



Full wwPDB EM Validation Report ⓘ

Feb 27, 2024 – 07:06 AM EST

PDB ID : 6V92
EMDB ID : EMD-21114
Title : RSC-NCP
Authors : Patel, A.B.; Moore, C.M.; Greber, B.J.; Nogales, E.
Deposited on : 2019-12-13
Resolution : 20.00 Å (reported)

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

We welcome your comments at validation@mail.wwpdb.org

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

EMDB validation analysis : 0.0.1.dev70
MolProbity : 4.02b-467
Percentile statistics : 20191225.v01 (using entries in the PDB archive December 25th 2019)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.36

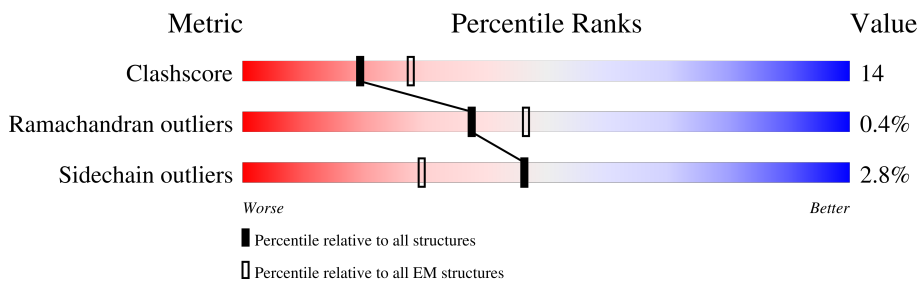
1 Overall quality at a glance i

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 20.00 Å.

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



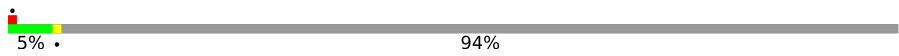

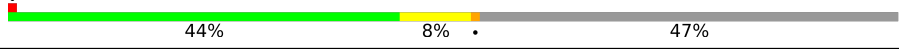


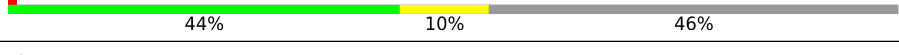

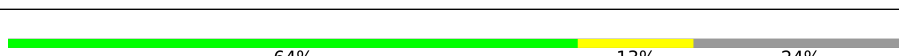

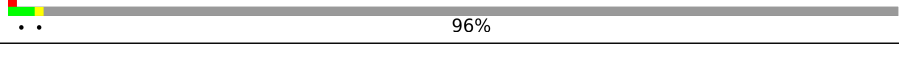
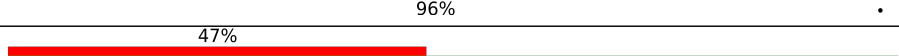
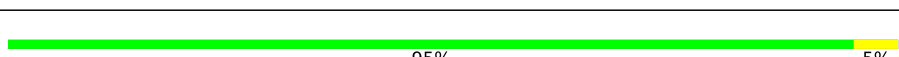
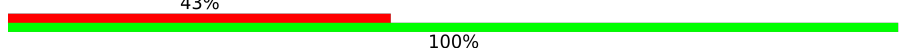
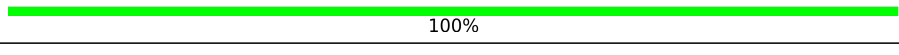
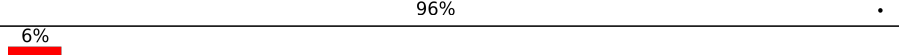
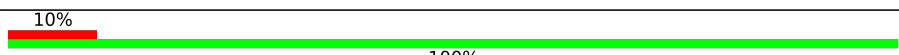








Metric	Whole archive (#Entries)	EM structures (#Entries)
Clashscore	158937	4297
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826

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 $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	A	477	
2	R	1359	
3	B	467	
4	P	157	
5	C	78	
6	D	180	
7	E	435	
8	F	889	

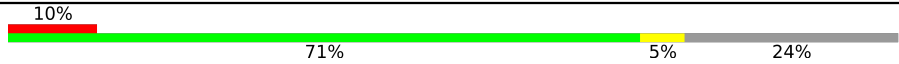

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Mol	Chain	Length	Quality of chain
9	G	885	 5% 94%
10	H	625	 16% 5% 79%
11	I	557	 44% 8% 47%
11	J	557	 18% 79%
11	K	557	 17% 80%
11	L	557	 44% 10% 46%
12	M	483	 52% 12% 36%
13	N	581	 58% 13% 29%
14	O	502	 64% 13% 24%
15	Q	426	 48% 13% 38%
16	S	883	 96%
17	2	28	 96%
18	3	19	 47% 100%
18	4	19	 95% 5%
19	5	14	 43% 100%
20	6	15	 100%
21	7	49	 96%
22	i	146	 6% 100%
22	j	146	 10% 100%
23	a	136	 5% 69% 29%
23	e	136	 71% 27%
24	b	103	 76% 24%
24	f	103	 79% 17%
25	c	130	 78% 5% 17%
25	g	130	8% 74% 6% 20%

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Mol	Chain	Length	Quality of chain
26	d	126	 10% 71% 5% 24%
26	h	126	 10% 69% 6% 25%

2 Entry composition [i](#)

There are 27 unique types of molecules in this entry. The entry contains 44583 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 Actin-related protein 7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	A	399	3227	2081	528	603	15	3	0

- Molecule 2 is a protein called Nuclear protein STH1/NPS1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	R	325	2663	1668	487	504	4	0	0

- Molecule 3 is a protein called Actin-like protein ARP9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	B	396	3198	2053	523	615	7	1	0

- Molecule 4 is a protein called Regulator of Ty1 transposition protein 102.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	P	54	490	313	84	92	1	0	0

- Molecule 5 is a protein called High temperature lethal protein 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	C	60	493	301	92	96	4	0	0

- Molecule 6 is a protein called Chromatin structure-remodeling complex protein RSC14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	D	100	772	490	132	148	2	0	0

- Molecule 7 is a protein called Chromatin structure-remodeling complex subunit RSC7.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	E	120	978	610	166	200	2	0	0

- Molecule 8 is a protein called Chromatin structure-remodeling complex subunit RSC2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	F	67	536	346	94	95	1	0	0

- Molecule 9 is a protein called Chromatin structure-remodeling complex protein RSC3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	G	53	422	270	71	79	2	0	0

- Molecule 10 is a protein called Chromatin structure-remodeling complex subunit RSC4.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	H	131	1083	696	175	205	7	0	0

- Molecule 11 is a protein called Chromatin structure-remodeling complex protein RSC8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	I	293	2416	1537	423	448	8	0	0
11	J	115	924	579	149	190	6	0	0
11	K	109	878	554	139	179	6	0	0
11	L	298	2445	1557	428	452	8	0	0

- Molecule 12 is a protein called Chromatin structure-remodeling complex protein RSC6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	M	310	2474	1558	414	496	6	0	0

- Molecule 13 is a protein called Chromatin structure-remodeling complex subunit RSC9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	N	412	3275	2105	540	612	18	0	0

- Molecule 14 is a protein called Chromatin structure-remodeling complex protein RSC58.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	O	384	3145	2025	529	581	10	0	0

- Molecule 15 is a protein called Chromatin structure-remodeling complex subunit SFH1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	Q	264	2137	1349	362	418	8	0	0

- Molecule 16 is a protein called Chromatin structure-remodeling complex protein RSC30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	S	34	278	182	41	54	1	0	0

- Molecule 17 is a protein called Unknown Protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
17	2	28	140	84	28	28	0	0

- Molecule 18 is a protein called Unknown Protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
18	3	19	95	57	19	19	0	0
18	4	19	95	57	19	19	0	0

- Molecule 19 is a protein called Unknown Protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
19	5	14	70	42	14	14	0	0

- Molecule 20 is a protein called Unknown Protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
20	6	15	Total	C	N	O	0	0
			75	45	15	15		

- Molecule 21 is a protein called Unknown Protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	7	49	Total	C	N	O	0	0
			245	147	49	49		

- Molecule 22 is a DNA chain called DNA (146-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
22	i	146	Total	C	N	O	P	0	0
			2990	1431	540	874	145		
22	j	146	Total	C	N	O	P	0	0
			2990	1431	540	874	145		

- Molecule 23 is a protein called Histone H3.1.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	a	97	Total	C	N	O	S	0	0
			801	505	155	137	4		
23	e	99	Total	C	N	O	S	0	0
			816	514	158	140	4		

- Molecule 24 is a protein called Histone H4.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	b	78	Total	C	N	O	S	0	0
			619	391	120	107	1		
24	f	85	Total	C	N	O	S	0	0
			683	430	136	116	1		

- Molecule 25 is a protein called Histone H2A type 1-B/E.

Mol	Chain	Residues	Atoms				AltConf	Trace
25	c	108	Total	C	N	O	0	0
			835	526	165	144		
25	g	104	Total	C	N	O	0	0
			805	508	157	140		

- Molecule 26 is a protein called Histone H2B type 1-K.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	d	96	Total	C	N	O	S	0	0
			754	473	138	141	2		
26	h	94	Total	C	N	O	S	0	0
			735	461	134	138	2		

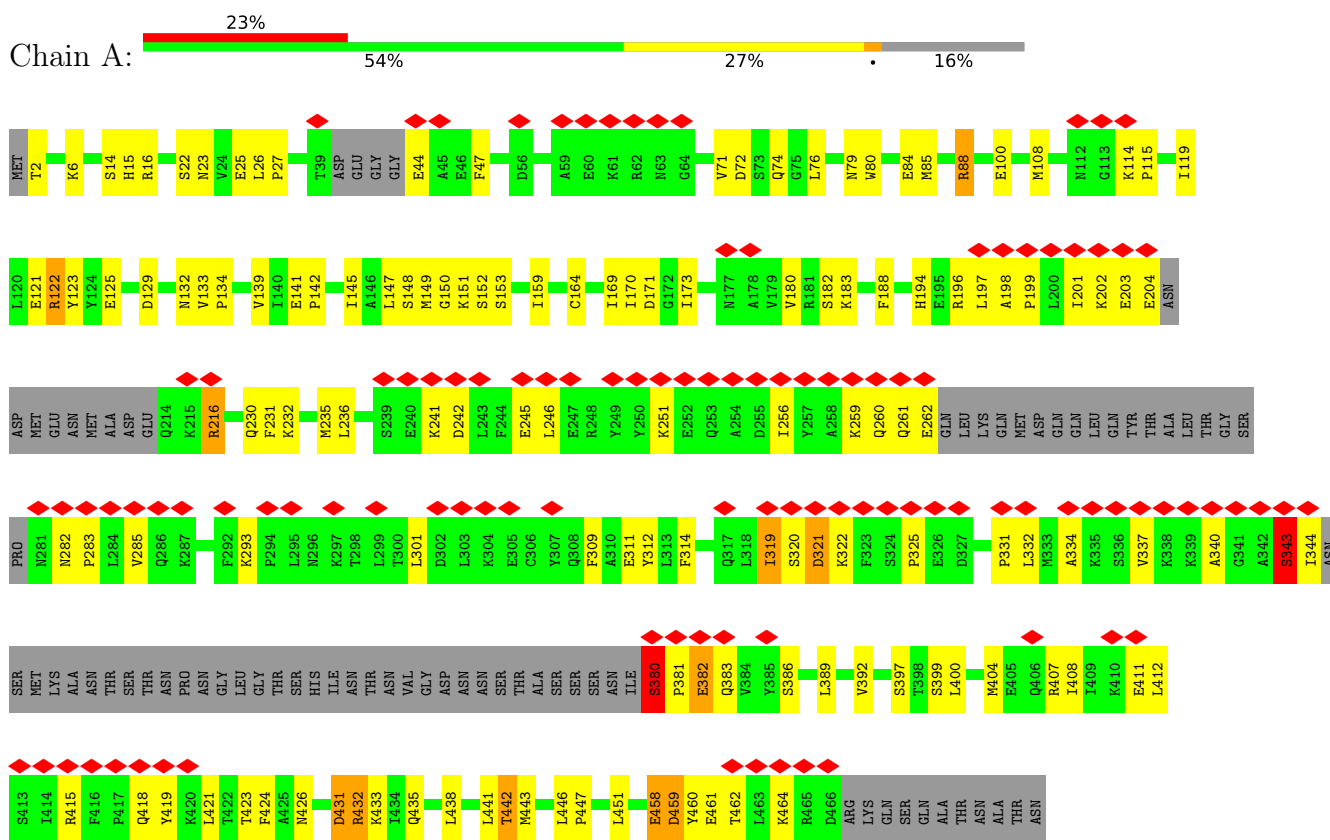
- Molecule 27 is ZINC ION (three-letter code: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
27	I	1	Total	Zn	0
			1	1	

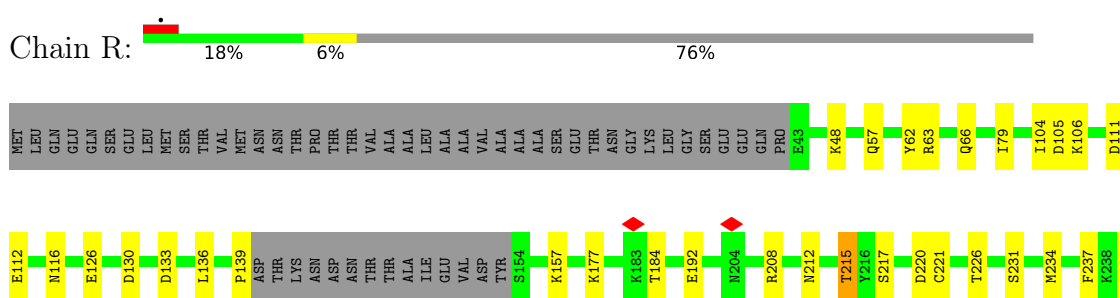
3 Residue-property plots [i](#)

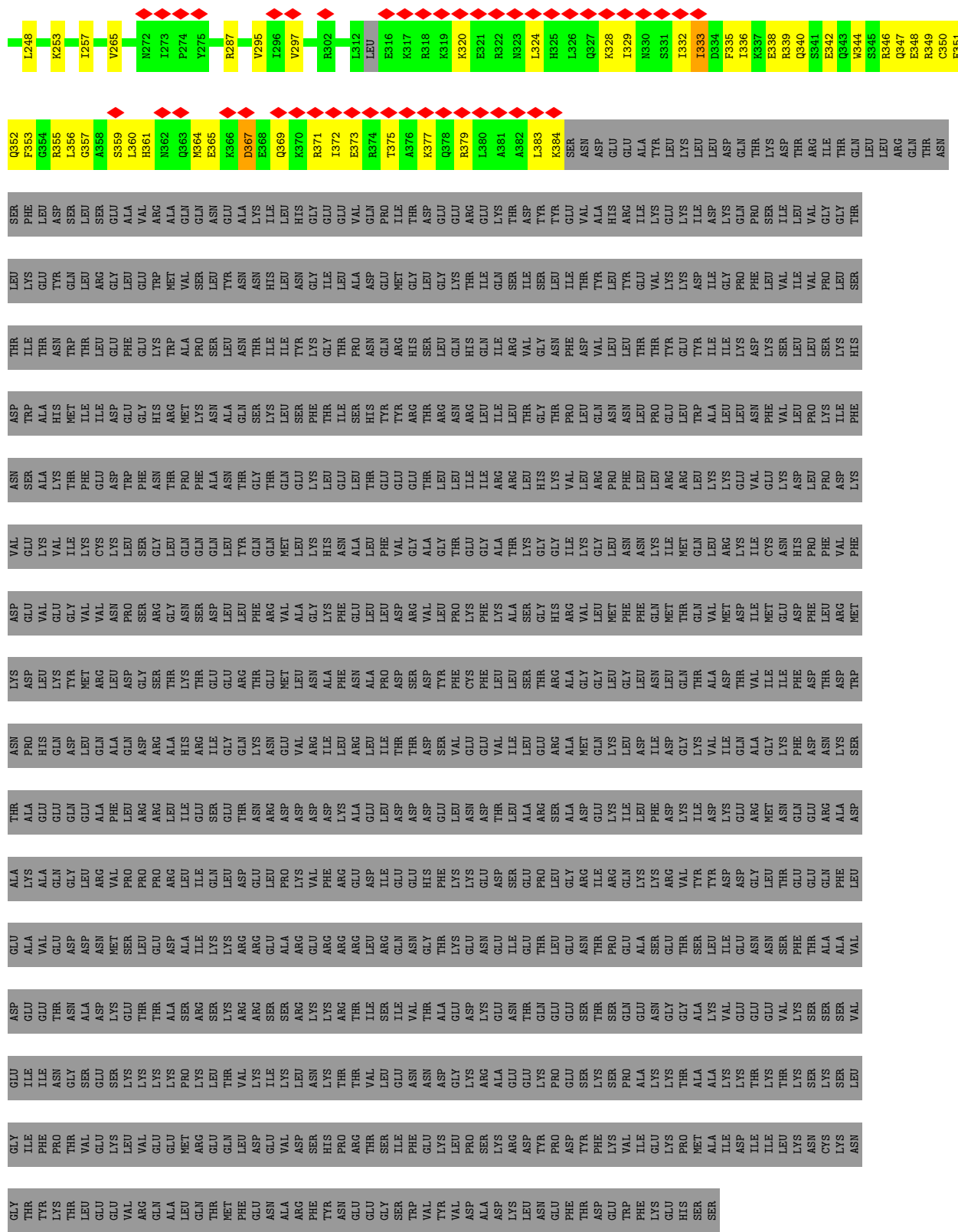
These plots are drawn for all protein, RNA, DNA and oligosaccharide chains in the entry. The first graphic for a chain summarises the proportions of the various outlier classes displayed in the second graphic. The second graphic shows the sequence view annotated by issues in geometry and atom inclusion 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: Actin-related protein 7



