ARG:HH22	32:f:119:LYS:N	2.16	0.44
10:j:11:SER:OG	10:j:15:HIS:N	2.50	0.44
10:j:67:ASP:OD1	10:j:67:ASP:N	2.50	0.44
17:q:22:ALA:HA	17:q:27:GLN:HA	1.98	0.44
20:t:184:TYR:HE2	20:t:186:ARG:HD3	1.82	0.44
2:B:106:PRO:HA	3:C:97:VAL:HG12	1.99	0.44
8:H:163:MET:N	8:H:163:MET:SD	2.91	0.44
10:J:204:LYS:HD2	10:J:222:PRO:HB3	1.98	0.44
20:T:85:PRO:HA	20:T:88:ILE:HD12	1.98	0.44
22:V:419:LEU:HA	22:V:422:ILE:HG22	2.00	0.44
23:W:303:LYS:HG2	23:W:307:LYS:NZ	2.33	0.44
25:Y:307:LEU:HD11	25:Y:319:MET:HE1	2.00	0.44
32:f:92:VAL:HG23	32:f:97:LYS:HD2	1.99	0.44
14:n:100:ILE:HB	14:n:112:TYR:HB2	1.99	0.44
17:q:52:ASP:OD1	18:r:88:TYR:OH	2.23	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:151:LEU:HB2	2:B:161:GLY:N	2.33	0.44
5:E:216:ARG:HG3	5:E:263:GLN:HE22	1.82	0.44
16:P:126:LEU:HG	16:P:127:ILE:HG23	1.99	0.44
23:W:359:VAL:HG23	23:W:382:LEU:HD22	1.99	0.44
25:Y:223:THR:HA	25:Y:226:VAL:HG12	1.96	0.44
25:Y:247:LEU:HD23	25:Y:250:LEU:HD21	1.99	0.44
26:Z:206:LEU:HD13	26:Z:209:ARG:HD3	2.00	0.44
27:a:289:ARG:HD3	27:a:333:MET:HB2	1.99	0.44
28:b:134:GLU:N	33:z:9:THR:HG21	2.32	0.44
32:f:646:MET:N	32:f:646:MET:SD	2.91	0.44
13:m:191:LYS:HB2	13:m:238:TYR:CD2	2.53	0.44
14:n:187:GLN:HE22	14:n:189:LEU:HD23	1.83	0.44
9:I:197:LEU:HA	9:I:200:THR:HG22	2.00	0.44
19:S:19:ASP:N	19:S:19:ASP:OD1	2.49	0.44
24:X:134:VAL:HG21	24:X:149:LEU:HB2	2.00	0.44
26:Z:21:ASP:OD1	26:Z:22:HIS:N	2.51	0.44
28:b:26:LEU:HD21	28:b:80:PRO:HG3	2.00	0.44
28:b:131:LEU:O	28:b:132:LYS:C	2.61	0.44
10:j:104:VAL:HA	10:j:107:ILE:HG22	1.99	0.44
14:n:127:ILE:HD11	14:n:136:TYR:HD1	1.82	0.44
18:r:167:ASP:HB3	18:r:170:SER:HB2	2.00	0.44
20:t:70:MET:HE1	20:t:91:TRP:CH2	2.52	0.44
2:B:264:PRO:HB3	2:B:311:GLU:HG2	2.00	0.44
4:D:57:GLN:O	4:D:61:ILE:HG12	2.17	0.44
4:D:115:ILE:HD11	4:D:121:ARG:HH22	1.81	0.44
5:E:210:GLU:H	5:E:213:ARG:HH21	1.65	0.44
15:O:11:GLY:HA2	15:O:108:PRO:HB3	2.00	0.44
21:U:443:LEU:HA	21:U:446:LEU:HD13	1.99	0.44
26:Z:284:ASP:HA	26:Z:287:LYS:HG2	2.00	0.44
32:f:321:MET:HE3	32:f:321:MET:HB2	1.84	0.44
14:n:148:THR:N	14:n:151:GLU:OE2	2.38	0.44
3:C:113:ARG:NH2	3:C:128:PRO:O	2.45	0.44
3:C:164:VAL:HG13	3:C:165:ILE:HG12	1.99	0.44
4:D:124:LEU:HD13	4:D:124:LEU:HA	1.86	0.44
6:F:38:THR:HG22	6:F:39:GLU:HG2	2.00	0.44
10:J:221:ASN:O	10:J:223:GLU:N	2.51	0.44
11:K:107:MET:HE2	11:K:107:MET:HB2	1.91	0.44
27:a:130:VAL:HG22	27:a:134:THR:HB	1.99	0.44
28:b:127:LEU:HD23	28:b:127:LEU:HA	1.78	0.44
28:b:134:GLU:HB2	33:z:9:THR:CG2	2.48	0.44
32:f:705:ASN:OD1	32:f:706:ILE:N	2.51	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:h:64:LYS:HB3	8:h:76:TYR:HE1	1.83	0.44
33:z:5:VAL:O	33:z:12:THR:HA	2.18	0.44
2:B:120:HIS:HB2	2:B:132:TYR:CE1	2.53	0.43
2:B:292:THR:OG1	2:B:336:THR:O	2.32	0.43
3:C:135:VAL:HA	3:C:138:MET:HE3	1.99	0.43
5:E:381:GLU:HB2	6:F:340:PRO:HB3	2.00	0.43
6:F:230:GLY:HA3	6:F:392:ASN:ND2	2.33	0.43
6:F:340:PRO:HA	6:F:343:LEU:HG	2.00	0.43
18:R:1:THR:N	18:R:169:TYR:O	2.50	0.43
21:U:204:ILE:HD12	21:U:204:ILE:HA	1.87	0.43
22:V:457:TYR:CE1	25:Y:350:VAL:HG21	2.53	0.43
32:f:138:GLU:HG2	32:f:141:LYS:HD3	1.98	0.43
8:h:148:GLN:OE1	8:h:158:TRP:NE1	2.46	0.43
13:m:179:LEU:HB2	13:m:181:MET:HE1	2.00	0.43
14:n:30:VAL:O	14:n:175:ARG:NH2	2.51	0.43
5:E:334:LEU:HD22	5:E:368:MET:HE1	1.99	0.43
8:H:39:LYS:HG3	8:H:44:VAL:HG22	2.00	0.43
8:H:100:VAL:HG12	16:P:90:MET:HE1	2.00	0.43
12:L:45:VAL:HG12	12:L:214:ILE:HG12	2.00	0.43
15:O:110:LEU:HD21	15:O:125:VAL:HG22	1.99	0.43
19:S:16:ALA:HB2	19:S:121:VAL:HG23	2.00	0.43
21:U:628:ARG:NH1	21:U:753:GLY:O	2.51	0.43
22:V:419:LEU:HD12	22:V:456:GLY:HA2	2.00	0.43
28:b:134:GLU:CG	28:b:136:VAL:HG23	2.48	0.43
29:c:227:GLU:O	29:c:230:THR:OG1	2.30	0.43
12:l:117:GLN:O	12:l:120:THR:OG1	2.28	0.43
5:E:127:PRO:HD2	6:F:320:PHE:HE2	1.82	0.43
6:F:253:GLY:HA3	6:F:287:GLU:HG2	2.00	0.43
19:S:69:GLU:HA	19:S:72:LEU:HD12	2.00	0.43
21:U:24:LEU:HB3	21:U:59:PHE:HD2	1.82	0.43
22:V:114:TYR:HD1	22:V:135:LEU:HD11	1.83	0.43
24:X:70:LEU:HD22	24:X:109:LEU:HG	1.99	0.43
7:g:123:GLN:O	7:g:126:THR:OG1	2.31	0.43
14:n:21:THR:HG22	14:n:26:ILE:HG12	2.00	0.43
1:A:99:THR:HG22	1:A:115:VAL:HA	2.01	0.43
3:C:347:ILE:HG23	3:C:387:VAL:HG21	1.99	0.43
5:E:345:ASN:HD22	6:F:345:SER:HB2	1.82	0.43
18:R:112:TYR:CE1	18:R:122:SER:HB2	2.53	0.43
21:U:59:PHE:HA	21:U:62:LEU:HD13	2.01	0.43
21:U:751:ARG:HD3	21:U:908:ILE:HG23	2.00	0.43
21:U:766:PHE:O	21:U:776:SER:OG	2.33	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:V:201:ARG:HH12	22:V:241:ARG:HD3	1.82	0.43
25:Y:90:ASP:HA	25:Y:93:LYS:HE3	2.01	0.43
32:f:858:LYS:HA	32:f:859:PRO:HD3	1.79	0.43
10:j:90:GLU:HG2	10:j:110:TYR:CE2	2.53	0.43
16:p:14:MET:N	16:p:21:ALA:O	2.51	0.43
1:A:158:ASP:OD1	1:A:158:ASP:N	2.50	0.43
3:C:258:ARG:HG3	3:C:259:LEU:H	1.83	0.43
10:J:90:GLU:HG3	10:J:110:TYR:CE2	2.54	0.43
17:Q:19:ARG:HB3	17:Q:31:ASP:HA	1.99	0.43
26:Z:136:GLU:OE2	26:Z:157:HIS:ND1	2.52	0.43
27:a:274:LEU:HA	27:a:310:LEU:HD21	2.00	0.43
28:b:7:MET:HB3	28:b:109:ILE:HG12	2.00	0.43
28:b:24:THR:C	28:b:26:LEU:H	2.27	0.43
29:c:115:HIS:NE2	29:c:123:SER:OG	2.46	0.43
32:f:116:GLY:H	32:f:119:LYS:HB3	1.82	0.43
32:f:799:VAL:HG21	32:f:821:LEU:HG	1.99	0.43
1:A:213:LEU:HA	1:A:319:MET:HB2	2.01	0.43
2:B:83:GLU:HG2	2:B:88:LEU:HD21	2.01	0.43
2:B:249:ARG:CZ	2:B:283:PHE:HB3	2.49	0.43
3:C:360:LYS:O	3:C:364:THR:HG23	2.18	0.43
5:E:136:GLY:H	37:E:401:ADP:HN62	1.66	0.43
6:F:235:LEU:HD21	35:F:501:ATP:H2'	2.00	0.43
8:H:46:LEU:HD23	8:H:75:VAL:HG22	2.01	0.43
10:J:39:ASP:N	10:J:39:ASP:OD1	2.49	0.43
16:P:205:ASP:OD1	16:P:205:ASP:N	2.51	0.43
19:S:194:ARG:HD2	19:S:205:GLU:HB3	2.00	0.43
22:V:417:ILE:HG12	22:V:458:VAL:HB	2.01	0.43
32:f:550:LEU:CD1	32:f:585:GLU:HG2	2.49	0.43
13:m:7:TYR:HD2	13:m:16:PRO:HD3	1.83	0.43
16:p:22:ILE:HG23	16:p:188:HIS:HB2	2.00	0.43
18:r:115:ASP:OD1	18:r:119:ASN:N	2.52	0.43
2:B:407:LEU:HD11	3:C:180:ILE:HG21	2.00	0.43
5:E:210:GLU:H	5:E:213:ARG:HE	1.65	0.43
7:G:127:GLN:HG3	8:H:128:ARG:HG3	2.00	0.43
14:N:4:MET:HE1	14:N:156:THR:HG22	2.00	0.43
21:U:360:VAL:HG12	21:U:365:CYS:HB3	2.01	0.43
21:U:898:CYS:SG	21:U:899:ARG:N	2.92	0.43
23:W:66:ILE:HG23	23:W:67:LEU:HD12	1.99	0.43
23:W:71:VAL:HG13	23:W:83:LEU:HD11	2.01	0.43
23:W:166:LEU:HD22	23:W:192:LEU:HD12	2.01	0.43
24:X:103:THR:HB	24:X:106:GLU:OE1	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Y:311:TYR:HB2	25:Y:314:LEU:HD12	2.00	0.43
30:d:27:LYS:HG2	30:d:27:LYS:H	1.66	0.43
30:d:155:LYS:HD3	30:d:167:ILE:HD12	2.00	0.43
30:d:171:LEU:HB3	30:d:175:ARG:NH1	2.33	0.43
7:g:20:GLY:HA3	8:h:28:ALA:HB2	2.01	0.43
13:m:230:ASP:OD1	13:m:230:ASP:N	2.50	0.43
17:q:71:ASN:HB3	17:q:73:TYR:CE2	2.54	0.43
1:A:209:PRO:HG2	1:A:339:ARG:HH21	1.83	0.43
2:B:273:VAL:HG22	2:B:277:HIS:CD2	2.52	0.43
4:D:125:LYS:HD2	4:D:125:LYS:HA	1.61	0.43
11:K:41:GLN:NE2	11:K:151:PRO:O	2.52	0.43
18:R:7:LYS:HG2	18:R:12:VAL:HG22	2.01	0.43
24:X:73:VAL:O	24:X:77:LEU:N	2.51	0.43
27:a:231:GLN:HA	27:a:234:ILE:HD13	2.00	0.43
28:b:20:ASP:OD1	28:b:20:ASP:N	2.51	0.43
29:c:32:TYR:HE1	29:c:206:ASN:HD21	1.66	0.43
30:d:221:ASN:HB3	30:d:223:TYR:CZ	2.54	0.43
10:j:196:LEU:HA	10:j:199:VAL:HG12	2.01	0.43
34:v:25:LYS:O	34:v:27:UNK:N	2.51	0.43
1:A:43:ARG:HA	1:A:46:LYS:HG2	2.01	0.43
1:A:258:ARG:HG3	1:A:305:GLN:NE2	2.34	0.43
1:A:349:GLU:HA	1:A:352:THR:HG23	2.00	0.43
2:B:51:LEU:HD23	2:B:68:ILE:HG21	2.00	0.43
3:C:97:VAL:HG11	3:C:121:TYR:HB3	2.00	0.43
4:D:160:PRO:HD2	4:D:221:HIS:HB2	2.01	0.43
4:D:233:SER:OG	5:E:258:MET:SD	2.76	0.43
13:M:35:THR:HA	13:M:166:GLY:HA3	2.01	0.43
17:Q:80:ALA:O	17:Q:84:THR:HG23	2.18	0.43
22:V:397:ARG:HE	30:d:116:HIS:CD2	2.37	0.43
23:W:340:VAL:O	23:W:350:ARG:HD2	2.19	0.43
28:b:140:ILE:HB	28:b:170:LEU:HD12	2.01	0.43
32:f:231:LEU:HD21	32:f:852:VAL:HG23	2.00	0.43
1:A:345:LEU:O	1:A:346:PRO:C	2.62	0.43
8:H:232:ALA:HB1	24:X:90:ARG:HH11	1.83	0.43
10:J:230:ALA:HA	10:J:233:GLU:HG2	2.00	0.43
13:M:8:ASP:OD1	13:M:8:ASP:N	2.39	0.43
6:F:202:ILE:HA	6:F:327:LYS:HE2	2.00	0.42
13:M:171:ALA:HA	13:M:174:THR:HG22	2.01	0.42
21:U:5:ALA:HB1	21:U:8:ILE:HB	2.00	0.42
21:U:444:TYR:HD1	21:U:476:GLY:HA2	1.84	0.42
21:U:494:TYR:HD1	21:U:520:MET:HE1	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:U:494:TYR:CD1	21:U:520:MET:HE1	2.54	0.42
21:U:583:MET:HE2	21:U:618:ALA:HA	2.01	0.42
26:Z:208:ILE:HG23	27:a:353:LEU:HD21	2.01	0.42
7:g:18:PRO:O	7:g:19:GLU:CB	2.66	0.42
1:A:125:LEU:HA	1:A:149:ILE:HB	2.02	0.42
10:J:212:ARG:HB2	10:J:215:GLN:CD	2.44	0.42
13:M:77:VAL:HG11	13:M:84:ALA:HB1	2.01	0.42
21:U:107:HIS:HA	21:U:110:LYS:HE3	2.01	0.42
21:U:194:ARG:NH1	21:U:222:PHE:HB3	2.34	0.42
21:U:532:MET:HE3	21:U:552:ILE:HG22	2.00	0.42
22:V:386:PHE:HB2	22:V:392:TYR:HD1	1.84	0.42
30:d:24:GLY:HA2	30:d:27:LYS:CG	2.47	0.42
32:f:253:LEU:HD21	32:f:281:ILE:HD11	2.01	0.42
32:f:290:VAL:O	32:f:294:MET:N	2.52	0.42
15:o:215:LYS:HB3	16:p:197:THR:HB	2.01	0.42
2:B:257:GLN:HG3	2:B:262:ASP:HB2	2.02	0.42
5:E:19:HIS:CD2	6:F:52:ILE:HD12	2.54	0.42
23:W:453:HIS:HA	26:Z:103:LYS:HZ1	1.84	0.42
24:X:9:PHE:CE2	24:X:45:VAL:HG13	2.52	0.42
24:X:292:GLN:HA	24:X:295:LYS:NZ	2.34	0.42
26:Z:9:VAL:HG12	26:Z:48:LEU:HB3	1.99	0.42
27:a:106:SER:OG	27:a:107:SER:N	2.52	0.42
27:a:115:LYS:HG3	27:a:141:MET:HE1	2.00	0.42
28:b:130:ARG:NH1	33:z:71:LEU:HD23	2.33	0.42
7:g:186:LYS:HD3	7:g:186:LYS:HA	1.88	0.42
9:i:122:THR:HB	9:i:129:PRO:HB3	2.01	0.42
15:o:161:ALA:O	15:o:165:ASN:ND2	2.47	0.42
5:E:35:GLU:CD	5:E:38:LYS:HZ1	2.27	0.42
10:J:122:ASN:OD1	11:K:134:SER:OG	2.28	0.42
16:P:153:LEU:HB3	16:P:166:THR:HG23	2.01	0.42
17:Q:106:GLY:O	17:Q:114:ALA:N	2.49	0.42
21:U:530:GLU:HA	21:U:533:VAL:HG12	2.01	0.42
22:V:433:ASP:HA	22:V:436:PHE:HD2	1.84	0.42
23:W:67:LEU:HD22	23:W:100:ALA:HB1	2.01	0.42
23:W:108:CYS:HB3	23:W:128:LEU:HD11	2.01	0.42
24:X:360:ASP:N	24:X:360:ASP:OD1	2.49	0.42
30:d:82:TYR:HA	30:d:86:LYS:HE3	2.00	0.42
32:f:206:ASP:HA	32:f:209:MET:HE2	2.02	0.42
32:f:232:TYR:O	32:f:235:SER:OG	2.33	0.42
18:r:127:SER:HB3	18:r:136:TYR:CE1	2.54	0.42
19:s:213:ASP:OD1	19:s:213:ASP:N	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:55:LEU:HD11	2:B:76:GLU:HG2	2.02	0.42
1:A:222:LYS:NZ	1:A:322:ASN:OD1	2.41	0.42
2:B:233:THR:N	37:B:501:ADP:O1A	2.36	0.42
2:B:338:ASP:N	2:B:338:ASP:OD1	2.48	0.42
4:D:233:SER:OG	5:E:259:GLU:OE2	2.37	0.42
4:D:262:ILE:HB	4:D:307:VAL:HG12	2.02	0.42
8:H:148:GLN:OE1	8:H:158:TRP:NE1	2.51	0.42
21:U:497:LEU:O	21:U:501:LEU:N	2.53	0.42
22:V:82:LEU:HD13	22:V:163:VAL:HG22	2.00	0.42
26:Z:62:ASP:N	26:Z:62:ASP:OD1	2.52	0.42
26:Z:254:ASN:HA	26:Z:257:MET:HG3	2.01	0.42
26:Z:267:ARG:HB2	29:c:288:VAL:HG11	2.00	0.42
7:g:15:ILE:HG23	8:h:21:GLN:HE22	1.84	0.42
8:h:72:ILE:HD13	8:h:110:LEU:HD13	2.02	0.42
14:n:120:MET:O	20:t:61:GLN:NE2	2.47	0.42
18:r:38:ASN:HD21	18:r:41:LEU:HD23	1.83	0.42
33:u:42:ARG:NH2	33:u:72:ARG:HG2	2.34	0.42
33:z:72:ARG:HE	33:z:72:ARG:HB2	1.55	0.42
1:A:52:ILE:HD11	2:B:68:ILE:HG22	2.01	0.42
2:B:248:LEU:HB2	2:B:282:VAL:HG12	2.02	0.42
3:C:69:GLN:NE2	4:D:135:HIS:O	2.53	0.42
14:N:7:GLN:HB2	14:N:111:VAL:HG23	2.02	0.42
17:Q:163:CYS:O	17:Q:166:GLU:HG3	2.20	0.42
21:U:556:MET:HE1	21:U:562:GLU:HB2	2.00	0.42
21:U:646:PRO:HA	21:U:649:ARG:HB2	2.00	0.42
21:U:764:LEU:O	21:U:767:THR:OG1	2.35	0.42
23:W:453:HIS:CD2	26:Z:103:LYS:HE3	2.54	0.42
24:X:318:ILE:HB	24:X:322:HIS:CE1	2.55	0.42
28:b:24:THR:O	28:b:26:LEU:N	2.52	0.42
28:b:129:LYS:HE2	33:z:35:GLY:CA	2.50	0.42
28:b:142:ASN:ND2	28:b:146:GLU:OE1	2.53	0.42
32:f:256:PHE:HB3	32:f:261:ARG:HB2	2.01	0.42
32:f:852:VAL:HA	32:f:855:GLN:NE2	2.35	0.42
8:h:205:GLU:HG3	8:h:230:LEU:HD21	2.01	0.42
12:l:225:ASP:CG	12:l:226:ASP:H	2.28	0.42
16:p:193:ASP:N	16:p:193:ASP:OD1	2.52	0.42
18:r:4:LEU:HA	18:r:127:SER:HA	2.00	0.42
3:C:369:TYR:HA	3:C:372:ARG:HG2	2.01	0.42
6:F:97:LEU:O	6:F:121:CYS:N	2.45	0.42
7:G:128:ASN:HB3	7:G:130:GLU:HG2	2.01	0.42
10:J:130:SER:OG	10:J:147:THR:O	2.28	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:J:204:LYS:HE2	10:J:222:PRO:O	2.19	0.42
18:R:104:TRP:CD2	18:R:181:GLU:HA	2.55	0.42
21:U:16:GLU:HG3	21:U:19:LEU:HB2	2.01	0.42
23:W:357:ARG:HD3	23:W:357:ARG:HA	1.87	0.42
30:d:29:VAL:HG12	30:d:30:LEU:HD23	2.01	0.42
32:f:807:ARG:HA	32:f:811:LEU:HD12	2.01	0.42
7:g:138:MET:SD	7:g:140:LEU:HG	2.60	0.42
8:h:9:SER:OG	8:h:10:LEU:N	2.53	0.42
10:j:209:ALA:HB2	10:j:219:ILE:HD12	2.01	0.42
11:k:50:VAL:HB	11:k:66:LYS:HE2	2.02	0.42
12:l:34:ALA:HA	12:l:162:GLY:HA3	2.02	0.42
13:m:43:ASP:OD1	13:m:43:ASP:N	2.51	0.42
14:n:59:VAL:HG11	14:n:83:PHE:CZ	2.55	0.42
2:B:265:LYS:HD2	2:B:266:LEU:HD22	2.02	0.42
3:C:46:GLN:HE22	21:U:639:LEU:HD22	1.84	0.42
3:C:117:ARG:HD3	3:C:120:SER:HB2	2.02	0.42
6:F:368:ILE:HG12	6:F:371:ARG:HH22	1.84	0.42
8:H:205:GLU:HB3	8:H:227:LYS:HB3	2.02	0.42
10:J:215:GLN:HG2	10:J:216:SER:N	2.35	0.42
12:L:96:ARG:HA	12:L:96:ARG:HD2	1.88	0.42
21:U:607:VAL:O	21:U:615:ARG:NH1	2.45	0.42
29:c:136:LEU:HD11	33:u:7:THR:HG21	2.01	0.42
7:g:212:PRO:HG3	7:g:236:ASP:HB2	2.01	0.42
10:j:83:VAL:HG21	10:j:129:ILE:HD11	2.01	0.42
10:j:95:ARG:O	17:q:62:LYS:NZ	2.53	0.42
11:k:146:VAL:HG11	11:k:222:PRO:HG3	2.02	0.42
14:n:179:ILE:HG23	14:n:184:VAL:HG22	2.01	0.42
19:s:19:ASP:N	19:s:19:ASP:OD1	2.52	0.42
19:s:93:SER:HB2	19:s:124:PHE:HE2	1.85	0.42
20:t:22:ILE:HB	20:t:50:MET:HE1	2.01	0.42
1:A:188:ARG:HD3	1:A:232:ARG:HH21	1.84	0.42
10:J:131:ALA:N	10:J:147:THR:OG1	2.47	0.42
18:R:38:ASN:OD1	18:R:41:LEU:N	2.53	0.42
19:S:159:GLN:NE2	15:o:207:GLY:O	2.51	0.42
22:V:337:LEU:HB3	22:V:398:LEU:HD11	2.02	0.42
23:W:54:THR:O	23:W:58:SER:N	2.53	0.42
24:X:156:GLU:HB3	24:X:160:MET:HE1	2.02	0.42
24:X:408:SER:O	25:Y:379:ARG:NH2	2.53	0.42
25:Y:212:GLU:HG2	25:Y:213:LEU:HD22	2.02	0.42
29:c:34:SER:HB3	29:c:70:ILE:HA	2.01	0.42
32:f:423:ASP:OD1	32:f:423:ASP:N	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:h:112:GLN:NE2	8:h:113:ARG:HH21	2.17	0.42
20:t:12:LEU:HD21	20:t:142:GLY:HA3	2.01	0.42
7:G:109:ILE:HD13	7:G:114:LEU:HD13	2.02	0.42
12:L:204:ASP:N	12:L:204:ASP:OD1	2.53	0.42
16:P:177:ARG:HG2	19:s:147:PRO:HG3	2.02	0.42
18:R:139:MET:O	18:R:143:TYR:CB	2.65	0.42
21:U:407:SER:HA	21:U:777:HIS:HE1	1.85	0.42
22:V:176:MET:O	22:V:176:MET:HE3	2.19	0.42
22:V:259:LEU:HD11	22:V:294:ARG:HD3	2.01	0.42
23:W:420:ASP:O	23:W:424:LEU:N	2.51	0.42
24:X:63:ALA:HB1	24:X:100:GLU:HG3	2.02	0.42
26:Z:63:LYS:HZ2	33:z:72:ARG:C	2.28	0.42
7:g:71:LYS:HE3	7:g:74:GLU:HA	2.02	0.42
9:i:214:ALA:HB2	9:i:227:VAL:HG12	2.02	0.42
1:A:347:ASP:O	1:A:351:ARG:NH1	2.53	0.41
2:B:77:GLU:OE2	2:B:81:ASN:ND2	2.45	0.41
2:B:197:ILE:HG13	2:B:235:LEU:HD11	2.02	0.41
3:C:17:GLY:O	3:C:22:GLN:N	2.53	0.41
