Full wwPDB EM Validation Report ⓘ

Nov 19, 2022 – 07:23 pm GMT

PDB ID	:	5OQJ
EMDB ID	:	EMD-3846
Title	:	STRUCTURE OF YEAST TRANSCRIPTION PRE-INITIATION COMPLEX WITH TFIIH
Authors	:	Schilbach, S.; Hantsche, M.; Tegunov, D.; Dienemann, C.; Wigge, C.; Henning, U.; Cramer, P.
Deposited on	:	2017-08-11
Resolution	:	4.70 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:

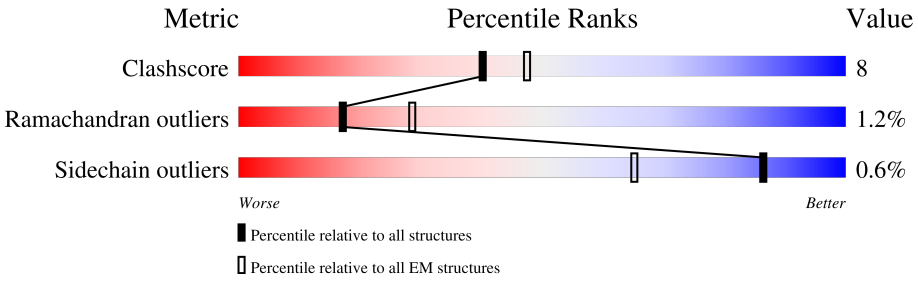
EMDB validation analysis	:	0.0.1.dev43
Mogul	:	1.8.4, CSD as541be (2020)
MolProbity	:	4.02b-467
Percentile statistics	:	20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ	:	1.9.9
Ideal geometry (proteins)	:	Engh & Huber (2001)
Ideal geometry (DNA, RNA)	:	Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP)	:	2.31.2

1 Overall quality at a glance (i)

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

The reported resolution of this entry is 4.70 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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	1733	66% 14% 19%
2	B	1224	73% 21% 6%
3	C	318	68% 14% 18%
4	D	221	5% 62% 9% 29%
5	E	215	87% 12%
6	F	155	42% 12% 46%
7	G	171	68% 32%
8	H	146	69% 24% 7%

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Mol	Chain	Length	Quality of chain
9	I	122	71% 23% 5%
10	J	70	80% 13% 7%
11	K	120	77% 17% 7%
12	L	70	50% 14% 36%
13	M	345	63% 17% 19%
14	N	106	9% 38% 34% 28%
15	O	240	58% 17% 25%
16	Q	735	15% 5% 80%
17	R	400	38% 10% 52%
18	T	106	11% 38% 30% 32%
19	U	286	24% 8% 68%
20	V	122	70% 12% 18%
21	W	586	5% 38% 6% 56%
22	X	328	44% 5% 51%
23	0	778	5% 75% 14% 10%
24	1	641	13% 70% 6% 23%
25	2	462	81% 5% 15%
26	3	321	38% 5% 57%
27	4	338	83% 12%
28	5	72	18% 65% 26% 8%
29	6	461	67% 6% 27%
30	7	843	36% 12% 52%
31	Z	43	88% 12%

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
34	SF4	0	801	-	-	X	-

2 Entry composition

There are 34 unique types of molecules in this entry. The entry contains 62931 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 DNA-directed RNA polymerase II subunit RPB1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	1398	10997	6931	1927	2078	61	0	0

- Molecule 2 is a protein called DNA-directed RNA polymerase II subunit RPB2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	B	1152	9178	5807	1608	1708	55	0	0

- Molecule 3 is a protein called DNA-directed RNA polymerase II subunit RPB3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	C	262	2061	1299	343	406	13	0	0

- Molecule 4 is a protein called DNA-directed RNA polymerase II subunit RPB4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	D	157	1253	779	220	252	2	0	0

- Molecule 5 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	E	213	1744	1107	308	318	11	0	0

- Molecule 6 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	F	83	670	428	114	125	3	0	0

- Molecule 7 is a protein called DNA-directed RNA polymerase II subunit RPB7.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	G	171	Total	C	N	O	S	0	0
			1340	861	222	249	8		

- Molecule 8 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC3.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	H	136	Total	C	N	O	S	0	0
			1089	686	184	215	4		

- Molecule 9 is a protein called DNA-directed RNA polymerase II subunit RPB9.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	I	116	Total	C	N	O	S	0	0
			944	581	172	181	10		

- Molecule 10 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	J	65	Total	C	N	O	S	0	0
			532	339	93	94	6		

- Molecule 11 is a protein called DNA-directed RNA polymerase II subunit RPB11.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	K	112	Total	C	N	O	S	0	0
			904	580	154	168	2		

- Molecule 12 is a protein called DNA-directed RNA polymerases I, II, and III subunit RPABC4.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	L	45	Total	C	N	O	S	0	0
			358	221	71	62	4		

- Molecule 13 is a protein called Transcription initiation factor IIB.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	M	279	Total	C	N	O	S	0	0
			2175	1382	373	403	17		

- Molecule 14 is a DNA chain called NONTEMPLATE DNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	N	76	Total	C	N	O	P	0	0
			1533	747	288	422	76		

- Molecule 15 is a protein called TATA-box-binding protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	O	180	Total	C	N	O	S	0	0
			1416	921	242	247	6		

- Molecule 16 is a protein called Transcription initiation factor IIF subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	Q	148	Total	C	N	O	S	0	0
			1144	733	195	212	4		

- Molecule 17 is a protein called Transcription initiation factor IIF subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	R	190	Total	C	N	O	S	0	0
			1303	812	238	246	7		

- Molecule 18 is a DNA chain called TEMPLATE DNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	T	72	Total	C	N	O	P	0	0
			1440	706	254	408	72		

- Molecule 19 is a protein called Transcription initiation factor IIA large subunit.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	U	92	Total	C	N	O	S	0	0
			757	474	130	150	3		

- Molecule 20 is a protein called Transcription initiation factor IIA subunit 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	V	100	Total	C	N	O	S	0	0
			782	492	130	156	4		

- Molecule 21 is a protein called Transcription initiation factor IIE subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	W	258	Total	C	N	O	S	0	0
			1825	1147	321	351	6		

- Molecule 22 is a protein called Transcription initiation factor IIE subunit beta.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	X	160	Total	C	N	O	S	0	0
			1004	620	184	196	4		

- Molecule 23 is a protein called DNA repair helicase RAD3.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	0	698	Total	C	N	O	S	0	0
			4844	3051	856	907	30		

- Molecule 24 is a protein called RNA polymerase II transcription factor B subunit 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	1	491	Total	C	N	O	S	0	0
			3060	1893	570	590	7		

- Molecule 25 is a protein called RNA polymerase II transcription factor B subunit 2.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	2	395	Total	C	N	O	0	0
			2160	1317	413	430		

- Molecule 26 is a protein called RNA polymerase II transcription factor B subunit 3.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	3	138	Total	C	N	O	S	0	0
			860	533	160	160	7		

- Molecule 27 is a protein called RNA polymerase II transcription factor B subunit 4.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	4	297	Total	C	N	O	S	0	0
			1475	877	297	297	4		

- Molecule 28 is a protein called RNA polymerase II transcription factor B subunit 5.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	5	66	Total	C	N	O	S	0	0
			498	314	89	93	2		

- Molecule 29 is a protein called Suppressor of stem-loop protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	6	335	Total	C	N	O	S	0	0
			2197	1355	399	422	21		

- Molecule 30 is a protein called DNA repair helicase RAD25.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	7	408	Total	C	N	O	S	0	0
			3148	2000	557	572	19		

- Molecule 31 is a protein called Unknown protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	Z	43	Total	C	N	O	0	0
			215	129	43	43		

- Molecule 32 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
32	A	2	Total	Zn	0
			2	2	
32	B	1	Total	Zn	0
			1	1	
32	C	1	Total	Zn	0
			1	1	
32	I	2	Total	Zn	0
			2	2	
32	J	1	Total	Zn	0
			1	1	
32	L	1	Total	Zn	0
			1	1	
32	M	1	Total	Zn	0
			1	1	
32	W	1	Total	Zn	0
			1	1	
32	3	2	Total	Zn	0
			2	2	

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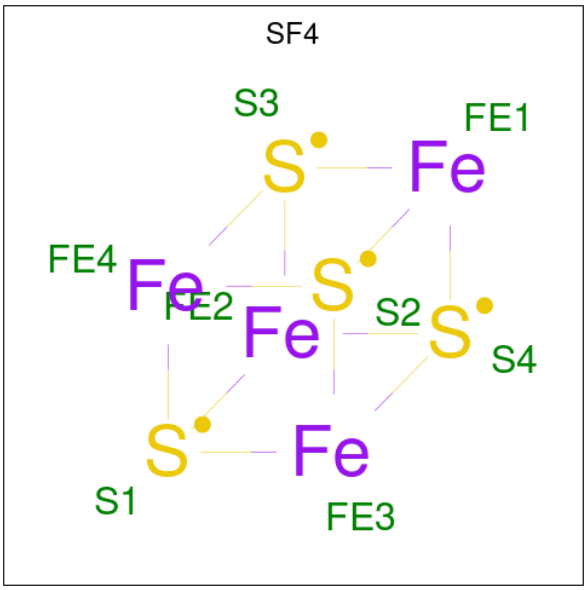
Mol	Chain	Residues	Atoms	AltConf
32	4	1	Total Zn 1 1	0
32	6	3	Total Zn 3 3	0

- Molecule 33 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	AltConf
33	A	1	Total Mg 1 1	0

- Molecule 34 is IRON/SULFUR CLUSTER (three-letter code: SF4) (formula: Fe_4S_4).



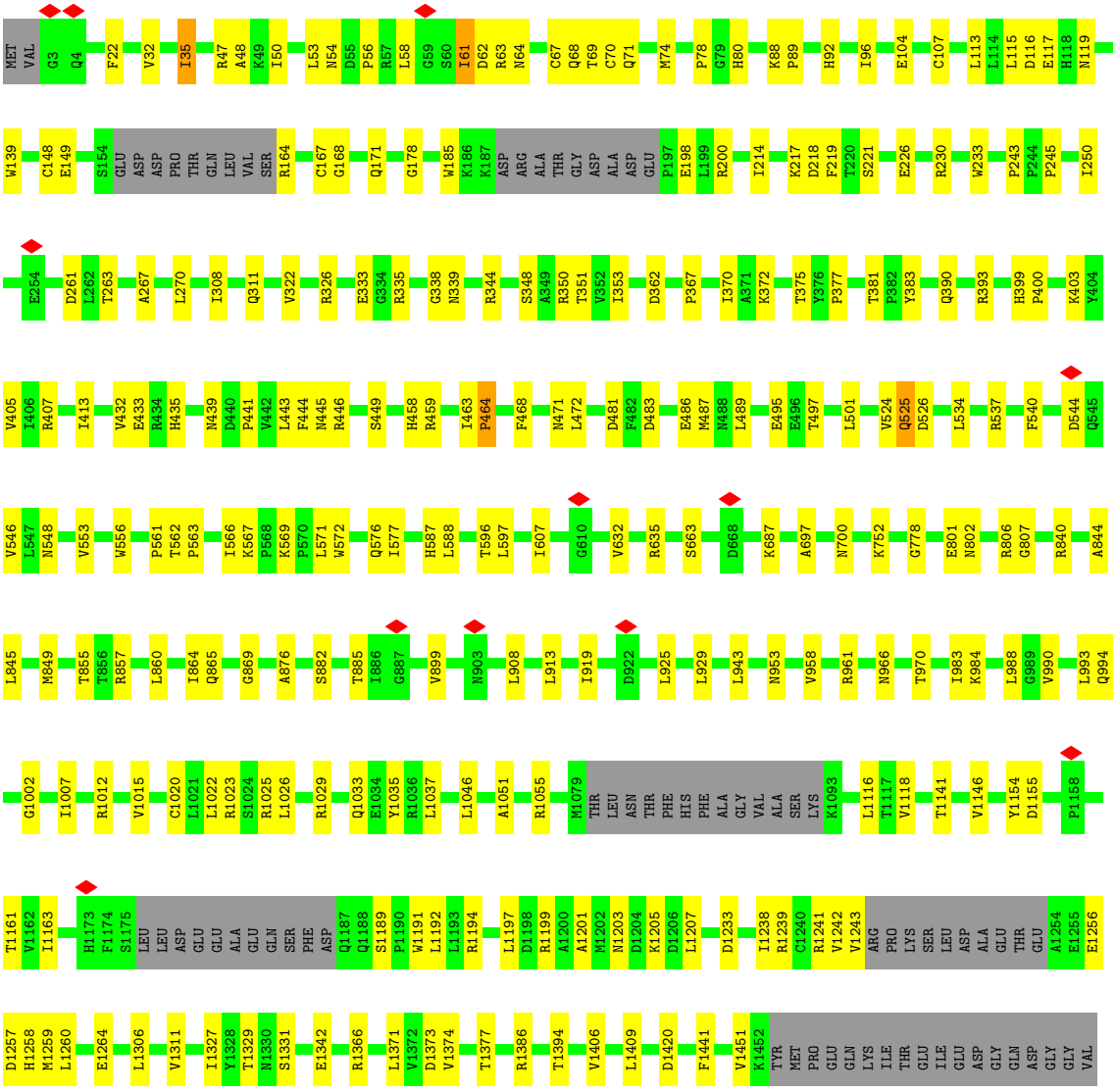
Mol	Chain	Residues	Atoms	AltConf
34	0	1	Total Fe S 8 4 4	0

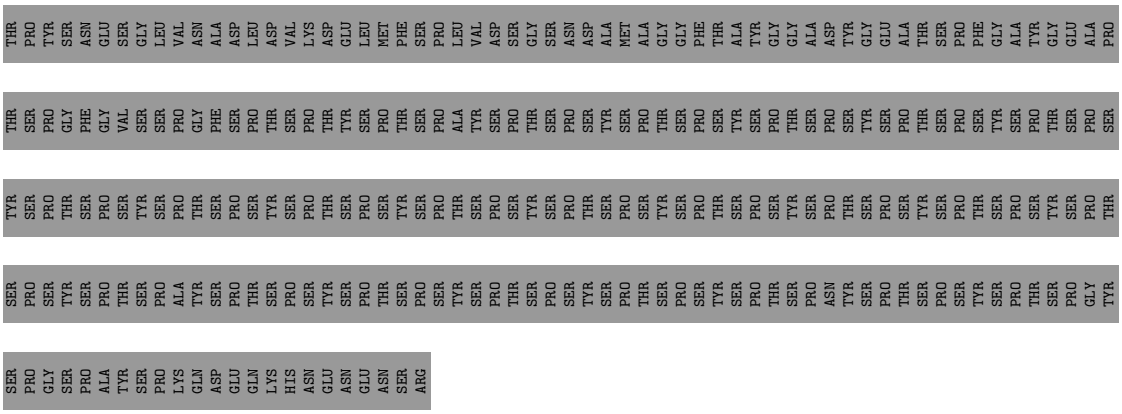
3 Residue-property plots (i)

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: DNA-directed RNA polymerase II subunit RPB1

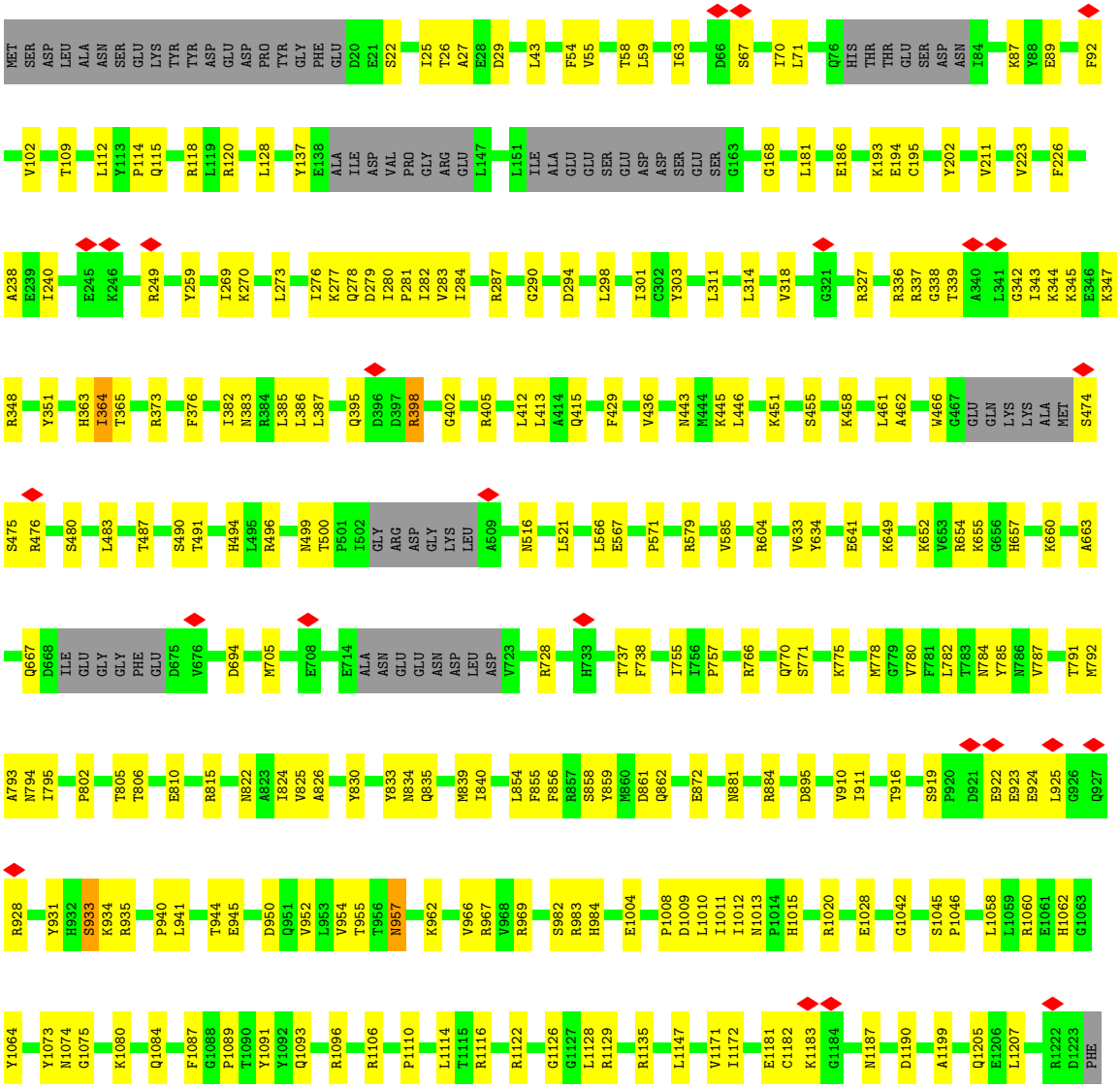
Chain A:





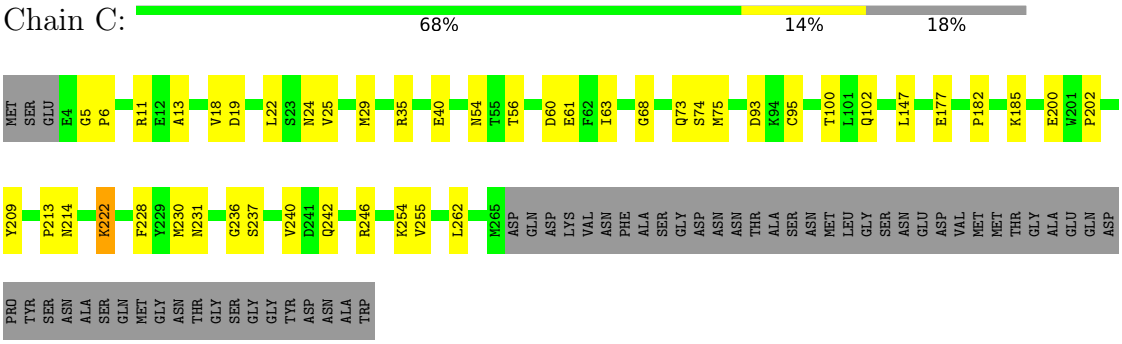
• Molecule 2: DNA-directed RNA polymerase II subunit RPB2

Chain B:



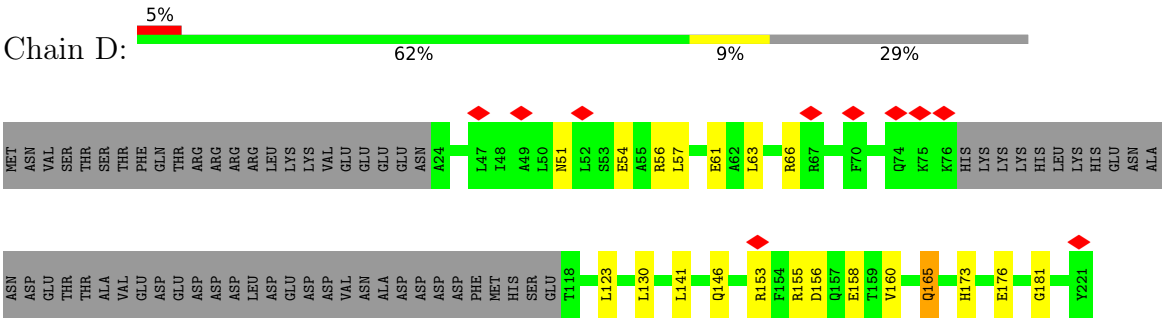
• Molecule 3: DNA-directed RNA polymerase II subunit RPB3

Chain C:



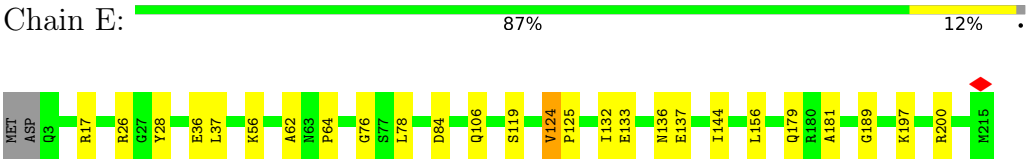
• Molecule 4: DNA-directed RNA polymerase II subunit RPB4

Chain D:



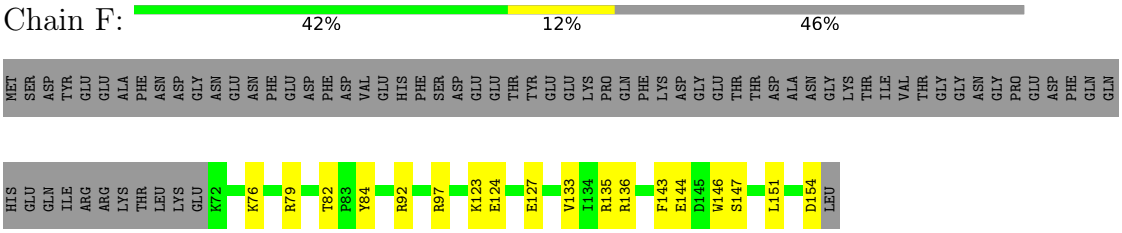
• Molecule 5: DNA-directed RNA polymerases I, II, and III subunit RPABC1

Chain E:



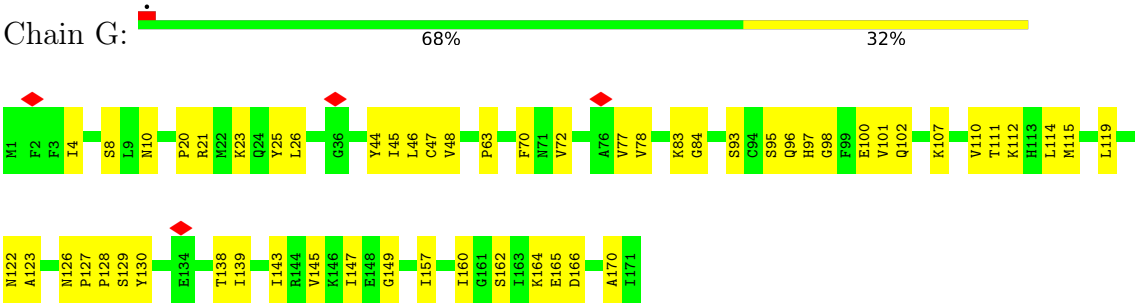
• Molecule 6: DNA-directed RNA polymerases I, II, and III subunit RPABC2

Chain F:



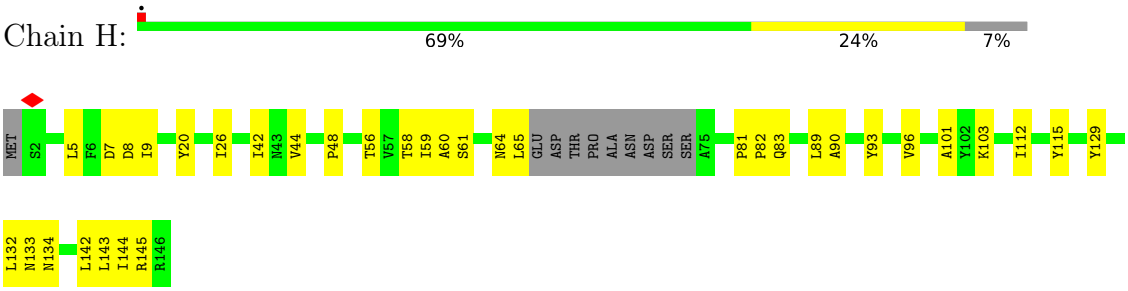
• Molecule 7: DNA-directed RNA polymerase II subunit RPB7

Chain G:



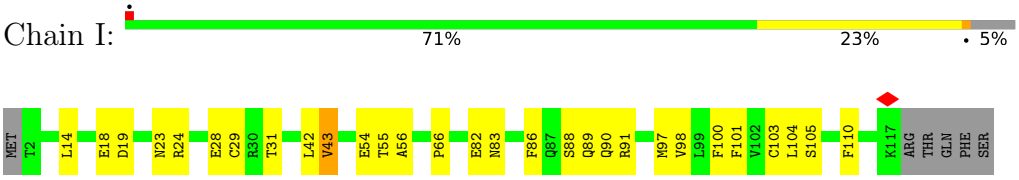
• Molecule 8: DNA-directed RNA polymerases I, II, and III subunit RPABC3

Chain H:



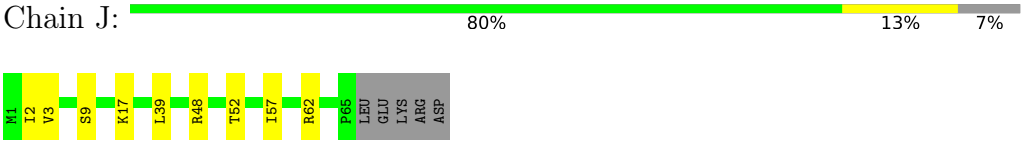
• Molecule 9: DNA-directed RNA polymerase II subunit RPB9

Chain I:



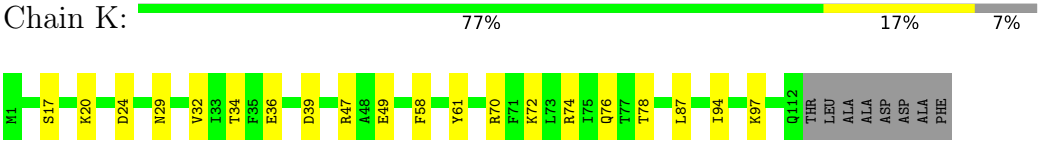
• Molecule 10: DNA-directed RNA polymerases I, II, and III subunit RPABC5

Chain J:



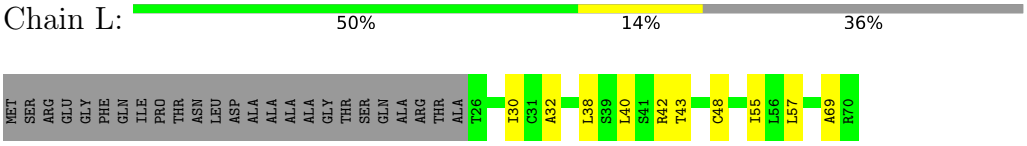
• Molecule 11: DNA-directed RNA polymerase II subunit RPB11

Chain K:



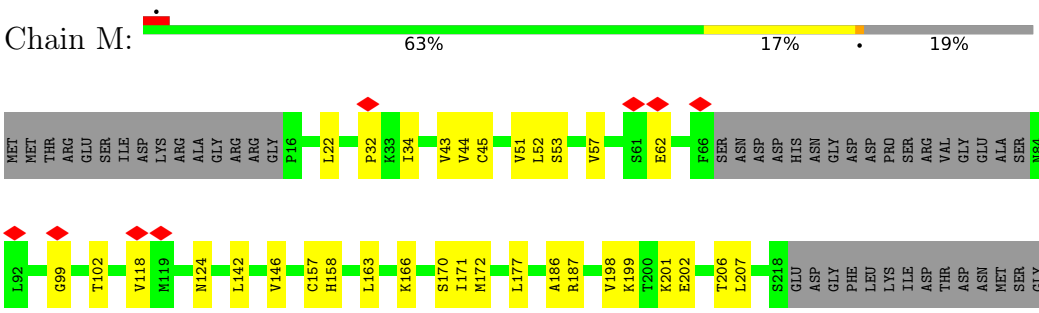
• Molecule 12: DNA-directed RNA polymerases I, II, and III subunit RPABC4

Chain L:

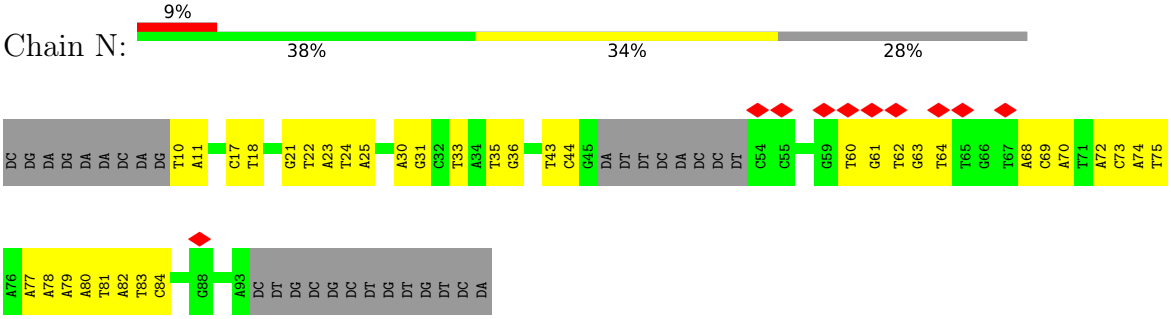


• Molecule 13: Transcription initiation factor IIB

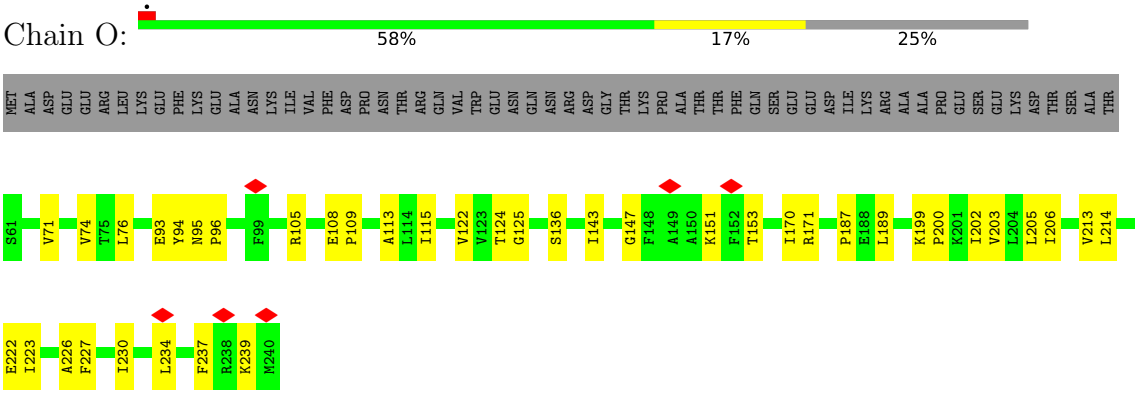
Chain M:



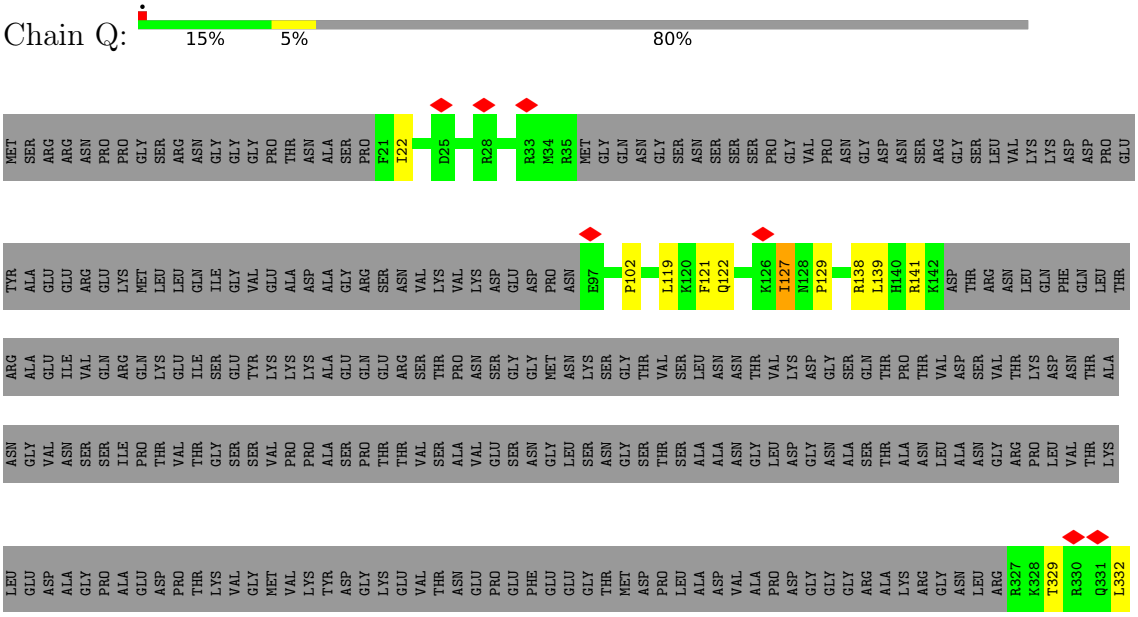
• Molecule 14: NONTEMPLATE DNA

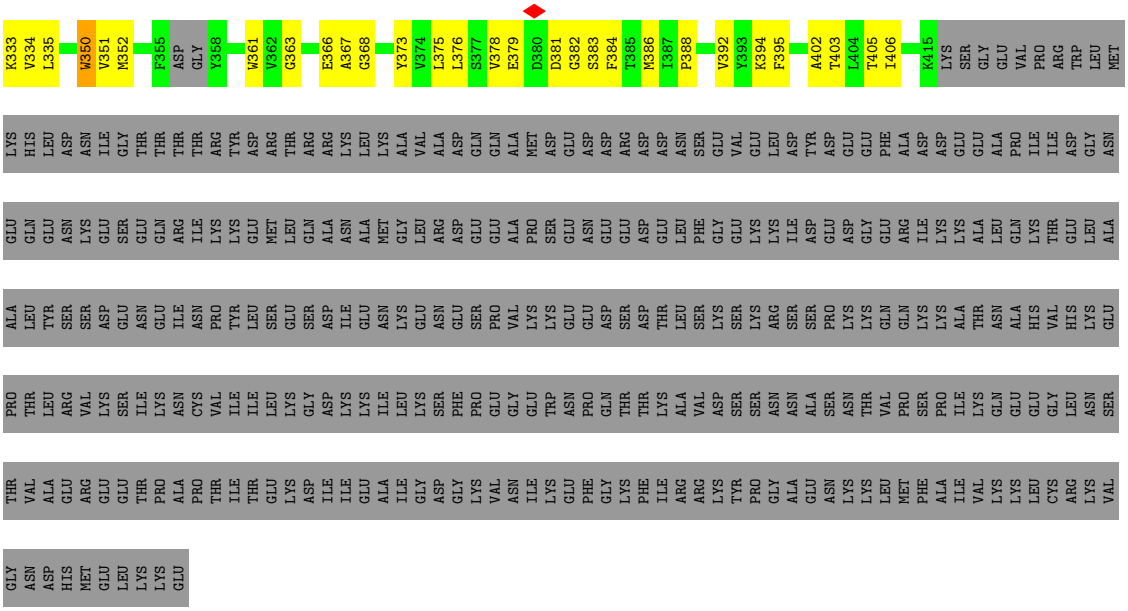


• Molecule 15: TATA-box-binding protein



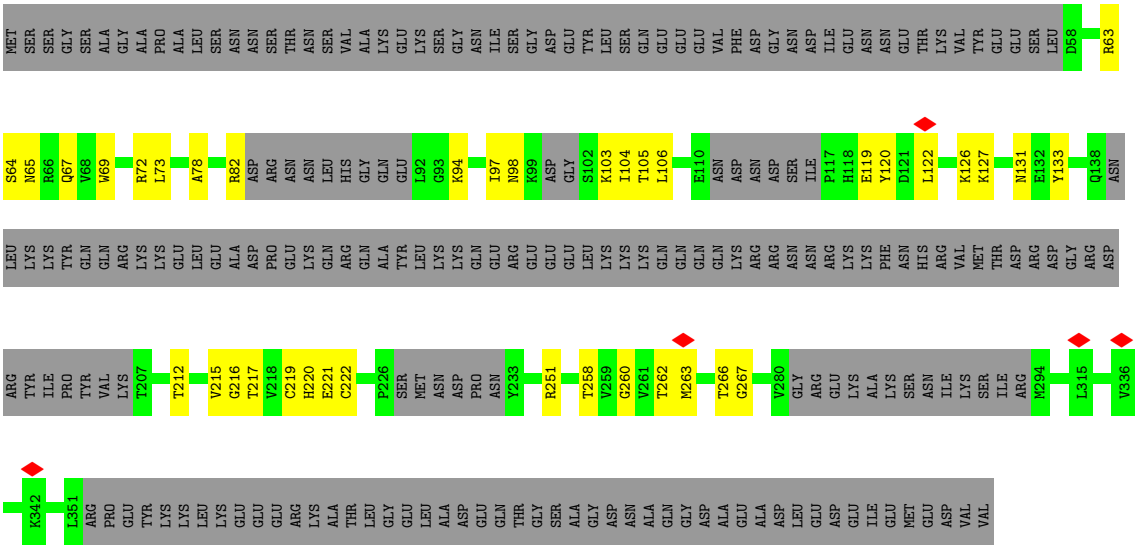
• Molecule 16: Transcription initiation factor IIF subunit alpha





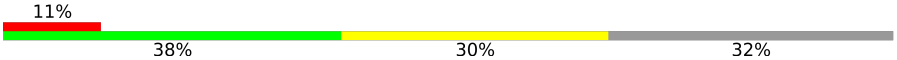
• Molecule 17: Transcription initiation factor IIF subunit beta

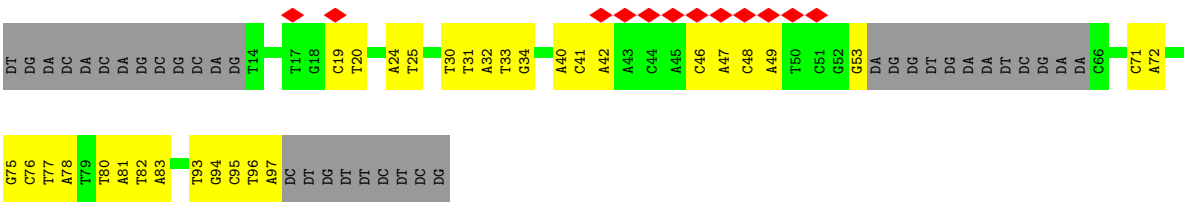
Chain R:



• Molecule 18: TEMPLATE DNA

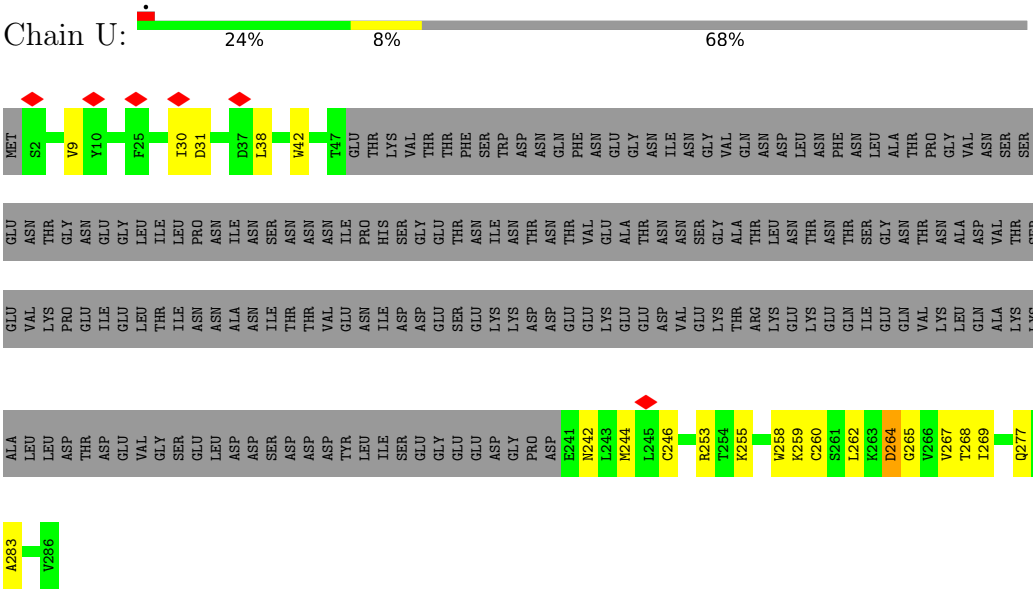
Chain T:





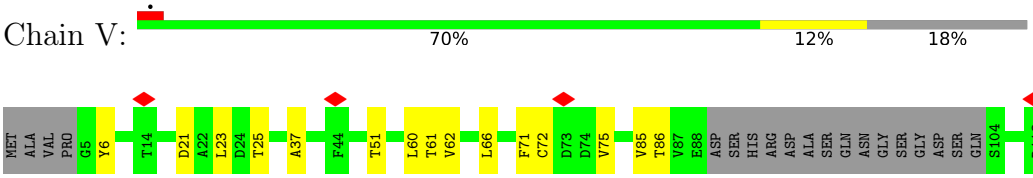
• Molecule 19: Transcription initiation factor IIA large subunit

Chain U:



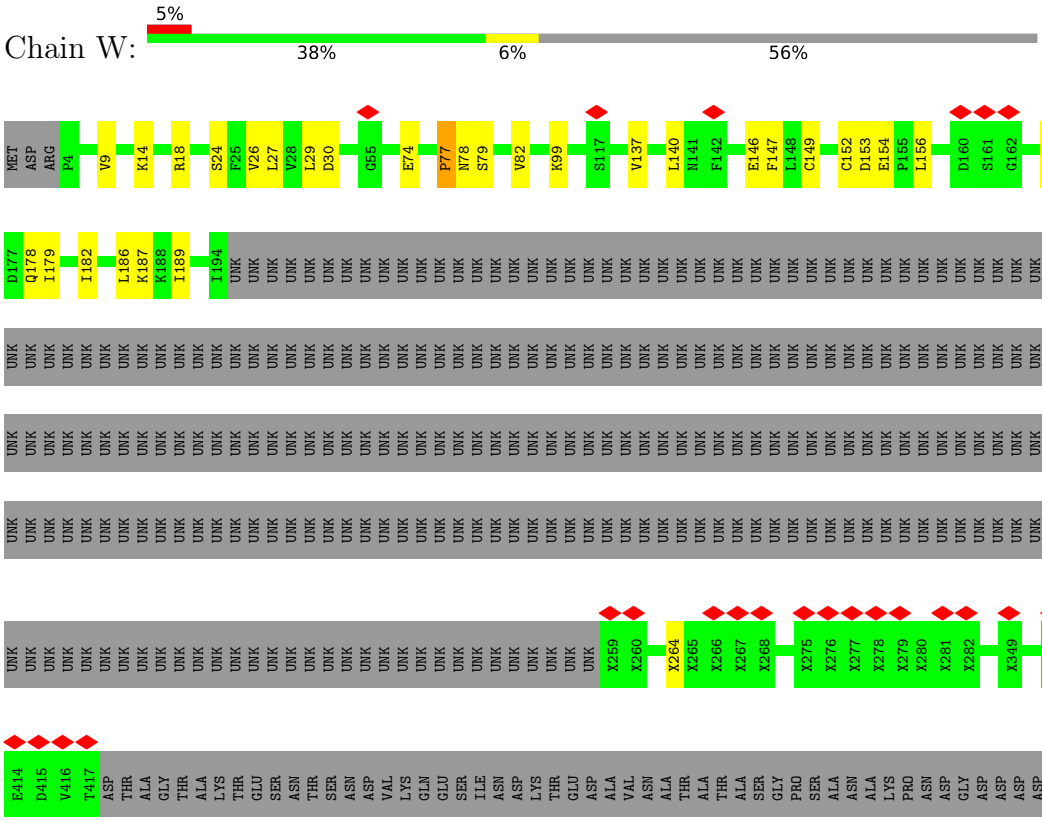
• Molecule 20: Transcription initiation factor IIA subunit 2