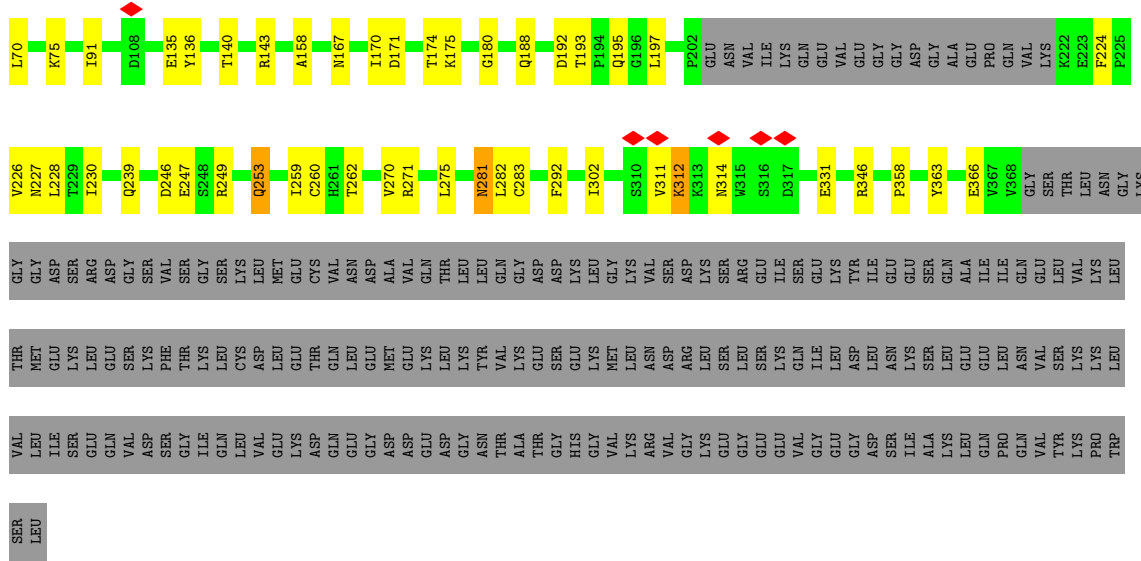
- Molecule 2: Nuclear protein STH1/NPS1





● Molecule 3: Actin-like protein ARP9

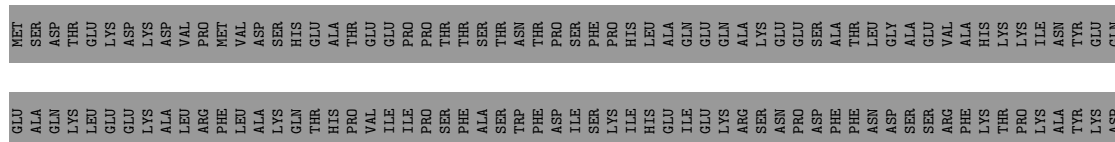


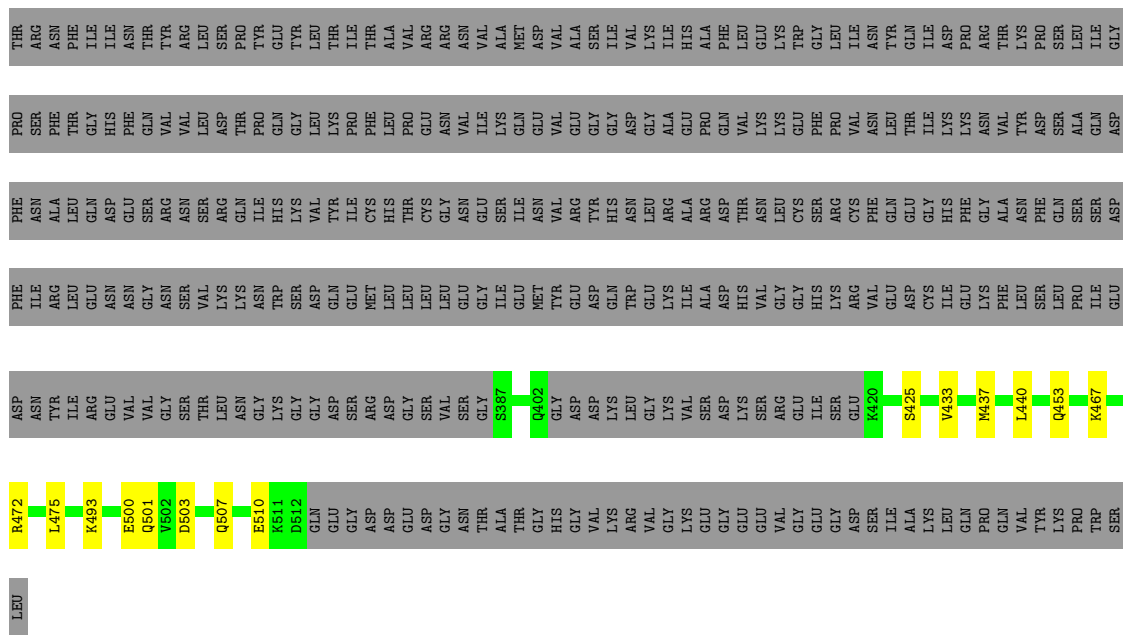


● Molecule 11: Chromatin structure-remodeling complex protein RSC8

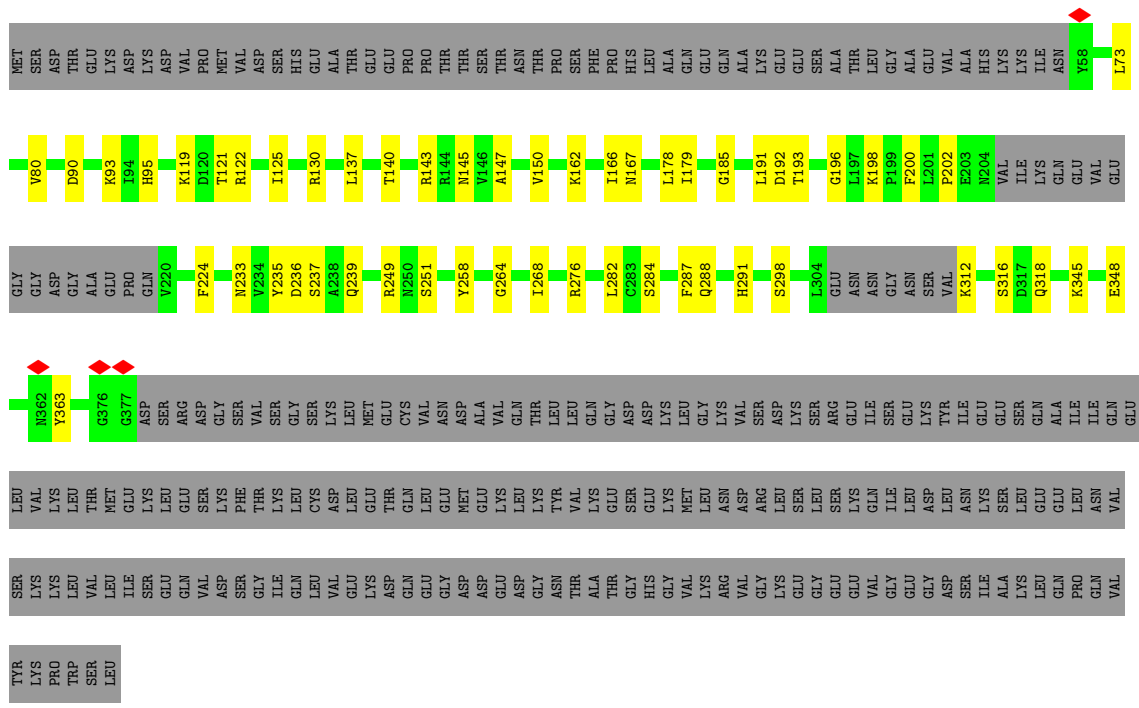


● Molecule 11: Chromatin structure-remodeling complex protein RSC8

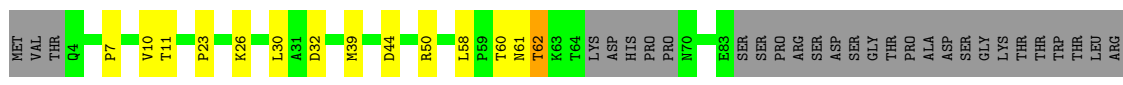


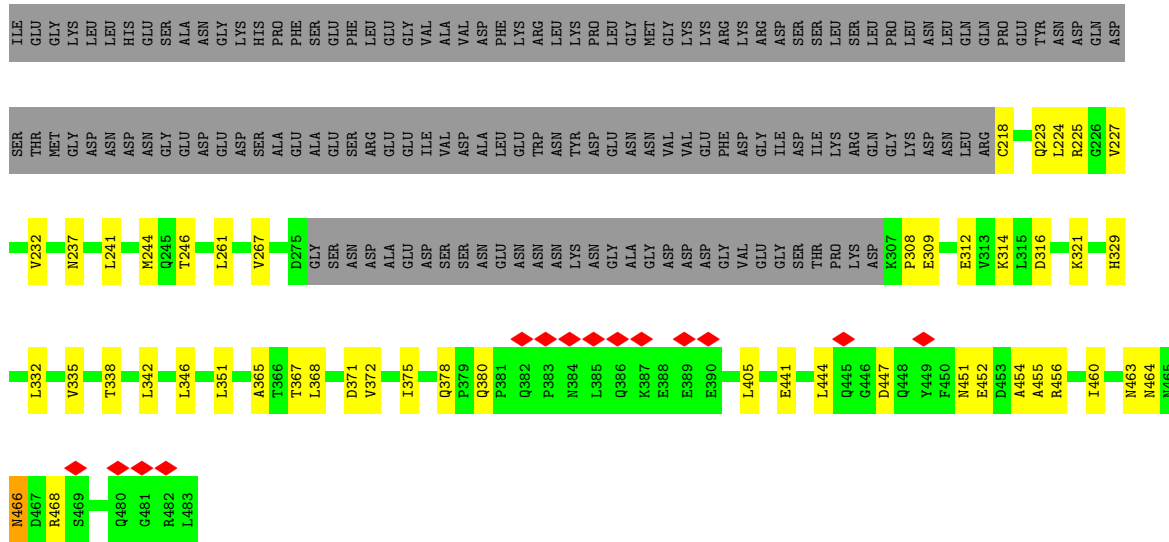


• Molecule 11: Chromatin structure-remodeling complex protein RSC8



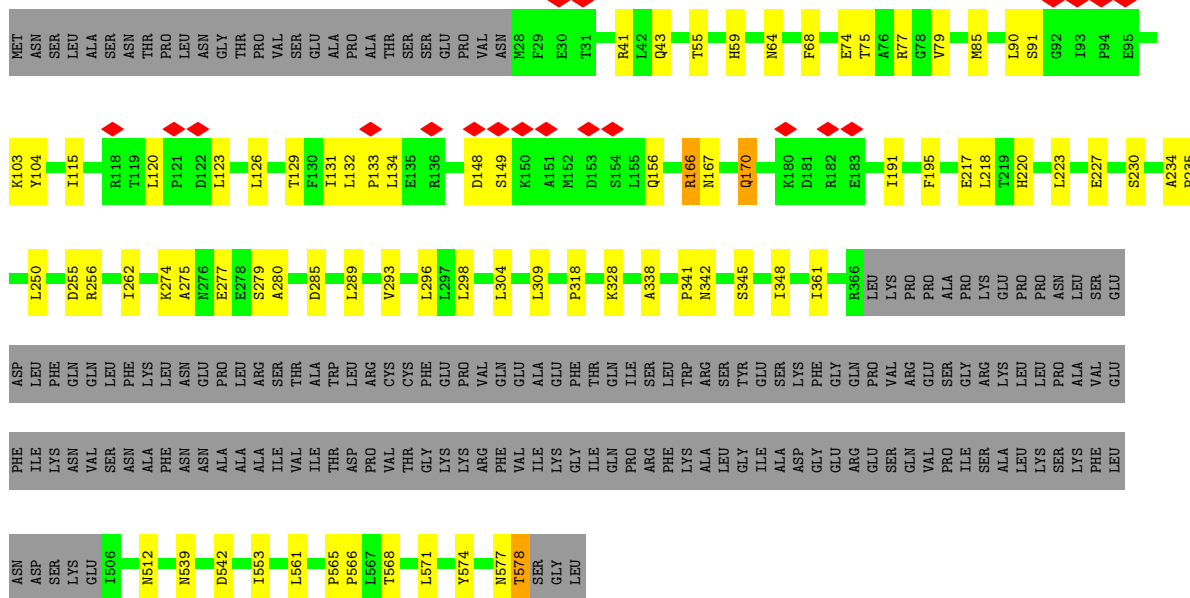
• Molecule 12: Chromatin structure-remodeling complex protein RSC6





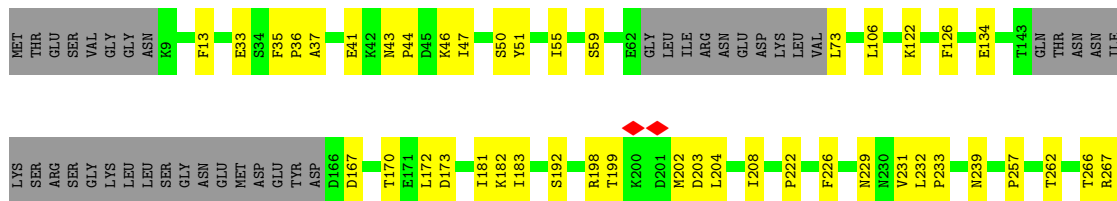
• Molecule 13: Chromatin structure-remodeling complex subunit RSC9