3:C:306:LEU:HB3	3:C:311:ILE:HG12	2.02	0.41
6:F:258:GLN:HG3	6:F:263:ASP:HB2	2.02	0.41
6:F:323:ASN:OD1	6:F:323:ASN:N	2.53	0.41
6:F:410:ARG:HD2	6:F:412:ALA:HB2	2.02	0.41
7:G:132:ARG:HA	7:G:133:PRO:HD3	1.84	0.41
9:I:105:ILE:HD13	9:I:110:LEU:HD13	2.02	0.41
14:N:37:ILE:HB	14:N:41:ILE:HG22	2.02	0.41
15:O:175:LEU:HB2	15:O:186:LEU:HB2	2.02	0.41
17:Q:18:ASP:OD1	17:Q:18:ASP:N	2.50	0.41
17:Q:43:LEU:HD23	17:Q:43:LEU:HA	1.82	0.41
18:R:59:LEU:HD22	18:R:83:LEU:HD13	2.02	0.41
23:W:101:VAL:HA	23:W:104:MET:HG2	2.01	0.41
23:W:125:ILE:HG23	23:W:129:ARG:HH21	1.84	0.41
23:W:330:LYS:HA	23:W:330:LYS:HD3	1.88	0.41
24:X:93:LEU:HD23	24:X:129:LEU:HD22	2.01	0.41
24:X:239:TYR:CE2	24:X:246:LYS:HB3	2.54	0.41
26:Z:14:LEU:HD12	29:c:39:LEU:HB3	2.01	0.41
28:b:134:GLU:O	28:b:136:VAL:N	2.53	0.41
30:d:54:ILE:HA	30:d:57:ILE:HG22	2.02	0.41
32:f:862:ILE:HG12	32:f:879:ARG:HB3	2.02	0.41
7:g:38:THR:HG21	7:g:206:LEU:HD11	2.01	0.41
11:k:32:LYS:NZ	11:k:175:GLU:OE1	2.40	0.41
33:u:40:GLN:HA	33:u:72:ARG:HB2	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:z:68:HIS:HD1	33:z:68:HIS:HA	1.77	0.41
2:B:141:LYS:HA	2:B:144:LEU:HD12	2.01	0.41
5:E:287:PRO:HA	5:E:290:LEU:HB2	2.01	0.41
7:G:196:GLU:HA	7:G:199:ILE:HG12	2.01	0.41
13:M:229:LYS:HA	13:M:232:ARG:HG2	2.02	0.41
20:T:13:GLY:HA2	20:T:22:ILE:HA	2.01	0.41
21:U:806:CYS:SG	21:U:807:LYS:N	2.92	0.41
26:Z:65:ASP:N	26:Z:65:ASP:OD1	2.52	0.41
28:b:16:MET:HE2	28:b:25:ARG:NH1	2.35	0.41
28:b:129:LYS:HD2	28:b:129:LYS:HA	1.85	0.41
32:f:348:ILE:HB	32:f:349:TYR:H	1.67	0.41
11:k:50:VAL:HG22	11:k:216:GLU:HB2	2.01	0.41
17:q:117:TYR:HD1	17:q:130:ALA:HB1	1.85	0.41
3:C:237:MET:HE2	3:C:241:HIS:CE1	2.54	0.41
14:N:167:ASP:HB3	14:N:170:SER:HB2	2.02	0.41
16:P:78:GLU:HB3	16:P:80:ARG:HG2	2.01	0.41
18:R:44:THR:H	18:R:99:THR:HG23	1.85	0.41
19:S:22:ILE:HG23	19:S:197:ILE:HG13	2.02	0.41
19:S:99:ARG:HG3	19:S:104:TYR:CZ	2.55	0.41
24:X:80:ILE:HB	24:X:81:SER:H	1.57	0.41
24:X:328:ASP:HA	24:X:331:LEU:HD13	2.00	0.41
28:b:21:PHE:HA	28:b:177:PRO:HA	2.02	0.41
32:f:169:GLU:OE2	32:f:180:GLN:NE2	2.54	0.41
32:f:586:PRO:O	32:f:589:SER:N	2.53	0.41
7:g:58:ASP:OD1	7:g:58:ASP:N	2.52	0.41
10:j:231:GLU:HA	10:j:234:LYS:HG2	2.02	0.41
13:m:99:ARG:NH2	13:m:105:ASN:OD1	2.43	0.41
17:q:25:ILE:HG22	17:q:26:VAL:HG13	2.02	0.41
17:q:108:ASP:N	17:q:112:GLY:O	2.53	0.41
1:A:158:ASP:O	1:A:162:THR:HG23	2.20	0.41
4:D:126:PRO:HD2	4:D:127:ASN:N	2.34	0.41
6:F:80:ILE:O	6:F:84:LYS:HG3	2.20	0.41
6:F:380:ASN:HD22	6:F:383:GLU:HG3	1.86	0.41
24:X:255:LEU:HD22	24:X:267:VAL:HG13	2.02	0.41
25:Y:382:LYS:HD2	25:Y:382:LYS:HA	1.94	0.41
29:c:226:MET:O	29:c:230:THR:HG23	2.20	0.41
30:d:129:THR:OG1	30:d:130:ASN:N	2.54	0.41
10:j:36:ARG:HG2	10:j:142:PRO:HB2	2.03	0.41
11:k:189:MET:N	11:k:189:MET:SD	2.94	0.41
11:k:234:LEU:O	11:k:238:ILE:HG12	2.20	0.41
16:p:135:ASP:OD1	16:p:136:PHE:N	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:t:91:TRP:HE3	20:t:92:LEU:HD12	1.85	0.41
4:D:125:LYS:N	4:D:126:PRO:CD	2.80	0.41
15:O:54:MET:HG2	16:P:96:TYR:CZ	2.54	0.41
18:R:52:CYS:O	18:R:55:TRP:N	2.53	0.41
18:R:167:ASP:HB3	18:R:170:SER:HB2	2.01	0.41
19:S:199:THR:OG1	19:S:201:GLU:OE2	2.39	0.41
21:U:91:ASN:HA	21:U:140:ARG:HH12	1.85	0.41
23:W:203:GLN:HB3	23:W:207:LYS:NZ	2.35	0.41
24:X:251:LEU:HA	24:X:254:MET:HG2	2.02	0.41
25:Y:90:ASP:HA	25:Y:93:LYS:HB2	2.01	0.41
27:a:212:ASN:OD1	27:a:213:PHE:N	2.54	0.41
28:b:129:LYS:O	28:b:130:ARG:C	2.63	0.41
32:f:567:LEU:HD23	32:f:790:GLN:HB3	2.03	0.41
7:g:76:ILE:HD13	7:g:114:LEU:HD22	2.03	0.41
9:i:10:THR:HG23	10:j:125:ARG:HB3	2.02	0.41
9:i:116:ASP:OD1	9:i:117:ILE:N	2.54	0.41
10:j:221:ASN:CG	10:j:224:GLU:HG2	2.45	0.41
12:l:157:ARG:HH21	13:m:60:GLU:HG2	1.86	0.41
1:A:324:PRO:HA	1:A:327:LEU:HD23	2.02	0.41
3:C:67:GLN:HE22	4:D:133:HIS:HE1	1.68	0.41
4:D:164:TYR:CZ	4:D:222:HIS:HB2	2.56	0.41
21:U:168:LEU:HD12	21:U:168:LEU:HA	1.92	0.41
21:U:327:LYS:HB3	21:U:333:MET:HE1	2.03	0.41
21:U:485:ALA:HB3	21:U:519:VAL:HG12	2.03	0.41
23:W:422:ASN:O	23:W:426:ASN:ND2	2.53	0.41
26:Z:138:TYR:HB3	26:Z:155:PHE:HB3	2.02	0.41
27:a:70:ARG:HA	27:a:70:ARG:HD2	1.86	0.41
29:c:248:MET:HE1	29:c:284:LEU:HA	2.02	0.41
10:j:180:ALA:HB1	10:j:190:LEU:HD11	2.02	0.41
13:m:175:GLU:HA	13:m:178:LYS:NZ	2.36	0.41
19:s:22:ILE:HD11	19:s:168:LEU:HD12	2.02	0.41
33:z:24:GLU:OE2	33:z:53:GLY:CA	2.69	0.41
2:B:273:VAL:HA	2:B:276:GLU:HG2	2.03	0.41
4:D:83:GLN:C	4:D:85:ILE:N	2.78	0.41
4:D:154:LEU:HB2	4:D:227:PHE:HD2	1.86	0.41
6:F:249:LEU:N	6:F:282:ILE:O	2.40	0.41
8:H:78:GLY:HA3	8:H:132:VAL:HG12	2.03	0.41
16:P:45:MET:HB2	16:P:49:LEU:HG	2.02	0.41
21:U:578:LEU:HD12	21:U:578:LEU:HA	1.96	0.41
24:X:89:VAL:HG11	24:X:125:LEU:HD21	2.02	0.41
10:j:187:THR:HA	10:j:190:LEU:HD12	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:o:201:ARG:HH11	15:o:203:ARG:HG2	1.85	0.41
16:p:25:ASP:OD1	16:p:25:ASP:N	2.51	0.41
2:B:44:ASP:HB2	2:B:48:LYS:HG3	2.02	0.41
3:C:100:ASP:H	3:C:103:ILE:HD11	1.86	0.41
5:E:25:ARG:HH11	5:E:29:LEU:HD11	1.85	0.41
6:F:233:LYS:HG2	6:F:354:PHE:CD2	2.56	0.41
8:H:106:PRO:HB2	8:H:109:GLN:HG2	2.01	0.41
9:I:148:TYR:HE1	10:J:58:THR:HG21	1.86	0.41
18:R:125:THR:HB	18:R:139:MET:HE1	2.02	0.41
21:U:167:ILE:HB	21:U:177:LEU:HD11	2.02	0.41
21:U:632:GLN:O	21:U:635:SER:OG	2.34	0.41
21:U:737:LEU:HD12	21:U:737:LEU:HA	1.81	0.41
23:W:417:ARG:HA	23:W:417:ARG:HD3	1.86	0.41
24:X:407:MET:HA	24:X:410:VAL:HG22	2.03	0.41
25:Y:233:ARG:NH2	25:Y:264:TYR:O	2.54	0.41
26:Z:215:VAL:HA	26:Z:220:LEU:HB2	2.02	0.41
27:a:138:VAL:HA	27:a:141:MET:HE3	2.03	0.41
16:p:12:MET:SD	16:p:138:VAL:HA	2.60	0.41
2:B:249:ARG:NH1	2:B:283:PHE:HB3	2.36	0.41
3:C:36:ASN:HD21	22:V:89:LYS:HB3	1.86	0.41
4:D:85:ILE:HD13	4:D:85:ILE:HA	1.66	0.41
5:E:168:LYS:NZ	5:E:270:LEU:HB2	2.35	0.41
5:E:235:ILE:HD11	5:E:277:MET:HB3	2.02	0.41
6:F:339:ASP:OD1	6:F:339:ASP:N	2.41	0.41
12:L:43:HIS:CD2	12:L:219:LEU:HD12	2.56	0.41
13:M:227:VAL:O	13:M:232:ARG:NH2	2.53	0.41
14:N:133:SER:HA	14:N:136:TYR:CE2	2.56	0.41
17:Q:36:PHE:HB2	17:Q:44:LEU:HD11	2.03	0.41
18:R:7:LYS:HD2	18:R:109:PRO:HB2	2.03	0.41
19:S:22:ILE:HG12	19:S:197:ILE:HG23	2.03	0.41
20:T:64:LYS:HB2	20:T:64:LYS:HE2	1.87	0.41
21:U:807:LYS:HA	21:U:874:ASN:HA	2.01	0.41
22:V:245:ASP:OD1	22:V:245:ASP:N	2.53	0.41
22:V:396:ILE:HD13	22:V:396:ILE:HA	1.94	0.41
24:X:30:ILE:O	24:X:33:ARG:HG2	2.21	0.41
24:X:173:GLU:HA	24:X:176:THR:HG22	2.02	0.41
25:Y:66:ASP:HB3	25:Y:69:LEU:HB3	2.02	0.41
25:Y:84:LEU:HD13	25:Y:107:LYS:HA	2.03	0.41
26:Z:63:LYS:NZ	33:z:73:LEU:N	2.69	0.41
26:Z:72:HIS:NE2	26:Z:111:LEU:HD21	2.36	0.41
29:c:246:LYS:HD3	29:c:246:LYS:HA	1.74	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:d:251:ARG:HH11	30:d:251:ARG:HG2	1.86	0.41
32:f:98:PHE:O	32:f:102:HIS:ND1	2.38	0.41
32:f:249:LEU:HD13	32:f:272:LEU:HG	2.03	0.41
32:f:452:ASN:HD21	32:f:461:PRO:HD2	1.86	0.41
9:i:136:TYR:CE2	9:i:150:SER:HB3	2.55	0.41
10:j:71:MET:HE1	10:j:73:PHE:HB3	2.03	0.41
13:m:10:SER:OG	13:m:11:ALA:N	2.54	0.41
16:p:14:MET:HB2	16:p:167:ILE:HD12	2.02	0.41
33:z:70:VAL:C	33:z:71:LEU:HD22	2.45	0.41
1:A:131:PRO:HA	1:A:134:ILE:HD12	2.02	0.41
6:F:256:LEU:HD11	6:F:268:VAL:HG13	2.03	0.41
8:H:51:LYS:NZ	8:H:200:GLU:O	2.54	0.41
11:K:72:ALA:O	11:K:226:PHE:N	2.41	0.41
11:K:236:GLU:HA	11:K:239:LYS:NZ	2.35	0.41
21:U:45:ILE:O	21:U:49:TYR:N	2.43	0.41
21:U:86:ASP:OD1	21:U:86:ASP:N	2.54	0.41
24:X:129:LEU:O	24:X:133:LEU:N	2.51	0.41
27:a:130:VAL:O	27:a:134:THR:N	2.41	0.41
28:b:124:LEU:HB2	28:b:156:PHE:CD1	2.56	0.41
30:d:103:LEU:HD23	30:d:136:PRO:HB2	2.01	0.41
30:d:215:TRP:HE3	30:d:222:TYR:HB3	1.86	0.41
7:g:111:VAL:HB	7:g:150:GLN:HE21	1.85	0.41
8:h:34:PRO:HA	8:h:164:GLY:HA3	2.03	0.41
10:j:90:GLU:HA	10:j:93:SER:HB3	2.02	0.41
15:o:79:ALA:HA	15:o:82:MET:HG2	2.03	0.41
2:B:211:TYR:CE2	2:B:218:PRO:HB3	2.56	0.40
2:B:327:VAL:HG12	2:B:329:MET:HE1	2.03	0.40
3:C:71:SER:O	4:D:112:TYR:N	2.51	0.40
4:D:410:ASP:N	4:D:410:ASP:OD1	2.53	0.40
11:K:16:SER:OG	11:K:19:GLY:N	2.55	0.40
21:U:692:ALA:HB2	21:U:733:ALA:HB1	2.02	0.40
23:W:328:LEU:HD12	23:W:329:ARG:HG2	2.03	0.40
24:X:93:LEU:HD12	24:X:93:LEU:HA	1.93	0.40
28:b:165:GLY:C	28:b:167:GLY:H	2.29	0.40
29:c:54:MET:HE3	29:c:84:VAL:HG11	2.03	0.40
32:f:118:ASN:HA	32:f:121:PHE:HB2	2.02	0.40
10:j:2:SER:OG	10:j:3:TYR:N	2.54	0.40
10:j:184:ASP:O	10:j:188:ILE:HG12	2.21	0.40
10:j:185:ASP:OD1	10:j:185:ASP:N	2.53	0.40
12:l:104:PRO:HB2	12:l:107:ARG:HD2	2.03	0.40
13:m:77:VAL:HG11	13:m:84:ALA:HB1	2.02	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:s:92:LEU:HD13	19:s:110:ILE:HD11	2.03	0.40
33:z:51:GLU:HB2	33:z:54:ARG:NE	2.36	0.40
1:A:258:ARG:HA	1:A:305:GLN:HE22	1.86	0.40
3:C:257:SER:HB2	3:C:301:LEU:HA	2.03	0.40
4:D:84:SER:HB2	29:c:148:ILE:HG22	2.03	0.40
5:E:75:ASN:HD22	6:F:130:GLN:HG2	1.86	0.40
6:F:251:LEU:HD23	6:F:285:ILE:HG12	2.02	0.40
7:G:27:TYR:CG	13:M:16:PRO:HA	2.56	0.40
8:H:45:VAL:HG21	8:H:188:ILE:HG12	2.04	0.40
9:I:17:ARG:NE	9:I:22:GLU:OE2	2.52	0.40
11:K:16:SER:N	11:K:20:ARG:O	2.51	0.40
14:N:17:ASP:OD1	14:N:17:ASP:N	2.53	0.40
16:P:159:ASP:OD1	16:P:162:HIS:ND1	2.50	0.40
21:U:560:MET:HE1	21:U:590:TYR:HA	2.03	0.40
22:V:179:LYS:HE2	22:V:179:LYS:HB2	1.95	0.40
22:V:224:LEU:HB2	22:V:261:TYR:HE1	1.87	0.40
23:W:455:LEU:HD12	23:W:456:GLN:NE2	2.36	0.40
24:X:258:LYS:HD3	24:X:266:ASP:HB2	2.02	0.40
26:Z:122:VAL:HG22	26:Z:137:ALA:HB2	2.04	0.40
26:Z:187:LEU:HD11	30:d:254:GLU:HG3	2.03	0.40
29:c:125:VAL:CG1	33:u:74:ARG:HD2	2.51	0.40
29:c:198:ARG:HH12	29:c:199:HIS:CE1	2.39	0.40
32:f:57:GLU:O	32:f:61:GLU:N	2.42	0.40
32:f:170:TRP:HA	32:f:173:LEU:HG	2.03	0.40
32:f:208:LEU:HD23	32:f:208:LEU:HA	1.87	0.40
32:f:779:CYS:HA	32:f:780:PRO:HD3	1.95	0.40
17:q:8:GLN:HA	17:q:13:VAL:HA	2.03	0.40
2:B:171:VAL:HA	2:B:174:MET:HG2	2.04	0.40
3:C:76:VAL:HA	3:C:87:VAL:HG22	2.02	0.40
3:C:187:LEU:HD11	3:C:295:THR:HG22	2.04	0.40
3:C:287:LYS:O	3:C:288:ASN:HB3	2.22	0.40
4:D:273:LYS:HZ3	4:D:319:PRO:HD3	1.87	0.40
4:D:274:ARG:HE	5:E:251:ARG:HH22	1.68	0.40
18:R:166:ARG:HA	18:R:166:ARG:HD3	1.88	0.40
21:U:899:ARG:O	21:U:917:THR:OG1	2.31	0.40
22:V:476:PHE:HB2	26:Z:257:MET:HE1	2.02	0.40
25:Y:51:ALA:HA	25:Y:54:TYR:HB3	2.03	0.40
28:b:33:VAL:HG11	28:b:75:LEU:HD21	2.02	0.40
28:b:121:GLU:HA	28:b:124:LEU:HG	2.03	0.40
30:d:251:ARG:HG2	30:d:251:ARG:NH1	2.37	0.40
32:f:347:ASP:C	32:f:348:ILE:HG13	2.45	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
9:i:92:LEU:HB3	9:i:96:ARG:NH2	2.36	0.40
10:j:89:VAL:HG22	17:q:66:LEU:HD21	2.03	0.40
11:k:95:GLU:HA	11:k:98:ASN:HD22	1.87	0.40
14:n:189:LEU:HD22	14:n:193:GLN:HG3	2.02	0.40
20:t:169:VAL:O	20:t:173:MET:HG2	2.21	0.40
6:F:221:LYS:HD3	6:F:221:LYS:HA	1.76	0.40
10:J:221:ASN:C	10:J:223:GLU:N	2.78	0.40
12:L:50:LYS:HB2	12:L:209:ASN:HA	2.03	0.40
13:M:15:SER:HB3	13:M:19:ARG:H	1.86	0.40
14:N:97:GLY:HA2	14:N:115:PRO:HA	2.03	0.40
21:U:336:GLU:O	21:U:340:GLN:N	2.45	0.40
21:U:740:GLY:HA3	21:U:744:VAL:HG22	2.04	0.40
21:U:807:LYS:HA	21:U:808:PRO:HD3	1.81	0.40
24:X:67:GLY:HA2	24:X:109:LEU:HD21	2.04	0.40
25:Y:80:GLU:OE2	25:Y:83:ARG:NH2	2.54	0.40
25:Y:376:LEU:HD23	26:Z:265:LEU:HD21	2.03	0.40
26:Z:5:ALA:HB3	26:Z:46:LYS:HE3	2.02	0.40
26:Z:74:TYR:HE1	29:c:98:MET:HB2	1.87	0.40
27:a:362:SER:HA	27:a:365:MET:HE2	2.04	0.40
28:b:129:LYS:CE	28:b:132:LYS:HD2	2.51	0.40
28:b:150:THR:HB	28:b:153:LEU:HB2	2.03	0.40
29:c:64:ASP:HA	29:c:139:ARG:HH12	1.86	0.40
32:f:188:VAL:HG11	32:f:211:ILE:HD12	2.04	0.40
32:f:523:GLY:HA3	32:f:561:GLY:HA2	2.04	0.40
18:r:144:SER:HB3	18:r:147:LEU:HG	2.04	0.40
33:z:38:PRO:O	33:z:40:GLN:N	2.54	0.40
2:B:156:VAL:HG23	2:B:158:ALA:H	1.86	0.40
3:C:73:VAL:HG23	3:C:127:LEU:HD12	2.03	0.40
4:D:274:ARG:HG2	4:D:275:PHE:CD1	2.57	0.40
6:F:39:GLU:HB3	6:F:43:GLN:HB2	2.03	0.40
6:F:217:ILE:HG13	6:F:218:GLN:N	2.35	0.40
6:F:362:ARG:NH2	6:F:388:THR:O	2.55	0.40
8:H:177:ARG:NH1	24:X:160:MET:HB3	2.37	0.40
10:J:116:GLN:O	10:J:119:THR:OG1	2.34	0.40
26:Z:206:LEU:HA	26:Z:209:ARG:HG2	2.03	0.40
14:n:14:LEU:HD23	14:n:34:LEU:HD22	2.04	0.40
20:t:180:ASP:HB3	20:t:183:SER:HB3	2.04	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	404/433 (93%)	352 (87%)	51 (13%)	1 (0%)	43	77
2	B	395/440 (90%)	355 (90%)	39 (10%)	1 (0%)	36	72
3	C	379/398 (95%)	333 (88%)	43 (11%)	3 (1%)	16	54
4	D	378/418 (90%)	331 (88%)	44 (12%)	3 (1%)	16	54
5	E	387/403 (96%)	355 (92%)	32 (8%)	0	100	100
6	F	413/439 (94%)	378 (92%)	35 (8%)	0	100	100
7	G	242/246 (98%)	231 (96%)	11 (4%)	0	100	100
7	g	238/246 (97%)	223 (94%)	14 (6%)	1 (0%)	30	67
8	H	230/234 (98%)	221 (96%)	9 (4%)	0	100	100
8	h	230/234 (98%)	220 (96%)	10 (4%)	0	100	100
9	I	249/261 (95%)	238 (96%)	10 (4%)	1 (0%)	30	67
9	i	246/261 (94%)	235 (96%)	10 (4%)	1 (0%)	30	67
10	J	237/248 (96%)	229 (97%)	7 (3%)	1 (0%)	30	67
10	j	237/248 (96%)	226 (95%)	11 (5%)	0	100	100
11	K	232/241 (96%)	220 (95%)	12 (5%)	0	100	100
11	k	236/241 (98%)	225 (95%)	11 (5%)	0	100	100
12	L	236/263 (90%)	231 (98%)	5 (2%)	0	100	100
12	l	238/263 (90%)	231 (97%)	7 (3%)	0	100	100
13	M	238/255 (93%)	235 (99%)	3 (1%)	0	100	100
13	m	240/255 (94%)	232 (97%)	8 (3%)	0	100	100
14	N	200/239 (84%)	197 (98%)	3 (2%)	0	100	100
14	n	200/239 (84%)	195 (98%)	5 (2%)	0	100	100
15	O	218/277 (79%)	211 (97%)	7 (3%)	0	100	100
15	o	218/277 (79%)	211 (97%)	7 (3%)	0	100	100
16	P	202/205 (98%)	192 (95%)	10 (5%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
16	p	202/205 (98%)	192 (95%)	10 (5%)	0	100	100
17	Q	197/201 (98%)	190 (96%)	7 (4%)	0	100	100
17	q	197/201 (98%)	189 (96%)	8 (4%)	0	100	100
18	R	199/263 (76%)	190 (96%)	9 (4%)	0	100	100
18	r	199/263 (76%)	194 (98%)	5 (2%)	0	100	100
19	S	211/241 (88%)	204 (97%)	7 (3%)	0	100	100
19	s	211/241 (88%)	204 (97%)	7 (3%)	0	100	100
20	T	214/264 (81%)	209 (98%)	5 (2%)	0	100	100
20	t	214/264 (81%)	209 (98%)	5 (2%)	0	100	100
21	U	812/953 (85%)	756 (93%)	56 (7%)	0	100	100
22	V	442/534 (83%)	430 (97%)	11 (2%)	1 (0%)	43	77
23	W	439/456 (96%)	429 (98%)	10 (2%)	0	100	100
24	X	420/422 (100%)	405 (96%)	14 (3%)	1 (0%)	43	77
25	Y	387/389 (100%)	358 (92%)	28 (7%)	1 (0%)	36	72
26	Z	284/324 (88%)	256 (90%)	28 (10%)	0	100	100
27	a	371/376 (99%)	344 (93%)	27 (7%)	0	100	100
28	b	189/377 (50%)	161 (85%)	25 (13%)	3 (2%)	7	37
29	c	285/310 (92%)	264 (93%)	18 (6%)	3 (1%)	11	46
30	d	255/350 (73%)	219 (86%)	36 (14%)	0	100	100
31	e	48/70 (69%)	42 (88%)	6 (12%)	0	100	100
32	f	840/908 (92%)	792 (94%)	43 (5%)	5 (1%)	21	59
33	u	74/76 (97%)	69 (93%)	5 (7%)	0	100	100
33	z	74/76 (97%)	63 (85%)	9 (12%)	2 (3%)	4	25
34	v	1/28 (4%)	1 (100%)	0	0	100	100
All	All	13488/15056 (90%)	12677 (94%)	783 (6%)	28 (0%)	44	77