Chain V:

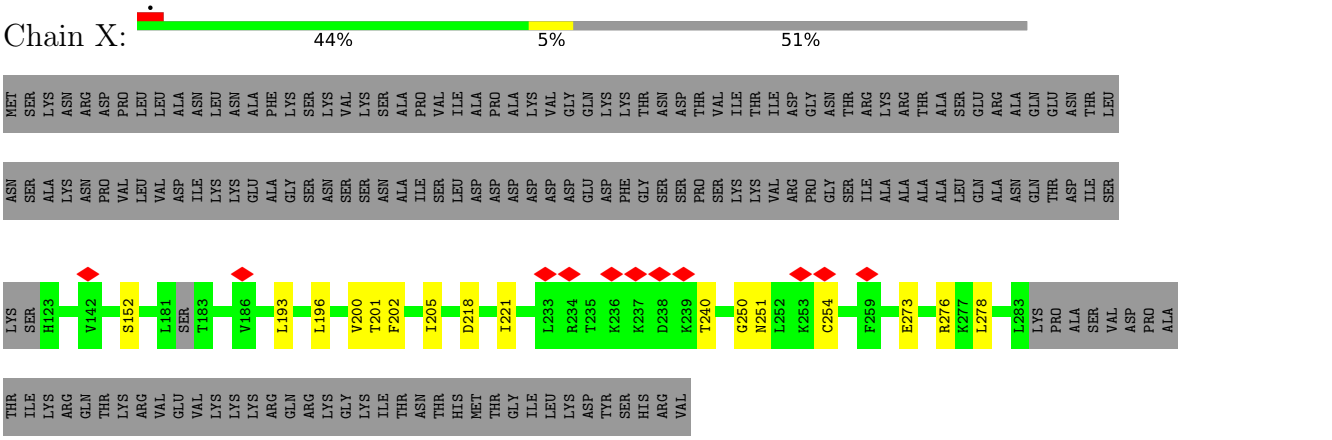


• Molecule 21: Transcription initiation factor IIE subunit alpha

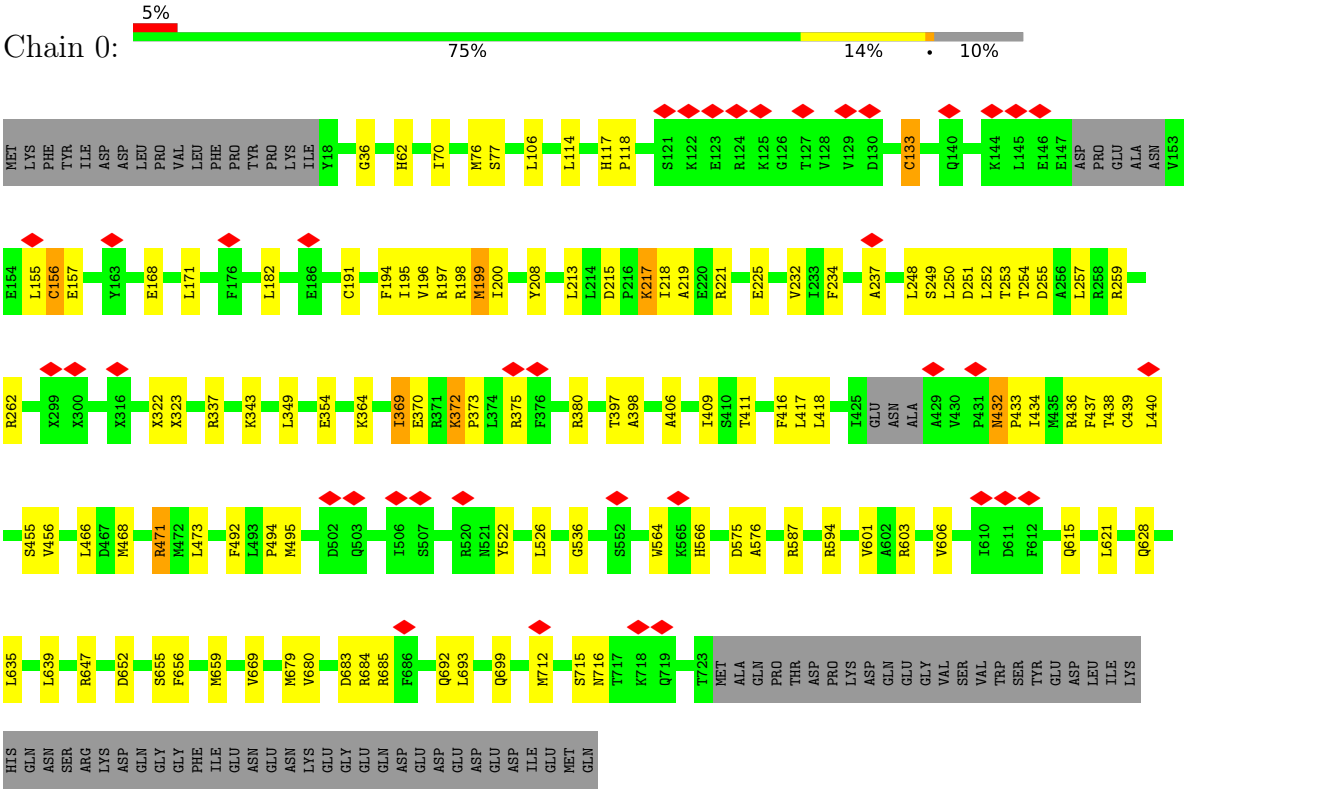
Chain W:



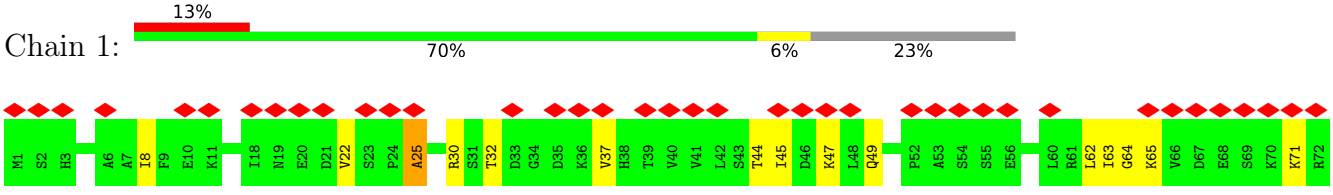
• Molecule 22: Transcription initiation factor IIE subunit beta

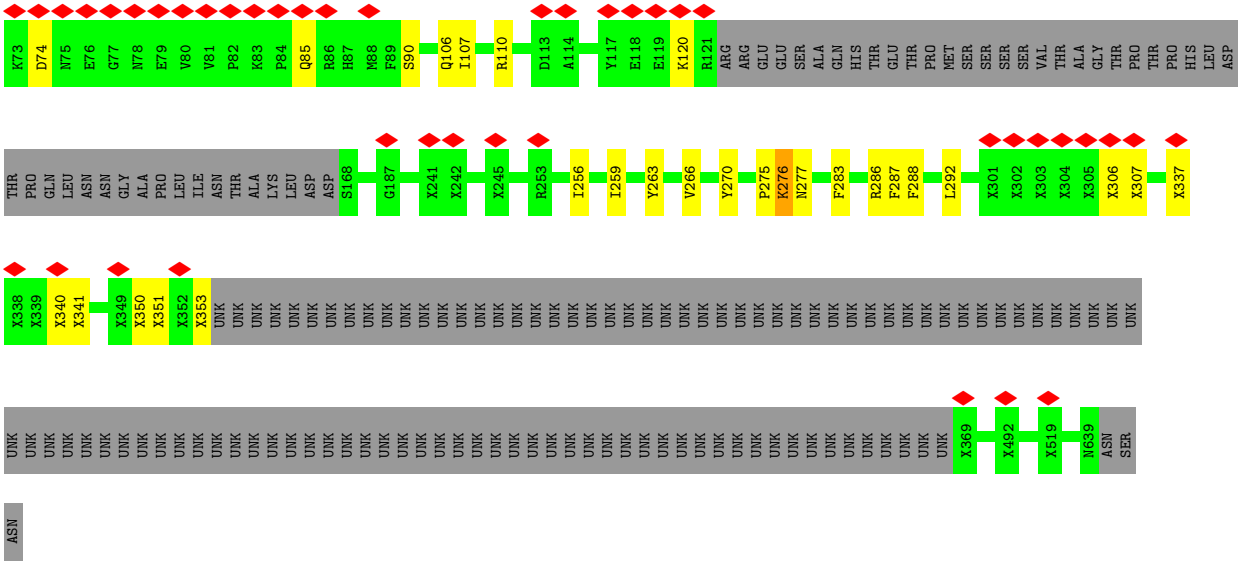


• Molecule 23: DNA repair helicase RAD3



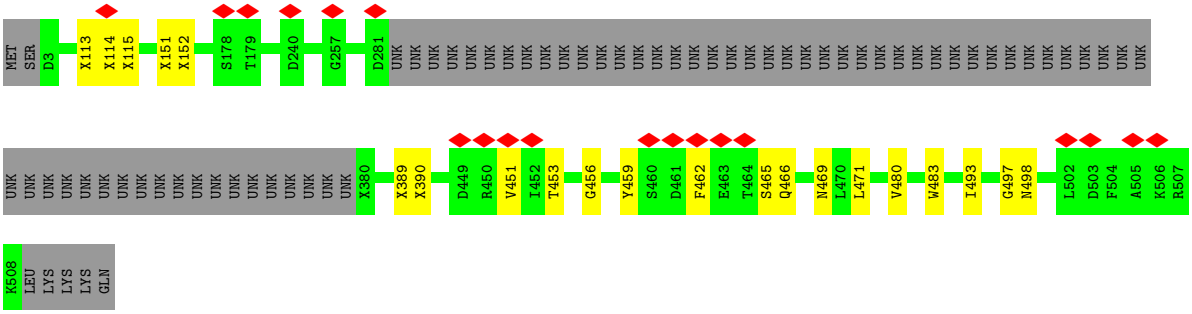
• Molecule 24: RNA polymerase II transcription factor B subunit 1





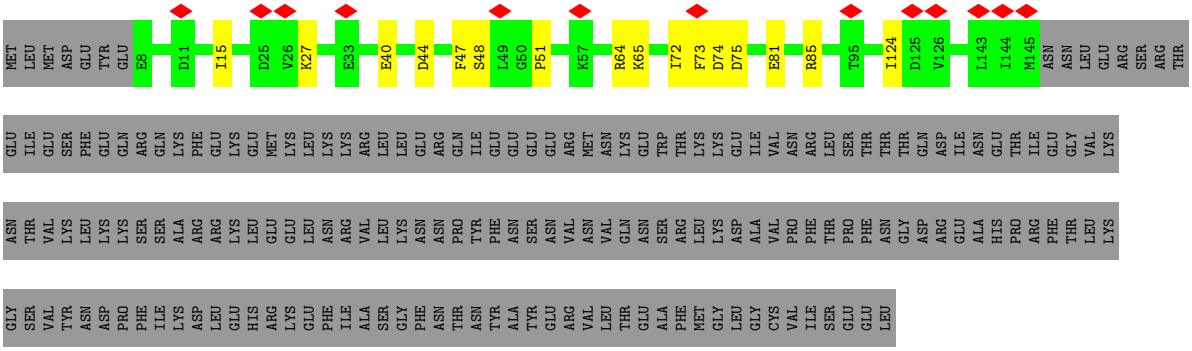
• Molecule 25: RNA polymerase II transcription factor B subunit 2

Chain 2:



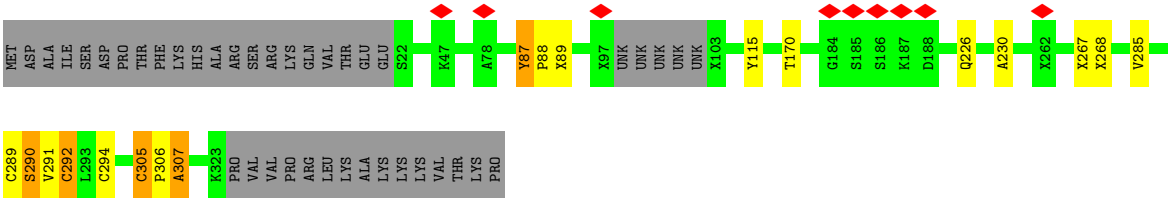
• Molecule 26: RNA polymerase II transcription factor B subunit 3

Chain 3:



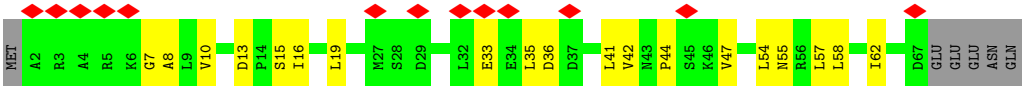
• Molecule 27: RNA polymerase II transcription factor B subunit 4

Chain 4:



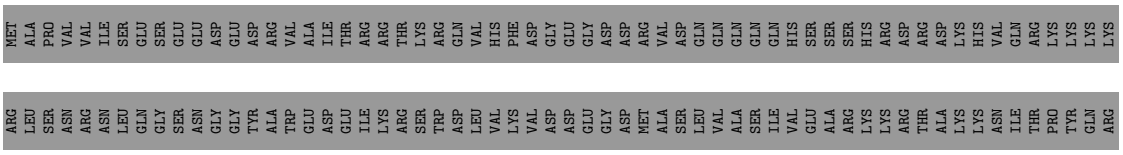
• Molecule 28: RNA polymerase II transcription factor B subunit 5

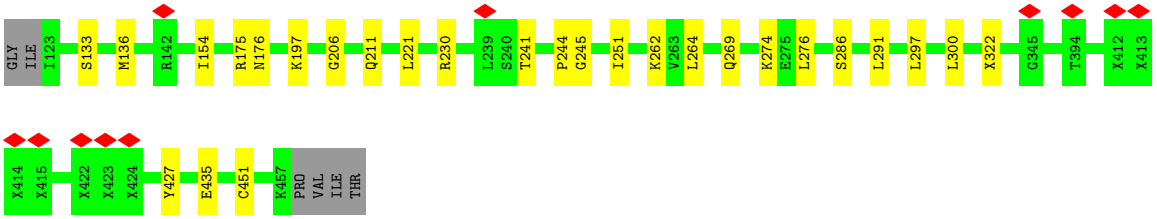
Chain 5:



• Molecule 29: Suppressor of stem-loop protein 1

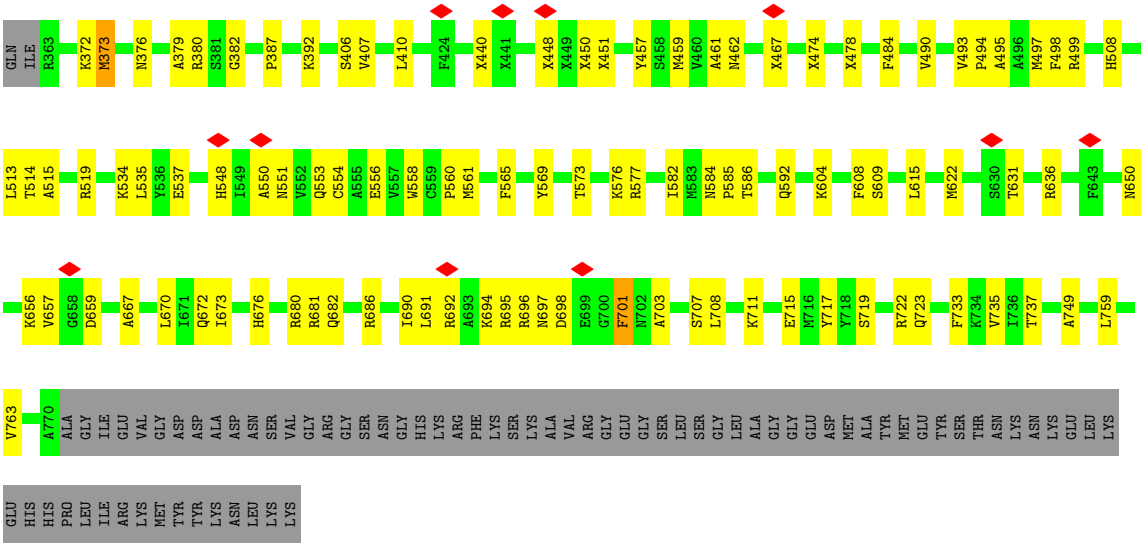
Chain 6:





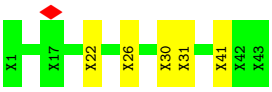
• Molecule 30: DNA repair helicase RAD25

Chain 7:



• Molecule 31: Unknown protein

Chain Z:



4 Experimental information (i)

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	58000	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 ($e^-/Å^2$)	42	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	5000	Depositor
Magnification	105000	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.592	Depositor
Minimum map value	-0.205	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.011	Depositor
Recommended contour level	0.066	Depositor
Map size (Å)	479.5, 479.5, 479.5	wwPDB
Map dimensions	350, 350, 350	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.37, 1.37, 1.37	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, MG, SF4

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	0.25	0/11192	0.40	0/15128
2	B	0.24	0/9357	0.40	0/12618
3	C	0.24	0/2099	0.40	0/2845
4	D	0.23	0/1262	0.37	0/1693
5	E	0.24	0/1780	0.38	0/2395
6	F	0.23	0/682	0.38	0/922
7	G	0.25	0/1368	0.42	0/1844
8	H	0.25	0/1107	0.42	0/1499
9	I	0.24	0/962	0.43	0/1295
10	J	0.28	0/541	0.41	0/727
11	K	0.24	0/922	0.38	0/1244
12	L	0.23	0/360	0.45	0/478
13	M	0.24	0/2204	0.40	0/2963
14	N	0.54	0/1724	0.93	0/2614
15	O	0.25	0/1443	0.43	0/1942
16	Q	0.26	0/1168	0.44	0/1579
17	R	0.24	0/1312	0.42	0/1777
18	T	0.53	0/1614	0.96	0/2442
19	U	0.22	0/766	0.38	0/1032
20	V	0.23	0/789	0.39	0/1066
21	W	0.24	0/1551	0.38	0/2096
22	X	0.24	0/1013	0.40	0/1385
23	0	0.26	0/4739	0.41	0/6431
24	1	0.25	0/2238	0.39	0/3039
25	2	0.23	0/1631	0.38	0/2243
26	3	0.24	0/870	0.40	0/1190
27	4	0.27	0/1282	0.52	0/1780
28	5	0.23	0/502	0.41	0/677
29	6	0.27	0/1996	0.42	0/2713
30	7	0.24	0/2980	0.38	0/4019
All	All	0.27	0/61454	0.46	0/83676

There are no bond length outliers.

There are no bond angle outliers.

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	10997	0	11081	166	0
2	B	9178	0	9195	166	0
3	C	2061	0	2029	30	0
4	D	1253	0	1275	12	0
5	E	1744	0	1772	15	0
6	F	670	0	690	11	0
7	G	1340	0	1357	38	0
8	H	1089	0	1062	22	0
9	I	944	0	899	31	0
10	J	532	0	542	6	0
11	K	904	0	911	13	0
12	L	358	0	381	7	0
13	M	2175	0	2283	41	0
14	N	1533	0	860	33	0
15	O	1416	0	1493	25	0
16	Q	1144	0	1034	30	0
17	R	1303	0	1110	29	0
18	T	1440	0	820	32	0
19	U	757	0	747	13	0
20	V	782	0	790	10	0
21	W	1825	0	1543	27	0
22	X	1004	0	730	10	0
23	0	4844	0	4241	83	0
24	1	3060	0	2055	29	0
25	2	2160	0	1075	13	0
26	3	860	0	620	16	0
27	4	1475	0	624	9	0
28	5	498	0	506	12	0
29	6	2197	0	1738	15	0
30	7	3148	0	3001	67	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
31	Z	215	0	49	5	0
32	3	2	0	0	0	0
32	4	1	0	0	0	0
32	6	3	0	0	0	0
32	A	2	0	0	0	0
32	B	1	0	0	0	0
32	C	1	0	0	0	0
32	I	2	0	0	0	0
32	J	1	0	0	0	0
32	L	1	0	0	0	0
32	M	1	0	0	0	0
32	W	1	0	0	0	0
33	A	1	0	0	0	0
34	0	8	0	0	3	0
All	All	62931	0	56513	909	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 8.