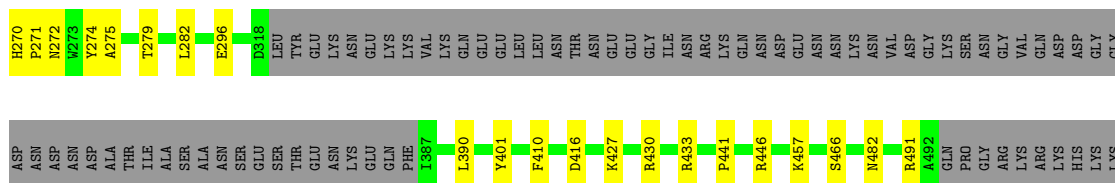
Chain N: 58% 13% 29%



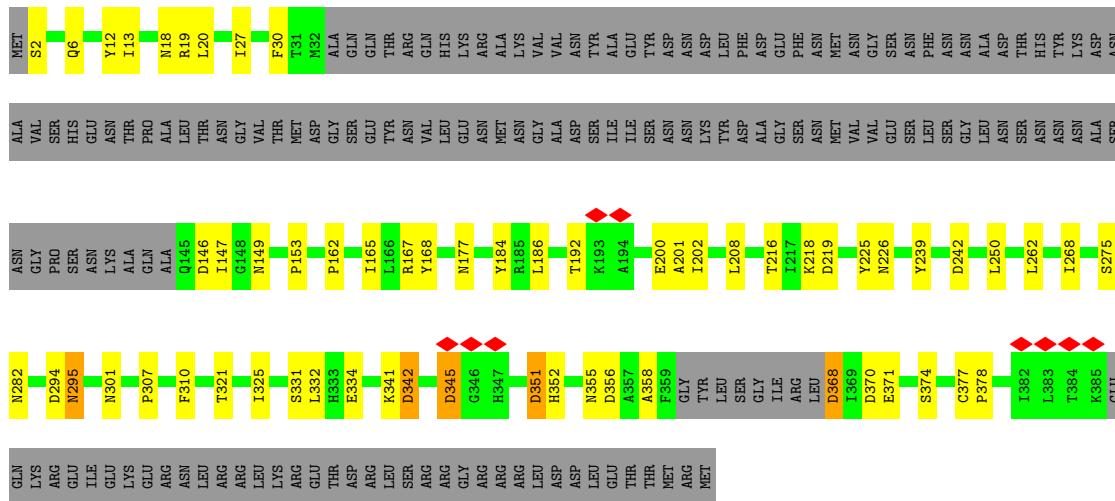
• Molecule 14: Chromatin structure-remodeling complex protein RSC58

Chain O: 64% 13% 24%

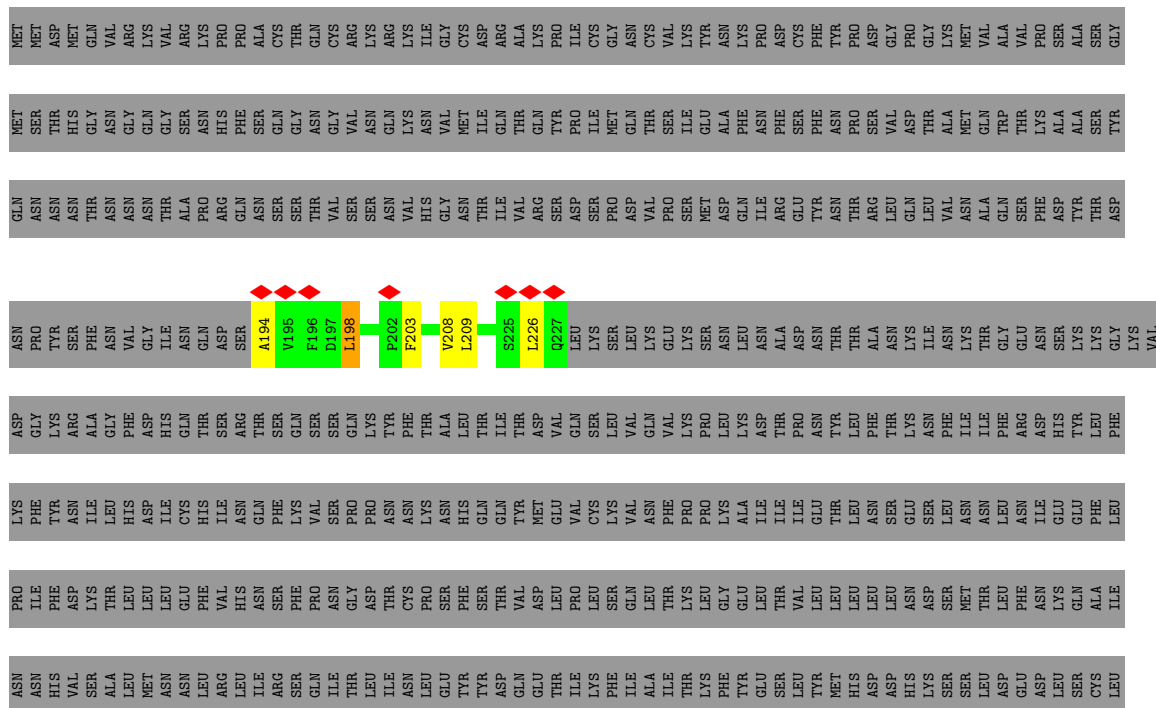




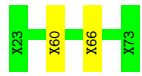
• Molecule 15: Chromatin structure-remodeling complex subunit SFH1



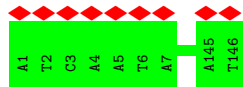
• Molecule 16: Chromatin structure-remodeling complex protein RSC30



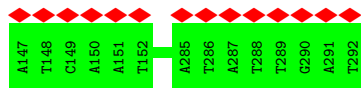
• Molecule 21: Unknown Protein



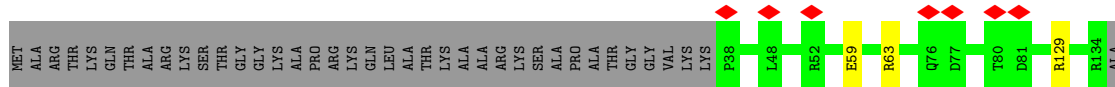
• Molecule 22: DNA (146-MER)



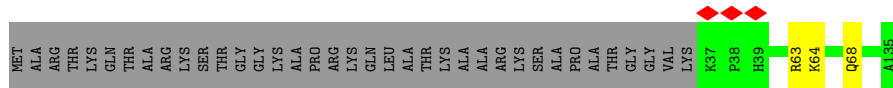
• Molecule 22: DNA (146-MER)



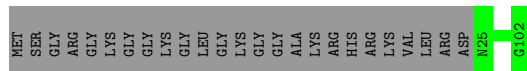
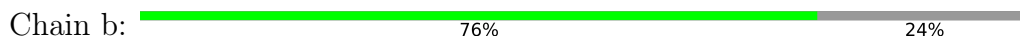
• Molecule 23: Histone H3.1



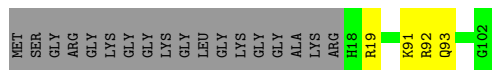
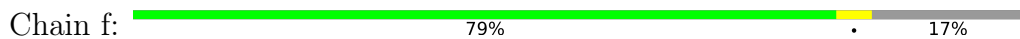
• Molecule 23: Histone H3.1



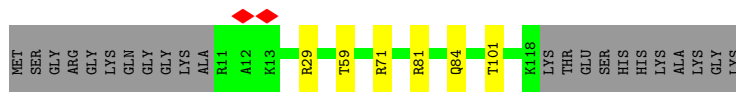
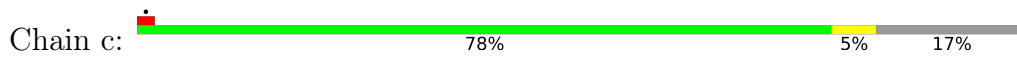
• Molecule 24: Histone H4



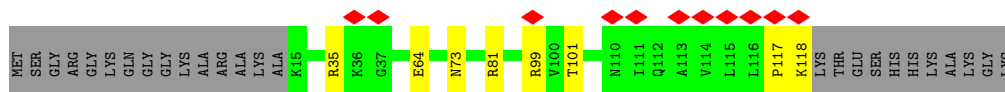
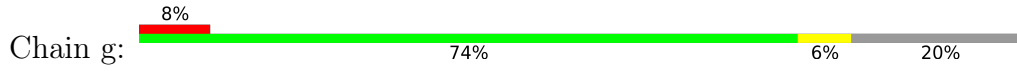
• Molecule 24: Histone H4



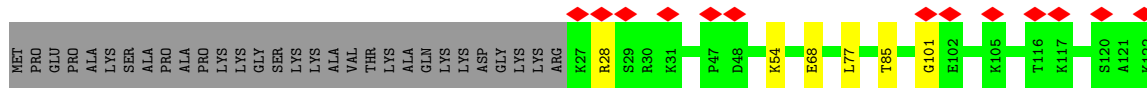
• Molecule 25: Histone H2A type 1-B/E



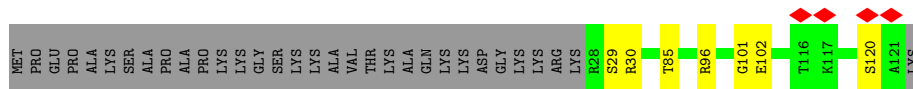
• Molecule 25: Histone H2A type 1-B/E



• Molecule 26: Histone H2B type 1-K



• Molecule 26: Histone H2B type 1-K



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	13337	Depositor
Resolution determination method	FSC 0.5 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TALOS ARCTICA	Depositor
Voltage (kV)	200	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	GATAN K3 (6k x 4k)	Depositor
Maximum map value	0.110	Depositor
Minimum map value	-0.064	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.008	Depositor
Recommended contour level	0.03	Depositor
Map size (Å)	437.76, 437.76, 437.76	wwPDB
Map dimensions	128, 128, 128	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	3.42, 3.42, 3.42	Depositor

5 Model quality i

5.1 Standard geometry i

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

The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 5$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
1	A	0.43	0/3303	0.60	1/4465 (0.0%)
2	R	0.36	2/2697 (0.1%)	0.49	3/3616 (0.1%)
3	B	0.45	0/3269	0.59	0/4432
4	P	0.41	0/501	0.57	0/669
5	C	0.24	0/495	0.36	0/662
6	D	0.27	0/786	0.38	0/1062
7	E	0.28	0/997	0.44	0/1356
8	F	0.27	0/551	0.41	0/748
9	G	0.26	0/431	0.43	0/584
10	H	0.29	0/1108	0.48	0/1497
11	I	0.32	0/2474	0.41	0/3343
11	J	0.30	0/926	0.40	0/1233
11	K	0.27	0/879	0.39	0/1172
11	L	0.29	0/2502	0.40	0/3376
12	M	0.28	0/2515	0.42	0/3423
13	N	0.30	0/3334	0.42	0/4515
14	O	0.30	0/3216	0.42	1/4358 (0.0%)
15	Q	0.28	0/2181	0.45	0/2964
16	S	0.26	0/281	0.35	0/378
22	i	0.38	0/3354	0.79	0/5175
22	j	0.36	0/3354	0.78	0/5175
23	a	0.40	0/813	0.59	0/1090
23	e	0.46	0/828	0.61	0/1109
24	b	0.38	0/626	0.62	0/837
24	f	0.44	0/691	0.63	0/923
25	c	0.39	0/845	0.60	0/1139
25	g	0.39	0/815	0.65	0/1100
26	d	0.41	0/765	0.63	0/1025
26	h	0.40	0/746	0.58	0/1003
All	All	0.35	2/45283 (0.0%)	0.55	5/62429 (0.0%)

All (2) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	R	328	LYS	C-O	5.96	1.34	1.23
2	R	333	ILE	C-O	5.93	1.34	1.23

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
1	A	380	SER	C-N-CD	5.93	140.86	128.40
14	O	231	VAL	C-N-CA	5.36	135.09	121.70
2	R	333	ILE	CA-C-O	5.28	131.19	120.10
2	R	367	ASP	CB-CG-OD2	5.17	122.95	118.30
2	R	328	LYS	CA-C-O	5.10	130.81	120.10

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	3227	0	3251	150	0
2	R	2663	0	2746	159	0
3	B	3198	0	3187	136	0
4	P	490	0	467	19	0
5	C	493	0	507	4	0
6	D	772	0	754	11	0
7	E	978	0	935	25	0
8	F	536	0	533	13	0
9	G	422	0	423	9	0
10	H	1083	0	1062	21	0
11	I	2416	0	2358	36	0
11	J	924	0	976	12	0
11	K	878	0	930	13	0
11	L	2445	0	2402	48	0
12	M	2474	0	2465	48	0
13	N	3275	0	3373	47	0
14	O	3145	0	3168	50	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
15	Q	2137	0	2069	42	0
16	S	278	0	287	6	0
17	2	140	0	34	1	0
18	3	95	0	21	0	0
18	4	95	0	21	1	0
19	5	70	0	16	0	0
20	6	75	0	17	0	0
21	7	245	0	63	2	0
22	i	2990	0	1652	0	0
22	j	2990	0	1652	0	0
23	a	801	0	839	0	0
23	e	816	0	856	0	0
24	b	619	0	659	0	0
24	f	683	0	729	0	0
25	c	835	0	897	0	0
25	g	805	0	861	0	0
26	d	754	0	782	0	0
26	h	735	0	756	0	0
27	I	1	0	0	0	0
All	All	44583	0	41748	652	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 14.

All (652) close contacts within the same asymmetric unit are listed below, sorted by their clash magnitude.

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:353:PHE:CZ	3:B:447:PHE:CE2	2.05	1.45
2:R:353:PHE:CZ	3:B:447:PHE:HE2	1.34	1.41
2:R:353:PHE:CE1	3:B:447:PHE:HE2	1.47	1.33
2:R:365:GLU:HG2	3:B:415:TYR:CD2	1.65	1.32
2:R:353:PHE:CE2	3:B:447:PHE:CE2	2.21	1.29
2:R:349:ARG:O	2:R:353:PHE:CD2	1.84	1.28
2:R:365:GLU:HG2	3:B:415:TYR:CE2	1.70	1.25
1:A:76:LEU:CD2	1:A:108:MET:CE	2.15	1.24
3:B:189:MET:HE1	3:B:305:LEU:CA	1.69	1.21
2:R:320:LYS:O	2:R:324:LEU:HG	1.34	1.20
2:R:353:PHE:CE2	3:B:447:PHE:CZ	2.31	1.19
2:R:365:GLU:OE2	3:B:415:TYR:CE2	1.96	1.18
2:R:353:PHE:CE1	3:B:447:PHE:CE2	2.30	1.17
1:A:76:LEU:CD2	1:A:108:MET:HE1	1.70	1.16