All (28) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	C	288	ASN
4	D	85	ILE
28	b	23	PRO
32	f	349	TYR
32	f	586	PRO

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Mol	Chain	Res	Type
7	g	19	GLU
1	A	347	ASP
2	B	412	MET
24	X	80	ILE
29	c	196	LEU
32	f	348	ILE
3	C	89	VAL
4	D	126	PRO
28	b	25	ARG
32	f	111	GLU
9	i	53	HIS
4	D	86	PRO
22	V	496	PHE
25	Y	350	VAL
28	b	135	LYS
29	c	266	THR
29	c	267	PRO
32	f	585	GLU
33	z	61	ILE
9	I	53	HIS
33	z	8	LEU
3	C	90	HIS
10	J	222	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	342/372 (92%)	339 (99%)	3 (1%)	70 79
2	B	345/385 (90%)	343 (99%)	2 (1%)	78 83
3	C	326/346 (94%)	322 (99%)	4 (1%)	63 75
4	D	333/366 (91%)	330 (99%)	3 (1%)	70 79
5	E	341/353 (97%)	341 (100%)	0	100 100
6	F	357/379 (94%)	357 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
7	G	205/210 (98%)	205 (100%)	0	100	100
7	g	202/210 (96%)	200 (99%)	2 (1%)	68	78
8	H	188/191 (98%)	188 (100%)	0	100	100
8	h	187/191 (98%)	187 (100%)	0	100	100
9	I	207/221 (94%)	206 (100%)	1 (0%)	81	83
9	i	202/221 (91%)	201 (100%)	1 (0%)	81	83
10	J	201/211 (95%)	198 (98%)	3 (2%)	57	72
10	j	197/211 (93%)	195 (99%)	2 (1%)	68	78
11	K	193/203 (95%)	193 (100%)	0	100	100
11	k	197/203 (97%)	197 (100%)	0	100	100
12	L	202/224 (90%)	202 (100%)	0	100	100
12	l	202/224 (90%)	202 (100%)	0	100	100
13	M	196/212 (92%)	196 (100%)	0	100	100
13	m	198/212 (93%)	198 (100%)	0	100	100
14	N	157/181 (87%)	157 (100%)	0	100	100
14	n	156/181 (86%)	156 (100%)	0	100	100
15	O	179/228 (78%)	179 (100%)	0	100	100
15	o	181/228 (79%)	181 (100%)	0	100	100
16	P	172/174 (99%)	172 (100%)	0	100	100
16	p	173/174 (99%)	173 (100%)	0	100	100
17	Q	168/171 (98%)	168 (100%)	0	100	100
17	q	168/171 (98%)	168 (100%)	0	100	100
18	R	156/202 (77%)	156 (100%)	0	100	100
18	r	156/202 (77%)	156 (100%)	0	100	100
19	S	175/199 (88%)	175 (100%)	0	100	100
19	s	178/199 (89%)	178 (100%)	0	100	100
20	T	178/215 (83%)	178 (100%)	0	100	100
20	t	179/215 (83%)	179 (100%)	0	100	100
21	U	696/816 (85%)	694 (100%)	2 (0%)	86	85
22	V	390/460 (85%)	389 (100%)	1 (0%)	86	85
23	W	406/416 (98%)	404 (100%)	2 (0%)	81	83