All (909) 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)
9:I:54:GLU:O	9:I:89:GLN:N	1.93	1.02
19:U:242:ASN:HA	19:U:268:THR:O	1.62	0.99
31:Z:31:UNK:HA	31:Z:41:UNK:CB	1.92	0.97
1:A:70:CYS:SG	1:A:80:HIS:NE2	2.40	0.95
31:Z:30:UNK:O	31:Z:41:UNK:CB	2.18	0.92
17:R:98:ASN:HB3	17:R:103:LYS:O	1.71	0.91
9:I:54:GLU:HB3	9:I:88:SER:OG	1.71	0.90
16:Q:138:ARG:O	16:Q:352:MET:HA	1.72	0.89
17:R:106:LEU:O	17:R:119:GLU:HA	1.72	0.88
23:0:594:ARG:NH1	29:6:241:THR:O	2.08	0.85
2:B:70:ILE:HD11	16:Q:333:LYS:HB2	1.59	0.84
9:I:54:GLU:HA	9:I:90:GLN:H	1.43	0.84
18:T:30:DT:H2"	18:T:31:DT:H71	1.58	0.84
3:C:11:ARG:NH1	3:C:209:TYR:OH	2.12	0.82
9:I:54:GLU:CB	9:I:88:SER:OG	2.27	0.82
23:0:252:LEU:O	23:0:434:ILE:HA	1.78	0.81
21:W:14:LYS:O	21:W:18:ARG:HB2	1.79	0.81
25:2:151:UNK:O	25:2:152:UNK:CB	2.29	0.81
7:G:165:GLU:HG2	26:3:65:LYS:NZ	1.95	0.80