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:351:PHE:CE1	3:B:176:ASP:HB3	1.81	1.16
2:R:365:GLU:CG	3:B:415:TYR:CE2	2.28	1.14
1:A:343:SER:CB	1:A:344:ILE:HA	1.81	1.11
2:R:347:GLN:O	2:R:351:PHE:HD2	1.36	1.09
1:A:76:LEU:HD22	1:A:108:MET:HE1	1.13	1.08
1:A:150:GLY:HA2	2:R:336:ILE:HD11	1.31	1.08
1:A:343:SER:HB3	1:A:344:ILE:HA	1.09	1.07
1:A:114:LYS:HG3	1:A:115:PRO:HD3	1.37	1.06
2:R:336:ILE:HG22	2:R:339:ARG:NH2	1.70	1.06
3:B:189:MET:HE1	3:B:305:LEU:HA	1.06	1.05
2:R:320:LYS:O	2:R:324:LEU:CG	2.03	1.05
1:A:76:LEU:CD2	1:A:108:MET:HE3	1.86	1.04
2:R:353:PHE:CE2	3:B:447:PHE:HE2	1.69	1.04
2:R:365:GLU:CG	3:B:415:TYR:CZ	2.39	1.04
2:R:347:GLN:O	2:R:351:PHE:CD2	2.11	1.03
1:A:122:ARG:HH11	1:A:122:ARG:HG2	1.25	1.02
1:A:216:ARG:HG2	1:A:216:ARG:HH11	1.17	1.00
2:R:360:LEU:HD11	3:B:438:GLN:NE2	1.78	0.99
1:A:76:LEU:HD21	1:A:108:MET:HE3	1.41	0.99
1:A:442:THR:HB	2:R:339:ARG:HE	1.26	0.97
2:R:365:GLU:CD	3:B:415:TYR:CE2	2.37	0.97
2:R:360:LEU:CD1	3:B:438:GLN:HG2	1.94	0.97
2:R:320:LYS:HB3	2:R:324:LEU:HD11	1.46	0.96
2:R:336:ILE:HG22	2:R:339:ARG:HH22	1.29	0.96
3:B:189:MET:CE	3:B:305:LEU:HA	1.94	0.96
1:A:150:GLY:CA	2:R:336:ILE:HD11	1.96	0.96
1:A:343:SER:HB3	1:A:344:ILE:CA	1.95	0.96
2:R:364:MET:CE	3:B:30:PHE:HE1	1.79	0.95
2:R:351:PHE:CZ	3:B:176:ASP:HB3	2.00	0.95
2:R:365:GLU:HG2	3:B:415:TYR:CG	2.05	0.92
2:R:349:ARG:O	2:R:353:PHE:HD2	1.36	0.92
2:R:353:PHE:CD2	3:B:447:PHE:CE2	2.58	0.91
1:A:76:LEU:HD22	1:A:108:MET:CE	1.86	0.91
2:R:364:MET:HE2	3:B:30:PHE:HE1	1.36	0.91
2:R:365:GLU:OE2	3:B:415:TYR:HE2	1.52	0.90
1:A:84:GLU:OE2	1:A:88:ARG:NH1	2.05	0.88
2:R:353:PHE:CD1	3:B:447:PHE:HE2	1.91	0.87
1:A:148:SER:O	2:R:340:GLN:NE2	2.05	0.87
2:R:357:GLY:O	2:R:361:HIS:CD2	2.26	0.87
2:R:365:GLU:OE2	3:B:415:TYR:CZ	2.27	0.87
2:R:353:PHE:CE2	3:B:447:PHE:HZ	1.90	0.86