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
24	X	362/362 (100%)	359 (99%)	3 (1%)	73 80
25	Y	344/344 (100%)	343 (100%)	1 (0%)	86 85
26	Z	257/295 (87%)	256 (100%)	1 (0%)	84 84
27	a	333/336 (99%)	333 (100%)	0	100 100
28	b	167/312 (54%)	157 (94%)	10 (6%)	17 39
29	c	252/268 (94%)	249 (99%)	3 (1%)	63 75
30	d	231/294 (79%)	231 (100%)	0	100 100
31	e	44/63 (70%)	44 (100%)	0	100 100
32	f	711/763 (93%)	707 (99%)	4 (1%)	78 83
33	u	68/68 (100%)	64 (94%)	4 (6%)	18 39
33	z	68/68 (100%)	55 (81%)	13 (19%)	1 8
34	v	1/1 (100%)	0	1 (100%)	0 0
All	All	11527/12751 (90%)	11461 (99%)	66 (1%)	76 83

All (66) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	347	ASP
1	A	373	LEU
1	A	403	ILE
2	B	125	THR
2	B	412	MET
3	C	88	LYS
3	C	89	VAL
3	C	210	THR
3	C	287	LYS
4	D	85	ILE
4	D	124	LEU
4	D	125	LYS
9	I	52	ILE
10	J	215	GLN
10	J	217	LEU
10	J	220	LEU
21	U	18	GLN
21	U	34	PHE
22	V	495	ARG
23	W	455	LEU
23	W	456	GLN

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Mol	Chain	Res	Type
24	X	80	ILE
24	X	106	GLU
24	X	107	VAL
25	Y	351	ASN
26	Z	103	LYS
28	b	121	GLU
28	b	122	LYS
28	b	126	LYS
28	b	127	LEU
28	b	130	ARG
28	b	133	LYS
28	b	134	GLU
28	b	135	LYS
28	b	164	ASP
28	b	166	THR
29	c	196	LEU
29	c	198	ARG
29	c	266	THR
32	f	111	GLU
32	f	113	MET
32	f	348	ILE
32	f	586	PRO
7	g	19	GLU
7	g	21	ARG
9	i	52	ILE
10	j	220	LEU
10	j	221	ASN
33	u	63	LYS
33	u	72	ARG
33	u	73	LEU
33	u	74	ARG
34	v	25	LYS
33	z	6	LYS
33	z	11	LYS
33	z	13	ILE
33	z	20	SER
33	z	24	GLU
33	z	33	LYS
33	z	42	ARG
33	z	52	ASP
33	z	54	ARG
33	z	68	HIS

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Mol	Chain	Res	Type
33	z	72	ARG
33	z	73	LEU
33	z	74	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (104) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	60	ASN
1	A	197	HIS
1	A	203	ASN
1	A	305	GLN
1	A	414	ASN
2	B	181	GLN
2	B	306	GLN
3	C	53	ASN
3	C	67	GLN
3	C	270	GLN
4	D	302	ASN
4	D	414	HIS
5	E	10	GLN
5	E	45	ASN
5	E	225	HIS
5	E	271	HIS
5	E	345	ASN
6	F	358	ASN
6	F	380	ASN
6	F	417	HIS
7	G	128	ASN
7	G	224	ASN
8	H	88	HIS
8	H	109	GLN
9	I	146	GLN
11	K	41	GLN
11	K	204	GLN
12	L	16	GLN
12	L	86	ASN
12	L	90	GLN
12	L	185	ASN
13	M	32	ASN
14	N	158	ASN
15	O	165	ASN
16	P	145	GLN

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Mol	Chain	Res	Type
17	Q	61	GLN
18	R	85	ASN
19	S	152	GLN
20	T	3	ASN
21	U	111	GLN
21	U	171	ASN
21	U	340	GLN
21	U	346	ASN
21	U	697	GLN
21	U	734	GLN
22	V	81	GLN
22	V	168	GLN
22	V	247	GLN
22	V	260	HIS
22	V	299	GLN
22	V	319	HIS
22	V	401	ASN
23	W	155	GLN
23	W	399	ASN
23	W	456	GLN
24	X	406	ASN
25	Y	77	ASN
26	Z	77	ASN
26	Z	109	ASN
26	Z	243	GLN
27	a	18	GLN
27	a	227	ASN
29	c	128	ASN
29	c	214	GLN
30	d	34	ASN
30	d	116	HIS
30	d	128	GLN
30	d	135	HIS
30	d	228	GLN
32	f	156	HIS
32	f	171	GLN
32	f	180	GLN
32	f	323	ASN
32	f	428	GLN
32	f	611	GLN
32	f	750	GLN
32	f	758	ASN

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Mol	Chain	Res	Type
32	f	790	GLN
7	g	75	ASN
7	g	92	GLN
7	g	147	GLN
7	g	150	GLN
8	h	21	GLN
8	h	95	GLN
10	j	92	GLN
11	k	41	GLN
11	k	152	GLN
11	k	227	HIS
12	l	43	HIS
14	n	110	GLN
14	n	123	GLN
14	n	158	ASN
14	n	187	GLN
14	n	193	GLN
15	o	91	GLN
15	o	165	ASN
16	p	61	GLN
17	q	82	ASN
17	q	99	HIS
17	q	168	GLN
17	q	189	HIS
18	r	29	GLN
18	r	85	ASN
19	s	8	ASN

5.3.3 RNA

There are no RNA molecules in this entry.

5.4 Non-standard residues in protein, DNA, RNA chains

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

5.5 Carbohydrates

There are no oligosaccharides in this entry.