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:166:ASP:OD2	26:3:64:ARG:NH2	2.15	0.80
18:T:19:DC:H2"	18:T:20:DT:H71	1.65	0.79
21:W:149:CYS:O	21:W:153:ASP:N	2.16	0.79
23:0:635:LEU:O	23:0:639:LEU:HB2	1.83	0.77
2:B:835:GLN:HA	2:B:1013:ASN:ND2	1.99	0.77
24:1:64:GLY:HA3	24:1:85:GLN:O	1.83	0.77
30:7:672:GLN:HE21	30:7:722:ARG:HH12	1.31	0.77
3:C:177:GLU:HB2	3:C:231:ASN:HB3	1.65	0.77
1:A:1141:THR:HG23	1:A:1205:LYS:HD3	1.67	0.77
4:D:57:LEU:O	4:D:61:GLU:HB2	1.84	0.77
1:A:78:PRO:O	2:B:1205:GLN:NE2	2.18	0.77
2:B:839:MET:HG2	2:B:1012:ILE:HG22	1.66	0.76
18:T:77:DT:H2'	18:T:78:DA:H8	1.48	0.76
24:1:350:UNK:O	24:1:351:UNK:CB	2.35	0.75
25:2:114:UNK:O	25:2:115:UNK:CB	2.35	0.75
25:2:113:UNK:O	25:2:114:UNK:CB	2.34	0.75
11:K:20:LYS:HB2	11:K:34:THR:HB	1.67	0.74
23:0:323:UNK:CB	23:0:380:ARG:NH2	2.51	0.74
3:C:75:MET:O	3:C:246:ARG:NH2	2.21	0.74
1:A:1055:ARG:NH1	6:F:154:ASP:O	2.20	0.74
16:Q:376:LEU:HD21	16:Q:386:MET:HE3	1.70	0.74
1:A:441:PRO:HA	1:A:458:HIS:O	1.88	0.73
8:H:56:THR:O	8:H:144:ILE:HA	1.86	0.73
9:I:101:PHE:HB2	9:I:110:PHE:O	1.89	0.72
12:L:32:ALA:HB2	12:L:55:ILE:HB	1.70	0.72
27:4:289:CYS:HB2	27:4:294:CYS:H	1.54	0.72
3:C:56:THR:HG22	3:C:147:LEU:HD21	1.70	0.72
21:W:149:CYS:HB2	21:W:156:LEU:HD21	1.70	0.72
13:M:279:VAL:HG11	13:M:304:VAL:HG11	1.70	0.72
2:B:835:GLN:HA	2:B:1013:ASN:HD22	1.55	0.72
16:Q:127:ILE:HG22	16:Q:129:PRO:HD3	1.70	0.72
25:2:389:UNK:O	25:2:390:UNK:CB	2.38	0.71
23:0:526:LEU:HD22	23:0:621:LEU:HD21	1.73	0.71
3:C:40:GLU:OE1	3:C:254:LYS:NZ	2.23	0.70
7:G:10:ASN:HA	7:G:70:PHE:O	1.92	0.70
8:H:93:TYR:HA	8:H:145:ARG:HB3	1.73	0.70
13:M:99:GLY:H	13:M:102:THR:HG21	1.58	0.69
9:I:19:ASP:HB3	9:I:24:ARG:O	1.92	0.69
16:Q:375:LEU:O	16:Q:386:MET:HA	1.91	0.69
1:A:524:VAL:HG12	1:A:525:GLN:HG2	1.75	0.69
18:T:82:DT:H2'	18:T:83:DA:C8	2.28	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:1:256:ILE:HD13	24:1:259:ILE:HD11	1.74	0.69
7:G:101:VAL:HG21	7:G:145:VAL:HG21	1.73	0.69
14:N:63:DG:H2"	14:N:64:DT:C5	2.28	0.69
30:7:672:GLN:HE21	30:7:722:ARG:NH1	1.91	0.69
1:A:243:PRO:HB2	1:A:245:PRO:HD2	1.72	0.68
23:0:364:LYS:HZ2	23:0:369:ILE:H	1.41	0.68
30:7:558:TRP:HE1	30:7:735:VAL:HB	1.57	0.68
8:H:96:VAL:HA	8:H:142:LEU:O	1.93	0.68
13:M:34:ILE:HG22	13:M:45:CYS:HA	1.75	0.68
13:M:236:LEU:HD11	13:M:257:GLU:HG3	1.74	0.68
1:A:35:ILE:HG22	1:A:270:LEU:HD11	1.74	0.68
1:A:61:ILE:HG22	1:A:62:ASP:H	1.59	0.68
14:N:25:DA:H5"	15:O:203:VAL:HG21	1.76	0.68
30:7:592:GLN:HE22	30:7:749:ALA:H	1.41	0.67
3:C:18:VAL:HG21	3:C:240:VAL:HG21	1.77	0.67
1:A:807:GLY:HA3	2:B:728:ARG:HH21	1.60	0.67
1:A:1146:VAL:HG23	1:A:1197:LEU:HD22	1.77	0.67
1:A:344:ARG:HA	2:B:1129:ARG:HA	1.75	0.67
2:B:825:VAL:HA	2:B:1010:LEU:O	1.93	0.67
30:7:376:ASN:HD21	30:7:380:ARG:HB3	1.58	0.67
23:0:712:MET:O	23:0:716:ASN:ND2	2.27	0.67
24:1:47:LYS:HB2	24:1:63:ILE:HD12	1.77	0.67
2:B:373:ARG:HG3	2:B:566:LEU:HD23	1.75	0.67
17:R:64:SER:HA	17:R:216:GLY:HA2	1.77	0.66
13:M:157:CYS:SG	13:M:158:HIS:N	2.68	0.66
26:3:51:PRO:HD3	26:3:65:LYS:HE3	1.77	0.66
1:A:1451:VAL:HG12	7:G:20:PRO:HB3	1.76	0.66
12:L:38:LEU:HD21	12:L:48:CYS:HA	1.77	0.66
13:M:267:LYS:HE2	13:M:270:ALA:HB2	1.78	0.66
16:Q:121:PHE:HB2	17:R:131:ASN:HB3	1.78	0.66
23:0:669:VAL:HG21	23:0:679:MET:HB2	1.77	0.66
29:6:221:LEU:HD13	29:6:230:ARG:HB3	1.78	0.66
2:B:67:SER:HB2	2:B:92:PHE:H	1.60	0.65
2:B:383:ASN:O	2:B:387:LEU:HB2	1.96	0.65
2:B:770:GLN:NE2	2:B:982:SER:O	2.29	0.65
1:A:107:CYS:SG	1:A:171:GLN:NE2	2.70	0.65
2:B:1171:VAL:HA	2:B:1181:GLU:O	1.97	0.65
2:B:826:ALA:HB3	2:B:1011:ILE:HG12	1.79	0.65
15:O:170:ILE:HD13	15:O:234:LEU:HD22	1.78	0.65
2:B:822:ASN:O	10:J:48:ARG:NH1	2.30	0.64
22:X:202:PHE:HE1	24:1:32:THR:O	1.80	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:1386:ARG:NH2	18:T:53:DG:H5"	2.13	0.64
1:A:178:GLY:HA2	1:A:311:GLN:HE22	1.63	0.64
23:0:253:THR:O	23:0:255:ASP:N	2.26	0.64
3:C:11:ARG:NH2	3:C:19:ASP:OD2	2.30	0.64
23:0:191:CYS:HG	34:0:801:SF4:FE4	1.13	0.64
23:0:248:LEU:HD13	23:0:416:PHE:HE1	1.63	0.64
1:A:69:THR:HG23	1:A:80:HIS:CD2	2.32	0.64
24:1:8:ILE:HB	24:1:90:SER:HB2	1.77	0.64
4:D:173:HIS:HB3	4:D:176:GLU:HG3	1.80	0.64
1:A:1329:THR:HG22	1:A:1331:SER:H	1.62	0.64
2:B:115:GLN:NE2	2:B:787:VAL:O	2.31	0.64
3:C:13:ALA:HA	3:C:18:VAL:HG22	1.80	0.64
21:W:413:PHE:HB3	24:1:49:GLN:HB3	1.78	0.64
1:A:1192:LEU:HD11	1:A:1239:ARG:HB3	1.80	0.63
23:0:191:CYS:SG	34:0:801:SF4:FE4	1.90	0.63
7:G:114:LEU:HD23	7:G:162:SER:HB3	1.81	0.63
1:A:70:CYS:SG	1:A:80:HIS:CE1	2.91	0.63
5:E:119:SER:OG	14:N:68:DA:OP1	2.17	0.63
30:7:558:TRP:HB3	30:7:711:LYS:HE2	1.81	0.63
23:0:248:LEU:HB2	23:0:439:CYS:HB3	1.79	0.63
2:B:911:ILE:HD11	2:B:941:LEU:HD12	1.81	0.62
1:A:860:LEU:HD11	1:A:1394:THR:HA	1.80	0.62
23:0:603:ARG:NH1	23:0:628:GLN:HG3	2.13	0.62
17:R:126:LYS:HB3	17:R:221:GLU:HB2	1.79	0.62
21:W:178:GLN:NE2	22:X:254:CYS:SG	2.73	0.62
23:0:251:ASP:OD1	23:0:436:ARG:NE	2.32	0.62
1:A:68:GLN:O	1:A:71:GLN:NE2	2.33	0.62
30:7:604:LYS:NZ	30:7:650:ASN:OD1	2.32	0.62
1:A:544:ASP:HB2	11:K:47:ARG:HH12	1.65	0.62
1:A:1189:SER:N	1:A:1242:VAL:O	2.31	0.62
2:B:490:SER:O	2:B:494:HIS:HB2	2.00	0.62
13:M:163:LEU:O	13:M:166:LYS:NZ	2.33	0.62
23:0:217:LYS:HG3	23:0:218:ILE:HG12	1.81	0.62
25:2:483:TRP:NE1	28:5:36:ASP:OD2	2.31	0.62
2:B:25:ILE:HA	2:B:655:LYS:HE3	1.82	0.62
19:U:259:LYS:HA	19:U:281:VAL:O	2.00	0.62
30:7:560:PRO:HD2	30:7:586:THR:HG21	1.80	0.62
2:B:944:THR:HG21	2:B:1122:ARG:HH12	1.63	0.61
13:M:118:VAL:HG22	13:M:124:ASN:HD21	1.65	0.61
1:A:1199:ARG:O	1:A:1203:ASN:ND2	2.33	0.61
23:0:495:MET:SD	23:0:684:ARG:NH2	2.73	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:G:96:GLN:NE2	21:W:146:GLU:OE2	2.33	0.61
1:A:562:THR:O	1:A:576:GLN:NE2	2.34	0.61
23:0:257:LEU:HB3	23:0:343:LYS:NZ	2.16	0.61
27:4:305:CYS:O	27:4:307:ALA:N	2.34	0.61
30:7:673:ILE:HG12	30:7:708:LEU:HD12	1.82	0.61
27:4:87:TYR:O	27:4:89:UNK:N	2.34	0.61
27:4:289:CYS:HB3	27:4:292:CYS:SG	2.40	0.61
2:B:249:ARG:HG2	2:B:415:GLN:HE22	1.64	0.61
3:C:25:VAL:HG13	3:C:29:MET:HB3	1.83	0.61
1:A:32:VAL:HG12	2:B:1183:LYS:HE2	1.81	0.61
30:7:565:PHE:O	30:7:569:TYR:HB2	2.01	0.61
16:Q:373:TYR:OH	17:R:72:ARG:NH2	2.34	0.61
25:2:456:GLY:HA3	25:2:493:ILE:O	2.01	0.61
27:4:285:VAL:HA	29:6:322:UNK:O	2.00	0.61
30:7:656:LYS:NZ	30:7:686:ARG:HH21	1.98	0.60
2:B:193:LYS:HB3	2:B:787:VAL:HG21	1.83	0.60
1:A:481:ASP:O	1:A:483:ASP:OD1	2.20	0.60
7:G:165:GLU:HG2	26:3:65:LYS:HZ1	1.64	0.60
1:A:185:TRP:HB2	1:A:198:GLU:O	2.02	0.60
7:G:165:GLU:CG	26:3:65:LYS:NZ	2.63	0.60
14:N:30:DA:H2'	14:N:31:DG:C8	2.36	0.60
30:7:631:THR:HB	30:7:636:ARG:HE	1.66	0.60
30:7:672:GLN:HE22	30:7:686:ARG:HH22	1.48	0.60
4:D:57:LEU:O	4:D:61:GLU:CB	2.50	0.60
8:H:129:TYR:O	8:H:133:ASN:ND2	2.35	0.60
1:A:115:LEU:O	1:A:164:ARG:NH1	2.35	0.60
1:A:1257:ASP:OD1	1:A:1258:HIS:N	2.35	0.60
30:7:493:VAL:O	30:7:495:ALA:N	2.35	0.60
1:A:537:ARG:HD2	8:H:20:TYR:CZ	2.37	0.59
2:B:364:ILE:HG12	2:B:585:VAL:HG13	1.83	0.59
31:Z:31:UNK:CA	31:Z:41:UNK:CB	2.77	0.59
3:C:22:LEU:O	3:C:228:PHE:HB2	2.03	0.59
23:0:322:UNK:CB	23:0:380:ARG:HH12	2.14	0.59
1:A:483:ASP:OD1	1:A:483:ASP:N	2.35	0.59
2:B:802:PRO:HG2	2:B:805:THR:HG22	1.84	0.59
4:D:66:ARG:NH2	7:G:47:CYS:SG	2.75	0.59
14:N:82:DA:H4'	30:7:676:HIS:HE1	1.66	0.59
18:T:77:DT:H2'	18:T:78:DA:C8	2.34	0.59
2:B:919:SER:HB2	2:B:922:GLU:HB2	1.84	0.59
13:M:281:SER:O	13:M:285:ASN:ND2	2.31	0.59
16:Q:139:LEU:HA	16:Q:351:VAL:O	2.02	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:0:364:LYS:NZ	23:0:370:GLU:H	1.99	0.59
13:M:22:LEU:HB3	13:M:52:LEU:HD23	1.83	0.59
2:B:287:ARG:NH2	2:B:294:ASP:OD1	2.36	0.59
7:G:4:ILE:HG12	7:G:77:VAL:HG22	1.84	0.59
30:7:680:ARG:HB3	30:7:722:ARG:HB2	1.84	0.59
2:B:298:LEU:HD23	2:B:311:LEU:HD22	1.84	0.59
3:C:54:ASN:HD21	3:C:63:ILE:HD12	1.68	0.59
8:H:101:ALA:HA	8:H:115:TYR:O	2.02	0.59
2:B:969:ARG:NH2	3:C:60:ASP:OD2	2.36	0.59
2:B:1106:ARG:NH2	2:B:1110:PRO:O	2.34	0.58
3:C:73:GLN:HE21	3:C:74:SER:H	1.50	0.58
18:T:30:DT:OP1	30:7:657:VAL:HA	2.03	0.58
23:0:354:GLU:HB2	23:0:418:LEU:HB2	1.84	0.58
23:0:364:LYS:HZ2	23:0:369:ILE:N	2.02	0.58
18:T:31:DT:H2'	18:T:32:DA:C8	2.38	0.58
29:6:264:LEU:HD22	29:6:300:LEU:HD13	1.85	0.58
17:R:104:ILE:HD11	17:R:122:LEU:HD22	1.86	0.58
1:A:390:GLN:OE1	1:A:393:ARG:NH2	2.37	0.58
1:A:1342:GLU:OE1	5:E:200:ARG:NH2	2.36	0.58
22:X:200:VAL:HG12	22:X:201:THR:HG23	1.85	0.58
1:A:333:GLU:OE1	2:B:1129:ARG:NH2	2.37	0.58
7:G:84:GLY:CA	7:G:147:ILE:O	2.52	0.58
23:0:257:LEU:HB3	23:0:343:LYS:HZ2	1.68	0.58
9:I:19:ASP:O	9:I:23:ASN:HA	2.04	0.58
16:Q:141:ARG:HA	16:Q:350:TRP:HA	1.85	0.58
17:R:104:ILE:HD11	17:R:122:LEU:HB3	1.86	0.58
29:6:291:LEU:HD22	29:6:297:LEU:HD13	1.86	0.58
19:U:244:MET:HG3	19:U:267:VAL:HG22	1.86	0.58
1:A:348:SER:HA	1:A:489:LEU:O	2.04	0.57
2:B:858:SER:HA	2:B:966:VAL:O	2.04	0.57
9:I:82:GLU:HG2	9:I:104:LEU:HD12	1.85	0.57
1:A:250:ILE:HD13	13:M:62:GLU:HG3	1.85	0.57
2:B:483:LEU:HD11	2:B:491:THR:HG23	1.86	0.57
8:H:65:LEU:HD21	8:H:89:LEU:HD13	1.86	0.57
11:K:29:ASN:ND2	11:K:78:THR:O	2.37	0.57
30:7:474:UNK:O	30:7:478:UNK:CB	2.51	0.57
1:A:1146:VAL:HG12	1:A:1201:ALA:HB1	1.85	0.57
2:B:872:GLU:HG2	2:B:916:THR:HG22	1.85	0.57
2:B:881:ASN:O	2:B:933:SER:OG	2.23	0.57
11:K:49:GLU:OE2	11:K:97:LYS:NZ	2.36	0.57
7:G:165:GLU:CG	26:3:65:LYS:HZ2	2.17	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:125:GLY:HA2	18:T:81:DA:H2”	1.87	0.57
1:A:326:ARG:HG2	1:A:1406:VAL:HG11	1.86	0.57
1:A:687:LYS:NZ	1:A:801:GLU:OE1	2.38	0.57
7:G:8:SER:HA	7:G:72:VAL:O	2.05	0.57
23:0:337:ARG:NH2	26:3:74:ASP:OD2	2.38	0.57
3:C:5:GLY:O	3:C:24:ASN:ND2	2.36	0.57
18:T:41:DC:H2”	18:T:42:DA:C8	2.39	0.57
7:G:84:GLY:HA2	7:G:147:ILE:O	2.05	0.57
13:M:284:LEU:HD22	13:M:316:LEU:HG	1.86	0.56
27:4:267:UNK:O	27:4:268:UNK:CB	2.51	0.56
30:7:490:VAL:H	30:7:514:THR:HB	1.70	0.56
1:A:544:ASP:O	1:A:548:ASN:ND2	2.38	0.56
2:B:834:ASN:O	2:B:1013:ASN:HB2	2.05	0.56
14:N:43:DT:H1’	14:N:44:DC:H5’	1.87	0.56
17:R:98:ASN:CB	17:R:103:LYS:O	2.50	0.56
9:I:55:THR:HG22	9:I:100:PHE:CD2	2.40	0.56
17:R:67:GLN:HB3	17:R:219:CYS:HB2	1.87	0.56
24:1:283:PHE:O	24:1:287:PHE:HB3	2.05	0.56
2:B:1009:ASP:OD2	10:J:48:ARG:NH2	2.38	0.56
7:G:84:GLY:N	7:G:147:ILE:O	2.39	0.56
1:A:443:LEU:HG	1:A:501:LEU:HD21	1.87	0.56
2:B:984:HIS:NE2	2:B:1028:GLU:OE1	2.32	0.56
7:G:138:THR:HG22	7:G:139:ILE:H	1.70	0.56
23:0:76:MET:HB2	24:1:341:UNK:HA	1.88	0.56
29:6:175:ARG:NH1	29:6:176:ASN:OD1	2.38	0.56
10:J:48:ARG:O	10:J:52:THR:OG1	2.14	0.56
11:K:36:GLU:OE1	11:K:70:ARG:NH1	2.39	0.56
19:U:262:LEU:HB2	19:U:279:ALA:HB3	1.87	0.56
21:W:169:GLN:HE22	26:3:15:ILE:HG12	1.71	0.56
23:0:468:MET:SD	23:0:468:MET:N	2.79	0.56
3:C:242:GLN:O	3:C:246:ARG:HB2	2.06	0.56
16:Q:122:GLN:HB2	16:Q:394:LYS:HE3	1.87	0.56
24:1:288:PHE:O	24:1:292:LEU:CB	2.53	0.56
1:A:335:ARG:HH22	2:B:1114:LEU:HD11	1.69	0.56
2:B:969:ARG:NH1	3:C:61:GLU:OE1	2.38	0.56
5:E:17:ARG:HH12	5:E:36:GLU:HA	1.71	0.56
19:U:30:ILE:HG23	19:U:31:ASP:H	1.70	0.56
1:A:261:ASP:HB3	1:A:322:VAL:HG13	1.88	0.56
1:A:1386:ARG:HH22	18:T:53:DG:H5”	1.71	0.56
2:B:794:ASN:HA	2:B:854:LEU:O	2.06	0.56
13:M:177:LEU:HD22	13:M:207:LEU:HD11	1.87	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:E:28:TYR:HA	5:E:64:PRO:HA	1.86	0.55
13:M:241:ARG:O	13:M:245:HIS:ND1	2.35	0.55
2:B:71:LEU:HD21	2:B:436:VAL:HG11	1.88	0.55
15:O:74:VAL:HG21	15:O:136:SER:HB3	1.87	0.55
29:6:154:ILE:HD13	29:6:197:LYS:NZ	2.22	0.55
1:A:62:ASP:O	1:A:64:ASN:N	2.35	0.55
1:A:445:ASN:OD1	1:A:449:SER:OG	2.21	0.55
1:A:908:LEU:HA	1:A:1029:ARG:HH22	1.72	0.55
2:B:785:TYR:O	2:B:967:ARG:NH1	2.32	0.55
3:C:73:GLN:NE2	3:C:237:SER:O	2.38	0.55
9:I:54:GLU:HG2	9:I:90:GLN:HB3	1.89	0.55
13:M:34:ILE:HG21	13:M:52:LEU:HD22	1.87	0.55
23:0:114:LEU:HD21	23:0:196:VAL:HG21	1.88	0.55
30:7:698:ASP:HB2	30:7:701:PHE:HB2	1.89	0.55
1:A:185:TRP:HZ3	1:A:200:ARG:HB2	1.72	0.55
1:A:899:VAL:H	1:A:929:LEU:HD11	1.72	0.55
2:B:118:ARG:NH2	2:B:202:TYR:OH	2.38	0.55
8:H:112:ILE:HG23	8:H:132:LEU:HD12	1.89	0.55
26:3:44:ASP:O	26:3:48:SER:OG	2.25	0.55
23:0:36:GLY:HA2	23:0:455:SER:H	1.72	0.55
1:A:335:ARG:HA	1:A:339:ASN:HD22	1.72	0.54
1:A:845:LEU:HD11	1:A:1371:LEU:HD23	1.89	0.54
23:0:575:ASP:OD1	23:0:576:ALA:N	2.40	0.54
12:L:30:ILE:HB	12:L:57:LEU:HB2	1.88	0.54
2:B:347:LYS:O	2:B:351:TYR:HB2	2.07	0.54
15:O:205:LEU:HB2	15:O:213:VAL:HB	1.90	0.54
24:1:64:GLY:CA	24:1:85:GLN:O	2.53	0.54
14:N:23:DA:OP1	15:O:189:LEU:HD11	2.07	0.54
2:B:211:VAL:O	2:B:480:SER:HA	2.07	0.54
2:B:298:LEU:HG	2:B:314:LEU:HD13	1.89	0.54
4:D:141:LEU:HD13	7:G:46:LEU:HB3	1.88	0.54
19:U:246:CYS:HB3	19:U:265:GLY:HA3	1.89	0.54
1:A:1155:ASP:OD2	1:A:1241:ARG:NH2	2.39	0.54
9:I:29:CYS:SG	9:I:31:THR:OG1	2.66	0.54
14:N:60:DT:H2"	14:N:61:DG:C8	2.42	0.54
30:7:515:ALA:HB1	30:7:692:ARG:NH1	2.23	0.54
3:C:6:PRO:HB3	3:C:25:VAL:HG23	1.90	0.54
7:G:160:ILE:HD11	21:W:137:VAL:HG21	1.90	0.54
13:M:43:VAL:HG12	13:M:53:SER:HB3	1.90	0.54
23:0:587:ARG:HH11	23:0:615:GLN:HB2	1.73	0.54
1:A:1441:PHE:O	6:F:92:ARG:NH1	2.41	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:429:PHE:CZ	16:Q:332:LEU:HB2	2.43	0.54
5:E:124:VAL:HG13	5:E:132:ILE:HB	1.90	0.54
13:M:202:GLU:OE2	13:M:206:THR:OG1	2.24	0.54
1:A:115:LEU:HD22	1:A:119:ASN:HD22	1.73	0.54
1:A:588:LEU:HD13	1:A:632:VAL:HG21	1.89	0.54
1:A:700:ASN:HB2	9:I:98:VAL:HG22	1.90	0.54
2:B:278:GLN:HB2	2:B:337:ARG:HD2	1.88	0.54
2:B:303:TYR:HD1	2:B:571:PRO:HB3	1.73	0.54
2:B:1106:ARG:HH11	2:B:1126:GLY:HA2	1.73	0.53
18:T:32:DA:H5"	30:7:440:UNK:CB	2.38	0.53
1:A:778:GLY:HA3	2:B:516:ASN:HB2	1.88	0.53
2:B:923:GLU:HB3	2:B:925:LEU:HG	1.91	0.53
7:G:47:CYS:SG	7:G:48:VAL:N	2.81	0.53
24:1:22:VAL:HG23	24:1:25:ALA:H	1.74	0.53
24:1:266:VAL:HG22	24:1:287:PHE:HZ	1.74	0.53
5:E:76:GLY:N	5:E:106:GLN:OE1	2.39	0.53
15:O:93:GLU:OE2	15:O:105:ARG:NH1	2.41	0.53
21:W:14:LYS:NZ	21:W:30:ASP:OD1	2.41	0.53
2:B:833:TYR:HB2	2:B:840:ILE:HD11	1.90	0.53
13:M:276:THR:HA	13:M:279:VAL:HG12	1.91	0.53
14:N:77:DA:H2"	14:N:78:DA:O5'	2.09	0.53
1:A:48:ALA:HB3	1:A:56:PRO:HD3	1.90	0.53
2:B:1060:ARG:NH1	3:C:200:GLU:O	2.42	0.53
10:J:2:ILE:HD13	10:J:57:ILE:HG21	1.90	0.53
1:A:353:ILE:HG22	1:A:468:PHE:HB2	1.90	0.53
24:1:44:THR:HA	24:1:65:LYS:HE2	1.91	0.53
17:R:105:THR:HA	17:R:120:TYR:O	2.09	0.53
24:1:283:PHE:O	24:1:287:PHE:CB	2.56	0.53
30:7:407:VAL:HG22	30:7:484:PHE:HB3	1.91	0.53
2:B:1042:GLY:HA2	16:Q:22:ILE:HA	1.90	0.53
2:B:1187:ASN:ND2	2:B:1190:ASP:O	2.39	0.53
14:N:82:DA:H4'	30:7:676:HIS:CE1	2.44	0.53
15:O:113:ALA:HA	15:O:122:VAL:O	2.09	0.53
17:R:127:LYS:HA	17:R:220:HIS:CE1	2.43	0.53
20:V:71:PHE:HA	20:V:75:VAL:O	2.09	0.53
22:X:202:PHE:HZ	24:1:30:ARG:HH22	1.56	0.53
23:0:221:ARG:HG2	23:0:225:GLU:OE2	2.09	0.53
2:B:128:LEU:HB2	2:B:168:GLY:O	2.09	0.52
16:Q:366:GLU:HB3	16:Q:392:VAL:HG13	1.90	0.52
23:0:322:UNK:C	23:0:380:ARG:HH12	2.21	0.52
4:D:51:ASN:HD22	4:D:181:GLY:HA3	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:0:601:VAL:HG12	23:0:603:ARG:H	1.74	0.52
26:3:81:GLU:O	26:3:85:ARG:CB	2.57	0.52
2:B:862:GLN:OE1	2:B:957:ASN:ND2	2.42	0.52
13:M:199:LYS:O	13:M:201:LYS:N	2.42	0.52
23:0:471:ARG:HA	23:0:471:ARG:HH11	1.74	0.52
23:0:492:PHE:HE2	23:0:715:SER:HB3	1.73	0.52
23:0:603:ARG:HH12	23:0:628:GLN:HG3	1.73	0.52
2:B:342:GLY:O	2:B:344:LYS:N	2.41	0.52
29:6:269:GLN:HB3	29:6:274:LYS:NZ	2.23	0.52
30:7:490:VAL:HG23	30:7:514:THR:HB	1.92	0.52
1:A:226:GLU:HA	1:A:230:ARG:HE	1.74	0.52
2:B:458:LYS:O	2:B:462:ALA:HB2	2.09	0.52
9:I:56:ALA:O	9:I:89:GLN:HG3	2.08	0.52
2:B:1091:TYR:HE2	2:B:1093:GLN:HE21	1.58	0.52
5:E:62:ALA:HB3	5:E:78:LEU:HB3	1.90	0.52
16:Q:366:GLU:O	16:Q:368:GLY:N	2.43	0.52
30:7:585:PRO:HG3	30:7:759:LEU:HD23	1.91	0.52
1:A:1154:TYR:HE2	9:I:18:GLU:HB2	1.75	0.52
2:B:806:THR:HG23	2:B:1045:SER:HA	1.91	0.52
1:A:88:LYS:HD3	1:A:89:PRO:HD2	1.92	0.52
2:B:55:VAL:HA	2:B:59:LEU:HD13	1.90	0.52
28:5:16:ILE:HD13	28:5:19:LEU:HD12	1.92	0.52
20:V:72:CYS:O	20:V:75:VAL:HB	2.10	0.52
30:7:448:UNK:C	30:7:450:UNK:H	2.23	0.52
2:B:376:PHE:HD2	2:B:566:LEU:HG	1.75	0.51
2:B:1060:ARG:HH12	3:C:202:PRO:HD3	1.75	0.51
3:C:35:ARG:NH2	11:K:39:ASP:OD2	2.41	0.51
2:B:757:PRO:HD3	2:B:983:ARG:HE	1.75	0.51
5:E:26:ARG:HH12	5:E:189:GLY:HA3	1.74	0.51
3:C:100:THR:OG1	3:C:102:GLN:NE2	2.43	0.51
16:Q:334:VAL:HG12	16:Q:335:LEU:H	1.75	0.51
22:X:193:LEU:HA	22:X:196:LEU:HD12	1.91	0.51
27:4:290:SER:C	27:4:292:CYS:H	2.14	0.51
2:B:791:THR:HG22	2:B:792:MET:HG3	1.91	0.51
2:B:826:ALA:O	2:B:1011:ILE:HA	2.10	0.51
30:7:672:GLN:NE2	30:7:722:ARG:HH12	2.06	0.51
2:B:771:SER:O	2:B:775:LYS:NZ	2.44	0.51
23:0:77:SER:HB3	24:1:337:UNK:HA	1.92	0.51
24:1:106:GLN:HB3	24:1:286:ARG:NH1	2.26	0.51
30:7:576:LYS:HB2	30:7:576:LYS:NZ	2.25	0.51
26:3:47:PHE:HB2	26:3:65:LYS:HG2	1.93	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:345:LYS:HA	2:B:348:ARG:HG2	1.91	0.51
2:B:737:THR:OG1	9:I:66:PRO:O	2.27	0.51
20:V:62:VAL:HG22	20:V:85:VAL:HG22	1.92	0.51
23:0:208:TYR:HE2	23:0:213:LEU:HB2	1.75	0.51
2:B:22:SER:O	2:B:654:ARG:NH2	2.44	0.51
13:M:280:VAL:HG12	13:M:309:ILE:HA	1.92	0.51
15:O:115:ILE:HD13	15:O:143:ILE:HD11	1.92	0.51
23:0:106:LEU:HD11	23:0:196:VAL:HG22	1.93	0.51
23:0:194:PHE:HD1	23:0:197:ARG:HH21	1.59	0.51
2:B:43:LEU:O	2:B:496:ARG:NH1	2.41	0.51
1:A:840:ARG:O	1:A:844:ALA:HB2	2.11	0.51
2:B:952:VAL:HG22	2:B:966:VAL:HG13	1.93	0.51
3:C:19:ASP:HB2	3:C:231:ASN:HD22	1.76	0.51
11:K:61:TYR:HA	11:K:72:LYS:O	2.11	0.51
28:5:54:LEU:HA	28:5:57:LEU:HG	1.93	0.51
1:A:534:LEU:HD11	1:A:577:ILE:HD11	1.93	0.50
2:B:102:VAL:O	2:B:109:THR:HA	2.12	0.50
15:O:206:ILE:HD13	15:O:234:LEU:HD21	1.93	0.50
30:7:690:ILE:O	30:7:694:LYS:NZ	2.41	0.50
1:A:752:LYS:HG3	2:B:1015:HIS:HB3	1.92	0.50
3:C:222:LYS:H	3:C:222:LYS:HD3	1.76	0.50
8:H:142:LEU:HG	8:H:144:ILE:HD11	1.92	0.50
9:I:55:THR:HG22	9:I:100:PHE:CE2	2.47	0.50
30:7:373:MET:SD	30:7:373:MET:N	2.84	0.50
1:A:63:ARG:HA	1:A:74:MET:HG2	1.92	0.50
1:A:553:VAL:HB	1:A:556:TRP:HB2	1.92	0.50
1:A:1386:ARG:CZ	18:T:53:DG:H5"	2.41	0.50
2:B:413:LEU:HD21	2:B:461:LEU:HD11	1.93	0.50
7:G:111:THR:HB	7:G:114:LEU:HD13	1.92	0.50
9:I:54:GLU:HA	9:I:90:GLN:N	2.21	0.50
23:0:250:LEU:HB3	23:0:437:PHE:CE2	2.46	0.50
23:0:466:LEU:H	23:0:466:LEU:HD23	1.76	0.50
30:7:656:LYS:HZ1	30:7:686:ARG:HH21	1.56	0.50
2:B:641:GLU:HB2	2:B:652:LYS:HE2	1.93	0.50
2:B:755:ILE:O	2:B:983:ARG:NE	2.45	0.50
1:A:1020:CYS:SG	1:A:1023:ARG:NH2	2.85	0.50
16:Q:119:LEU:HD12	17:R:133:TYR:HB2	1.93	0.50
1:A:864:ILE:HG22	1:A:865:GLN:HG3	1.93	0.50
1:A:984:LYS:O	1:A:988:LEU:HB2	2.12	0.50
1:A:1116:LEU:HD11	1:A:1311:VAL:HG23	1.94	0.50
9:I:86:PHE:O	9:I:100:PHE:HB2	2.12	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:W:99:LYS:HG2	21:W:186:LEU:HD13	1.93	0.50
22:X:202:PHE:CE1	24:1:32:THR:O	2.62	0.50
25:2:459:TYR:OH	25:2:498:ASN:OD1	2.21	0.50
1:A:540:PHE:HB3	1:A:571:LEU:HD23	1.94	0.50
7:G:95:SER:OG	7:G:98:GLY:O	2.23	0.50
8:H:8:ASP:OD1	8:H:9:ILE:N	2.44	0.50
17:R:73:LEU:HD23	17:R:78:ALA:HA	1.92	0.50
23:0:372:LYS:N	23:0:373:PRO:HD3	2.27	0.50
24:1:351:UNK:O	24:1:353:UNK:N	2.45	0.50
1:A:961:ARG:NH1	1:A:1035:TYR:OH	2.44	0.49
5:E:56:LYS:NZ	5:E:84:ASP:OD2	2.43	0.49
6:F:82:THR:HG22	6:F:84:TYR:H	1.76	0.49
17:R:263:MET:O	17:R:266:THR:OG1	2.28	0.49
2:B:63:ILE:O	2:B:67:SER:HB3	2.13	0.49
13:M:187:ARG:HH11	13:M:241:ARG:HH21	1.59	0.49
16:Q:352:MET:HG3	16:Q:361:TRP:HB2	1.94	0.49
21:W:24:SER:HA	21:W:27:LEU:HD22	1.94	0.49
2:B:269:ILE:HD11	2:B:386:LEU:HD21	1.94	0.49
15:O:202:ILE:HD11	15:O:222:GLU:HB3	1.94	0.49
29:6:133:SER:H	29:6:136:MET:HG2	1.76	0.49
1:A:1029:ARG:O	1:A:1033:GLN:HB3	2.13	0.49
2:B:402:GLY:O	2:B:405:ARG:NH1	2.41	0.49
2:B:766:ARG:HE	2:B:1020:ARG:HB3	1.77	0.49
14:N:33:DT:O2	18:T:75:DG:N2	2.46	0.49
1:A:1199:ARG:NH1	1:A:1233:ASP:O	2.45	0.49
23:0:432:ASN:O	23:0:434:ILE:HG13	2.13	0.49
30:7:548:HIS:HB2	30:7:697:ASN:HA	1.93	0.49
30:7:551:ASN:O	30:7:703:ALA:HB3	2.12	0.49
30:7:691:LEU:HA	30:7:694:LYS:NZ	2.27	0.49
1:A:1118:VAL:HB	1:A:1306:LEU:HB2	1.93	0.49
1:A:1191:TRP:CZ3	9:I:43:VAL:HG21	2.48	0.49
2:B:87:LYS:HB2	2:B:137:TYR:HB2	1.93	0.49
2:B:521:LEU:HD22	2:B:633:VAL:HG12	1.93	0.49
1:A:869:GLY:HA3	1:A:1366:ARG:HD2	1.93	0.49
2:B:226:PHE:HD1	2:B:395:GLN:HE21	1.60	0.49
3:C:185:LYS:HE2	3:C:213:PRO:HB3	1.93	0.49
21:W:77:PRO:O	21:W:79:SER:N	2.46	0.49
22:X:273:GLU:HG2	22:X:276:ARG:HH11	1.77	0.49
1:A:495:GLU:OE1	1:A:495:GLU:N	2.46	0.49
1:A:597:LEU:HD13	8:H:103:LYS:HD3	1.94	0.49
1:A:1373:ASP:O	1:A:1377:THR:HG23	2.12	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:B:793:ALA:O	2:B:855:PHE:HA	2.13	0.49
16:Q:363:GLY:HA2	16:Q:395:PHE:HA	1.95	0.49
1:A:446:ARG:O	1:A:449:SER:OG	2.31	0.49
1:A:526:ASP:OD1	2:B:1015:HIS:ND1	2.45	0.49
9:I:14:LEU:HA	9:I:28:GLU:O	2.13	0.49
19:U:283:ALA:HB1	20:V:66:LEU:HB2	1.94	0.49
23:0:364:LYS:HZ2	23:0:370:GLU:H	1.60	0.49
28:5:33:GLU:HB2	28:5:41:LEU:HB3	1.95	0.49
11:K:32:VAL:HG22	11:K:74:ARG:HG2	1.94	0.49
14:N:24:DT:H2"	14:N:25:DA:N7	2.27	0.49