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:353:PHE:CD2	3:B:447:PHE:CZ	2.64	0.86
2:R:369:GLN:O	2:R:373:GLU:HG3	1.79	0.83
2:R:360:LEU:HD11	3:B:438:GLN:HE21	1.41	0.82
2:R:365:GLU:HG3	3:B:415:TYR:CZ	2.15	0.82
1:A:150:GLY:HA2	2:R:336:ILE:CD1	2.11	0.81
1:A:147:LEU:CD2	1:A:443:MET:SD	2.68	0.81
2:R:351:PHE:CE1	3:B:176:ASP:CB	2.62	0.80
2:R:329:ILE:O	2:R:332:ILE:HG22	1.80	0.80
2:R:353:PHE:CD1	3:B:447:PHE:CE2	2.66	0.80
3:B:189:MET:HE1	3:B:305:LEU:N	1.98	0.79
1:A:47:PHE:HB2	1:A:85:MET:HE2	1.65	0.79
3:B:459:PRO:HG2	4:P:63:TRP:CD2	2.18	0.79
2:R:360:LEU:HD11	3:B:438:GLN:CG	2.14	0.78
1:A:159:ILE:HD11	1:A:408:ILE:HD11	1.65	0.78
2:R:365:GLU:HG2	3:B:415:TYR:CZ	2.12	0.78
3:B:189:MET:CE	3:B:305:LEU:CA	2.59	0.78
2:R:360:LEU:HD13	3:B:438:GLN:HG2	1.63	0.77
1:A:114:LYS:HG3	1:A:115:PRO:CD	2.14	0.77
2:R:371:ARG:O	2:R:375:THR:HG23	1.84	0.77
2:R:320:LYS:HB3	2:R:324:LEU:CD1	2.15	0.76
2:R:360:LEU:CD1	3:B:438:GLN:CG	2.62	0.76
2:R:349:ARG:HB3	2:R:353:PHE:HE2	1.50	0.76
1:A:100:GLU:HG2	1:A:132:ASN:HB3	1.68	0.75
2:R:349:ARG:O	2:R:353:PHE:CE2	2.38	0.75
2:R:373:GLU:O	2:R:377:LYS:HG3	1.86	0.75
3:B:303:ASN:HD21	3:B:307:LYS:NZ	1.85	0.75
1:A:122:ARG:HH11	1:A:122:ARG:CG	1.99	0.75
15:Q:282:ASN:OD1	15:Q:295:ASN:ND2	2.20	0.74
1:A:147:LEU:HD22	1:A:443:MET:SD	2.28	0.74
2:R:360:LEU:CD1	3:B:438:GLN:HE21	2.00	0.74
2:R:287:ARG:NH1	13:N:217:GLU:OE1	2.21	0.73
1:A:216:ARG:HG2	1:A:216:ARG:NH1	1.94	0.73
4:P:84:LEU:O	4:P:85:LYS:HB2	1.89	0.73
2:R:348:GLU:O	2:R:352:GLN:HG3	1.88	0.72
3:B:14:PRO:O	3:B:116[B]:HIS:HE1	1.72	0.72
1:A:76:LEU:HD21	1:A:108:MET:CE	2.04	0.71
2:R:340:GLN:O	2:R:344:TRP:HD1	1.72	0.71
1:A:183:LYS:O	1:A:183:LYS:HG2	1.91	0.71
6:D:96:GLN:NE2	18:4:15:UNK:O	2.22	0.70
8:F:813:LEU:HD11	14:O:183:ILE:HD12	1.73	0.70
11:L:268:ILE:HD11	14:O:232:LEU:HD22	1.73	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:353:PHE:CG	3:B:447:PHE:CE2	2.80	0.70
1:A:344:ILE:HG23	1:A:344:ILE:O	1.92	0.69
11:I:136:TYR:O	11:I:167:ASN:ND2	2.26	0.69
13:N:345:SER:HA	13:N:348:ILE:HD11	1.75	0.69
14:O:35:PHE:O	14:O:73:LEU:N	2.26	0.69
2:R:360:LEU:HD11	3:B:438:GLN:CD	2.12	0.69
3:B:98:ASN:O	3:B:99:GLN:HG2	1.93	0.69
5:C:20:THR:HG22	14:O:275:ALA:H	1.58	0.69
2:R:320:LYS:O	2:R:324:LEU:CB	2.41	0.69
2:R:364:MET:HE2	3:B:30:PHE:CE1	2.24	0.69
1:A:14:SER:HA	1:A:71:VAL:HB	1.74	0.68
2:R:364:MET:CE	3:B:30:PHE:CE1	2.72	0.68
2:R:364:MET:HE1	3:B:30:PHE:HE1	1.57	0.68
1:A:47:PHE:CD1	1:A:85:MET:HE1	2.28	0.68
11:I:135:GLU:OE2	15:Q:19:ARG:NH2	2.27	0.68
13:N:220:HIS:NE2	14:O:296:GLU:O	2.27	0.68
2:R:365:GLU:CG	3:B:415:TYR:CD2	2.58	0.68
11:L:178:LEU:HD21	15:Q:325:ILE:HD11	1.76	0.68
1:A:76:LEU:HD23	1:A:108:MET:CE	2.23	0.68
2:R:365:GLU:HG3	3:B:415:TYR:CE1	2.28	0.68
1:A:392:VAL:HB	1:A:423:THR:HG22	1.75	0.67
3:B:107:SER:O	4:P:11:ASN:HA	1.95	0.67
3:B:275:LYS:HB3	3:B:278:ASP:OD2	1.94	0.67
7:E:376:ASN:ND2	7:E:381:ASP:O	2.27	0.67
12:M:218:CYS:SG	21:7:60:UNK:N	2.68	0.67
1:A:311:GLU:OE2	1:A:407:ARG:NH2	2.28	0.67
3:B:303:ASN:ND2	3:B:307:LYS:NZ	2.43	0.67
2:R:231:SER:HB3	2:R:234:MET:HG2	1.75	0.67
2:R:226:THR:HG22	14:O:126:PHE:HB2	1.78	0.66
2:R:320:LYS:C	2:R:324:LEU:HG	2.14	0.66
2:R:353:PHE:CD2	3:B:447:PHE:HE2	2.08	0.66
10:H:527:THR:C	10:H:529:ASN:H	1.97	0.66
12:M:456:ARG:NH2	14:O:262:THR:O	2.28	0.66
3:B:303:ASN:HD21	3:B:307:LYS:HZ1	1.44	0.66
2:R:365:GLU:OE2	3:B:415:TYR:OH	2.14	0.66
13:N:55:THR:O	13:N:64:ASN:ND2	2.28	0.66
8:F:813:LEU:HD22	11:L:276:ARG:HH21	1.62	0.65
1:A:343:SER:CB	1:A:344:ILE:CA	2.66	0.65
2:R:365:GLU:CG	3:B:415:TYR:CE1	2.79	0.65
1:A:458:GLU:HG2	1:A:459:ASP:N	2.10	0.65
15:Q:18:ASN:ND2	15:Q:177:ASN:O	2.29	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:K:501:GLN:HG2	12:M:244:MET:HB3	1.79	0.65
1:A:180:VAL:HG11	1:A:332:LEU:HG	1.78	0.65
1:A:446:LEU:HD23	2:R:339:ARG:HH12	1.62	0.65
11:J:426:GLN:NE2	12:M:26:LYS:O	2.30	0.65
14:O:33:GLU:HG3	14:O:106:LEU:HD11	1.79	0.65
13:N:75:THR:HG1	15:Q:12:TYR:HH	1.42	0.64
2:R:351:PHE:HE1	3:B:176:ASP:HB3	1.57	0.64
2:R:116:ASN:ND2	11:L:363:TYR:OH	2.29	0.64
15:Q:184:TYR:OH	15:Q:242:ASP:OD1	2.15	0.64
14:O:41:GLU:OE2	14:O:50:SER:OG	2.16	0.64
1:A:150:GLY:CA	2:R:336:ILE:CD1	2.72	0.63
1:A:442:THR:HB	2:R:339:ARG:NE	2.05	0.63
1:A:446:LEU:HD11	2:R:332:ILE:HD11	1.80	0.63
1:A:108:MET:HE2	1:A:119:ILE:HG21	1.80	0.63
1:A:148:SER:HB2	1:A:442:THR:HG21	1.79	0.63
7:E:392:ASP:HB3	11:I:226:VAL:HB	1.80	0.63
1:A:121:GLU:O	1:A:125:GLU:HG3	1.98	0.63
2:R:221:CYS:HB3	8:F:875:THR:HG22	1.81	0.63
2:R:375:THR:O	2:R:379:ARG:HG3	1.98	0.63
2:R:365:GLU:CD	3:B:415:TYR:CZ	2.69	0.63
3:B:303:ASN:ND2	3:B:307:LYS:HZ2	1.96	0.62
1:A:446:LEU:CD2	2:R:332:ILE:HG13	2.29	0.62
1:A:153:SER:HA	1:A:169:ILE:O	1.99	0.62
1:A:149:MET:HA	2:R:340:GLN:HE22	1.64	0.62
3:B:47:GLN:O	3:B:48:ASP:HB3	2.00	0.62
2:R:48:LYS:NZ	14:O:401:TYR:OH	2.21	0.61
1:A:203:GLU:O	1:A:204:GLU:HB2	2.00	0.61
10:H:527:THR:O	10:H:529:ASN:N	2.33	0.61
10:H:449:LYS:O	10:H:516:THR:OG1	2.16	0.61
11:I:260:CYS:HB2	11:I:283:CYS:SG	2.40	0.61
1:A:256:ILE:O	1:A:260:GLN:HB2	2.00	0.61
1:A:108:MET:CE	1:A:119:ILE:HG21	2.31	0.61
3:B:14:PRO:O	3:B:116[B]:HIS:CE1	2.53	0.61
1:A:382:GLU:CD	1:A:382:GLU:H	2.03	0.61
11:I:282:LEU:HD21	11:I:292:PHE:HB3	1.83	0.61
11:I:312:LYS:H	11:I:312:LYS:HD3	1.66	0.60
12:M:463:ASN:HA	12:M:468:ARG:HH21	1.66	0.60
1:A:442:THR:O	2:R:339:ARG:CZ	2.49	0.60
2:R:351:PHE:HE1	3:B:176:ASP:CB	2.10	0.60
7:E:405:ILE:HD11	11:L:162:LYS:HD3	1.82	0.60
6:D:64:HIS:HD2	6:D:66:TYR:H	1.47	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:Q:2:SER:N	15:Q:6:GLN:OE1	2.35	0.60
2:R:364:MET:HE1	3:B:30:PHE:CE1	2.35	0.60
3:B:53:TYR:CD1	3:B:81:GLN:HG3	2.37	0.60
1:A:389:LEU:HB3	1:A:421:LEU:HD23	1.84	0.60
2:R:353:PHE:CE1	3:B:447:PHE:CD2	2.90	0.60
3:B:44:THR:OG1	3:B:62:ALA:HB2	2.02	0.60
2:R:329:ILE:O	2:R:332:ILE:CG2	2.49	0.60
11:I:239:GLN:OE1	11:I:346:ARG:NH1	2.35	0.60
1:A:47:PHE:CB	1:A:85:MET:HE2	2.32	0.59
11:L:288:GLN:HB2	11:L:291:HIS:CE1	2.37	0.59
13:N:296:LEU:HD21	13:N:309:LEU:HG	1.83	0.59
1:A:399:SER:HA	1:A:404:MET:HG2	1.85	0.59
3:B:199:LYS:HD2	3:B:210:ILE:HD13	1.85	0.59
7:E:408:GLU:N	7:E:408:GLU:OE1	2.35	0.59
11:L:95:HIS:O	11:L:95:HIS:ND1	2.34	0.59
11:L:237:SER:OG	11:L:249:ARG:NH1	2.35	0.59
1:A:380:SER:O	1:A:383:GLN:HB2	2.03	0.59
3:B:35:LEU:HD11	4:P:84:LEU:HD13	1.84	0.59
1:A:334:ALA:HB2	1:A:415:ARG:HD3	1.85	0.58
12:M:378:GLN:OE1	12:M:380:GLN:NE2	2.36	0.58
1:A:418:GLN:HG3	1:A:418:GLN:O	2.03	0.58
1:A:159:ILE:HG23	1:A:164:CYS:SG	2.44	0.58
14:O:167:ASP:OD2	14:O:182:LYS:NZ	2.36	0.58
1:A:400:LEU:HD12	1:A:433:LYS:HE2	1.84	0.58
2:R:353:PHE:CG	3:B:447:PHE:HE2	2.19	0.58
14:O:170:THR:HG22	14:O:172:LEU:H	1.68	0.58
15:Q:351:ASP:OD1	15:Q:351:ASP:N	2.35	0.58
15:Q:368:ASP:OD1	15:Q:368:ASP:N	2.35	0.58
7:E:380:SER:HB2	12:M:464:ASN:HA	1.86	0.58
3:B:141:ILE:HG12	3:B:448:TYR:HB3	1.85	0.58
2:R:130:ASP:OD1	14:O:430:ARG:NH2	2.31	0.58
4:P:29:TRP:CD2	4:P:61:LYS:HD3	2.38	0.58
11:J:434:LYS:NZ	11:J:438:GLU:OE2	2.37	0.58
13:N:574:TYR:O	13:N:578:THR:OG1	2.21	0.57
1:A:241:LYS:NZ	1:A:245:GLU:HB3	2.19	0.57
2:R:340:GLN:O	2:R:344:TRP:CD1	2.54	0.57
1:A:44:GLU:O	1:A:44:GLU:HG2	2.05	0.57
8:F:852:ASP:OD1	8:F:853:VAL:N	2.36	0.57
11:I:57:ASN:N	11:I:59:GLU:OE1	2.38	0.57
11:I:271:ARG:HD2	11:I:281:ASN:HD22	1.68	0.57
2:R:287:ARG:NH2	13:N:156:GLN:OE1	2.38	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:216:ARG:NE	1:A:216:ARG:HA	2.20	0.57
2:R:365:GLU:HG2	3:B:415:TYR:CD1	2.40	0.57
5:C:33:ARG:NH2	12:M:441:GLU:OE2	2.36	0.57
14:O:266:THR:HG23	14:O:267:ARG:HG3	1.87	0.56
1:A:381:PRO:HG2	1:A:382:GLU:OE2	2.04	0.56
1:A:72:ASP:OD1	1:A:74:GLN:HB2	2.05	0.56
1:A:426:ASN:O	1:A:432:ARG:NE	2.35	0.56
1:A:446:LEU:HD22	2:R:332:ILE:HG13	1.88	0.56
8:F:814:PRO:O	11:L:276:ARG:NH2	2.39	0.56
1:A:26:LEU:HB3	1:A:27:PRO:HD2	1.88	0.55
1:A:196:ARG:NH2	1:A:312:TYR:OH	2.39	0.55
15:Q:202:ILE:HG12	15:Q:226:ASN:HB2	1.87	0.55
11:L:268:ILE:HD12	14:O:233:PRO:HD2	1.88	0.55
1:A:194:HIS:NE2	1:A:203:GLU:OE1	2.39	0.55
1:A:426:ASN:HB3	1:A:432:ARG:HG2	1.88	0.55
10:H:513:SER:O	10:H:588:THR:HA	2.07	0.55
14:O:35:PHE:HB2	14:O:36:PRO:HD2	1.89	0.55
1:A:122:ARG:HG2	1:A:122:ARG:NH1	2.06	0.55
2:R:239:ILE:HG12	11:I:302:ILE:HD11	1.89	0.55
7:E:372:ARG:HB2	11:I:188:GLN:HB2	1.89	0.55
11:I:226:VAL:HG13	11:I:228:LEU:HG	1.88	0.55
11:L:179:ILE:HD11	15:Q:321:THR:HA	1.89	0.55
12:M:227:VAL:HG12	13:N:361:ILE:HD12	1.88	0.55
14:O:167:ASP:HB3	14:O:173:ASP:HB3	1.89	0.54
14:O:198:ARG:NH2	14:O:199:THR:O	2.41	0.54
4:P:69:ASP:O	4:P:70:GLU:HG3	2.06	0.54
12:M:351:LEU:HD11	12:M:368:LEU:HD11	1.90	0.54
15:Q:147:ILE:HD11	15:Q:167:ARG:HB3	1.90	0.54
2:R:105:ASP:OD1	2:R:106:LYS:N	2.40	0.54
10:H:489:ASN:O	10:H:490:GLU:HG2	2.06	0.54
12:M:225:ARG:HB3	21:7:66:UNK:HA	1.90	0.54
3:B:43:ARG:HG3	3:B:53:TYR:CE2	2.42	0.54
3:B:275:LYS:HE3	3:B:277:SER:H	1.73	0.54
2:R:295:VAL:HG12	13:N:170:GLN:HG3	1.90	0.54
11:L:191:LEU:HG	11:L:200:PHE:HB2	1.90	0.54
11:K:433:VAL:HG21	12:M:32:ASP:HB3	1.90	0.54
11:L:235:TYR:O	14:O:446:ARG:NH1	2.41	0.54
12:M:267:VAL:HG22	12:M:314:LYS:HE3	1.89	0.54
8:F:813:LEU:HD23	8:F:814:PRO:HD2	1.89	0.53
2:R:192:GLU:OE2	12:M:456:ARG:NH1	2.42	0.53
2:R:349:ARG:HB3	2:R:353:PHE:CE2	2.37	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:57:GLN:NE2	11:L:251:SER:OG	2.41	0.53
3:B:189:MET:HG2	3:B:305:LEU:HD13	1.90	0.53
10:H:448:TYR:HA	10:H:493:GLN:HE21	1.73	0.53
1:A:25:GLU:OE1	2:R:346:ARG:NH1	2.42	0.53
7:E:431:CYS:HA	7:E:434:TYR:HD2	1.72	0.53
10:H:453:GLN:HA	10:H:486:PHE:O	2.09	0.53
12:M:451:ASN:OD1	12:M:451:ASN:N	2.42	0.53
14:O:491:ARG:HG2	17:2:358:UNK:HA	1.91	0.53
1:A:438:LEU:O	1:A:442:THR:HG23	2.08	0.53
13:N:285:ASP:OD1	13:N:285:ASP:N	2.36	0.53
11:L:80:VAL:HG21	11:L:130:ARG:HG2	1.91	0.53
1:A:261:GLN:HB2	1:A:262:GLU:OE1	2.09	0.53
2:R:253:LYS:HE3	2:R:257:ILE:HD11	1.89	0.53
6:D:66:TYR:OH	11:I:331:GLU:OE2	2.20	0.53
2:R:126:GLU:OE2	11:L:233:ASN:ND2	2.42	0.53
7:E:380:SER:OG	12:M:463:ASN:ND2	2.43	0.53
1:A:47:PHE:CD1	1:A:85:MET:CE	2.92	0.52
2:R:62:TYR:HB2	2:R:79:ILE:HG21	1.91	0.52
7:E:327:CYS:SG	11:L:145:ASN:ND2	2.82	0.52
11:I:363:TYR:HA	11:I:366:GLU:HG2	1.91	0.52
11:L:193:THR:OG1	11:L:196:GLY:O	2.26	0.52
2:R:361:HIS:CE1	3:B:151:TYR:O	2.62	0.52
15:Q:275:SER:O	15:Q:301:ASN:ND2	2.41	0.52
15:Q:345:ASP:OD1	15:Q:345:ASP:N	2.43	0.52
3:B:43:ARG:HD3	3:B:51:TYR:CD1	2.44	0.52
1:A:6:LYS:HE3	3:B:121:GLN:OE1	2.09	0.52
1:A:80:TRP:NE1	1:A:122:ARG:HD3	2.24	0.52
1:A:147:LEU:HD23	1:A:443:MET:SD	2.47	0.52
9:G:159:VAL:HG11	16:S:208:VAL:HG21	1.91	0.52
1:A:381:PRO:C	1:A:383:GLN:H	2.11	0.52
11:I:91:ILE:HD12	11:L:185:GLY:HA2	1.91	0.52
1:A:399:SER:OG	1:A:432:ARG:NH1	2.42	0.52
11:J:458:LYS:NZ	11:K:453:GLN:OE1	2.42	0.52
1:A:133:VAL:HG13	1:A:134:PRO:HD2	1.91	0.52
1:A:197:LEU:HD11	1:A:231:PHE:CZ	2.45	0.52
11:I:70:LEU:O	11:I:75:LYS:NZ	2.39	0.52
12:M:466:ASN:OD1	12:M:466:ASN:N	2.42	0.52
1:A:152:SER:OG	2:R:333:ILE:HD11	2.10	0.51
8:F:798:ILE:HD11	14:O:192:SER:HB2	1.91	0.51
9:G:175:ASP:OD1	9:G:175:ASP:N	2.43	0.51
11:J:467:LYS:NZ	12:M:62:THR:O	2.42	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:189:MET:CE	3:B:305:LEU:N	2.72	0.51
15:Q:342:ASP:N	15:Q:342:ASP:OD1	2.42	0.51
3:B:34:GLU:CD	3:B:34:GLU:H	2.13	0.51
11:I:249:ARG:NH2	11:I:253:GLN:HE21	2.09	0.51
11:J:430:GLN:NE2	11:K:425:SER:OG	2.41	0.51
11:L:348:GLU:HB3	14:O:457:LYS:HE3	1.92	0.51
13:N:227:GLU:O	13:N:230:SER:OG	2.15	0.51
10:H:497:ALA:HB3	14:O:229:ASN:HA	1.92	0.51
1:A:201:ILE:O	1:A:202:LYS:HB2	2.11	0.51
1:A:418:GLN:HG2	1:A:419:TYR:CE1	2.46	0.51
3:B:32:VAL:HG23	3:B:33:PRO:HD2	1.92	0.51
7:E:402:LEU:HD12	7:E:405:ILE:HD13	1.92	0.51
13:N:255:ASP:OD1	13:N:256:ARG:N	2.44	0.51
3:B:335:ILE:HG22	3:B:340:THR:HG21	1.93	0.51
2:R:111:ASP:OD1	2:R:111:ASP:N	2.38	0.50
2:R:365:GLU:HG2	3:B:415:TYR:CE1	2.44	0.50
4:P:85:LYS:O	4:P:90:ARG:NH1	2.44	0.50
11:L:147:ALA:HB1	15:Q:355:ASN:HD22	1.76	0.50
12:M:454:ALA:HB1	12:M:460:ILE:HG21	1.93	0.50
15:Q:30:PHE:HA	15:Q:216:THR:O	2.11	0.50
15:Q:358:ALA:H	15:Q:371:GLU:HB2	1.75	0.50
2:R:351:PHE:CZ	3:B:176:ASP:CB	2.83	0.50
3:B:171:ILE:HD13	3:B:312:ARG:CG	2.42	0.50
2:R:226:THR:HG21	14:O:122:LYS:HG3	1.93	0.50
10:H:511:LEU:HD23	10:H:525:LEU:HD11	1.94	0.50
12:M:60:THR:O	12:M:61:ASN:ND2	2.44	0.50
3:B:47:GLN:O	3:B:48:ASP:CB	2.59	0.50
15:Q:268:ILE:HD13	15:Q:341:LYS:HG2	1.93	0.50
3:B:102:PHE:HZ	4:P:6:LEU:CD2	2.25	0.50
13:N:250:LEU:HB2	13:N:262:ILE:HG21	1.92	0.50
1:A:460:TYR:CZ	1:A:464:LYS:HE3	2.47	0.50
7:E:417:ASP:N	7:E:417:ASP:OD1	2.42	0.50
1:A:22:SER:HA	1:A:441:LEU:CD1	2.42	0.49
14:O:270:HIS:HD2	14:O:272:ASN:HB2	1.77	0.49
15:Q:200:GLU:HG3	15:Q:201:ALA:H	1.76	0.49
3:B:153:MET:HG3	3:B:334:ILE:HD13	1.94	0.49
6:D:62:ALA:HB3	6:D:71:VAL:HG23	1.94	0.49
8:F:869:ARG:H	11:L:318:GLN:NE2	2.09	0.49
11:L:282:LEU:HD22	11:L:291:HIS:CD2	2.48	0.49
2:R:352:GLN:O	2:R:356:LEU:HG	2.13	0.49
7:E:345:ASP:O	15:Q:149:ASN:ND2	2.45	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:A:389:LEU:O	1:A:421:LEU:HA	2.13	0.49
1:A:407:ARG:O	1:A:411:GLU:HB2	2.12	0.49
7:E:331:ASN:HD21	11:L:137:LEU:HA	1.78	0.49
11:I:192:ASP:OD1	11:I:193:THR:N	2.45	0.49
15:Q:153:PRO:HB3	15:Q:168:TYR:CE2	2.47	0.49
11:K:440:LEU:HD13	12:M:39:MET:HE2	1.95	0.49
12:M:308:PRO:HB3	12:M:329:HIS:CD2	2.48	0.48
1:A:15:HIS:ND1	1:A:16[B]:ARG:HG2	2.28	0.48
1:A:241:LYS:O	1:A:242:ASP:C	2.52	0.48
9:G:163:ALA:HB1	16:S:194:ALA:HB1	1.94	0.48
13:N:341:PRO:HD3	13:N:553:ILE:HD11	1.95	0.48
1:A:141:GLU:HB3	1:A:142:PRO:HD3	1.94	0.48
11:L:236:ASP:OD2	11:L:239:GLN:NE2	2.45	0.48
1:A:170:ILE:O	1:A:173:ILE:HG22	2.13	0.48
1:A:183:LYS:O	1:A:183:LYS:CG	2.61	0.48
11:L:284:SER:HB2	14:O:181:ILE:HD11	1.95	0.48
13:N:126:LEU:O	13:N:129:THR:OG1	2.25	0.48
2:R:350:CYS:SG	3:B:467:PHE:C	2.92	0.48
3:B:189:MET:HE1	3:B:304:ASN:C	2.33	0.48
3:B:286:ASP:HB3	3:B:290:ASN:H	1.79	0.48
2:R:133:ASP:HA	14:O:427:LYS:HZ1	1.79	0.48
11:L:140:THR:HG22	11:L:143:ARG:HH22	1.79	0.48
13:N:191:ILE:HD12	13:N:218:LEU:HD21	1.96	0.48
2:R:215:THR:HG21	2:R:237:PHE:H	1.79	0.48
3:B:364:GLU:HG2	3:B:365:GLU:N	2.29	0.48
1:A:438:LEU:HD23	1:A:438:LEU:HA	1.67	0.47
15:Q:202:ILE:HB	15:Q:225:TYR:HB3	1.96	0.47
15:Q:294:ASP:OD1	15:Q:295:ASN:N	2.46	0.47