5.6 Ligand geometry (i)

Of 9 ligands modelled in this entry, 4 are monoatomic - leaving 5 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	$\#\|Z\| > 2$
35	ATP	A	501	36	29,33,33	0.30	0	44,52,52	0.49	1 (2%)
37	ADP	B	501	-	27,29,29	1.36	4 (14%)	42,45,45	2.04	9 (21%)
35	ATP	F	501	36	29,33,33	0.29	0	44,52,52	0.50	1 (2%)
37	ADP	E	401	-	27,29,29	1.36	4 (14%)	42,45,45	2.06	11 (26%)
35	ATP	D	501	36	29,33,33	0.31	0	44,52,52	0.54	1 (2%)

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
35	ATP	A	501	36	-	4/22/38/38	0/3/3/3
37	ADP	B	501	-	-	3/16/32/32	0/3/3/3
35	ATP	F	501	36	-	4/22/38/38	0/3/3/3
37	ADP	E	401	-	-	2/16/32/32	0/3/3/3
35	ATP	D	501	36	-	5/22/38/38	0/3/3/3

All (8) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
37	B	501	ADP	C5-C4	4.50	1.47	1.39
37	E	401	ADP	C5-C4	4.47	1.47	1.39
37	E	401	ADP	C5-C6	2.72	1.48	1.41
37	B	501	ADP	C5-C6	2.68	1.48	1.41
37	E	401	ADP	C8-N7	2.36	1.36	1.31
37	B	501	ADP	C5-N7	-2.35	1.34	1.39
37	B	501	ADP	C8-N7	2.29	1.35	1.31
37	E	401	ADP	C5-N7	-2.14	1.35	1.39

All (23) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(^{o})	Ideal(^{o})
37	B	501	ADP	C5-C4-N3	-6.77	117.92	126.75
37	E	401	ADP	C5-C4-N3	-6.33	118.49	126.75
37	B	501	ADP	N3-C4-N9	5.25	135.73	127.08
37	E	401	ADP	N3-C4-N9	4.99	135.30	127.08
37	E	401	ADP	PA-O3A-PB	-4.20	118.42	132.83
37	B	501	ADP	C2-N3-C4	3.96	121.11	111.75
37	E	401	ADP	C2-N3-C4	3.89	120.94	111.75
37	B	501	ADP	PA-O3A-PB	-3.57	120.59	132.83
37	B	501	ADP	C4-C5-N7	-3.43	106.44	110.62
37	E	401	ADP	C4-C5-N7	-3.38	106.50	110.62
37	E	401	ADP	N3-C2-N1	-2.99	123.92	128.60
37	B	501	ADP	C5-N7-C8	2.99	107.76	103.51
37	B	501	ADP	N3-C2-N1	-2.96	123.97	128.60
37	E	401	ADP	C5-N7-C8	2.88	107.61	103.51
37	E	401	ADP	C4-N9-C8	2.79	108.76	105.73
37	B	501	ADP	C3'-C2'-C1'	2.70	106.55	101.43
37	E	401	ADP	C3'-C2'-C1'	2.64	106.45	101.43
37	B	501	ADP	C4-N9-C8	2.33	108.25	105.73
37	E	401	ADP	C6-C5-N7	2.22	136.15	132.02
37	E	401	ADP	N9-C8-N7	-2.18	110.93	113.91
35	F	501	ATP	PB-O3B-PG	2.14	140.16	132.83
35	A	501	ATP	PB-O3B-PG	2.03	139.79	132.83
35	D	501	ATP	PB-O3B-PG	2.01	139.71	132.83

There are no chirality outliers.

All (18) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
35	D	501	ATP	C5'-O5'-PA-O3A
35	D	501	ATP	C4'-C5'-O5'-PA
35	D	501	ATP	C3'-C4'-C5'-O5'
35	F	501	ATP	C5'-O5'-PA-O1A
35	F	501	ATP	C5'-O5'-PA-O2A
37	B	501	ADP	C5'-O5'-PA-O2A
37	B	501	ADP	C5'-O5'-PA-O3A
37	E	401	ADP	O4'-C4'-C5'-O5'
37	E	401	ADP	C3'-C4'-C5'-O5'
35	A	501	ATP	O4'-C4'-C5'-O5'
35	A	501	ATP	C3'-C4'-C5'-O5'
35	D	501	ATP	O4'-C4'-C5'-O5'
35	F	501	ATP	C5'-O5'-PA-O3A

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Mol	Chain	Res	Type	Atoms
35	A	501	ATP	PA-O3A-PB-O2B
35	D	501	ATP	C5'-O5'-PA-O1A
37	B	501	ADP	C5'-O5'-PA-O1A
35	F	501	ATP	PB-O3B-PG-O3G
35	A	501	ATP	PA-O3A-PB-O1B

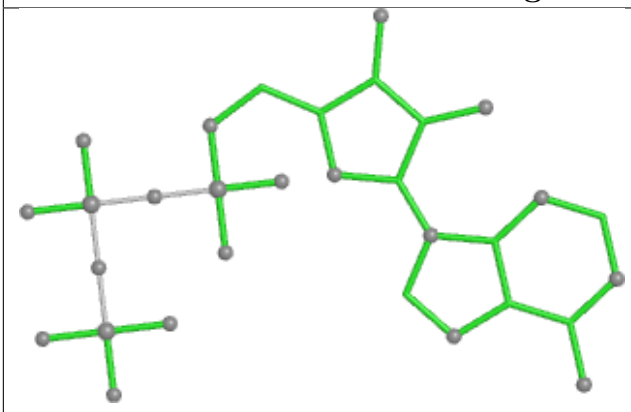
There are no ring outliers.

4 monomers are involved in 9 short contacts:

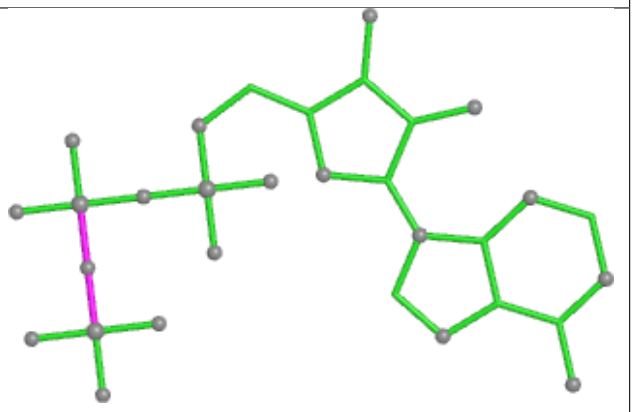
Mol	Chain	Res	Type	Clashes	Symm-Clashes
37	B	501	ADP	2	0
35	F	501	ATP	2	0
37	E	401	ADP	3	0
35	D	501	ATP	2	0

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 then 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.