24:1:276:LYS:H	24:1:276:LYS:HD3	1.77	0.49
6:F:133:VAL:HA	6:F:147:SER:HA	1.95	0.48
14:N:78:DA:H4'	14:N:79:DA:OP1	2.13	0.48
17:R:73:LEU:HD23	17:R:78:ALA:CA	2.43	0.48
24:1:306:UNK:O	24:1:307:UNK:CB	2.60	0.48
2:B:114:PRO:HG2	2:B:181:LEU:HD11	1.95	0.48
7:G:165:GLU:HG2	26:3:65:LYS:HZ2	1.69	0.48
8:H:89:LEU:HG	8:H:90:ALA:H	1.78	0.48
9:I:19:ASP:CB	9:I:24:ARG:O	2.60	0.48
11:K:24:ASP:HB2	11:K:32:VAL:HG23	1.95	0.48
16:Q:381:ASP:OD1	16:Q:382:GLY:N	2.42	0.48
19:U:38:LEU:O	19:U:42:TRP:HB2	2.12	0.48
1:A:63:ARG:HH11	13:M:57:VAL:HG22	1.76	0.48
2:B:931:TYR:O	2:B:933:SER:N	2.43	0.48
4:D:54:GLU:HB2	4:D:160:VAL:HG11	1.95	0.48
8:H:26:ILE:HG13	8:H:42:ILE:HD12	1.95	0.48
18:T:30:DT:H2"	18:T:31:DT:C7	2.38	0.48
26:3:27:LYS:HB2	26:3:40:GLU:OE2	2.13	0.48
27:4:290:SER:N	27:4:292:CYS:SG	2.86	0.48
30:7:553:GLN:HB2	30:7:703:ALA:O	2.13	0.48
23:0:323:UNK:CB	23:0:380:ARG:HH22	2.26	0.48
1:A:69:THR:HG23	1:A:80:HIS:NE2	2.28	0.48
2:B:810:GLU:HB2	2:B:815:ARG:HH12	1.79	0.48
23:0:234:PHE:HB3	23:0:237:ALA:HB2	1.94	0.48
13:M:267:LYS:HG3	13:M:268:GLU:H	1.78	0.48
31:Z:22:UNK:O	31:Z:26:UNK:CB	2.62	0.48
13:M:118:VAL:HG22	13:M:124:ASN:ND2	2.28	0.48
7:G:119:LEU:HD11	7:G:130:TYR:HB3	1.95	0.48
1:A:338:GLY:HA2	2:B:1129:ARG:HH22	1.79	0.48
23:0:259:ARG:HG2	23:0:262:ARG:HH21	1.78	0.48
23:0:322:UNK:CA	23:0:380:ARG:HH12	2.27	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:6:154:ILE:HD13	29:6:197:LYS:HZ2	1.79	0.48
1:A:1002:GLY:HA3	1:A:1007:ILE:HG21	1.95	0.47
2:B:70:ILE:HG22	2:B:89:GLU:HG3	1.97	0.47
2:B:445:LYS:NZ	17:R:267:GLY:O	2.36	0.47
13:M:273:SER:HA	15:O:187:PRO:HB2	1.96	0.47
29:6:251:ILE:HG12	29:6:276:LEU:HD13	1.95	0.47
1:A:864:ILE:HG12	1:A:1374:VAL:HG22	1.97	0.47
2:B:120:ARG:HG2	2:B:955:THR:HG21	1.95	0.47
5:E:156:LEU:HD11	5:E:197:LYS:HB2	1.96	0.47
5:E:179:GLN:HG2	5:E:181:ALA:H	1.78	0.47
16:Q:102:PRO:HA	17:R:94:LYS:HA	1.97	0.47
17:R:122:LEU:HD21	17:R:222:CYS:HB3	1.97	0.47
1:A:481:ASP:OD2	1:A:483:ASP:OD2	2.31	0.47
2:B:458:LYS:O	2:B:462:ALA:CB	2.63	0.47
15:O:214:LEU:HD22	15:O:223:ILE:HG23	1.96	0.47
17:R:69:TRP:CD1	17:R:219:CYS:HB3	2.49	0.47
18:T:46:DC:H2"	18:T:47:DA:C8	2.49	0.47
2:B:398:ARG:H	2:B:398:ARG:HD2	1.80	0.47
2:B:861:ASP:OD1	2:B:862:GLN:N	2.48	0.47
23:0:156:CYS:SG	23:0:157:GLU:N	2.87	0.47
28:5:55:ASN:HA	28:5:58:LEU:HG	1.96	0.47
30:7:608:PHE:HE2	30:7:670:LEU:HB3	1.79	0.47
1:A:381:THR:HG23	1:A:383:TYR:H	1.78	0.47
2:B:282:ILE:HD12	2:B:382:ILE:HD13	1.96	0.47
13:M:312:GLY:O	13:M:316:LEU:HB2	2.14	0.47
15:O:171:ARG:HB2	15:O:237:PHE:HB3	1.96	0.47
23:0:257:LEU:HD13	23:0:343:LYS:HG2	1.96	0.47
23:0:417:LEU:O	23:0:438:THR:HB	2.14	0.47
1:A:58:LEU:HA	1:A:80:HIS:HB2	1.96	0.47
2:B:810:GLU:HG3	2:B:815:ARG:HH22	1.80	0.47
7:G:123:ALA:HA	7:G:128:PRO:HB3	1.97	0.47
20:V:60:LEU:HA	20:V:86:THR:O	2.15	0.47
21:W:74:GLU:CB	21:W:82:VAL:O	2.63	0.47
21:W:176:MET:HA	21:W:179:ILE:HG22	1.96	0.47
25:2:453:THR:HG22	28:5:10:VAL:HG22	1.95	0.47
30:7:495:ALA:HB3	30:7:498:PHE:CD1	2.50	0.47
31:Z:30:UNK:C	31:Z:41:UNK:CB	2.93	0.47
4:D:123:LEU:HD21	4:D:146:GLN:HA	1.97	0.47
9:I:54:GLU:CG	9:I:88:SER:OG	2.62	0.47
9:I:88:SER:O	9:I:91:ARG:NH1	2.47	0.47
30:7:410:LEU:HB3	30:7:457:TYR:CZ	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:7:534:LYS:HD2	30:7:537:GLU:OE2	2.15	0.47
2:B:336:ARG:HD2	2:B:348:ARG:NH1	2.30	0.46
16:Q:402:ALA:O	16:Q:403:THR:HG23	2.16	0.46
30:7:406:SER:HA	30:7:451:UNK:CB	2.45	0.46
2:B:364:ILE:HG22	2:B:365:THR:HG22	1.96	0.46
28:5:8:ALA:HB3	28:5:42:VAL:O	2.15	0.46
1:A:471:ASN:OD1	1:A:472:LEU:N	2.48	0.46
2:B:194:GLU:HA	2:B:784:ASN:HD22	1.80	0.46
6:F:76:LYS:HA	6:F:79:ARG:HE	1.79	0.46
17:R:97:ILE:HA	17:R:104:ILE:HG22	1.97	0.46
18:T:71:DC:H2"	18:T:72:DA:C8	2.50	0.46
23:0:494:PRO:HB2	23:0:699:GLN:HE22	1.80	0.46
30:7:659:ASP:HB3	30:7:686:ARG:HG3	1.96	0.46
1:A:806:ARG:HD2	2:B:728:ARG:HA	1.97	0.46
1:A:990:VAL:HG12	1:A:994:GLN:HE21	1.80	0.46
2:B:363:HIS:CD2	2:B:364:ILE:HG13	2.49	0.46
7:G:44:TYR:OH	7:G:157:ILE:O	2.28	0.46
17:R:63:ARG:C	17:R:65:ASN:H	2.18	0.46
30:7:565:PHE:HE2	30:7:763:VAL:HG21	1.81	0.46
10:J:17:LYS:HB3	10:J:39:LEU:HD13	1.96	0.46
15:O:95:ASN:N	15:O:95:ASN:OD1	2.47	0.46
1:A:882:SER:O	1:A:1025:ARG:NH2	2.43	0.46
28:5:13:ASP:OD1	28:5:15:SER:OG	2.23	0.46
30:7:691:LEU:HA	30:7:694:LYS:HZ1	1.79	0.46
1:A:308:ILE:HG23	1:A:311:GLN:HB2	1.97	0.46
1:A:561:PRO:HB2	1:A:576:GLN:HE21	1.80	0.46
14:N:21:DG:H1'	14:N:22:DT:H5'	1.98	0.46
18:T:48:DC:C2	18:T:49:DA:C8	3.04	0.46
22:X:218:ASP:HA	22:X:221:ILE:HD12	1.97	0.46
1:A:596:THR:HG22	1:A:597:LEU:H	1.80	0.46
1:A:1012:ARG:HH21	1:A:1015:VAL:HG11	1.81	0.46
2:B:634:TYR:HA	2:B:694:ASP:HA	1.98	0.46
2:B:1172:ILE:HD11	2:B:1183:LYS:HD2	1.98	0.46
9:I:54:GLU:HB3	9:I:88:SER:CB	2.46	0.46
21:W:18:ARG:CZ	22:X:250:GLY:H	2.28	0.46
30:7:495:ALA:HB3	30:7:498:PHE:HD1	1.80	0.46
1:A:563:PRO:HG2	1:A:566:ILE:HG13	1.98	0.46
1:A:993:LEU:HD13	1:A:1046:LEU:HD22	1.98	0.46
2:B:301:ILE:O	2:B:383:ASN:ND2	2.49	0.46
2:B:933:SER:OG	2:B:934:LYS:N	2.49	0.46
8:H:44:VAL:HG13	8:H:48:PRO:HA	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:17:SER:H	11:K:20:LYS:HZ1	1.63	0.46
1:A:1161:THR:HG22	1:A:1163:ILE:H	1.81	0.46
18:T:40:DA:H2"	18:T:41:DC:H5'	1.97	0.46
1:A:855:THR:HG21	1:A:857:ARG:HH21	1.81	0.45
2:B:1004:GLU:OE1	2:B:1064:TYR:OH	2.27	0.45
4:D:158:GLU:OE1	4:D:158:GLU:N	2.41	0.45
23:0:133:CYS:HA	34:0:801:SF4:S4	2.56	0.45
23:0:372:LYS:HD3	23:0:375:ARG:NH1	2.31	0.45
30:7:554:CYS:HB2	30:7:733:PHE:HA	1.97	0.45
30:7:719:SER:O	30:7:723:GLN:HG2	2.16	0.45
2:B:824:ILE:HD13	2:B:1089:PRO:HB3	1.98	0.45
18:T:33:DT:OP1	30:7:467:UNK:CB	2.64	0.45
1:A:53:LEU:HD21	1:A:267:ALA:HB2	1.99	0.45
23:0:70:ILE:HB	23:0:232:VAL:HA	1.96	0.45
23:0:652:ASP:O	23:0:656:PHE:HB3	2.16	0.45
1:A:587:HIS:HA	1:A:607:ILE:O	2.16	0.45
2:B:249:ARG:HG2	2:B:415:GLN:NE2	2.29	0.45
2:B:290:GLY:HA2	2:B:327:ARG:HD2	1.98	0.45
2:B:314:LEU:O	2:B:318:VAL:HG23	2.16	0.45
7:G:21:ARG:HG3	7:G:25:TYR:HE2	1.81	0.45
14:N:61:DG:C2	18:T:47:DA:C2	3.05	0.45
23:0:564:TRP:O	23:0:566:HIS:N	2.40	0.45
24:1:45:ILE:HD12	24:1:62:LEU:HB3	1.97	0.45
24:1:107:ILE:HD12	24:1:110:ARG:HH11	1.81	0.45
25:2:466:GLN:OE1	25:2:466:GLN:N	2.47	0.45
29:6:427:TYR:O	29:6:435:GLU:HA	2.16	0.45
1:A:1191:TRP:CD1	1:A:1256:GLU:HB2	2.52	0.45
9:I:83:ASN:HA	9:I:104:LEU:HG	1.98	0.45
21:W:24:SER:HA	21:W:27:LEU:HB2	1.98	0.45
30:7:573:THR:HA	30:7:577:ARG:HD2	1.97	0.45
2:B:924:GLU:H	2:B:928:ARG:HD2	1.79	0.45
6:F:135:ARG:HA	6:F:144:GLU:O	2.16	0.45
15:O:202:ILE:HG13	15:O:226:ALA:HB2	1.98	0.45
20:V:23:LEU:HD13	20:V:37:ALA:HB1	1.99	0.45
23:0:171:LEU:HD22	23:0:199:MET:HG2	1.99	0.45
1:A:463:ILE:HD12	1:A:464:PRO:O	2.17	0.45
2:B:737:THR:HB	9:I:66:PRO:CB	2.47	0.45
7:G:23:LYS:O	7:G:26:LEU:HB2	2.16	0.45
12:L:43:THR:HG22	12:L:43:THR:O	2.16	0.45
14:N:79:DA:H1'	14:N:80:DA:H5'	1.98	0.45
15:O:227:PHE:HA	15:O:230:ILE:HG22	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:7:561:MET:SD	30:7:584:ASN:ND2	2.90	0.45
1:A:92:HIS:O	1:A:96:ILE:HG13	2.17	0.45
1:A:1146:VAL:HG11	1:A:1207:LEU:CD1	2.47	0.45
2:B:238:ALA:HB2	2:B:385:LEU:HD13	1.99	0.45
16:Q:379:GLU:OE2	16:Q:383:SER:OG	2.35	0.45
30:7:556:GLU:HG2	30:7:707:SER:HB3	1.99	0.45
8:H:5:LEU:HD22	8:H:134:ASN:HB3	1.99	0.45
19:U:260:CYS:HB2	19:U:281:VAL:HB	1.99	0.45
21:W:171:LYS:O	21:W:175:LEU:HB2	2.16	0.45
23:0:215:ASP:H	23:0:219:ALA:HB2	1.81	0.45
25:2:462:PHE:HE1	25:2:471:LEU:HD12	1.82	0.45
26:3:72:ILE:H	26:3:72:ILE:HG13	1.62	0.45
30:7:392:LYS:HD3	30:7:513:LEU:HB3	1.99	0.45
1:A:350:ARG:HA	1:A:487:MET:O	2.17	0.44
1:A:439:ASN:HA	1:A:459:ARG:HG3	1.99	0.44
21:W:179:ILE:HD12	21:W:182:ILE:HD12	1.97	0.44
23:0:196:VAL:O	23:0:200:ILE:HG12	2.17	0.44
2:B:663:ALA:O	2:B:667:GLN:HB2	2.17	0.44
16:Q:352:MET:CG	16:Q:361:TRP:HB2	2.47	0.44
20:V:21:ASP:O	20:V:25:THR:OG1	2.27	0.44
23:0:106:LEU:HD22	23:0:199:MET:HB3	1.99	0.44
24:1:263:TYR:HB2	24:1:266:VAL:HG23	1.98	0.44
29:6:176:ASN:HA	29:6:206:GLY:HA3	2.00	0.44
2:B:859:TYR:OH	2:B:945:GLU:OE1	2.35	0.44
17:R:133:TYR:CD1	17:R:217:THR:HG22	2.52	0.44
1:A:367:PRO:HD2	1:A:370:ILE:HD12	1.98	0.44
1:A:481:ASP:C	1:A:483:ASP:OD1	2.56	0.44
16:Q:376:LEU:CD2	16:Q:386:MET:HE3	2.45	0.44
21:W:152:CYS:O	21:W:154:GLU:HG3	2.17	0.44
1:A:104:GLU:OE1	1:A:139:TRP:NE1	2.47	0.44
13:M:262:LYS:O	13:M:266:ILE:HG13	2.17	0.44
18:T:75:DG:H1'	18:T:76:DC:H5'	1.98	0.44
2:B:281:PRO:HD2	2:B:284:ILE:HD12	2.00	0.44
2:B:499:ASN:OD1	2:B:500:THR:N	2.50	0.44
2:B:412:LEU:HB3	2:B:466:TRP:CE2	2.53	0.44
13:M:44:VAL:HG22	13:M:51:VAL:HA	2.00	0.44
14:N:72:DA:H5'	14:N:72:DA:C8	2.53	0.44
20:V:61:THR:HB	20:V:86:THR:HB	1.99	0.44
21:W:169:GLN:NE2	26:3:15:ILE:HG12	2.33	0.44
23:0:168:GLU:HA	23:0:199:MET:HE2	2.00	0.44
2:B:195:CYS:HB3	2:B:782:LEU:HD22	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:D:63:LEU:HD13	4:D:130:LEU:HD13	1.99	0.44
13:M:267:LYS:HG2	15:O:239:LYS:HD3	1.98	0.44
14:N:69:DC:H2"	14:N:70:DA:C8	2.53	0.44
28:5:62:ILE:HA	30:7:717:TYR:CZ	2.53	0.44
29:6:262:LYS:HE2	29:6:264:LEU:HD21	1.99	0.44
1:A:1051:ALA:O	1:A:1055:ARG:HG2	2.18	0.44
2:B:273:LEU:HD12	2:B:280:ILE:HD12	2.00	0.44
6:F:123:LYS:NZ	6:F:127:GLU:OE2	2.51	0.44
13:M:166:LYS:HB3	13:M:170:SER:HB3	2.00	0.44
23:0:232:VAL:HB	23:0:456:VAL:HG13	1.99	0.44
1:A:116:ASP:OD1	1:A:117:GLU:N	2.43	0.43
1:A:339:ASN:HB3	2:B:1199:ALA:HB1	2.00	0.43
1:A:362:ASP:OD2	1:A:459:ARG:NH1	2.51	0.43
1:A:882:SER:OG	1:A:953:ASN:ND2	2.51	0.43
2:B:954:VAL:HG11	2:B:962:LYS:HE3	1.98	0.43
7:G:102:GLN:HE22	7:G:107:LYS:HE2	1.83	0.43
21:W:264:UNK:C	24:1:120:LYS:HZ2	2.31	0.43
23:0:197:ARG:HG3	23:0:221:ARG:NH1	2.33	0.43
1:A:351:THR:O	1:A:486:GLU:HA	2.18	0.43
1:A:377:PRO:HB3	1:A:433:GLU:HG2	2.00	0.43
1:A:1035:TYR:HB3	1:A:1037:LEU:HG	2.01	0.43
14:N:73:DC:H2"	14:N:74:DA:C8	2.52	0.43
14:N:83:DT:H2"	14:N:84:DC:C5	2.54	0.43
19:U:267:VAL:HG12	19:U:269:ILE:HG13	2.00	0.43
21:W:99:LYS:HE3	22:X:278:LEU:HD13	2.00	0.43
1:A:925:LEU:HD22	1:A:983:ILE:HB	2.00	0.43
2:B:223:VAL:HG22	2:B:240:ILE:HD12	1.99	0.43
2:B:226:PHE:HA	2:B:395:GLN:HG3	1.99	0.43
9:I:54:GLU:CA	9:I:88:SER:OG	2.66	0.43
1:A:405:VAL:HG13	1:A:432:VAL:HG22	2.01	0.43
13:M:198:VAL:HG12	13:M:198:VAL:O	2.18	0.43
19:U:253:ARG:HD2	19:U:258:TRP:CZ2	2.54	0.43
30:7:608:PHE:CG	30:7:686:ARG:NH1	2.87	0.43
1:A:407:ARG:HH11	1:A:413:ILE:HD11	1.84	0.43
1:A:546:VAL:HG21	1:A:572:TRP:HB2	1.99	0.43
1:A:1146:VAL:HG11	1:A:1207:LEU:HD12	2.00	0.43
1:A:1409:LEU:HD13	2:B:1207:LEU:HD21	1.99	0.43
13:M:267:LYS:CG	13:M:268:GLU:H	2.32	0.43
13:M:325:ASP:HB3	13:M:326:PRO:HD3	2.00	0.43
15:O:76:LEU:HD13	15:O:143:ILE:HG21	2.00	0.43
23:0:416:PHE:CE2	23:0:437:PHE:HB2	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:7:459:MET:O	30:7:462:ASN:ND2	2.51	0.43
30:7:495:ALA:O	30:7:499:ARG:HG2	2.18	0.43
7:G:97:HIS:O	7:G:112:LYS:N	2.51	0.43
7:G:143:ILE:HG13	7:G:170:ALA:HA	2.01	0.43
14:N:60:DT:H2"	14:N:61:DG:H8	1.81	0.43
14:N:77:DA:H4'	14:N:78:DA:OP1	2.18	0.43
18:T:80:DT:H6	18:T:80:DT:H2'	1.70	0.43
23:0:217:LYS:NZ	23:0:218:ILE:HD11	2.34	0.43
23:0:432:ASN:O	23:0:434:ILE:N	2.52	0.43
30:7:515:ALA:HB1	30:7:692:ARG:HH12	1.83	0.43
1:A:697:ALA:HB1	9:I:97:MET:HE3	2.01	0.43
2:B:376:PHE:HE2	2:B:567:GLU:HA	1.84	0.43
2:B:1058:LEU:O	2:B:1062:HIS:ND1	2.50	0.43
2:B:1073:TYR:CE1	2:B:1080:LYS:HG2	2.53	0.43
8:H:5:LEU:HD11	8:H:61:SER:HB3	2.00	0.43
8:H:64:ASN:OD1	8:H:65:LEU:N	2.52	0.43
14:N:74:DA:H1'	14:N:75:DT:H5"	2.00	0.43
30:7:382:GLY:HA3	30:7:535:LEU:HG	2.00	0.43
1:A:113:LEU:HD11	1:A:218:ASP:HA	2.01	0.43
1:A:167:CYS:SG	1:A:168:GLY:N	2.92	0.43
2:B:276:ILE:HA	2:B:338:GLY:HA3	1.99	0.43
13:M:187:ARG:NH1	13:M:241:ARG:HH21	2.17	0.43
17:R:262:THR:O	17:R:266:THR:HG23	2.19	0.43
24:1:266:VAL:O	24:1:270:TYR:HB2	2.19	0.43
1:A:1386:ARG:NH1	18:T:53:DG:H5"	2.33	0.43
2:B:1074:ASN:OD1	2:B:1075:GLY:N	2.52	0.43
13:M:171:ILE:H	13:M:171:ILE:HG13	1.66	0.43
17:R:258:THR:O	17:R:260:GLY:N	2.42	0.43
30:7:387:PRO:HB3	30:7:692:ARG:HD3	2.01	0.43
15:O:199:LYS:HA	15:O:200:PRO:HA	1.84	0.43
25:2:480:VAL:HG11	25:2:497:GLY:HA3	2.00	0.43
1:A:399:HIS:HB3	1:A:400:PRO:HD3	2.00	0.42
1:A:966:ASN:O	1:A:970:THR:OG1	2.25	0.42
3:C:262:LEU:HD22	11:K:87:LEU:HD23	2.01	0.42
16:Q:388:PRO:HB2	17:R:82:ARG:NH1	2.34	0.42
1:A:849:MET:SD	1:A:849:MET:N	2.92	0.42
2:B:1008:PRO:HB3	2:B:1087:PHE:HE1	1.84	0.42
9:I:103:CYS:SG	9:I:105:SER:OG	2.71	0.42
12:L:38:LEU:HD23	12:L:40:LEU:HD23	2.01	0.42
14:N:17:DC:H1'	14:N:18:DT:H5'	2.01	0.42
14:N:33:DT:C2	18:T:75:DG:N2	2.87	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:O:94:TYR:CZ	15:O:96:PRO:HG3	2.54	0.42
18:T:24:DA:H2'	18:T:25:DT:H71	2.02	0.42
28:5:44:PRO:HA	28:5:47:VAL:HG23	2.01	0.42
1:A:375:THR:HB	1:A:403:LYS:HD3	2.01	0.42
1:A:1260:LEU:O	1:A:1264:GLU:HG3	2.19	0.42
5:E:144:ILE:H	5:E:144:ILE:HG13	1.71	0.42
17:R:105:THR:OG1	17:R:106:LEU:N	2.52	0.42
1:A:148:CYS:O	1:A:168:GLY:HA2	2.19	0.42
1:A:362:ASP:O	1:A:458:HIS:ND1	2.51	0.42
1:A:372:LYS:HA	1:A:435:HIS:HD2	1.84	0.42
2:B:283:VAL:O	2:B:287:ARG:HG2	2.19	0.42
13:M:268:GLU:C	13:M:270:ALA:H	2.23	0.42
30:7:379:ALA:H	30:7:508:HIS:CE1	2.37	0.42
1:A:443:LEU:HD21	1:A:501:LEU:HD11	2.00	0.42
1:A:913:LEU:HD11	1:A:919:ILE:HG13	2.02	0.42
2:B:474:SER:O	2:B:476:ARG:N	2.52	0.42
7:G:98:GLY:HA3	7:G:110:VAL:O	2.20	0.42
13:M:142:LEU:HD23	13:M:146:VAL:HG11	2.01	0.42
18:T:93:DT:H2"	18:T:94:DG:C8	2.54	0.42
2:B:186:GLU:OE2	10:J:62:ARG:NH1	2.52	0.42
2:B:487:THR:HG23	2:B:490:SER:H	1.85	0.42
2:B:884:ARG:HG3	2:B:935:ARG:HE	1.84	0.42
14:N:43:DT:H2"	14:N:44:DC:H5'	2.01	0.42
18:T:33:DT:H2"	18:T:34:DG:C8	2.55	0.42
19:U:9:VAL:HG13	20:V:51:THR:HG21	2.00	0.42
23:0:114:LEU:HA	23:0:182:LEU:HD21	2.01	0.42
25:2:465:SER:O	25:2:469:ASN:ND2	2.32	0.42
28:5:7:GLY:HA3	28:5:41:LEU:HD11	2.01	0.42
30:7:372:LYS:HB3	30:7:380:ARG:HH12	1.85	0.42
2:B:950:ASP:HB2	2:B:969:ARG:HG2	2.02	0.42
6:F:97:ARG:NE	6:F:124:GLU:OE1	2.38	0.42
14:N:80:DA:OP2	30:7:495:ALA:HB2	2.20	0.42
21:W:9:VAL:HG22	21:W:189:ILE:HD13	2.01	0.42
21:W:77:PRO:C	21:W:79:SER:H	2.23	0.42
29:6:211:GLN:HE22	29:6:245:GLY:C	2.22	0.42
2:B:279:ASP:OD1	2:B:279:ASP:N	2.50	0.42
2:B:451:LYS:O	2:B:455:SER:HB2	2.20	0.42
14:N:43:DT:C1'	14:N:44:DC:H5'	2.50	0.42
23:0:692:GLN:HG3	23:0:693:LEU:HG	2.01	0.42
24:1:30:ARG:HA	24:1:37:VAL:HG12	2.02	0.42
8:H:7:ASP:OD1	8:H:58:THR:OG1	2.37	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:H:81:PRO:HA	8:H:82:PRO:HD3	1.97	0.42
14:N:61:DG:H2"	14:N:62:DT:C6	2.55	0.42
15:O:151:LYS:HG2	15:O:153:THR:HG23	2.02	0.42
23:0:372:LYS:N	23:0:373:PRO:CD	2.83	0.42
1:A:74:MET:O	2:B:1116:ARG:NH2	2.48	0.41
3:C:230:MET:HE3	3:C:230:MET:HB3	1.94	0.41
14:N:10:DT:H2"	14:N:11:DA:N7	2.35	0.41
23:0:621:LEU:HA	23:0:680:VAL:HG23	2.02	0.41
27:4:226:GLN:O	27:4:230:ALA:CB	2.68	0.41
30:7:497:MET:HG3	30:7:498:PHE:N	2.35	0.41
1:A:54:ASN:OD1	1:A:54:ASN:N	2.52	0.41
1:A:348:SER:HB2	2:B:1128:LEU:HD12	2.01	0.41
1:A:1022:LEU:O	1:A:1026:LEU:HB2	2.20	0.41
6:F:146:TRP:HB3	6:F:151:LEU:HD21	2.03	0.41
7:G:83:LYS:HG2	7:G:149:GLY:HA2	2.01	0.41
1:A:53:LEU:HD23	1:A:263:THR:HG22	2.03	0.41
1:A:230:ARG:HB2	1:A:233:TRP:CG	2.55	0.41
3:C:19:ASP:HA	3:C:231:ASN:HA	2.00	0.41
3:C:68:GLY:HA3	12:L:69:ALA:HB1	2.01	0.41
21:W:26:VAL:HA	21:W:29:LEU:HB3	2.00	0.41
1:A:663:SER:OG	2:B:1084:GLN:O	2.25	0.41
1:A:1191:TRP:CZ3	1:A:1257:ASP:HB3	2.55	0.41
2:B:70:ILE:HG21	16:Q:335:LEU:HD21	2.01	0.41
6:F:136:ARG:O	6:F:143:PHE:HA	2.21	0.41
11:K:58:PHE:HB3	11:K:76:GLN:HB3	2.01	0.41
14:N:80:DA:H1'	14:N:81:DT:H5'	2.02	0.41
16:Q:376:LEU:HB2	17:R:69:TRP:HB2	2.01	0.41
23:0:492:PHE:CE2	23:0:715:SER:HB3	2.53	0.41
30:7:410:LEU:HB3	30:7:457:TYR:CE1	2.56	0.41
30:7:519:ARG:HE	30:7:682:GLN:HE22	1.67	0.41
30:7:609:SER:HB2	30:7:615:LEU:HD13	2.02	0.41
2:B:54:PHE:O	2:B:58:THR:HB	2.21	0.41
2:B:778:MET:HA	2:B:1096:ARG:HH12	1.86	0.41
2:B:910:VAL:HA	2:B:940:PRO:HA	2.01	0.41
13:M:269:ILE:HG23	13:M:272:LYS:HE3	2.03	0.41
14:N:35:DT:H2"	14:N:36:DG:C8	2.56	0.41
26:3:44:ASP:O	26:3:48:SER:CB	2.69	0.41
30:7:582:ILE:HG23	30:7:673:ILE:HG22	2.03	0.41
1:A:481:ASP:N	1:A:481:ASP:OD1	2.52	0.41
2:B:793:ALA:HB3	2:B:856:PHE:HB2	2.03	0.41
15:O:108:GLU:HA	15:O:109:PRO:HA	1.87	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:Q:378:VAL:HG22	16:Q:384:PHE:CD1	2.56	0.41
23:0:198:ARG:HA	23:0:198:ARG:HH11	1.86	0.41
1:A:481:ASP:CG	1:A:483:ASP:OD1	2.59	0.41
2:B:70:ILE:HG12	16:Q:335:LEU:HD21	2.03	0.41
7:G:122:ASN:HB3	7:G:129:SER:O	2.21	0.41
16:Q:139:LEU:HD23	17:R:212:THR:HG21	2.03	0.41
18:T:96:DT:H6	18:T:96:DT:H2'	1.73	0.41
23:0:635:LEU:O	23:0:639:LEU:CB	2.62	0.41
2:B:895:ASP:OD2	12:L:42:ARG:NH2	2.54	0.41
2:B:1171:VAL:HG22	2:B:1182:CYS:HB2	2.03	0.41
5:E:136:ASN:OD1	5:E:137:GLU:N	2.54	0.41
13:M:171:ILE:HD12	13:M:172:MET:HG3	2.03	0.41
13:M:268:GLU:OE1	13:M:319:HIS:NE2	2.38	0.41
15:O:124:THR:OG1	18:T:81:DA:H1'	2.20	0.41
21:W:187:LYS:HD3	21:W:187:LYS:HA	1.69	0.41
23:0:259:ARG:HH22	23:0:397:THR:HB	1.85	0.41
1:A:1194:ARG:HA	1:A:1238:ILE:O	2.20	0.41
5:E:124:VAL:H	5:E:125:PRO:HD2	1.85	0.41
6:F:76:LYS:HB3	6:F:79:ARG:HH21	1.85	0.41
7:G:126:ASN:HA	7:G:127:PRO:HA	1.96	0.41
13:M:186:ALA:HB1	13:M:238:TYR:CZ	2.56	0.41
15:O:71:VAL:HG13	15:O:124:THR:HB	2.03	0.41
23:0:155:LEU:O	23:0:156:CYS:HB2	2.21	0.41
23:0:257:LEU:O	23:0:343:LYS:NZ	2.53	0.41
23:0:655:SER:O	23:0:659:MET:HB2	2.20	0.41
25:2:483:TRP:CZ2	28:5:35:LEU:HB3	2.55	0.41
2:B:102:VAL:HG23	2:B:112:LEU:HB2	2.03	0.41
2:B:259:TYR:HE1	2:B:270:LYS:HB2	1.85	0.41
2:B:1135:ARG:HG3	2:B:1147:LEU:HD11	2.03	0.41
7:G:93:SER:OG	7:G:100:GLU:OE1	2.39	0.41
9:I:55:THR:CG2	9:I:100:PHE:CE2	3.03	0.41
19:U:264:ASP:OD1	19:U:277:GLN:NE2	2.54	0.41
21:W:140:LEU:HD22	21:W:147:PHE:HE1	1.85	0.41
1:A:1420:ASP:OD1	1:A:1420:ASP:N	2.54	0.40
4:D:165:GLN:HE21	4:D:165:GLN:HB3	1.68	0.40
5:E:26:ARG:NH2	5:E:133:GLU:OE1	2.54	0.40
8:H:56:THR:HB	8:H:145:ARG:HG2	2.03	0.40
8:H:93:TYR:CG	8:H:143:LEU:HB3	2.56	0.40
23:0:195:ILE:O	23:0:199:MET:HB2	2.21	0.40
24:1:340:UNK:O	24:1:341:UNK:CB	2.69	0.40
1:A:217:LYS:NZ	1:A:221:SER:OG	2.42	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:497:THR:O	1:A:501:LEU:HB2	2.20	0.40
1:A:635:ARG:NH2	1:A:876:ALA:O	2.54	0.40
1:A:802:ASN:HA	1:A:806:ARG:HH21	1.87	0.40
1:A:1242:VAL:HG12	1:A:1243:VAL:N	2.36	0.40
2:B:26:THR:OG1	2:B:27:ALA:N	2.54	0.40
2:B:26:THR:HG23	2:B:29:ASP:H	1.86	0.40
2:B:780:VAL:HG22	2:B:795:ILE:HG23	2.04	0.40
3:C:255:VAL:HG21	11:K:94:ILE:HG21	2.04	0.40
4:D:56:ARG:HH22	4:D:155:ARG:HE	1.68	0.40
7:G:45:ILE:HA	7:G:78:VAL:HG12	2.02	0.40
1:A:217:LYS:O	1:A:221:SER:OG	2.33	0.40
1:A:885:THR:HB	1:A:943:LEU:HD12	2.03	0.40
2:B:443:ASN:HD22	2:B:446:LEU:HG	1.86	0.40
2:B:757:PRO:HG2	2:B:984:HIS:CE1	2.56	0.40
2:B:1183:LYS:HE3	2:B:1183:LYS:HB3	1.83	0.40
9:I:54:GLU:HG2	9:I:88:SER:OG	2.22	0.40
14:N:73:DC:H2"	14:N:74:DA:N7	2.36	0.40
18:T:95:DC:H6	18:T:95:DC:H2'	1.69	0.40
23:0:406:ALA:HA	23:0:409:ILE:HG12	2.02	0.40
1:A:149:GLU:H	1:A:164:ARG:HH21	1.70	0.40
2:B:649:LYS:HZ1	2:B:738:PHE:HD2	1.70	0.40
2:B:657:HIS:HA	2:B:660:LYS:HZ3	1.86	0.40
8:H:90:ALA:HB1	8:H:96:VAL:HG21	2.03	0.40
20:V:61:THR:O	20:V:85:VAL:HA	2.21	0.40
23:0:259:ARG:NH1	23:0:398:ALA:HB2	2.37	0.40
1:A:214:ILE:HG22	1:A:219:PHE:HD2	1.87	0.40
7:G:115:MET:O	7:G:164:LYS:NZ	2.49	0.40
18:T:96:DT:H2"	18:T:97:DA:C8	2.56	0.40
23:0:117:HIS:N	23:0:118:PRO:HD2	2.36	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	1386/1733 (80%)	1297 (94%)	78 (6%)	11 (1%)	19	60
2	B	1136/1224 (93%)	1064 (94%)	62 (6%)	10 (1%)	17	56
3	C	260/318 (82%)	236 (91%)	20 (8%)	4 (2%)	10	46
4	D	153/221 (69%)	145 (95%)	7 (5%)	1 (1%)	22	62
5	E	211/215 (98%)	202 (96%)	8 (4%)	1 (0%)	29	68
6	F	81/155 (52%)	79 (98%)	2 (2%)	0	100	100
7	G	169/171 (99%)	156 (92%)	12 (7%)	1 (1%)	25	65
8	H	132/146 (90%)	117 (89%)	12 (9%)	3 (2%)	6	36
9	I	114/122 (93%)	99 (87%)	15 (13%)	0	100	100
10	J	63/70 (90%)	58 (92%)	3 (5%)	2 (3%)	4	30
11	K	110/120 (92%)	109 (99%)	1 (1%)	0	100	100
12	L	43/70 (61%)	37 (86%)	6 (14%)	0	100	100
13	M	273/345 (79%)	252 (92%)	16 (6%)	5 (2%)	8	41
15	O	178/240 (74%)	164 (92%)	13 (7%)	1 (1%)	25	65
16	Q	140/735 (19%)	119 (85%)	16 (11%)	5 (4%)	3	28
17	R	176/400 (44%)	160 (91%)	15 (8%)	1 (1%)	25	65
19	U	88/286 (31%)	82 (93%)	4 (4%)	2 (2%)	6	36
20	V	96/122 (79%)	92 (96%)	3 (3%)	1 (1%)	15	54
21	W	196/586 (33%)	187 (95%)	7 (4%)	2 (1%)	15	54
22	X	156/328 (48%)	129 (83%)	23 (15%)	4 (3%)	5	34
23	0	659/778 (85%)	590 (90%)	54 (8%)	15 (2%)	6	36
24	1	316/641 (49%)	303 (96%)	9 (3%)	4 (1%)	12	48
25	2	284/462 (62%)	266 (94%)	17 (6%)	1 (0%)	34	72
26	3	136/321 (42%)	115 (85%)	18 (13%)	3 (2%)	6	37
27	4	257/338 (76%)	231 (90%)	17 (7%)	9 (4%)	3	28
28	5	64/72 (89%)	59 (92%)	5 (8%)	0	100	100
29	6	289/461 (63%)	260 (90%)	26 (9%)	3 (1%)	15	54
30	7	361/843 (43%)	333 (92%)	23 (6%)	5 (1%)	11	47
All	All	7527/11523 (65%)	6941 (92%)	492 (6%)	94 (1%)	17	50