2:R:351:PHE:HE1	3:B:176:ASP:CG	2.18	0.47
2:R:372:ILE:O	2:R:375:THR:OG1	2.30	0.47
9:G:175:ASP:O	9:G:178:ILE:HG22	2.14	0.47
11:I:311:VAL:HB	11:I:314:ASN:HD22	1.79	0.47
15:Q:208:LEU:O	15:Q:218:LYS:HA	2.13	0.47
13:N:68:PHE:CZ	15:Q:13:ILE:HD11	2.49	0.47
15:Q:356:ASP:O	15:Q:374:SER:N	2.37	0.47
1:A:337:VAL:O	1:A:340:ALA:HB3	2.15	0.47
1:A:458:GLU:O	1:A:461:GLU:N	2.47	0.47
2:R:338:GLU:O	2:R:342:GLU:HG3	2.13	0.47
3:B:286:ASP:HB2	3:B:290:ASN:HB2	1.95	0.47
11:I:358:PRO:HB2	11:L:224:PHE:HB2	1.94	0.47
1:A:47:PHE:HB2	1:A:85:MET:CE	2.41	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:353:PHE:CD2	3:B:447:PHE:HZ	2.20	0.47
3:B:148:ALA:O	3:B:431:GLY:HA3	2.14	0.47
3:B:370:GLU:HG3	3:B:395:VAL:HG21	1.97	0.47
4:P:83:ASP:C	4:P:84:LEU:O	2.52	0.47
11:J:419:GLU:O	11:J:422:ILE:HG12	2.13	0.47
1:A:259:LYS:HD2	1:A:259:LYS:O	2.14	0.47
1:A:325:PRO:O	1:A:331:PRO:HG2	2.15	0.47
2:R:217:SER:OG	2:R:220:ASP:OD1	2.32	0.47
3:B:30:PHE:HB3	3:B:433:GLN:OE1	2.14	0.47
4:P:9:LYS:HD2	4:P:12:LYS:HE2	1.97	0.47
10:H:444:GLU:HG2	10:H:445:TYR:H	1.80	0.47
12:M:237:ASN:ND2	12:M:321:LYS:O	2.47	0.47
3:B:403:CYS:HB2	3:B:404:PRO:HA	1.97	0.47
10:H:524:THR:HG23	10:H:605:ARG:HB3	1.97	0.47
3:B:26:ASN:O	3:B:27:GLU:HB2	2.15	0.47
11:I:249:ARG:HH21	11:I:253:GLN:HE21	1.61	0.47
2:R:212:ASN:OD1	2:R:212:ASN:N	2.48	0.47
3:B:120:SER:HB2	3:B:123:ASP:H	1.79	0.47
11:K:472:ARG:NH2	11:K:503:ASP:OD2	2.37	0.47
13:N:279:SER:OG	13:N:280:ALA:N	2.48	0.47
14:O:198:ARG:HD3	14:O:203:ASP:OD1	2.14	0.47
7:E:372:ARG:HH12	11:I:227:ASN:HD21	1.62	0.46
15:Q:331:SER:O	15:Q:334:GLU:HB2	2.15	0.46
2:R:369:GLN:O	2:R:373:GLU:CG	2.59	0.46
12:M:23:PRO:HB2	12:M:26:LYS:HG2	1.97	0.46
1:A:447:PRO:HG3	2:R:335:PHE:CG	2.49	0.46
8:F:818:TRP:HA	11:L:287:PHE:CD1	2.51	0.46
13:N:115:ILE:HA	13:N:120:LEU:HD12	1.96	0.46
1:A:188:PHE:HZ	1:A:319:ILE:HD13	1.80	0.46
1:A:216:ARG:NH1	1:A:216:ARG:CG	2.69	0.46
3:B:189:MET:HG2	3:B:305:LEU:CD1	2.45	0.46
10:H:525:LEU:O	10:H:532:PRO:HD2	2.16	0.46
12:M:452:GLU:HA	12:M:455:ALA:HB3	1.98	0.46
10:H:490:GLU:HG3	11:L:264:GLY:O	2.15	0.46
12:M:309:GLU:N	12:M:312:GLU:OE1	2.47	0.46
7:E:331:ASN:ND2	11:L:137:LEU:HA	2.31	0.46
11:J:472:ARG:HH22	11:K:467:LYS:HB2	1.81	0.46
1:A:236:LEU:HD22	1:A:309:PHE:CD2	2.51	0.46
7:E:372:ARG:HH22	11:I:227:ASN:HD21	1.64	0.46
1:A:150:GLY:N	2:R:336:ILE:HD13	2.30	0.46
1:A:419:TYR:N	1:A:419:TYR:CD1	2.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
2:R:208:ARG:NH1	6:D:85:HIS:O	2.49	0.46
3:B:212:SER:HB3	3:B:284:PHE:HE2	1.81	0.46
4:P:56:TYR:HB3	4:P:58:PHE:CE2	2.51	0.46
6:D:64:HIS:CD2	6:D:66:TYR:H	2.30	0.46
7:E:388:THR:HG23	11:I:230:ILE:HB	1.98	0.46
1:A:6:LYS:HD2	1:A:23:ASN:ND2	2.30	0.46
15:Q:162:PRO:O	15:Q:165:ILE:HB	2.16	0.46
1:A:282:ASN:O	1:A:285:VAL:HG22	2.16	0.45
3:B:102:PHE:HZ	4:P:6:LEU:HD23	1.82	0.45
3:B:424:TYR:CD1	3:B:427:ILE:HD12	2.51	0.45
6:D:98:GLU:OE2	13:N:41:ARG:NH2	2.29	0.45
7:E:414:VAL:HG22	7:E:418:VAL:HB	1.98	0.45
12:M:372:VAL:HG12	12:M:375:ILE:HB	1.98	0.45
10:H:608:ASP:O	10:H:609:LYS:HG2	2.16	0.45
13:N:561:LEU:HD21	13:N:571:LEU:HD12	1.98	0.45
1:A:164:CYS:HB2	1:A:182:SER:HB3	1.98	0.45
1:A:232:LYS:HA	1:A:236:LEU:HG	1.99	0.45
1:A:320:SER:OG	1:A:322:LYS:N	2.38	0.45
9:G:192:LEU:HD11	16:S:209:LEU:HD22	1.97	0.45
11:J:482:LEU:HD11	11:K:507:GLN:HA	1.99	0.45
4:P:23:GLU:OE2	4:P:65:ARG:HD3	2.16	0.45
11:K:493:LYS:HE2	11:K:510:GLU:HG2	1.97	0.45
11:L:150:VAL:HG11	15:Q:310:PHE:CE1	2.51	0.45
15:Q:307:PRO:HB3	15:Q:332:LEU:HD23	1.97	0.45
3:B:143:LEU:HD12	3:B:144:PRO:HD2	1.98	0.45
11:L:298:SER:HB3	14:O:390:LEU:HG	1.98	0.45
3:B:3:PRO:HA	3:B:4:PHE:HA	1.67	0.45
4:P:33:SER:HB3	4:P:55:LYS:CD	2.46	0.45
9:G:157:ASN:ND2	16:S:203:PHE:O	2.46	0.45
11:L:147:ALA:HB3	15:Q:371:GLU:H	1.80	0.45
3:B:121:GLN:HG2	3:B:463:TRP:CH2	2.52	0.45
11:L:258:TYR:OH	14:O:173:ASP:OD1	2.33	0.45
1:A:412:LEU:HD12	1:A:412:LEU:HA	1.76	0.45
6:D:64:HIS:CD2	6:D:66:TYR:HB2	2.52	0.45
11:K:433:VAL:O	11:K:437:MET:HG2	2.17	0.45
13:N:77:ARG:NH1	16:S:198:LEU:H	2.15	0.45
1:A:344:ILE:O	1:A:344:ILE:CG2	2.64	0.44
3:B:197:SER:HB3	3:B:301:GLY:HA2	1.99	0.44
3:B:286:ASP:CB	3:B:290:ASN:H	2.29	0.44
6:D:64:HIS:HD2	6:D:66:TYR:HB2	1.81	0.44
10:H:487:ASN:ND2	10:H:490:GLU:OE2	2.43	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:M:372:VAL:HG13	12:M:375:ILE:HD12	1.99	0.44
2:R:356:LEU:O	2:R:359:SER:OG	2.22	0.44
4:P:66:ASN:HB3	4:P:70:GLU:HB2	1.98	0.44
11:K:500:GLU:OE1	12:M:246:THR:OG1	2.33	0.44
12:M:447:ASP:HB3	14:O:270:HIS:CD2	2.52	0.44
15:Q:20:LEU:HA	15:Q:27:ILE:HD12	1.99	0.44
3:B:30:PHE:CD1	3:B:30:PHE:N	2.84	0.44
11:I:180:GLY:HA3	11:L:198:LYS:HE3	2.00	0.44
1:A:25:GLU:OE1	2:R:346:ARG:HD2	2.18	0.44
2:R:177:LYS:HG2	12:M:444:LEU:HD13	1.98	0.44
4:P:33:SER:HB3	4:P:55:LYS:HD3	1.98	0.44
6:D:123:ASP:OD2	10:H:474:ARG:NH2	2.50	0.44
2:R:157:LYS:HD3	5:C:44:GLU:HB2	1.98	0.44
2:R:248:LEU:O	14:O:257:PRO:HG2	2.18	0.44
2:R:351:PHE:CE1	3:B:176:ASP:CG	2.91	0.44
11:I:171:ASP:O	11:I:174:THR:HG22	2.17	0.44
11:I:281:ASN:OD1	11:I:281:ASN:N	2.50	0.44
3:B:180:LEU:HA	3:B:180:LEU:HD23	1.69	0.44
7:E:392:ASP:OD2	7:E:395:LEU:HD13	2.16	0.44
9:G:167:MET:HE1	9:G:177:ILE:HA	2.00	0.44
11:I:239:GLN:H	11:I:239:GLN:HG3	1.60	0.44
2:R:367:ASP:O	2:R:371:ARG:HG3	2.17	0.44
3:B:354:LEU:HD22	3:B:358:LEU:HD22	1.98	0.44
4:P:1:MET:HG2	4:P:2:ASP:N	2.33	0.44
1:A:145:ILE:O	1:A:149:MET:HG2	2.17	0.44
2:R:351:PHE:O	2:R:355:ARG:HG3	2.17	0.44
3:B:146:SER:HB2	3:B:174:ILE:HD11	1.99	0.44
11:I:246:ASP:OD1	11:I:247:GLU:N	2.49	0.44
14:O:202:MET:HG3	14:O:204:LEU:HD11	2.00	0.44
1:A:282:ASN:HA	1:A:283:PRO:HD2	1.90	0.44
1:A:149:MET:HA	2:R:340:GLN:NE2	2.33	0.43
1:A:458:GLU:O	1:A:459:ASP:C	2.57	0.43
13:N:234:ALA:HB3	13:N:235:PRO:HD3	1.99	0.43
1:A:320:SER:OG	1:A:321:ASP:N	2.49	0.43
1:A:334:ALA:CB	1:A:415:ARG:HD3	2.46	0.43
12:M:227:VAL:HG13	12:M:346:LEU:HD12	1.99	0.43
13:N:539:ASN:OD1	13:N:577:ASN:ND2	2.51	0.43
2:R:357:GLY:C	2:R:361:HIS:CD2	2.90	0.43
3:B:189:MET:HG3	3:B:193:SER:OG	2.19	0.43
1:A:76:LEU:HD23	1:A:108:MET:HE1	1.82	0.43
2:R:383:LEU:HB3	2:R:384:LYS:HA	1.99	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:E:371:TRP:CD2	11:L:202:PRO:HG3	2.53	0.43
14:O:51:TYR:CE2	14:O:55:ILE:HD11	2.53	0.43
1:A:381:PRO:HG2	1:A:382:GLU:CD	2.39	0.43
1:A:381:PRO:C	1:A:383:GLN:N	2.72	0.43
1:A:446:LEU:CD1	2:R:332:ILE:CD1	2.97	0.43
2:R:112:GLU:OE2	14:O:466:SER:OG	2.29	0.43
12:M:10:VAL:HG22	12:M:11:THR:H	1.84	0.43
9:G:178:ILE:HD12	16:S:226:LEU:HD23	2.01	0.43
10:H:527:THR:C	10:H:529:ASN:N	2.68	0.43
14:O:173:ASP:OD1	14:O:173:ASP:N	2.48	0.43
1:A:431:ASP:O	1:A:435:GLN:HB2	2.19	0.43
9:G:158:TRP:CD1	13:N:74:GLU:HG3	2.54	0.43
12:M:335:VAL:O	12:M:338:THR:OG1	2.31	0.43
11:I:140:THR:HG23	11:I:143:ARG:HH21	1.83	0.43
13:N:59:HIS:O	13:N:59:HIS:ND1	2.49	0.43
13:N:75:THR:OG1	15:Q:12:TYR:OH	2.20	0.43
15:Q:20:LEU:HD23	15:Q:27:ILE:HG21	2.01	0.43
1:A:129:ASP:OD2	1:A:460:TYR:HE2	2.01	0.43
1:A:180:VAL:CG1	1:A:332:LEU:HG	2.48	0.43
12:M:378:GLN:HG2	12:M:380:GLN:HG3	2.00	0.43
13:N:132:LEU:N	13:N:133:PRO:HD2	2.33	0.43
15:Q:219:ASP:OD2	15:Q:239:TYR:OH	2.30	0.43
3:B:286:ASP:HB2	3:B:290:ASN:O	2.18	0.43
12:M:261:LEU:HD23	12:M:261:LEU:HA	1.88	0.43
13:N:542:ASP:OD1	13:N:542:ASP:N	2.50	0.43
1:A:80:TRP:CE2	1:A:122:ARG:HD3	2.53	0.42
1:A:147:LEU:HG	2:R:336:ILE:HG21	2.00	0.42
1:A:151:LYS:HE3	1:A:424:PHE:CE1	2.53	0.42
3:B:156:LEU:HD23	3:B:156:LEU:HA	1.76	0.42
8:F:808:ASP:OD1	8:F:809:PRO:HD2	2.19	0.42
14:O:55:ILE:O	14:O:59:SER:N	2.48	0.42
14:O:433:ARG:NH1	14:O:441:PRO:HB3	2.34	0.42
1:A:198:ALA:N	1:A:199:PRO:HD2	2.34	0.42
2:R:344:TRP:O	2:R:348:GLU:HG3	2.18	0.42
3:B:66:LYS:HA	3:B:67:PRO:HD3	1.78	0.42
7:E:394:ASP:HB2	7:E:428:PHE:HE1	1.84	0.42
13:N:166:ARG:HG3	13:N:167:ASN:N	2.34	0.42
13:N:223:LEU:HD23	13:N:223:LEU:HA	1.82	0.42
1:A:314:PHE:CZ	1:A:407:ARG:HG3	2.54	0.42
11:I:195:GLN:C	11:I:197:LEU:H	2.23	0.42
11:J:482:LEU:HD23	11:J:482:LEU:HA	1.91	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:B:445:ASP:HA	3:B:448:TYR:CE1	2.55	0.42
4:P:83:ASP:O	4:P:86:GLU:HG3	2.18	0.42
12:M:371:ASP:OD1	12:M:371:ASP:N	2.53	0.42
1:A:122:ARG:CG	1:A:122:ARG:NH1	2.66	0.42
11:I:158:ALA:HB2	15:Q:186:LEU:HD12	2.01	0.42
11:J:479:ILE:HD11	11:K:475:LEU:HD21	2.01	0.42
13:N:85:MET:SD	13:N:103:LYS:HB3	2.59	0.42
15:Q:146:ASP:OD1	15:Q:147:ILE:N	2.52	0.42
11:L:121:THR:O	11:L:125:ILE:HG13	2.20	0.42
12:M:30:LEU:HA	12:M:30:LEU:HD23	1.86	0.42
13:N:148:ASP:OD1	13:N:149:SER:N	2.50	0.42
14:O:13:PHE:CE1	14:O:134:GLU:HB3	2.55	0.42
14:O:44:PRO:HA	14:O:47:ILE:HG13	2.00	0.42
3:B:275:LYS:HA	3:B:275:LYS:HD2	1.91	0.42
10:H:523:GLU:HG2	10:H:606:CYS:SG	2.59	0.42
11:I:135:GLU:HG2	11:I:136:TYR:H	1.84	0.42
11:L:90:ASP:HB3	11:L:93:LYS:HB2	2.02	0.42
11:L:119:LYS:HG3	11:L:122:ARG:NH2	2.34	0.42
15:Q:356:ASP:N	15:Q:374:SER:HA	2.35	0.42
1:A:197:LEU:HD11	1:A:231:PHE:CE1	2.55	0.42
7:E:320:LEU:HB3	11:L:73:LEU:HD11	2.02	0.42
8:F:818:TRP:HA	11:L:287:PHE:HD1	1.85	0.42
12:M:332:LEU:HD23	13:N:565:PRO:HB3	2.00	0.42
3:B:6:GLN:O	3:B:24:GLY:HA2	2.19	0.42
12:M:7:PRO:HB2	14:O:282:LEU:HB3	2.02	0.42
13:N:328:LYS:HE2	13:N:328:LYS:HB3	1.87	0.42
13:N:338:ALA:O	13:N:342:ASN:ND2	2.52	0.42
1:A:381:PRO:O	1:A:383:GLN:N	2.53	0.42
3:B:429:PHE:HE1	3:B:433:GLN:HE21	1.68	0.42
4:P:9:LYS:HD2	4:P:12:LYS:NZ	2.34	0.42
13:N:298:LEU:HD12	13:N:304:LEU:HD23	2.01	0.42
14:O:270:HIS:ND1	14:O:271:PRO:HD2	2.34	0.42
1:A:442:THR:O	2:R:339:ARG:NH2	2.53	0.41
1:A:451:LEU:HA	1:A:451:LEU:HD23	1.81	0.41
2:R:133:ASP:HA	14:O:427:LYS:NZ	2.34	0.41
11:K:493:LYS:HG3	11:K:510:GLU:HG2	2.02	0.41
13:N:274:LYS:HB2	13:N:277:GLU:HB3	2.02	0.41
1:A:150:GLY:N	2:R:336:ILE:CD1	2.83	0.41
2:R:63:ARG:HH21	11:L:287:PHE:HA	1.85	0.41
3:B:26:ASN:HB3	3:B:29:THR:O	2.20	0.41
11:I:260:CYS:SG	11:I:262:THR:OG1	2.76	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:O:222:PRO:HG2	14:O:226:PHE:CE2	2.55	0.41
1:A:235:MET:SD	3:B:401:VAL:HG21	2.61	0.41
2:R:248:LEU:HD23	2:R:248:LEU:HA	1.85	0.41
2:R:360:LEU:HD21	3:B:438:GLN:NE2	2.35	0.41
6:D:110:HIS:NE2	6:D:115:CYS:SG	2.93	0.41
11:J:443:LYS:NZ	12:M:44:ASP:OD1	2.51	0.41
11:J:447:LEU:HD23	11:J:447:LEU:HA	1.91	0.41
13:N:90:LEU:HD23	13:N:90:LEU:HA	1.93	0.41
14:O:239:ASN:ND2	14:O:482:ASN:O	2.53	0.41
1:A:446:LEU:HD11	2:R:332:ILE:CD1	2.47	0.41
2:R:184:THR:HG21	12:M:451:ASN:O	2.21	0.41
10:H:457:PHE:HB3	10:H:483:GLU:HG3	2.03	0.41
2:R:136:LEU:C	2:R:139:PRO:HD2	2.40	0.41
7:E:407:LYS:HA	7:E:410:TYR:CZ	2.55	0.41
8:F:807:GLY:O	11:L:316:SER:HB2	2.21	0.41
3:B:91:LEU:CD2	3:B:106:LEU:HD22	2.50	0.41
11:I:259:ILE:HD12	13:N:43:GLN:HG2	2.02	0.41
13:N:361:ILE:HA	13:N:512:ASN:HD21	1.86	0.41
1:A:139:VAL:HG11	1:A:443:MET:HG3	2.03	0.41
3:B:112:LEU:HD12	3:B:141:ILE:HD12	2.02	0.41
5:C:61:SER:O	5:C:65:MET:HG2	2.20	0.41
12:M:223:GLN:HG3	12:M:224:LEU:H	1.85	0.41
13:N:561:LEU:HD22	13:N:568:THR:HA	2.03	0.41
2:R:62:TYR:O	2:R:66:GLN:HG3	2.21	0.41
11:L:312:LYS:N	11:L:345:LYS:HZ2	2.19	0.41
14:O:37:ALA:HB3	14:O:73:LEU:HB2	2.02	0.41
14:O:43:ASN:HD21	14:O:46:LYS:HD2	1.86	0.41
14:O:416:ASP:N	14:O:416:ASP:OD1	2.54	0.41
1:A:418:GLN:HG2	1:A:419:TYR:CD1	2.55	0.41
2:R:360:LEU:HD21	3:B:438:GLN:HE21	1.86	0.41
2:R:365:GLU:O	2:R:369:GLN:HG3	2.21	0.41
3:B:154:ILE:HG22	3:B:154:ILE:O	2.21	0.41
7:E:352:ALA:O	15:Q:19:ARG:HD2	2.21	0.41
8:F:862:GLY:HA3	8:F:864:PHE:CE2	2.56	0.41
12:M:316:ASP:N	12:M:316:ASP:OD1	2.53	0.41
12:M:338:THR:O	12:M:342:LEU:HG	2.21	0.41
12:M:365:ALA:O	12:M:367:THR:HG23	2.21	0.41
13:N:275:ALA:HB2	13:N:318:PRO:O	2.20	0.41
15:Q:377:CYS:HB2	15:Q:378:PRO:HD2	2.03	0.41
1:A:442:THR:CB	2:R:339:ARG:HH21	2.34	0.41
1:A:458:GLU:O	1:A:460:TYR:N	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:M:405:LEU:HD12	12:M:405:LEU:HA	1.92	0.41
1:A:153:SER:HG	1:A:171:ASP:H	1.66	0.40
1:A:241:LYS:HZ2	1:A:245:GLU:HB3	1.86	0.40
1:A:108:MET:SD	1:A:123:TYR:HE2	2.43	0.40
2:R:360:LEU:CD2	3:B:438:GLN:HE21	2.34	0.40
3:B:312:ARG:HA	3:B:312:ARG:HD3	1.79	0.40
10:H:502:LEU:HD11	10:H:509:LEU:HD11	2.03	0.40
11:L:166:ILE:HG22	11:L:167:ASN:CG	2.42	0.40
13:N:565:PRO:N	13:N:566:PRO:HD2	2.36	0.40
15:Q:358:ALA:H	15:Q:371:GLU:CB	2.32	0.40
1:A:389:LEU:HD22	1:A:421:LEU:CD2	2.52	0.40
2:R:365:GLU:CG	3:B:415:TYR:CD1	3.03	0.40
13:N:131:ILE:O	13:N:134:LEU:HB3	2.21	0.40
14:O:170:THR:HG22	14:O:172:LEU:N	2.36	0.40
3:B:146:SER:O	3:B:149:ALA:HB3	2.21	0.40
11:I:175:LYS:HE2	11:L:192:ASP:OD1	2.21	0.40
13:N:289:LEU:O	13:N:293:VAL:HG23	2.21	0.40
1:A:381:PRO:HG2	1:A:382:GLU:H	1.86	0.40
2:R:104:ILE:HG23	14:O:410:PHE:HD1	1.87	0.40
2:R:371:ARG:HH12	3:B:28:GLU:C	2.19	0.40
7:E:331:ASN:HD22	11:L:137:LEU:HD12	1.87	0.40
10:H:489:ASN:OD1	10:H:489:ASN:N	2.54	0.40
12:M:50:ARG:HA	12:M:50:ARG:HD3	1.78	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	392/477 (82%)	369 (94%)	18 (5%)	5 (1%)	12 48
2	R	319/1359 (24%)	296 (93%)	23 (7%)	0	100 100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
3	B	391/467 (84%)	368 (94%)	21 (5%)	2 (0%)	29	69
4	P	46/157 (29%)	43 (94%)	2 (4%)	1 (2%)	6	35
5	C	58/78 (74%)	56 (97%)	2 (3%)	0	100	100
6	D	96/180 (53%)	90 (94%)	6 (6%)	0	100	100
7	E	118/435 (27%)	108 (92%)	10 (8%)	0	100	100
8	F	63/889 (7%)	56 (89%)	7 (11%)	0	100	100
9	G	51/885 (6%)	49 (96%)	2 (4%)	0	100	100
10	H	127/625 (20%)	114 (90%)	10 (8%)	3 (2%)	6	33
11	I	289/557 (52%)	274 (95%)	15 (5%)	0	100	100
11	J	113/557 (20%)	109 (96%)	4 (4%)	0	100	100
11	K	105/557 (19%)	101 (96%)	4 (4%)	0	100	100
11	L	292/557 (52%)	277 (95%)	15 (5%)	0	100	100
12	M	302/483 (62%)	281 (93%)	21 (7%)	0	100	100
13	N	408/581 (70%)	380 (93%)	28 (7%)	0	100	100
14	O	376/502 (75%)	352 (94%)	24 (6%)	0	100	100
15	Q	258/426 (61%)	224 (87%)	34 (13%)	0	100	100
16	S	32/883 (4%)	32 (100%)	0	0	100	100
23	a	95/136 (70%)	92 (97%)	3 (3%)	0	100	100
23	e	97/136 (71%)	95 (98%)	2 (2%)	0	100	100
24	b	76/103 (74%)	75 (99%)	1 (1%)	0	100	100
24	f	83/103 (81%)	80 (96%)	3 (4%)	0	100	100
25	c	106/130 (82%)	101 (95%)	5 (5%)	0	100	100
25	g	102/130 (78%)	98 (96%)	3 (3%)	1 (1%)	15	55
26	d	94/126 (75%)	89 (95%)	4 (4%)	1 (1%)	14	52
26	h	92/126 (73%)	88 (96%)	0	4 (4%)	2	22
All	All	4581/11645 (39%)	4297 (94%)	267 (6%)	17 (0%)	38	72