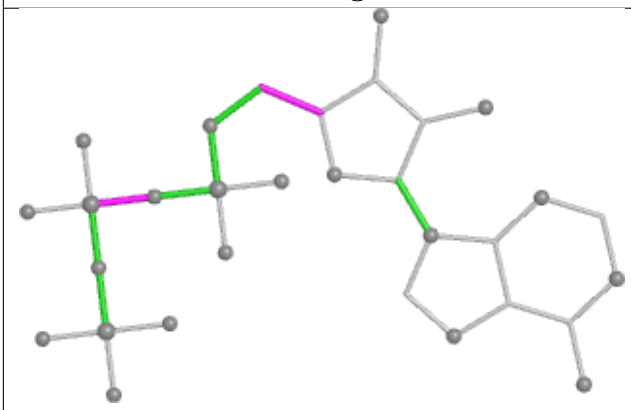
Ligand ATP A 501



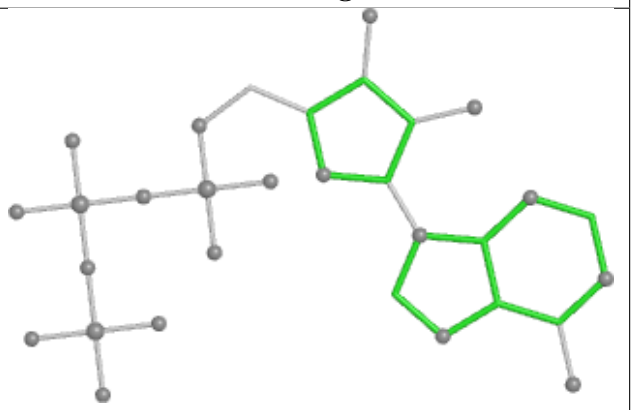
Bond lengths



Bond angles

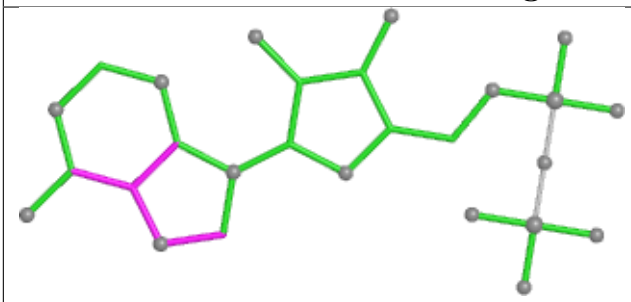


Torsions

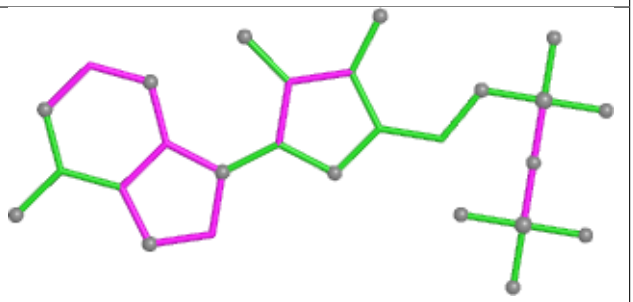


Rings

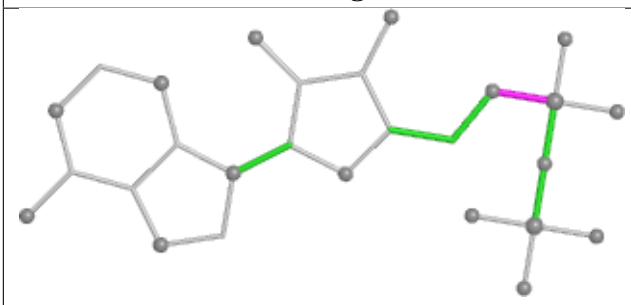
Ligand ADP B 501



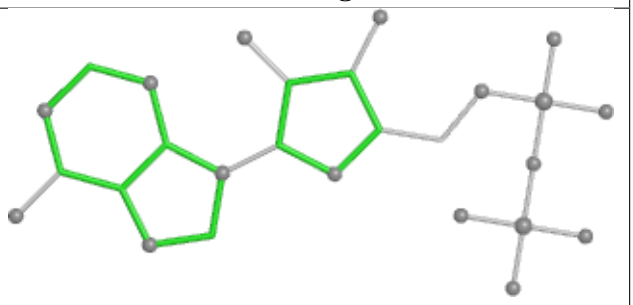
Bond lengths



Bond angles

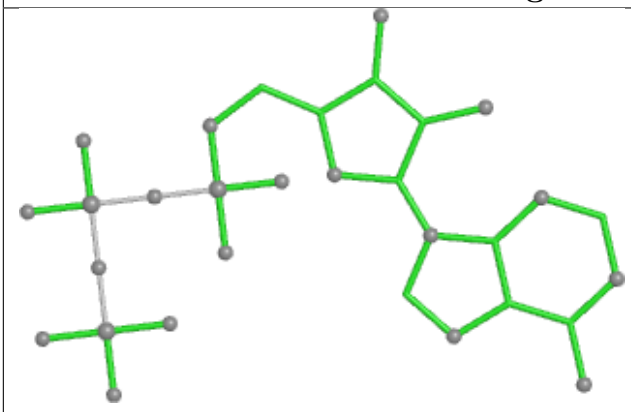


Torsions

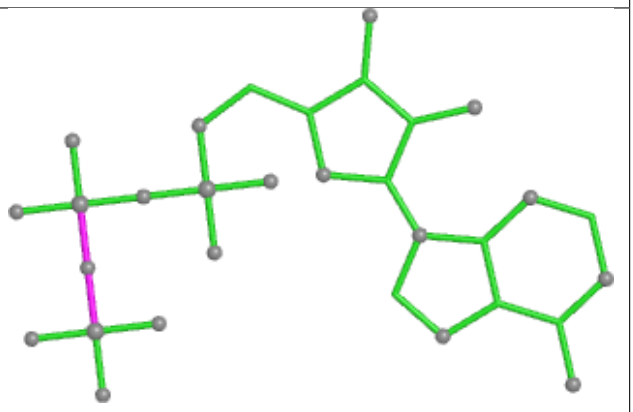


Rings

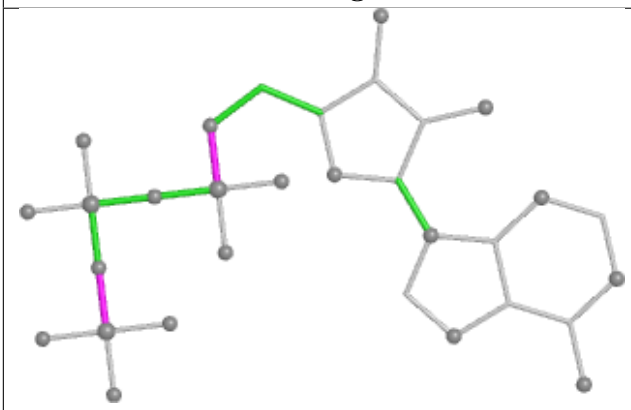
Ligand ATP F 501



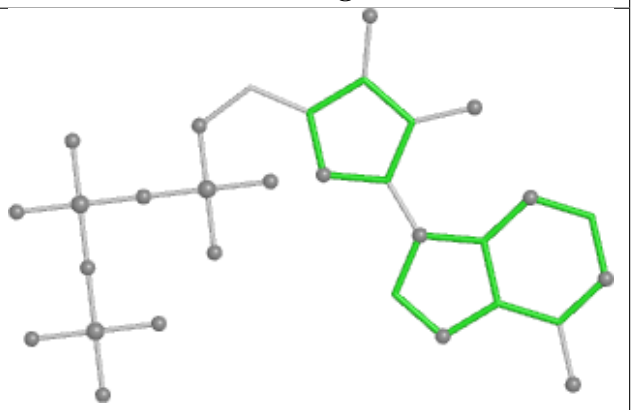
Bond lengths



Bond angles

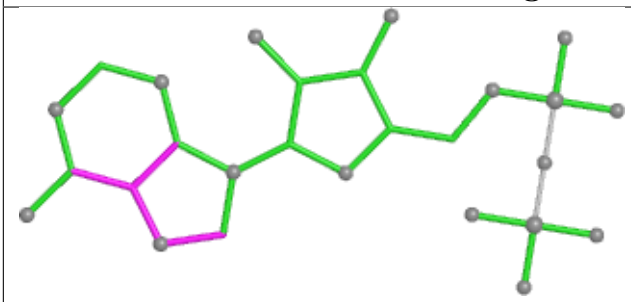


Torsions

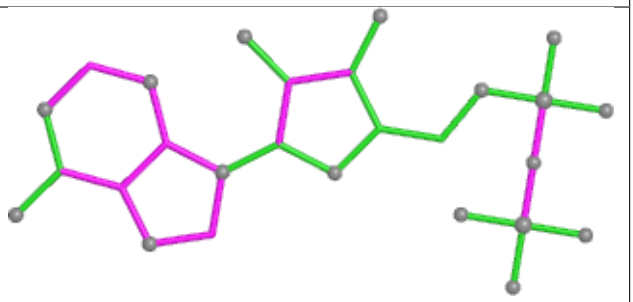


Rings

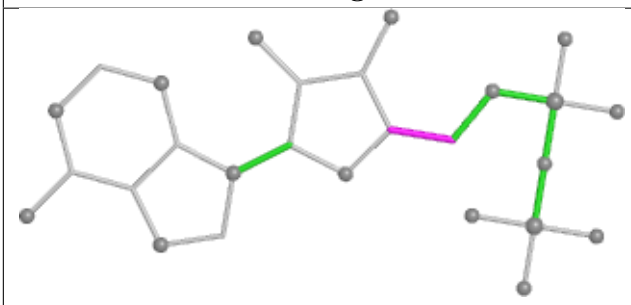
Ligand ADP E 401



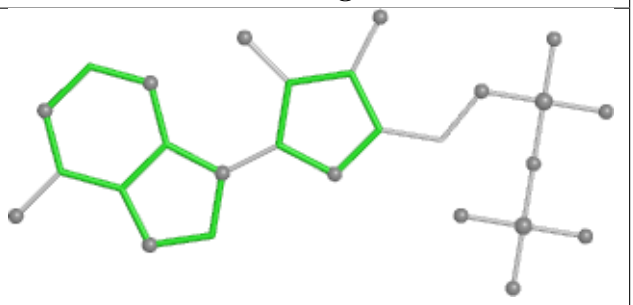
Bond lengths



Bond angles

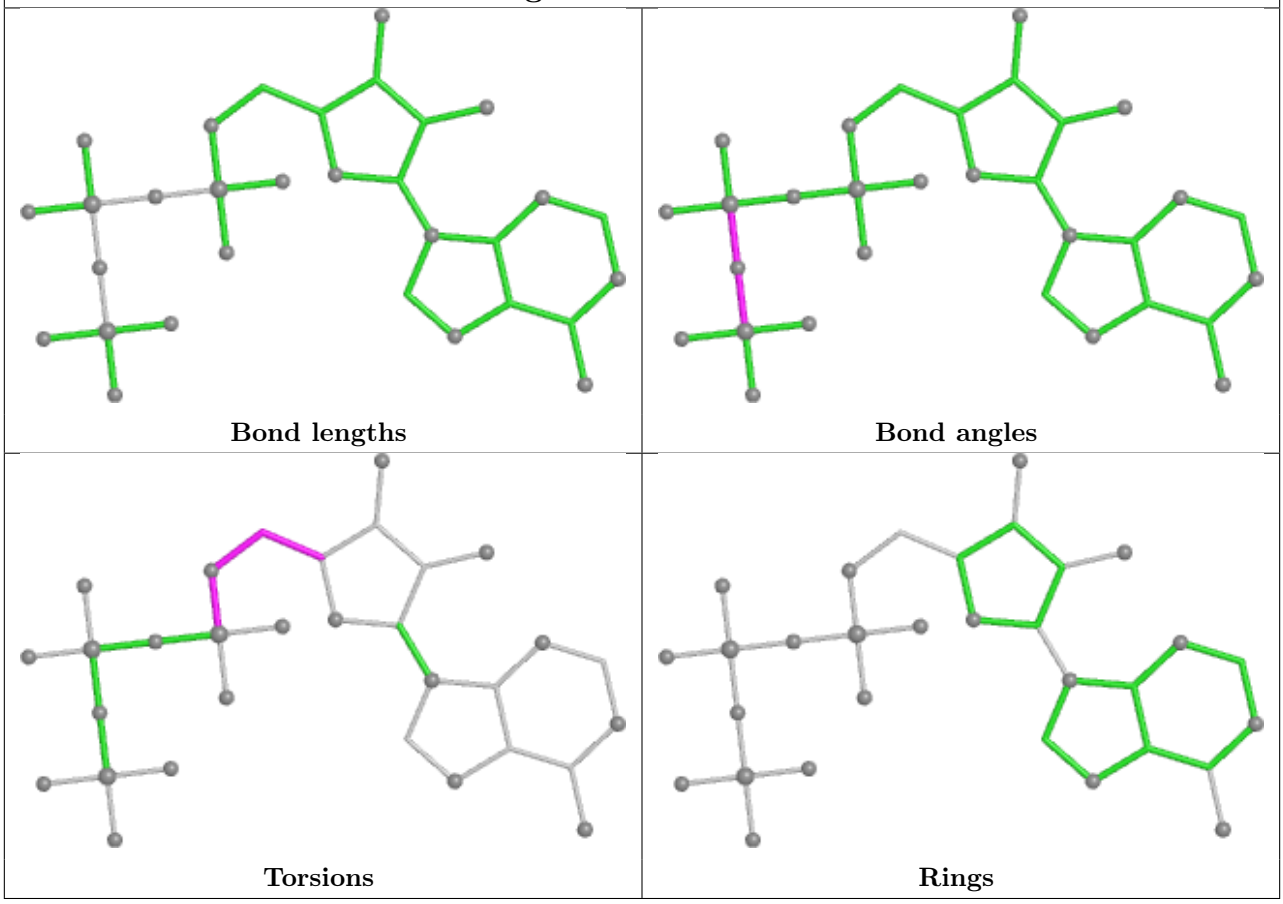


Torsions



Rings

Ligand ATP D 501



5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

There are no chain breaks in this entry.

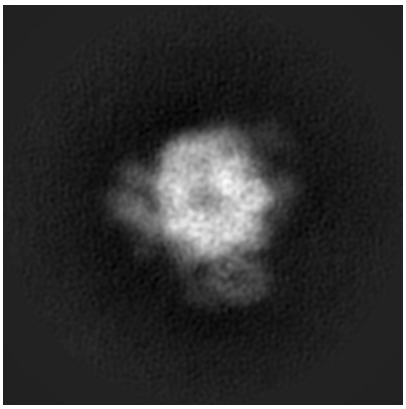
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-62069. These allow visual inspection of the internal detail of the map and identification of artifacts.

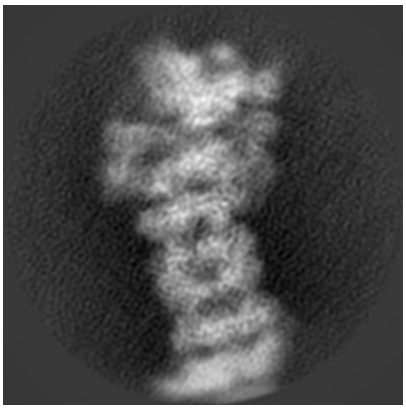
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections

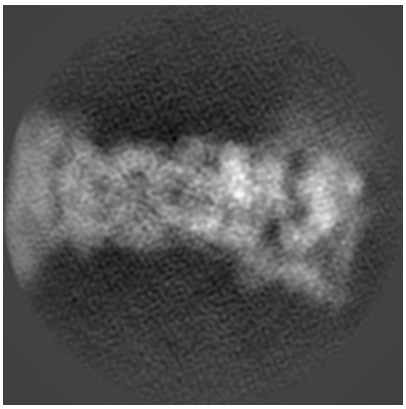
6.1.1 Primary map



X

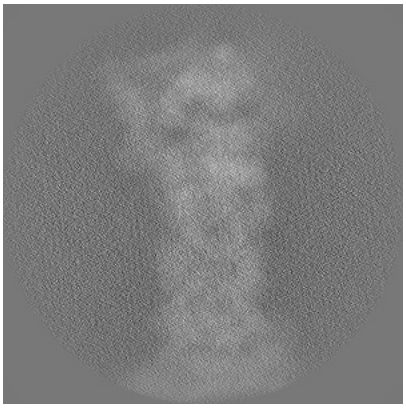


Y

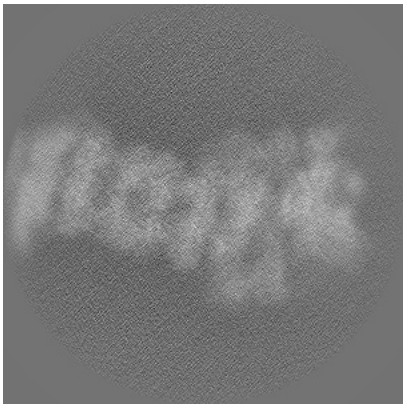


Z

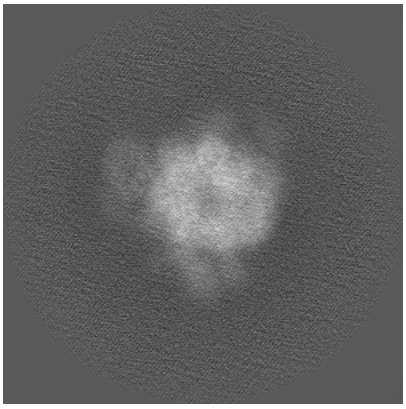
6.1.2 Raw map



X



Y

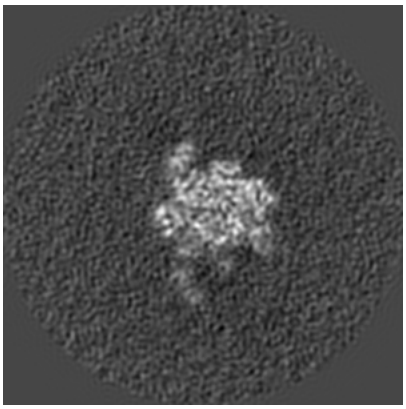


Z

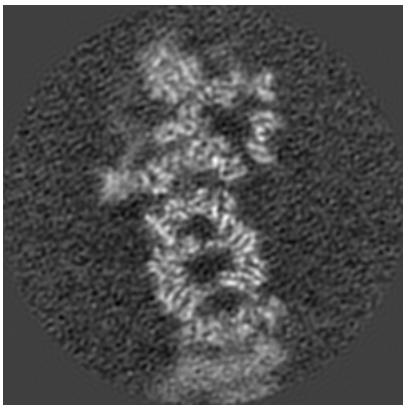
The images above show the map projected in three orthogonal directions.

6.2 Central slices (i)

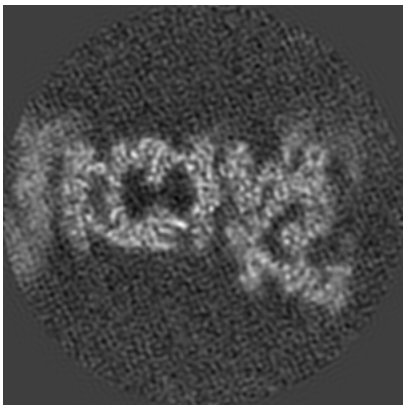
6.2.1 Primary map



X Index: 300

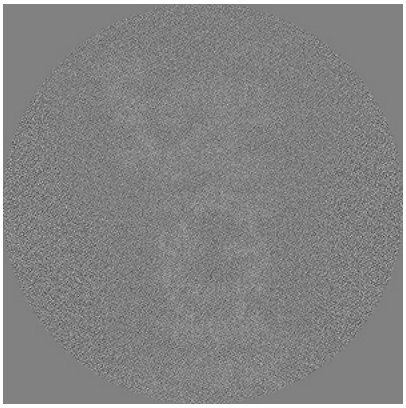


Y Index: 300

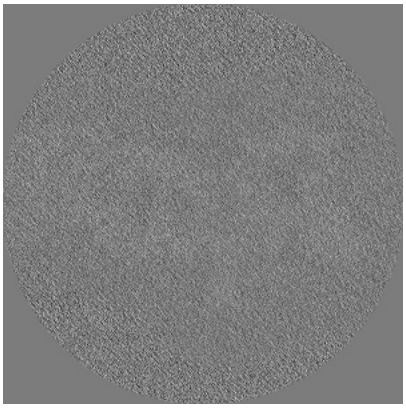


Z Index: 300

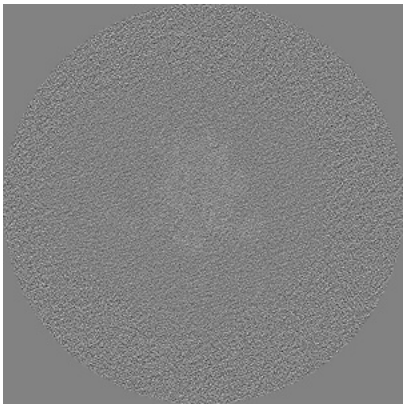
6.2.2 Raw map



X Index: 300



Y Index: 300

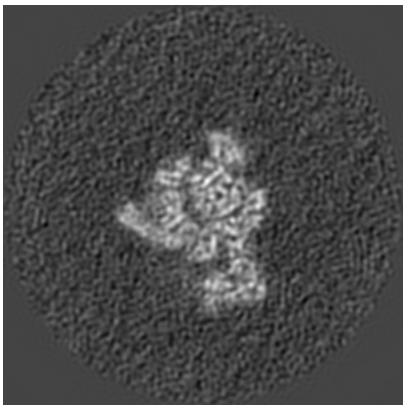


Z Index: 300

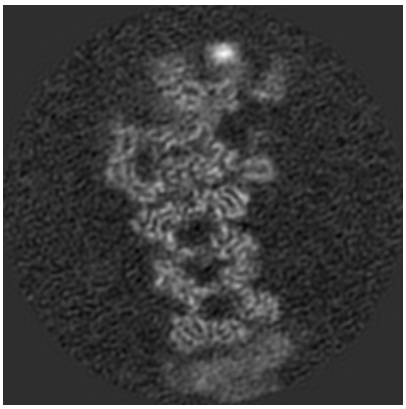
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices (i)

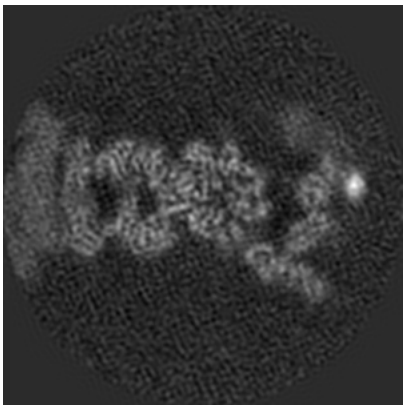
6.3.1 Primary map



X Index: 356

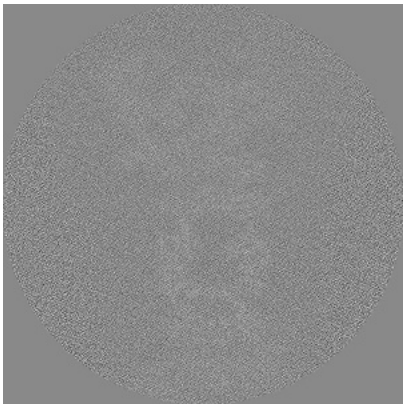


Y Index: 332

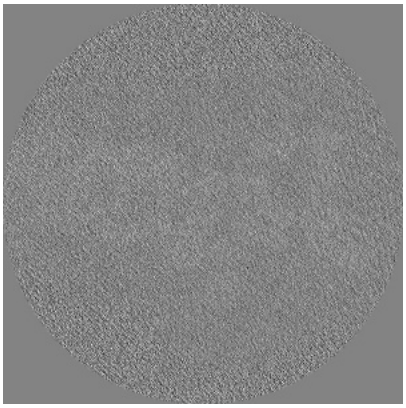


Z Index: 329

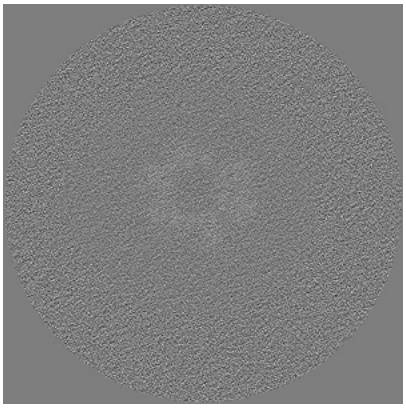
6.3.2 Raw map



X Index: 299



Y Index: 288

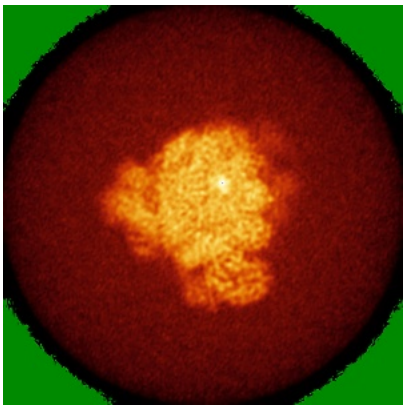


Z Index: 255

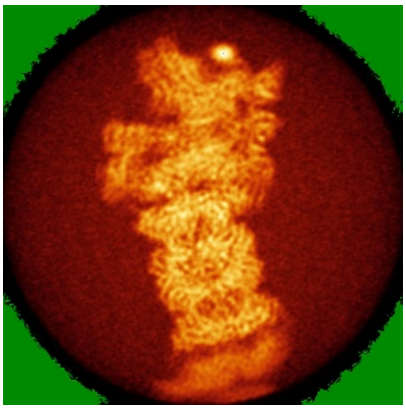
The images above show the largest variance slices of the map in three orthogonal directions.