All (94) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
16	Q	127	ILE
21	W	77	PRO
23	0	156	CYS
23	0	254	THR
27	4	88	PRO
27	4	290	SER
2	B	830	TYR
2	B	933	SER
7	G	63	PRO
13	M	269	ILE
16	Q	405	THR
21	W	78	ASN
22	X	251	ASN
23	0	349	LEU
24	1	275	PRO
26	3	124	ILE
30	7	461	ALA
2	B	277	LYS
2	B	475	SER
3	C	214	ASN
8	H	60	ALA
13	M	268	GLU
16	Q	406	ILE
19	U	255	LYS
22	X	152	SER
23	0	62	HIS
23	0	217	LYS
23	0	471	ARG
24	1	25	ALA
24	1	74	ASP
27	4	87	TYR
27	4	170	THR
27	4	291	VAL
27	4	307	ALA
29	6	244	PRO
30	7	494	PRO
30	7	550	ALA
30	7	696	ARG
1	A	47	ARG
1	A	67	CYS
1	A	567	LYS
1	A	958	VAL
2	B	364	ILE

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Mol	Chain	Res	Type
2	B	957	ASN
3	C	93	ASP
4	D	156	ASP
8	H	83	GLN
10	J	9	SER
19	U	264	ASP
20	V	6	TYR
23	0	432	ASN
23	0	683	ASP
24	1	277	ASN
25	2	451	VAL
27	4	115	TYR
27	4	305	CYS
27	4	306	PRO
29	6	451	CYS
30	7	667	ALA
1	A	35	ILE
1	A	50	ILE
1	A	525	GLN
1	A	569	LYS
2	B	339	THR
2	B	705	MET
3	C	236	GLY
5	E	124	VAL
10	J	3	VAL
13	M	271	GLY
22	X	240	THR
23	0	249	SER
23	0	433	PRO
23	0	473	LEU
23	0	606	VAL
26	3	75	ASP
29	6	286	SER
1	A	464	PRO
2	B	1046	PRO
13	M	273	SER
16	Q	329	THR
16	Q	367	ALA
26	3	73	PHE
15	O	147	GLY
22	X	205	ILE
23	0	536	GLY

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Mol	Chain	Res	Type
2	B	343	ILE
23	0	372	LYS
1	A	61	ILE
3	C	182	PRO
8	H	59	ILE
17	R	215	VAL
1	A	1327	ILE
13	M	32	PRO
23	0	369	ILE

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	1221/1520 (80%)	1218 (100%)	3 (0%)	93 96
2	B	1000/1061 (94%)	997 (100%)	3 (0%)	92 95
3	C	230/274 (84%)	228 (99%)	2 (1%)	78 88
4	D	139/200 (70%)	137 (99%)	2 (1%)	67 81
5	E	195/197 (99%)	194 (100%)	1 (0%)	88 93
6	F	73/137 (53%)	73 (100%)	0	100 100
7	G	152/152 (100%)	152 (100%)	0	100 100
8	H	119/128 (93%)	119 (100%)	0	100 100
9	I	110/116 (95%)	108 (98%)	2 (2%)	59 77
10	J	60/65 (92%)	60 (100%)	0	100 100
11	K	97/102 (95%)	97 (100%)	0	100 100
12	L	40/57 (70%)	40 (100%)	0	100 100
13	M	245/299 (82%)	245 (100%)	0	100 100
15	O	152/205 (74%)	152 (100%)	0	100 100
16	Q	109/641 (17%)	108 (99%)	1 (1%)	78 88
17	R	107/363 (30%)	106 (99%)	1 (1%)	78 88
19	U	84/260 (32%)	84 (100%)	0	100 100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles
20	V	90/108 (83%)	90 (100%)	0	100 100
21	W	161/244 (66%)	161 (100%)	0	100 100
22	X	62/295 (21%)	62 (100%)	0	100 100
23	0	413/677 (61%)	406 (98%)	7 (2%)	60 78
24	1	179/341 (52%)	177 (99%)	2 (1%)	73 85
25	2	53/273 (19%)	53 (100%)	0	100 100
26	3	53/303 (18%)	53 (100%)	0	100 100
27	4	4/260 (2%)	3 (75%)	1 (25%)	0 4
28	5	53/66 (80%)	53 (100%)	0	100 100
29	6	173/378 (46%)	173 (100%)	0	100 100
30	7	315/695 (45%)	308 (98%)	7 (2%)	52 71
All	All	5689/9417 (60%)	5657 (99%)	32 (1%)	86 92

All (32) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	22	PHE
1	A	444	PHE
1	A	1259	MET
2	B	398	ARG
2	B	579	ARG
2	B	604	ARG
3	C	95	CYS
3	C	222	LYS
4	D	153	ARG
4	D	165	GLN
5	E	37	LEU
9	I	42	LEU
9	I	43	VAL
16	Q	350	TRP
17	R	251	ARG
23	0	133	CYS
23	0	199	MET
23	0	411	THR
23	0	440	LEU
23	0	522	TYR
23	0	647	ARG
23	0	685	ARG

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Mol	Chain	Res	Type
24	1	71	LYS
24	1	276	LYS
27	4	292	CYS
30	7	373	MET
30	7	622	MET
30	7	681	ARG
30	7	695	ARG
30	7	701	PHE
30	7	715	GLU
30	7	737	THR

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (92) such sidechains are listed below:

Mol	Chain	Res	Type
1	A	18	GLN
1	A	64	ASN
1	A	68	GLN
1	A	256	GLN
1	A	311	GLN
1	A	313	GLN
1	A	339	ASN
1	A	363	GLN
1	A	517	ASN
1	A	525	GLN
1	A	589	GLN
1	A	611	GLN
1	A	640	GLN
1	A	698	GLN
1	A	745	GLN
1	A	760	GLN
1	A	881	GLN
1	A	953	ASN
1	A	965	GLN
1	A	968	GLN
1	A	994	GLN
1	A	1040	GLN
1	A	1130	GLN
1	A	1140	HIS
2	B	60	GLN
2	B	115	GLN
2	B	395	GLN
2	B	415	GLN

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Mol	Chain	Res	Type
2	B	433	GLN
2	B	573	GLN
2	B	657	HIS
2	B	667	GLN
2	B	763	GLN
2	B	1093	GLN
2	B	1161	HIS
2	B	1193	GLN
2	B	1195	HIS
3	C	73	GLN
3	C	102	GLN
3	C	224	GLN
3	C	231	ASN
3	C	242	GLN
3	C	264	GLN
4	D	157	GLN
4	D	165	GLN
4	D	179	GLN
5	E	54	GLN
7	G	96	GLN
7	G	102	GLN
8	H	83	GLN
9	I	60	GLN
10	J	53	HIS
11	K	112	GLN
13	M	90	ASN
13	M	114	GLN
13	M	193	GLN
13	M	235	ASN
15	O	91	ASN
15	O	158	GLN
16	Q	117	HIS
19	U	33	GLN
19	U	280	GLN
20	V	55	ASN
20	V	84	GLN
21	W	107	GLN
21	W	178	GLN
22	X	216	GLN
22	X	223	GLN
22	X	267	GLN
22	X	279	GLN

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Mol	Chain	Res	Type
23	0	239	ASN
23	0	651	ASN
23	0	716	ASN
24	1	38	HIS
24	1	49	GLN
24	1	92	ASN
24	1	258	ASN
28	5	11	GLN
28	5	22	GLN
29	6	211	GLN
29	6	212	ASN
29	6	269	GLN
29	6	281	ASN
29	6	302	ASN
30	7	491	HIS
30	7	508	HIS
30	7	584	ASN
30	7	592	GLN
30	7	648	GLN
30	7	672	GLN
30	7	676	HIS
30	7	682	GLN

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 monosaccharides in this entry.

5.6 Ligand geometry

Of 18 ligands modelled in this entry, 17 are monoatomic - leaving 1 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	$\#\|Z\| > 2$
34	SF4	0	801	23	0,12,12	-	-	-		

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
34	SF4	0	801	23	-	-	0/6/5/5

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

1 monomer is involved in 3 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
34	0	801	SF4	3	0

5.7 Other polymers (i)

There are no such residues in this entry.

5.8 Polymer linkage issues (i)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
21	W	2
24	1	2
25	2	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	W	373:UNK	C	407:UNK	N	85.52
1	1	394:UNK	C	465:UNK	N	84.00
1	W	289:UNK	C	349:UNK	N	45.11
1	2	419:UNK	C	433:LEU	N	13.48
1	1	519:UNK	C	537:GLU	N	11.51

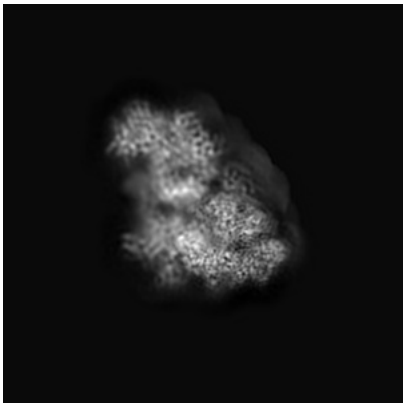
6 Map visualisation

This section contains visualisations of the EMDB entry EMD-3846. These allow visual inspection of the internal detail of the map and identification of artifacts.