All (17) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
3	B	48	ASP
10	H	528	ILE
26	h	120	SER

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Mol	Chain	Res	Type
1	A	343	SER
26	d	101	GLY
26	h	29	SER
26	h	30	ARG
26	h	101	GLY
1	A	382	GLU
1	A	459	ASP
4	P	84	LEU
10	H	529	ASN
1	A	431	ASP
1	A	458	GLU
3	B	155	SER
10	H	527	THR
25	g	117	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	357/420 (85%)	338 (95%)	19 (5%)	22	47
2	R	297/1228 (24%)	294 (99%)	3 (1%)	76	86
3	B	363/423 (86%)	343 (94%)	20 (6%)	21	47
4	P	53/140 (38%)	52 (98%)	1 (2%)	57	75
5	C	58/75 (77%)	58 (100%)	0	100	100
6	D	82/151 (54%)	82 (100%)	0	100	100
7	E	113/388 (29%)	105 (93%)	8 (7%)	14	39
8	F	60/810 (7%)	60 (100%)	0	100	100
9	G	48/832 (6%)	47 (98%)	1 (2%)	53	72
10	H	126/578 (22%)	124 (98%)	2 (2%)	62	79
11	I	268/500 (54%)	261 (97%)	7 (3%)	46	66
11	J	111/500 (22%)	110 (99%)	1 (1%)	78	87
11	K	106/500 (21%)	106 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
11	L	270/500 (54%)	270 (100%)	0	100	100
12	M	286/435 (66%)	281 (98%)	5 (2%)	60	78
13	N	374/521 (72%)	366 (98%)	8 (2%)	53	72
14	O	358/462 (78%)	355 (99%)	3 (1%)	81	89
15	Q	243/384 (63%)	233 (96%)	10 (4%)	30	55
16	S	33/824 (4%)	32 (97%)	1 (3%)	41	63
23	a	85/111 (77%)	82 (96%)	3 (4%)	36	59
23	e	86/111 (78%)	83 (96%)	3 (4%)	36	59
24	b	63/79 (80%)	63 (100%)	0	100	100
24	f	70/79 (89%)	66 (94%)	4 (6%)	20	45
25	c	85/100 (85%)	79 (93%)	6 (7%)	14	39
25	g	83/100 (83%)	76 (92%)	7 (8%)	11	33
26	d	82/105 (78%)	77 (94%)	5 (6%)	18	44
26	h	80/105 (76%)	77 (96%)	3 (4%)	33	57
All	All	4240/10461 (40%)	4120 (97%)	120 (3%)	46	65

All (120) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	A	2	THR
1	A	79	ASN
1	A	88	ARG
1	A	122	ARG
1	A	216	ARG
1	A	230	GLN
1	A	246	LEU
1	A	251	LYS
1	A	293	LYS
1	A	301	LEU
1	A	319	ILE
1	A	321	ASP
1	A	343	SER
1	A	380	SER
1	A	386	SER
1	A	397	SER
1	A	432	ARG
1	A	442	THR

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Mol	Chain	Res	Type
1	A	462	THR
2	R	215	THR
2	R	265	VAL
2	R	297	VAL
3	B	7	ASP
3	B	32	VAL
3	B	34	GLU
3	B	41	ILE
3	B	48	ASP
3	B	52	THR
3	B	54	HIS
3	B	56	THR
3	B	69	GLN
3	B	94	ARG
3	B	100	ASP
3	B	105	GLU
3	B	122	SER
3	B	181	ASP
3	B	197	SER
3	B	291	GLU
3	B	321	ASP
3	B	347	GLU
3	B	422	SER
3	B	438	GLN
4	P	90	ARG
7	E	327	CYS
7	E	351	ASP
7	E	356	ILE
7	E	359	ILE
7	E	384	ILE
7	E	413	VAL
7	E	414	VAL
7	E	417	ASP
9	G	175	ASP
10	H	510	THR
10	H	527	THR
11	I	170	ILE
11	I	224	PHE
11	I	253	GLN
11	I	270	VAL
11	I	275	LEU
11	I	281	ASN

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Mol	Chain	Res	Type
11	I	312	LYS
11	J	459	LEU
12	M	58	LEU
12	M	62	THR
12	M	232	VAL
12	M	241	LEU
12	M	466	ASN
13	N	79	VAL
13	N	91	SER
13	N	104	TYR
13	N	123	LEU
13	N	166	ARG
13	N	170	GLN
13	N	195	PHE
13	N	578	THR
14	O	208	ILE
14	O	274	TYR
14	O	279	THR
15	Q	192	THR
15	Q	250	LEU
15	Q	262	LEU
15	Q	295	ASN
15	Q	342	ASP
15	Q	345	ASP
15	Q	351	ASP
15	Q	352	HIS
15	Q	368	ASP
15	Q	370	ASP
16	S	198	LEU
23	a	59	GLU
23	a	63	ARG
23	a	129	ARG
25	c	29	ARG
25	c	59	THR
25	c	71	ARG
25	c	81	ARG
25	c	84	GLN
25	c	101	THR
26	d	28	ARG
26	d	54	LYS
26	d	68	GLU
26	d	77	LEU

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Mol	Chain	Res	Type
26	d	85	THR
23	e	63	ARG
23	e	64	LYS
23	e	68	GLN
24	f	19	ARG
24	f	91	LYS
24	f	92	ARG
24	f	93	GLN
25	g	35	ARG
25	g	64	GLU
25	g	73	ASN
25	g	81	ARG
25	g	99	ARG
25	g	101	THR
25	g	118	LYS
26	h	85	THR
26	h	96	ARG
26	h	102	GLU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (62) such sidechains are listed below:

Mol	Chain	Res	Type
2	R	57	GLN
2	R	72	ASN
2	R	116	ASN
2	R	123	GLN
2	R	270	HIS
2	R	290	GLN
2	R	340	GLN
2	R	361	HIS
3	B	303	ASN
3	B	304	ASN
3	B	438	GLN
6	D	64	HIS
6	D	108	HIS
7	E	331	ASN
7	E	432	ASN
9	G	180	HIS
10	H	493	GLN
10	H	506	GLN
10	H	601	HIS
11	I	60	GLN

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Mol	Chain	Res	Type
11	I	63	GLN
11	I	227	ASN
11	I	314	ASN
11	K	426	GLN
11	K	501	GLN
11	L	145	ASN
11	L	291	HIS
11	L	318	GLN
12	M	61	ASN
12	M	233	GLN
12	M	340	ASN
12	M	378	GLN
12	M	380	GLN
13	N	43	GLN
13	N	512	ASN
13	N	559	HIS
13	N	577	ASN
14	O	18	GLN
14	O	22	ASN
14	O	97	HIS
14	O	270	HIS
14	O	484	ASN
15	Q	3	HIS
15	Q	15	ASN
15	Q	158	GLN
15	Q	164	ASN
15	Q	261	GLN
23	a	76	GLN
23	a	85	GLN
24	b	75	HIS
25	c	31	HIS
25	c	38	ASN
25	c	73	ASN
25	c	84	GLN
26	d	60	ASN
26	d	92	GLN
24	f	75	HIS
24	f	93	GLN
25	g	31	HIS
25	g	73	ASN
26	h	79	HIS
26	h	92	GLN

5.3.3 RNA [i](#)

There are no RNA molecules in this entry.

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

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

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

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

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
21	7	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	7	57:UNK	C	60:UNK	N	4.98

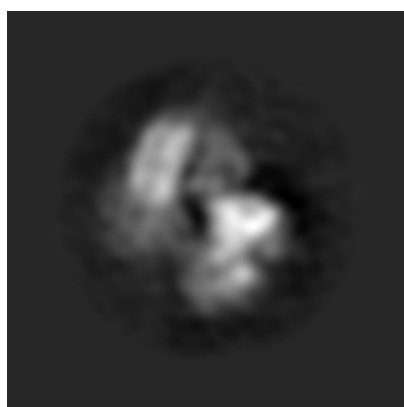
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-21114. 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 [i](#)

6.1.1 Primary map



X



Y

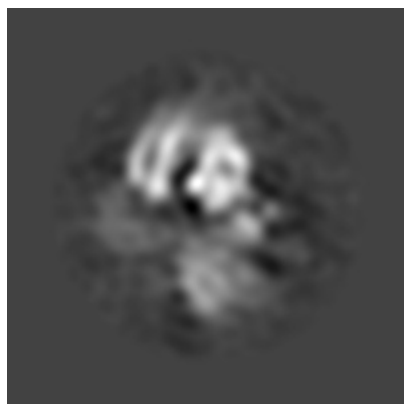


Z

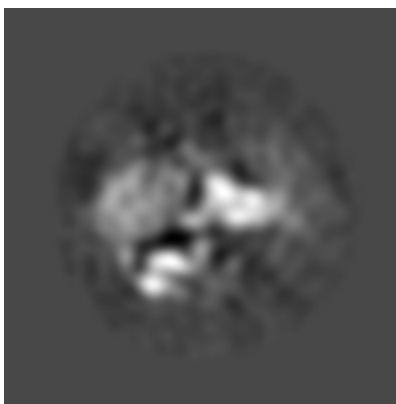
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

6.2.1 Primary map



X Index: 64



Y Index: 64



Z Index: 64

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: 68



Y Index: 71

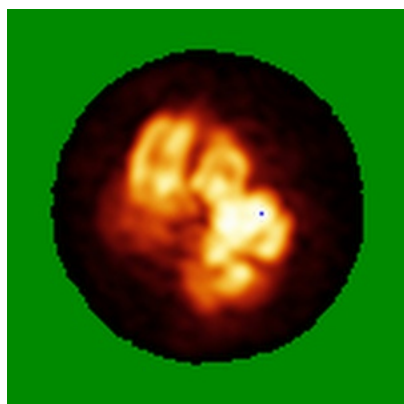


Z Index: 59

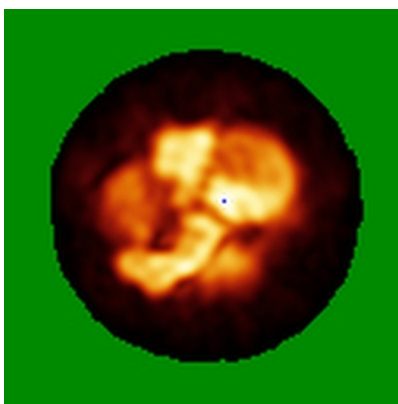
The images above show the largest variance slices of the map in three orthogonal directions.