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

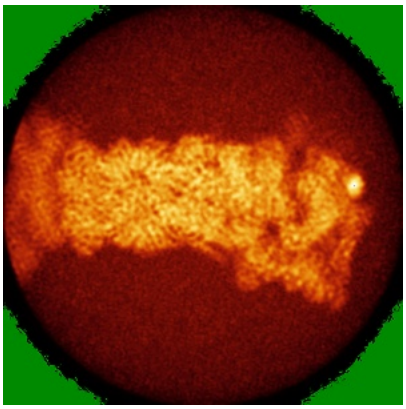
6.4.1 Primary map



X

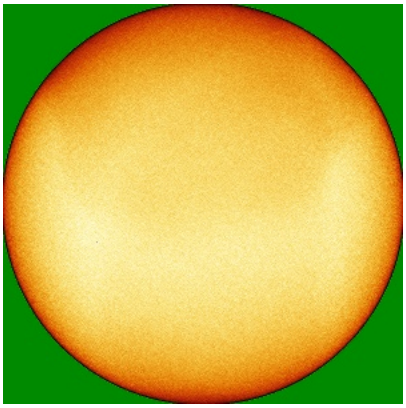


Y

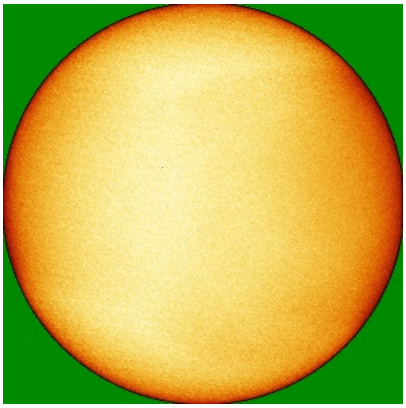


Z

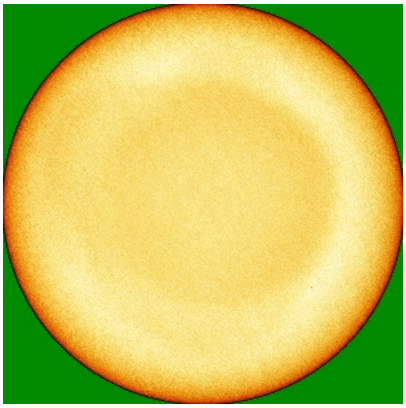
6.4.2 Raw map



X



Y



Z

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

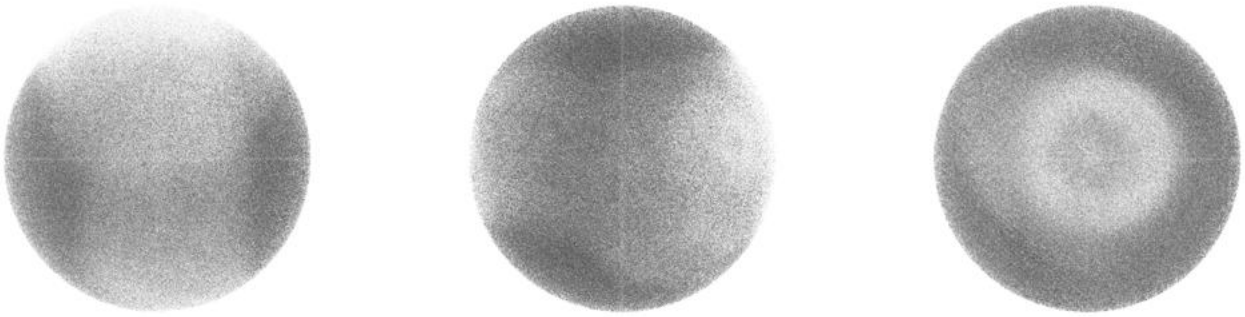
6.5 Orthogonal surface views (i)

6.5.1 Primary map

X Y Z

The images above show the 3D surface view of the map at the recommended contour level 0.00448. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.5.2 Raw map



X Y Z

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

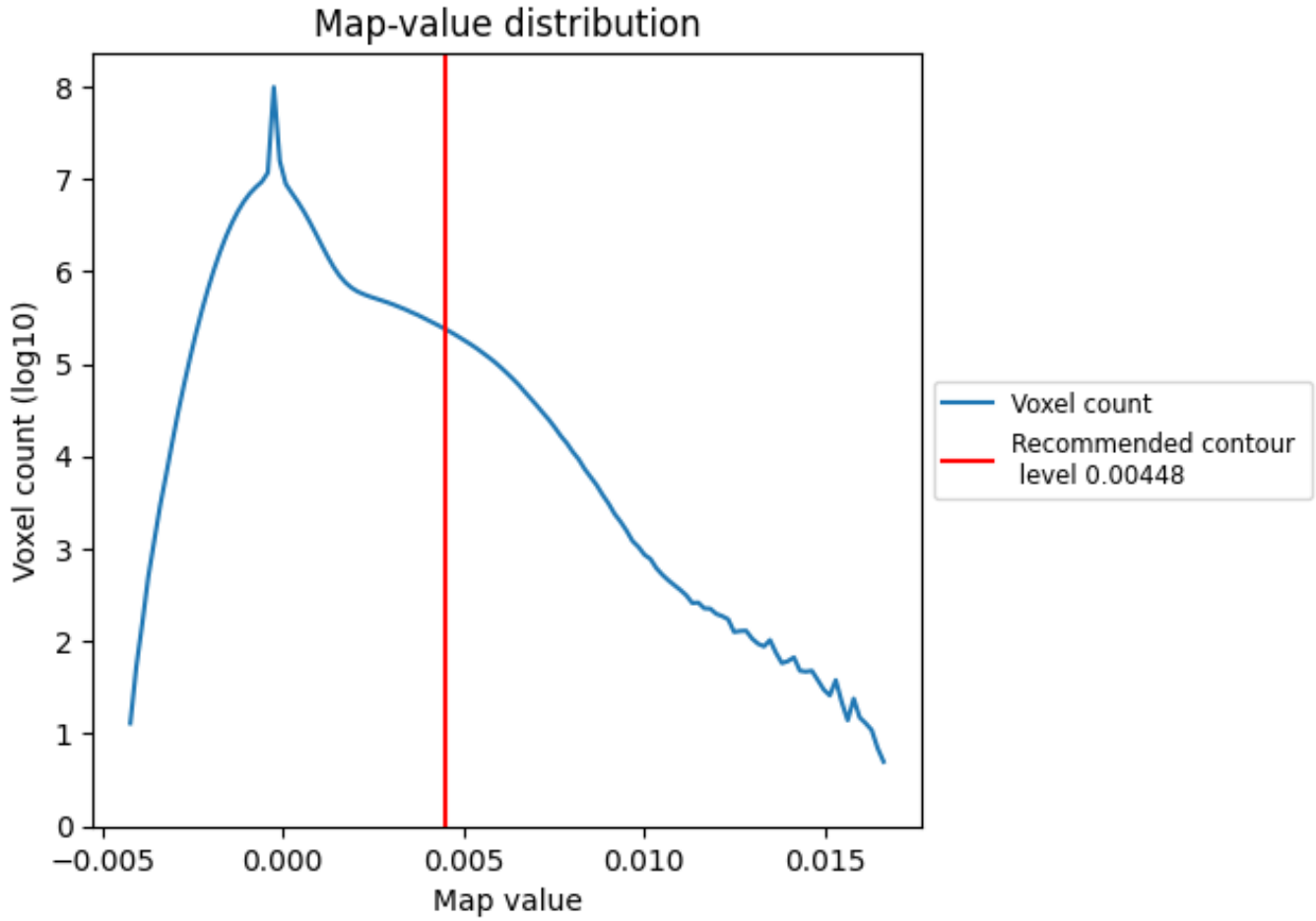
6.6 Mask visualisation (i)

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

7 Map analysis

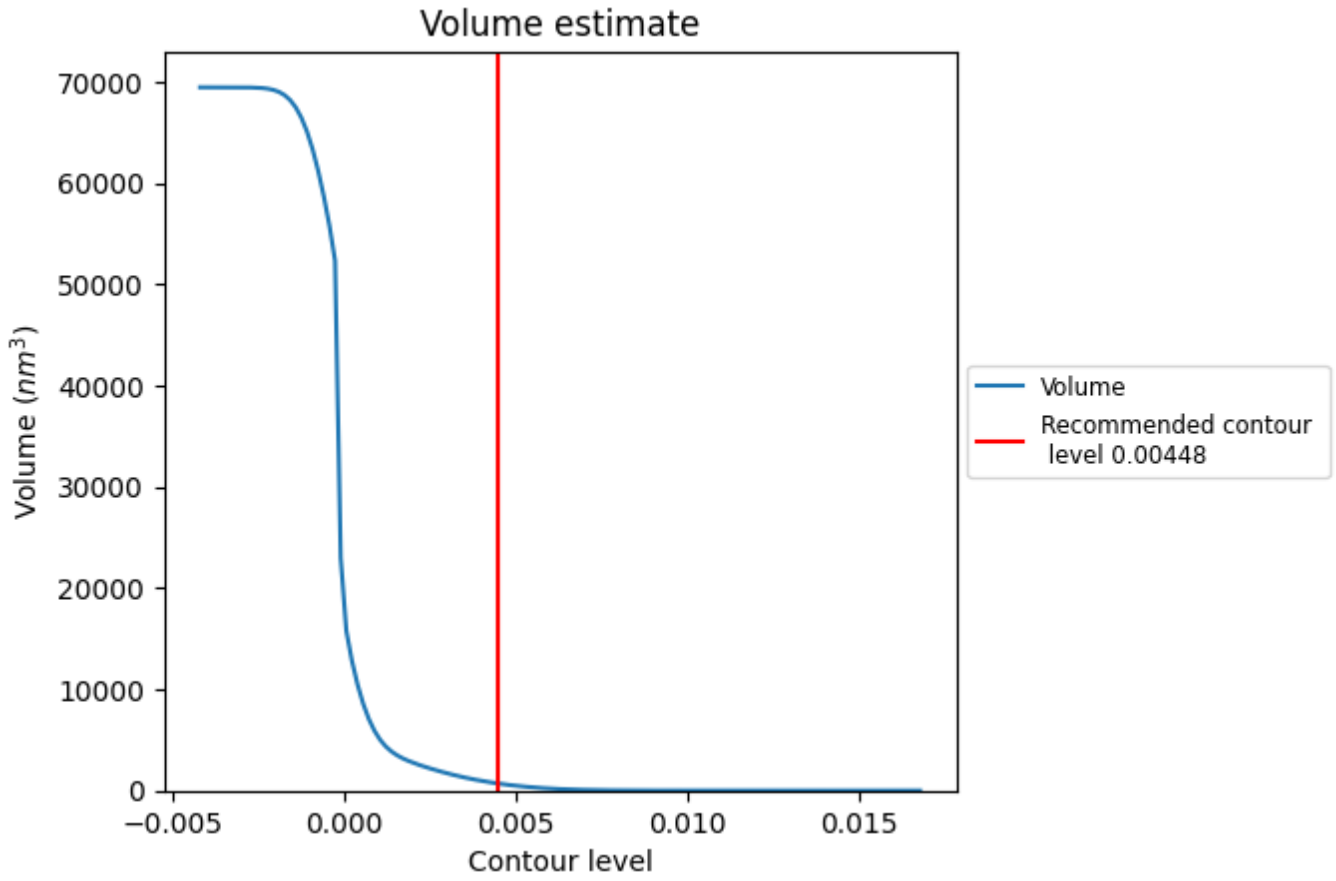
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution



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

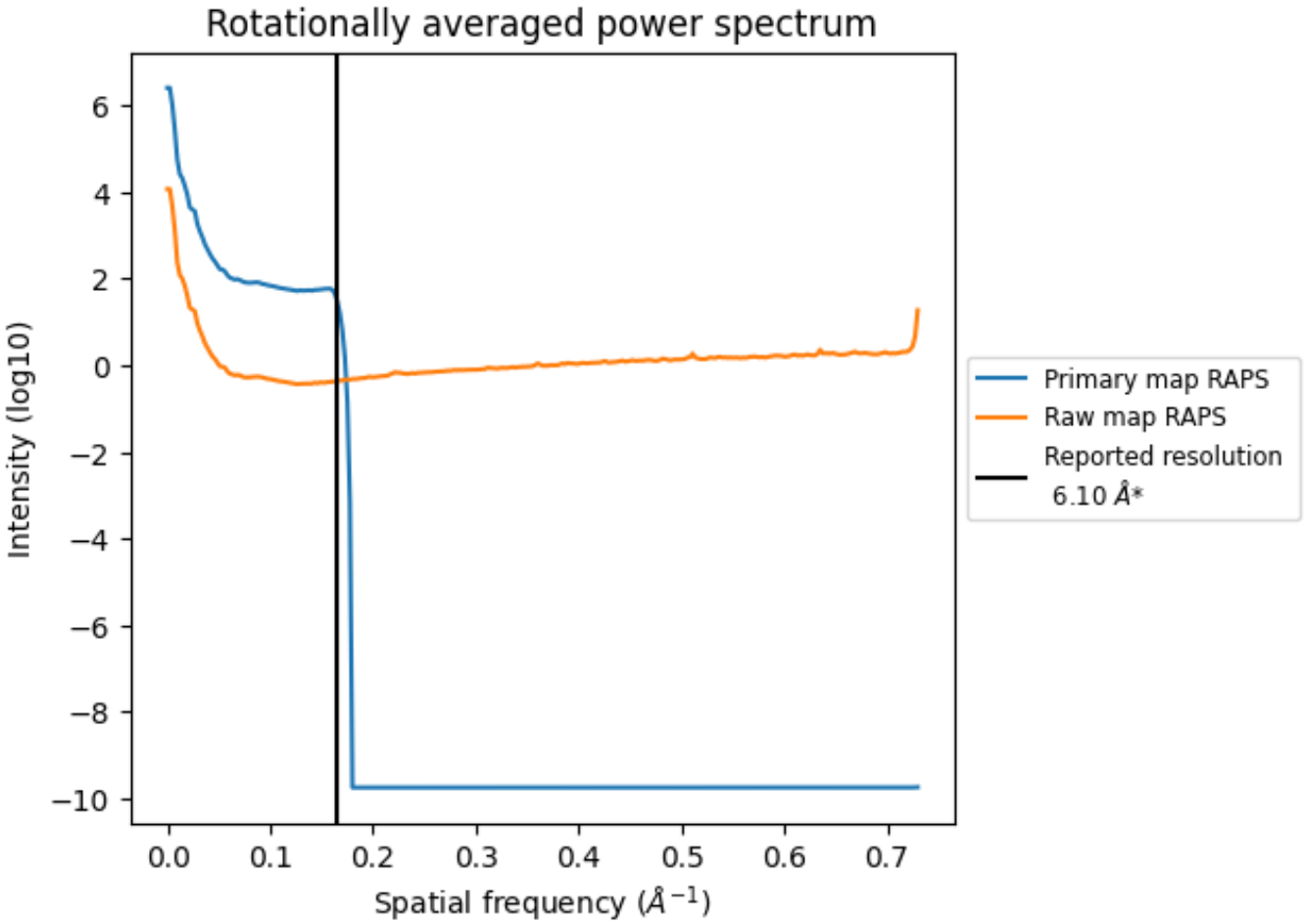
7.2 Volume estimate



The volume at the recommended contour level is 699 nm^3; this corresponds to an approximate mass of 631 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)