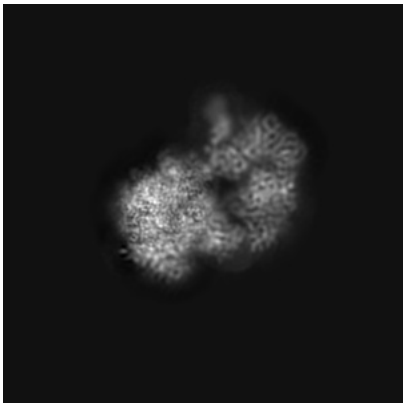
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

6.1 Orthogonal projections

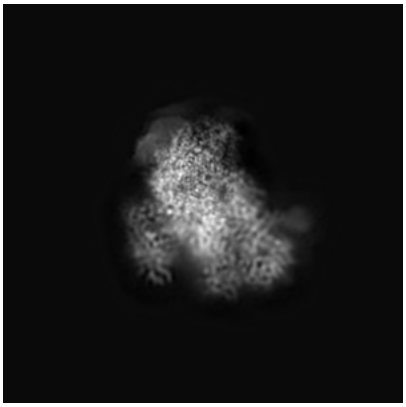
6.1.1 Primary map



X



Y



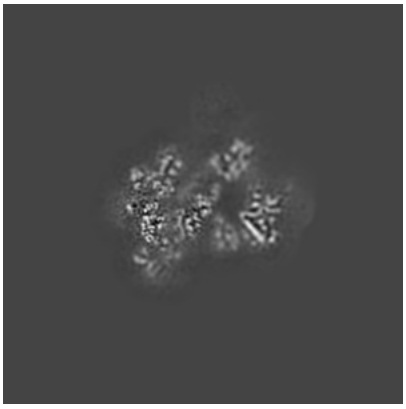
Z

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

6.2 Central slices

6.2.1 Primary map

X Index: 175



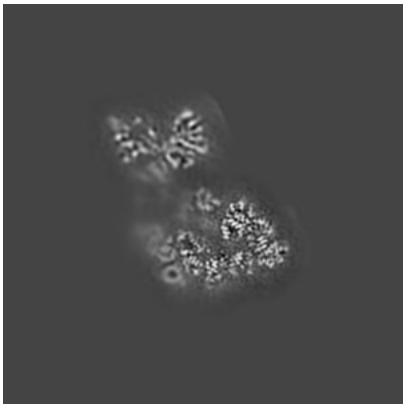
Y Index: 175

Z Index: 175

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

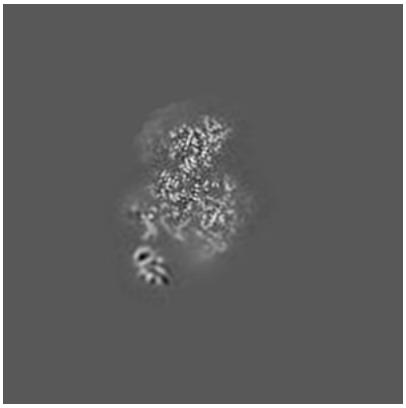
6.3 Largest variance slices (i)

6.3.1 Primary map



X Index: 182

Y Index: 167



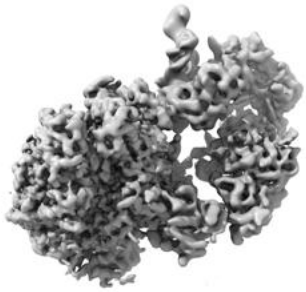
Z Index: 133

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

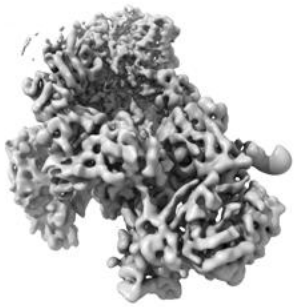
6.4 Orthogonal surface views (i)

6.4.1 Primary map

X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.066. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

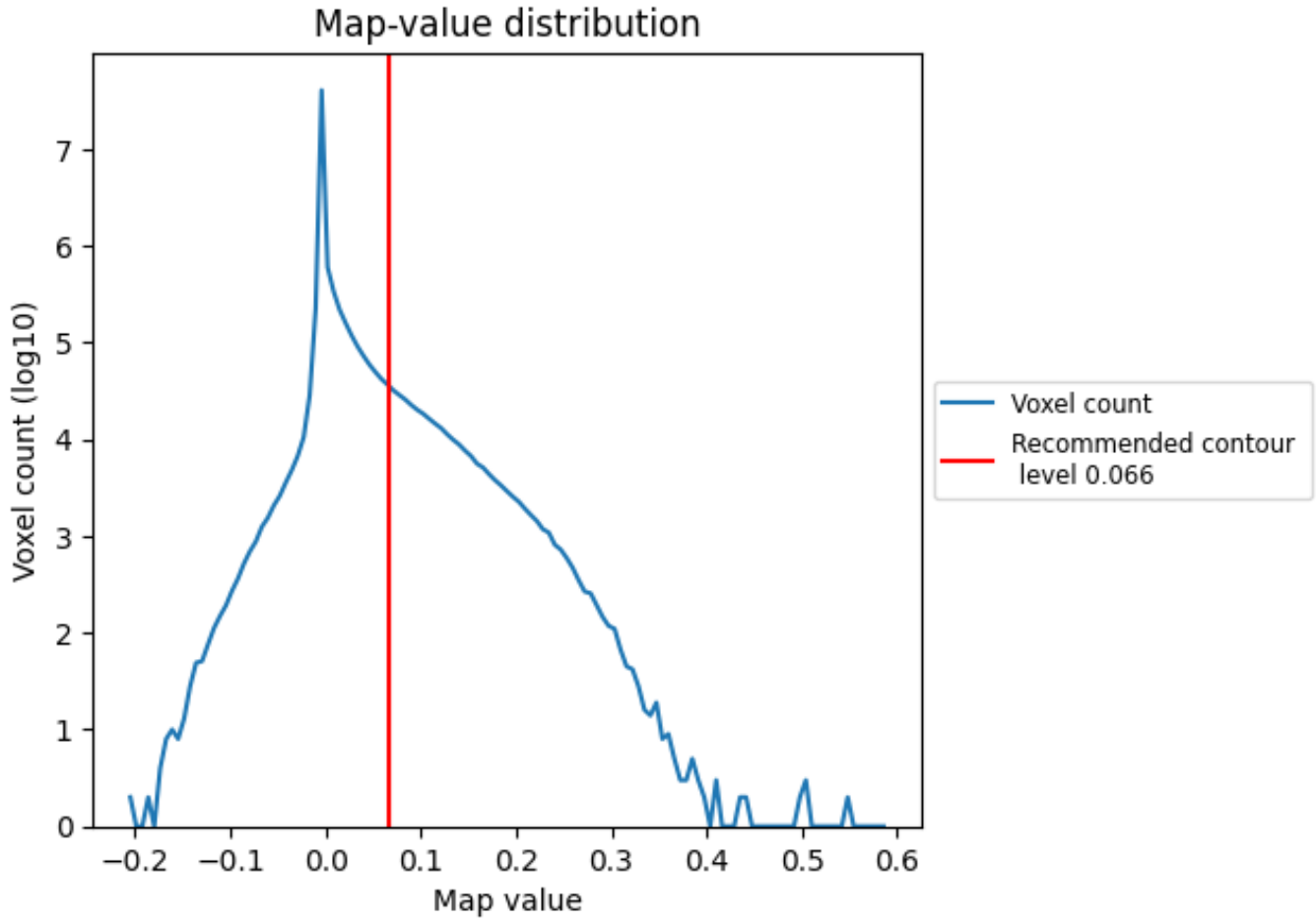
6.5 Mask visualisation (i)

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

7 Map analysis

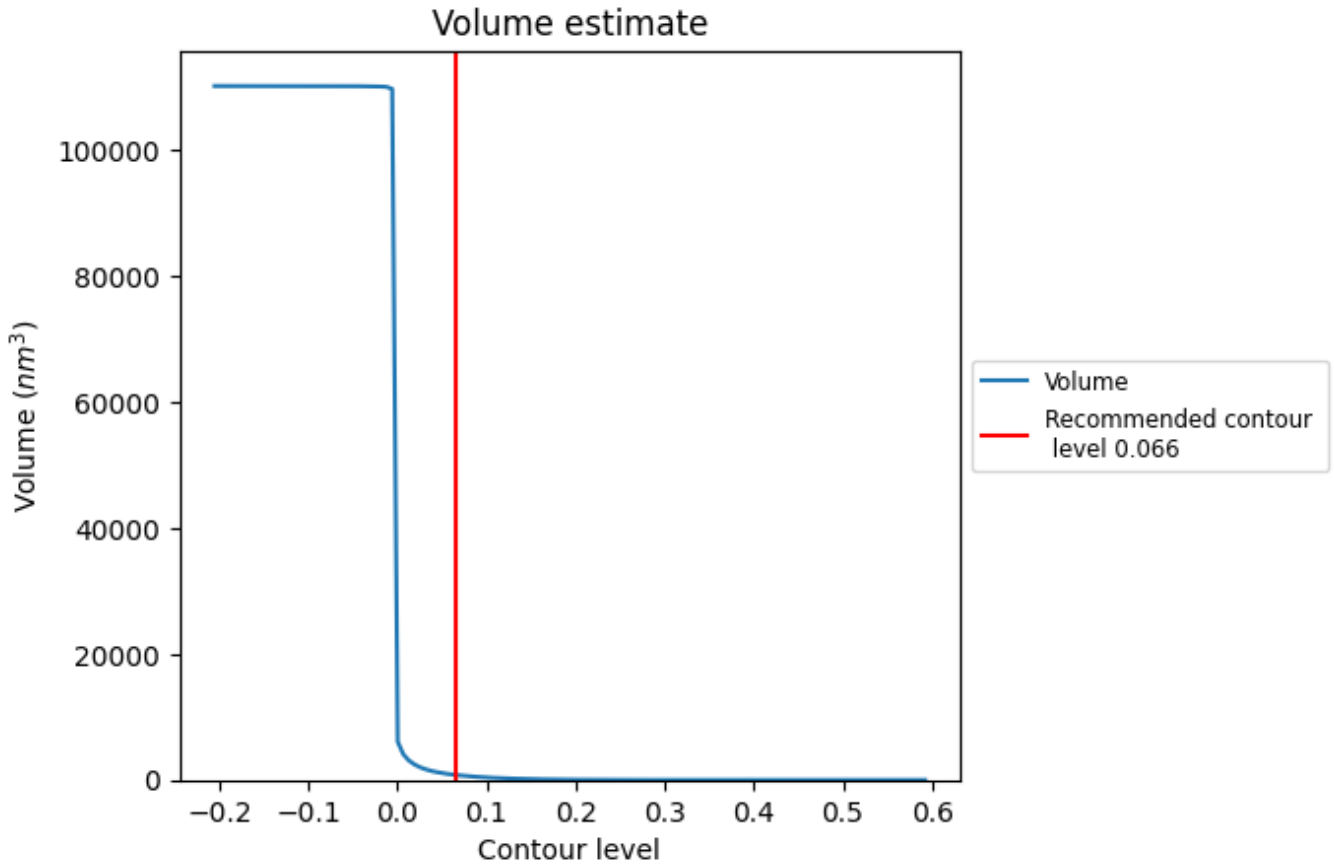
This section contains the results of statistical analysis of the map.

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.

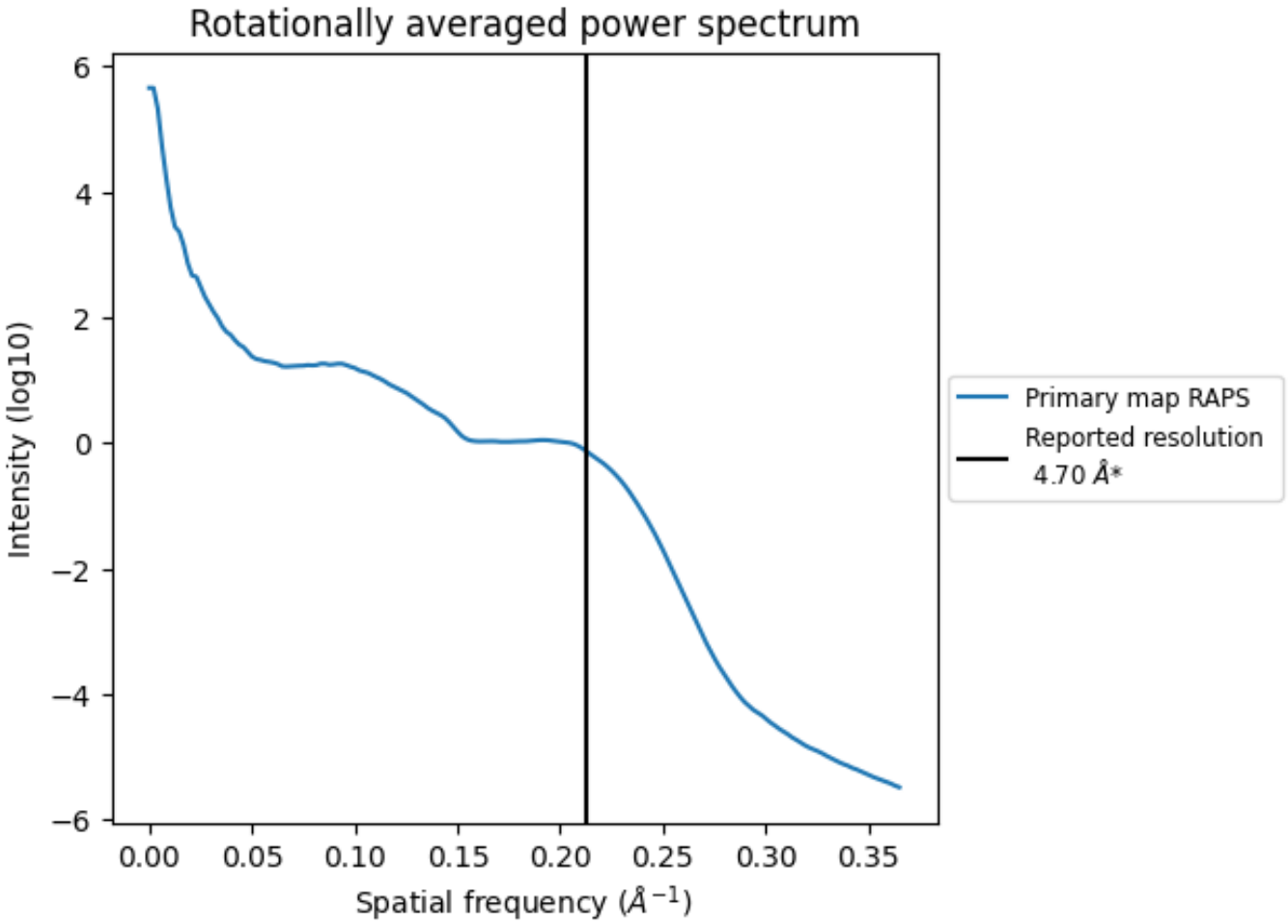
7.2 Volume estimate



The volume at the recommended contour level is 790 nm^3; this corresponds to an approximate mass of 714 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 0.213 Å^{-1}

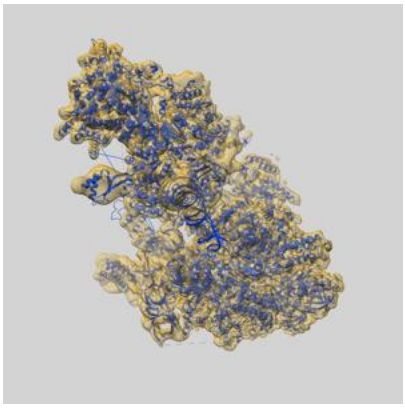
8 Fourier-Shell correlation

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

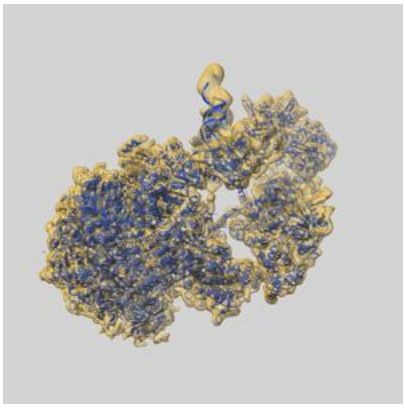
9 Map-model fit

This section contains information regarding the fit between EMDB map EMD-3846 and PDB model 5OQJ. Per-residue inclusion information can be found in section 3 on page 11.

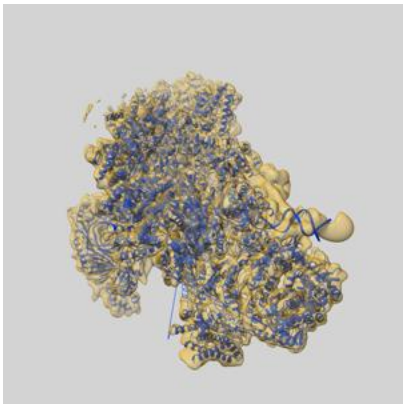
9.1 Map-model overlay



X



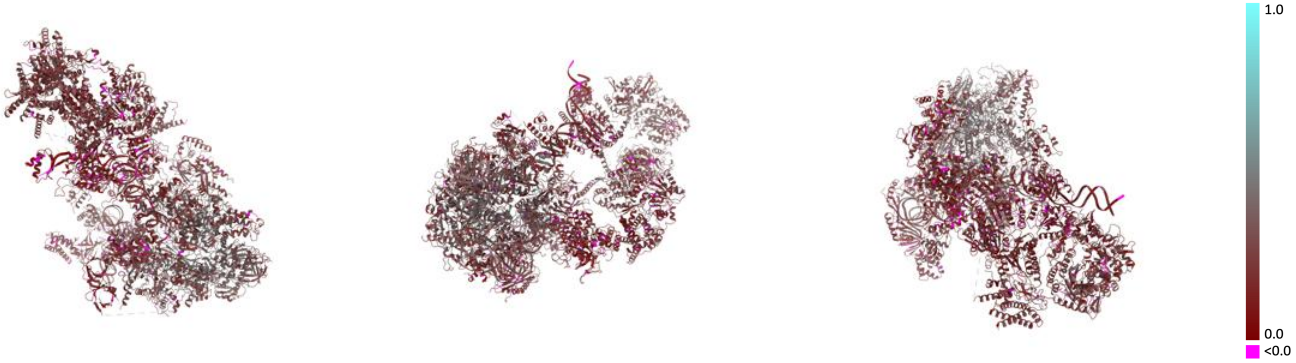
Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.066 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.

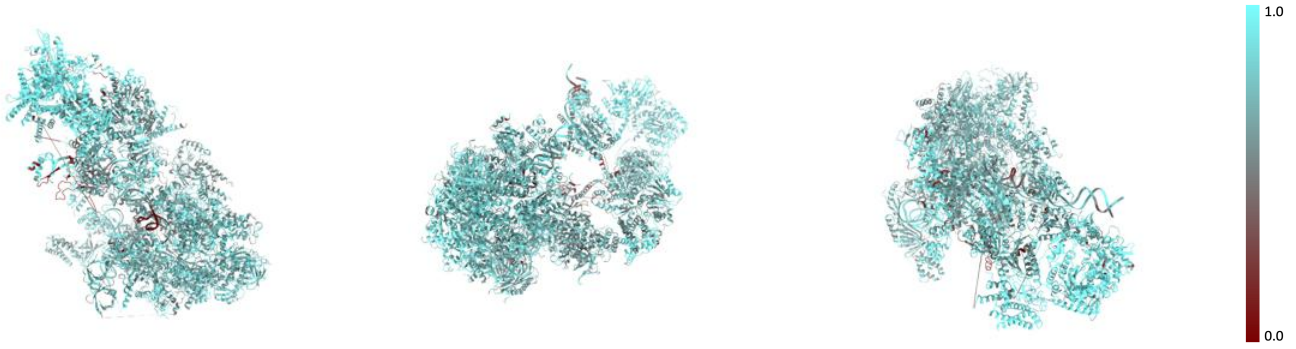
9.2 Q-score mapped to coordinate model (i)



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.

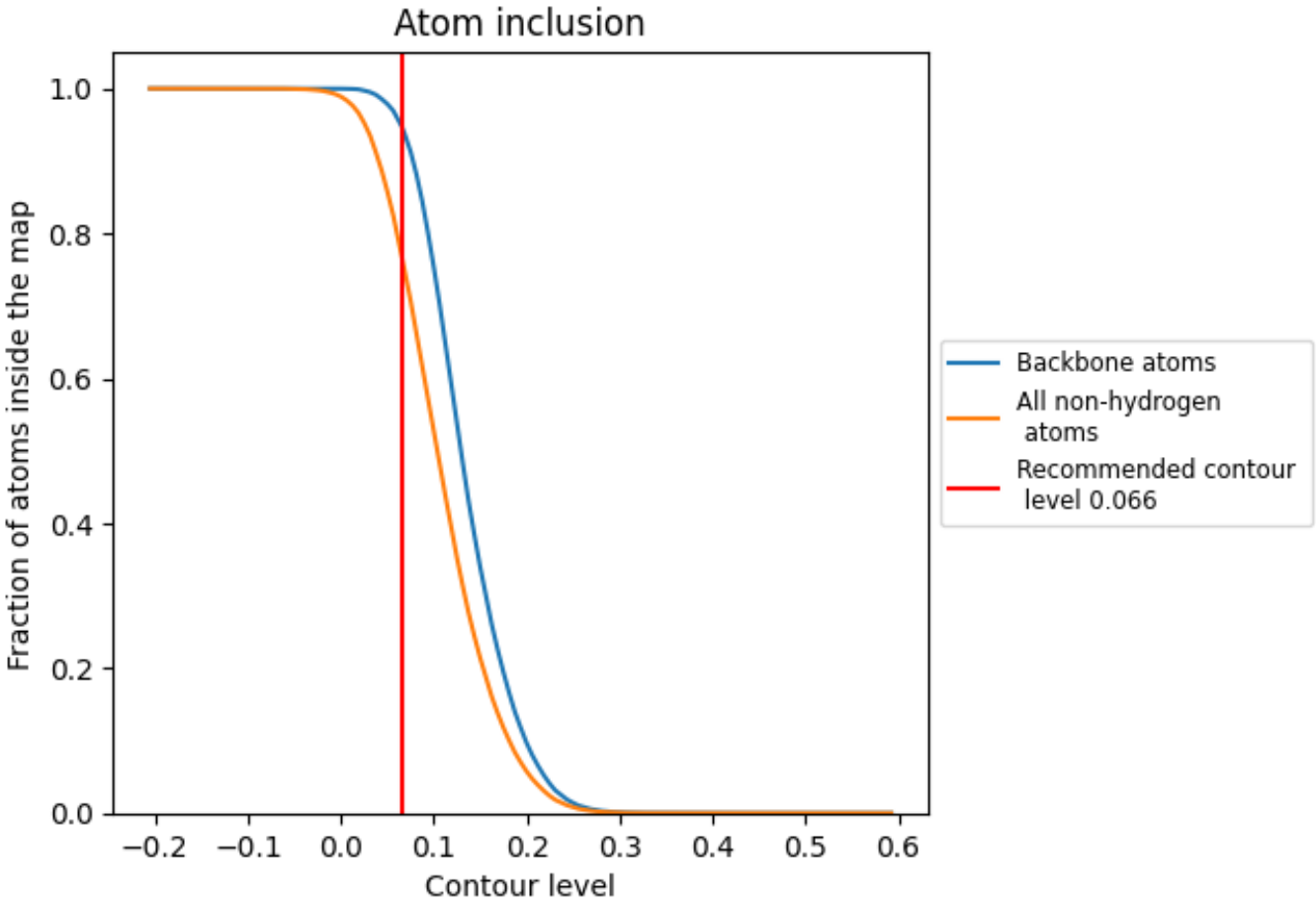
9.3 Atom inclusion mapped to coordinate model (i)



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 (0.066).

9.4 Atom inclusion (i)



At the recommended contour level, 95% of all backbone atoms, 77% 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 (0.066) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	0.7669	0.2490
0	0.7360	0.1840
1	0.6904	0.2060
2	0.8871	0.2210
3	0.7576	0.1950
4	0.9099	0.2680
5	0.6402	0.1280
6	0.7987	0.2070
7	0.7480	0.1620
A	0.7919	0.3100
B	0.7911	0.3170
C	0.8309	0.3480
D	0.6342	0.1680
E	0.8054	0.2850
F	0.8037	0.3440
G	0.7065	0.2100
H	0.7964	0.3310
I	0.7970	0.2700
J	0.8472	0.3430
K	0.8238	0.3430
L	0.8006	0.3200
M	0.6696	0.2080
N	0.7365	0.2070
O	0.7089	0.1580
Q	0.7337	0.2000
R	0.7798	0.2240
T	0.7417	0.2150
U	0.7085	0.1350
V	0.7119	0.1490
W	0.6565	0.1770
X	0.7495	0.1850
Z	0.9302	0.2610