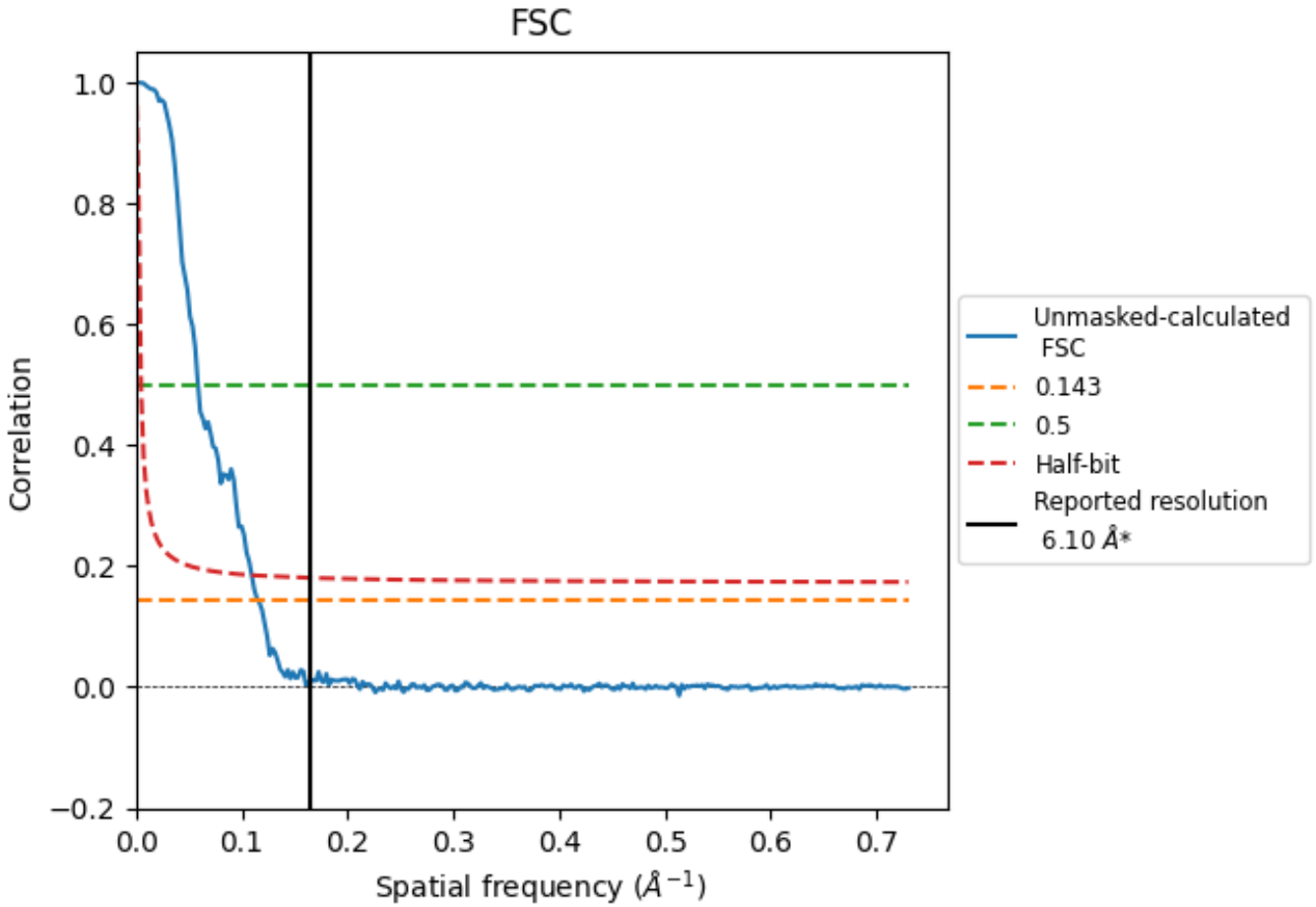


*Reported resolution corresponds to spatial frequency of 0.164 Å^{-1}

8 Fourier-Shell correlation

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

8.1 FSC



*Reported resolution corresponds to spatial frequency of 0.164 Å^{-1}

8.2 Resolution estimates (i)

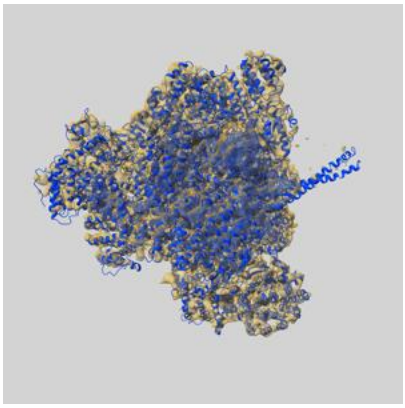
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	6.10	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	8.66	17.06	9.14

*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 8.66 differs from the reported value 6.1 by more than 10 %

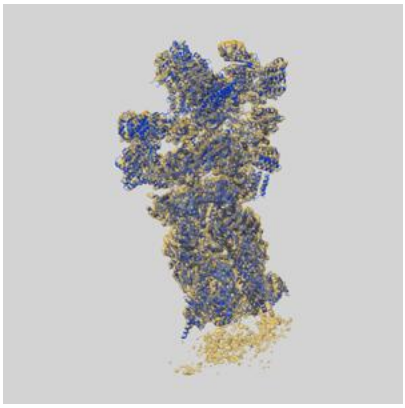
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-62069 and PDB model 9K4T. Per-residue inclusion information can be found in section 3 on page 13.

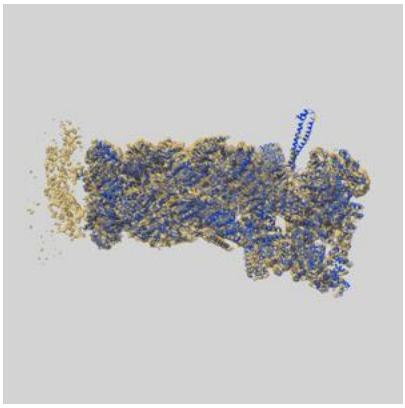
9.1 Map-model overlay



X



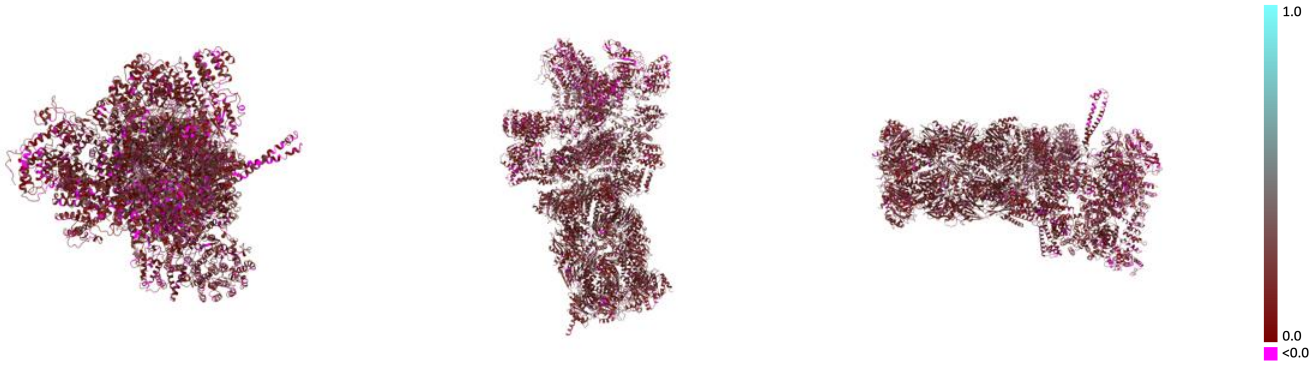
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.00448 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

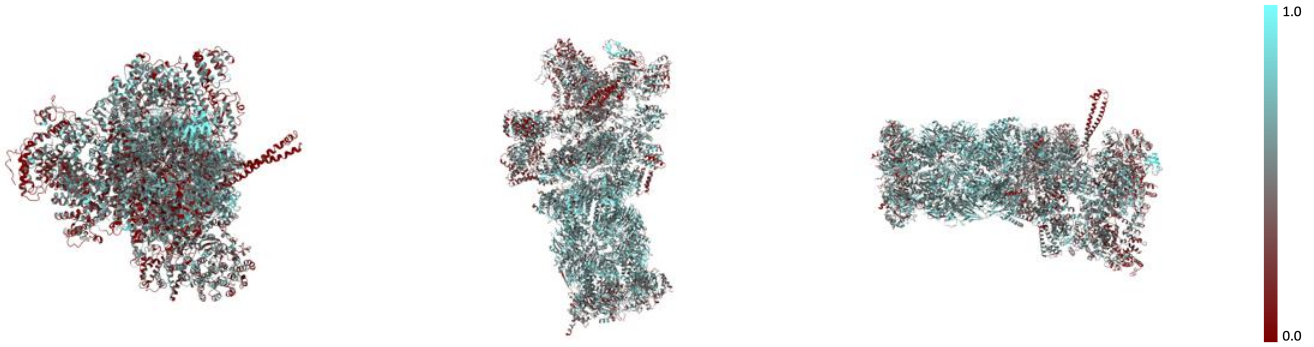
9.2 Q-score mapped to coordinate model (i)



X Y Z

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

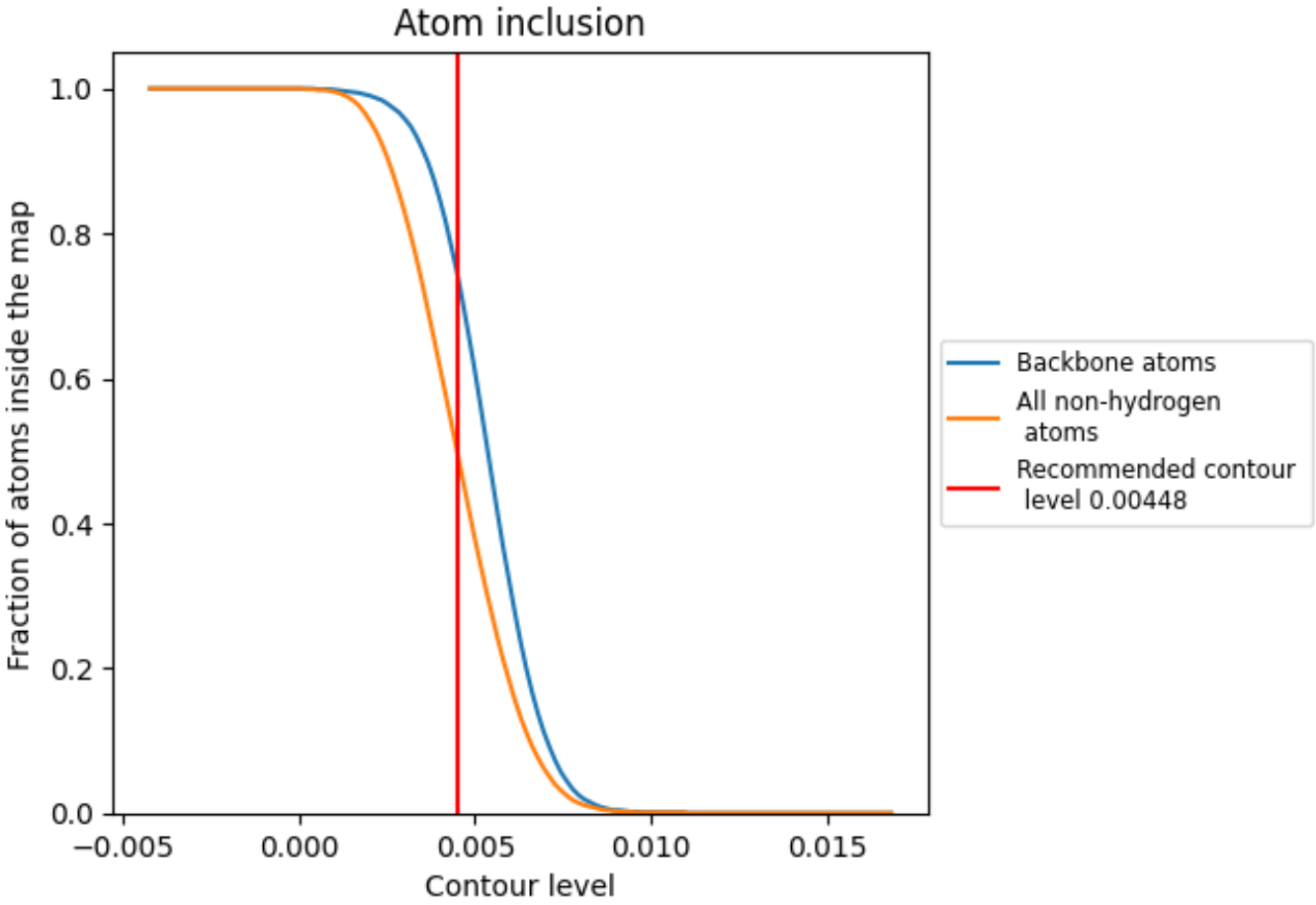
9.3 Atom inclusion mapped to coordinate model (i)



X Y Z

The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.00448).

9.4 Atom inclusion (i)



At the recommended contour level, 75% of all backbone atoms, 50% 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 (0.00448) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.5020	0.1860
A	0.4790	0.1810
B	0.4690	0.1800
C	0.4310	0.1620
D	0.4720	0.1800
E	0.4890	0.1820
F	0.4460	0.1760
G	0.6120	0.2180
H	0.6200	0.2150
I	0.6190	0.2080
J	0.5850	0.1970
K	0.5950	0.2190
L	0.6470	0.2200
M	0.6390	0.2140
N	0.6400	0.2210
O	0.6410	0.2150
P	0.6200	0.2020
Q	0.6290	0.2140
R	0.6550	0.2150
S	0.5990	0.2090
T	0.6460	0.2190
U	0.4060	0.1530
V	0.3820	0.1630
W	0.5240	0.1830
X	0.4610	0.1770
Y	0.5090	0.1670
Z	0.4140	0.1570
a	0.4360	0.1540
b	0.3770	0.1370
c	0.4580	0.1680
d	0.2610	0.1340
e	0.3440	0.2030
f	0.3770	0.1600
g	0.5000	0.2140
h	0.4790	0.2020

Continued on next page...

Continued from previous page...

Chain	Atom inclusion	Q-score
i	0.4690	0.2140
j	0.4210	0.2020
k	0.4410	0.2030
l	0.5460	0.2100
m	0.5070	0.1990
n	0.5930	0.2070
o	0.5950	0.2200
p	0.6160	0.2120
q	0.5840	0.2070
r	0.6020	0.2090
s	0.5850	0.2150
t	0.6420	0.2200
u	0.4120	0.1480
v	0.2310	0.1500
z	0.6940	0.0570