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

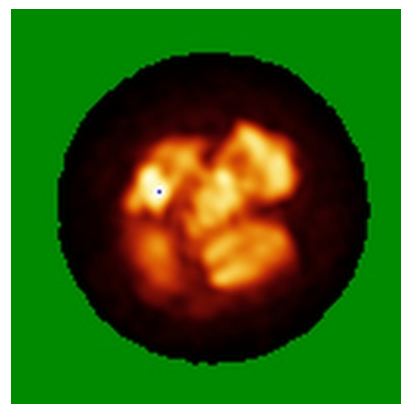
6.4.1 Primary map



X



Y



Z

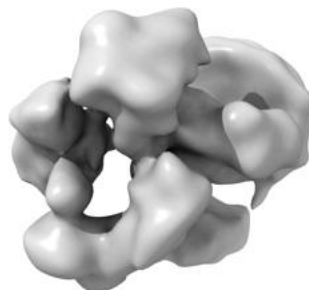
The images above show the map standard deviation projections with false color in three orthogonal directions. Minimum values are shown in green, max in blue, and dark to light orange shades represent small to large values respectively.

6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



X



Y



Z

The images above show the 3D surface view of the map at the recommended contour level 0.03. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

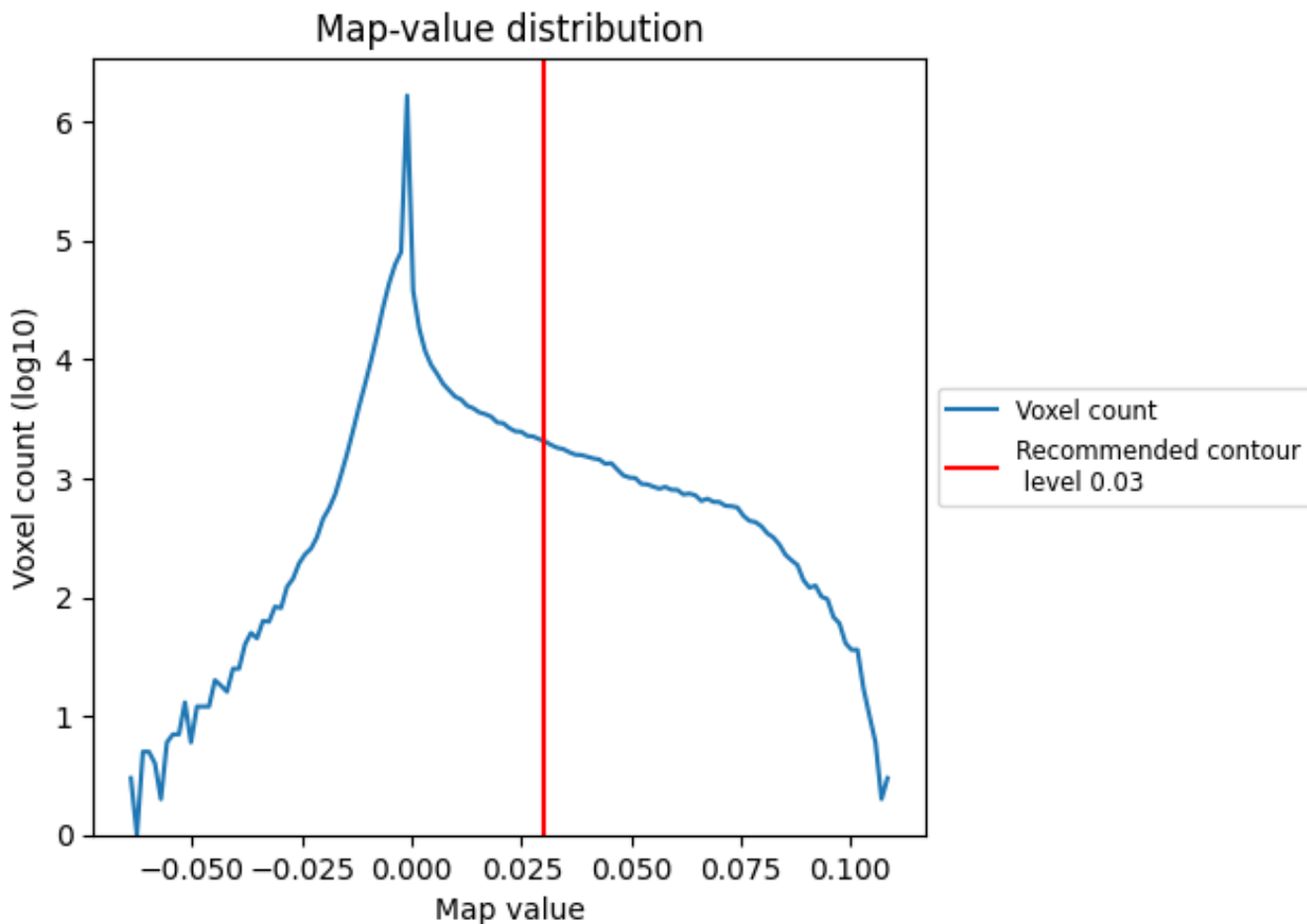
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

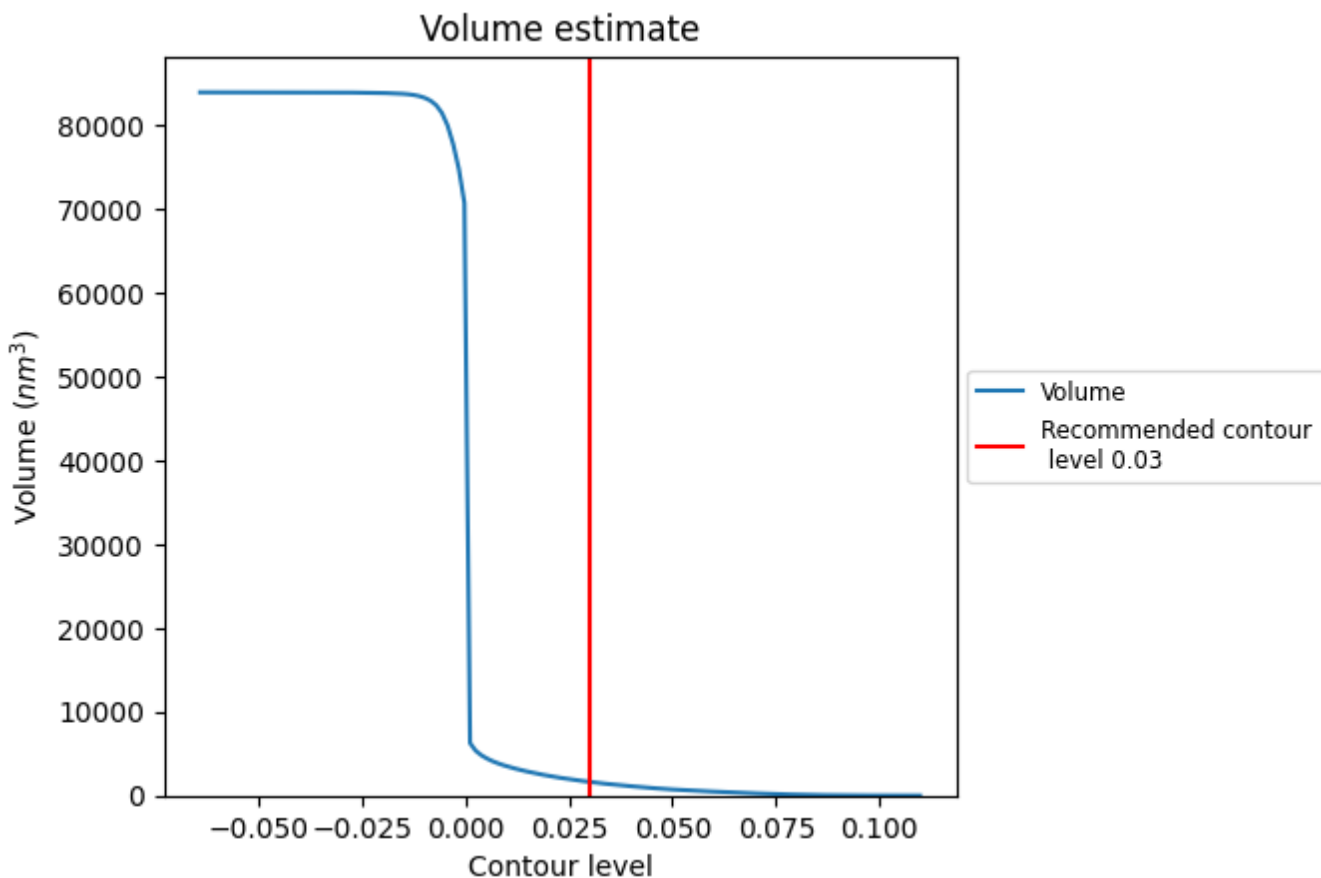
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

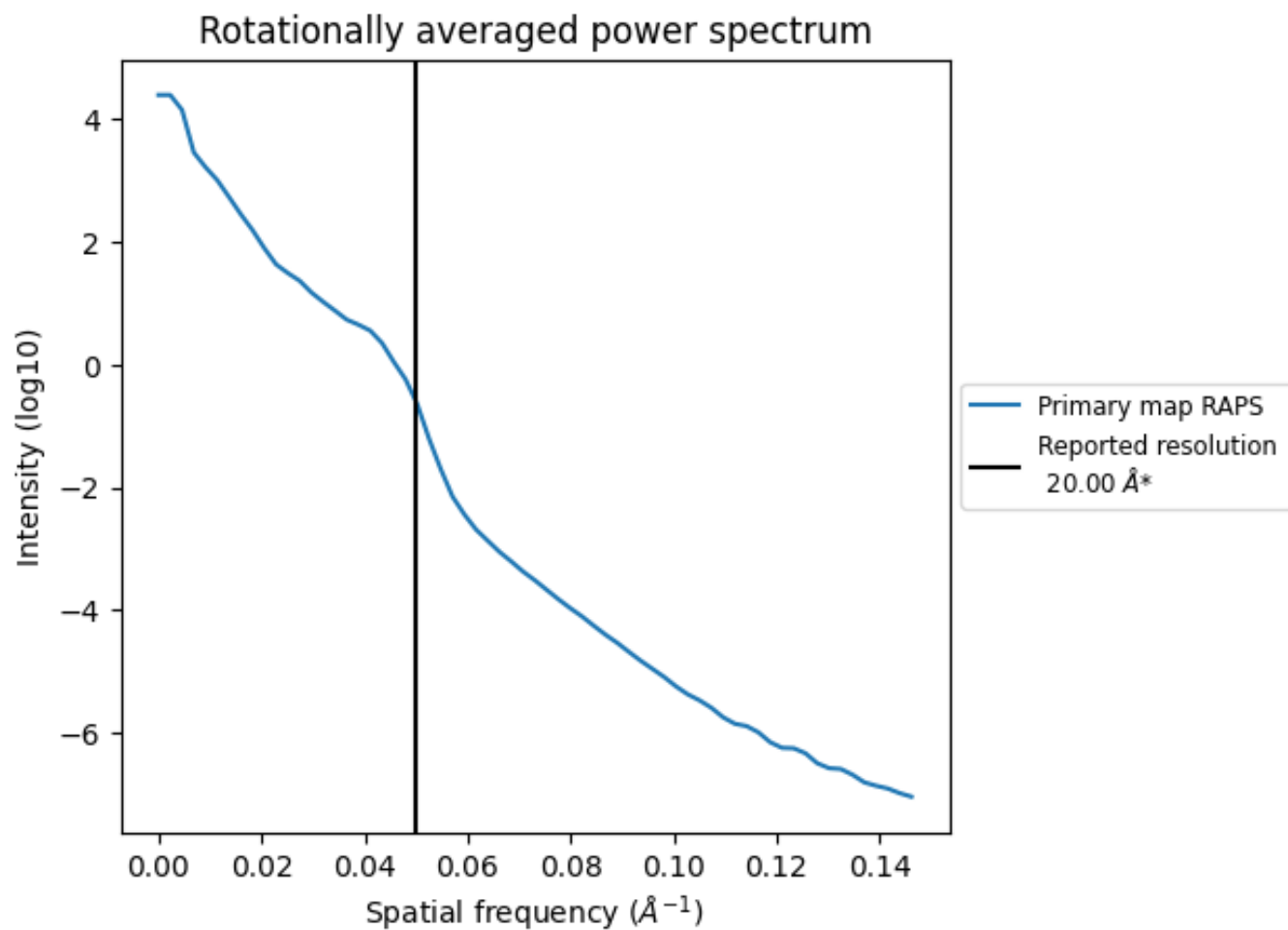
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1633 nm³; this corresponds to an approximate mass of 1475 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 0.050 Å⁻¹

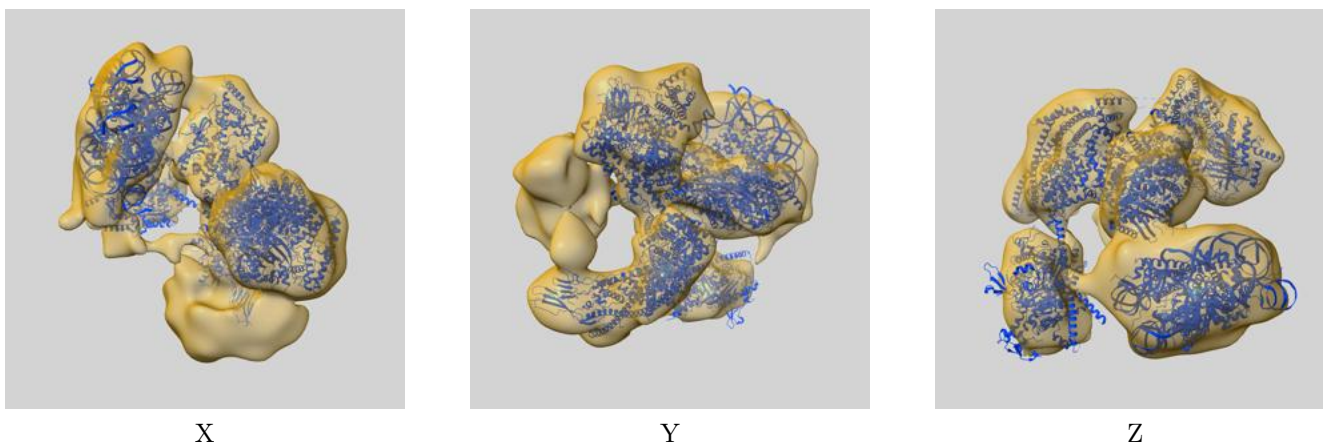
8 Fourier-Shell correlation

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

9 Map-model fit [i](#)

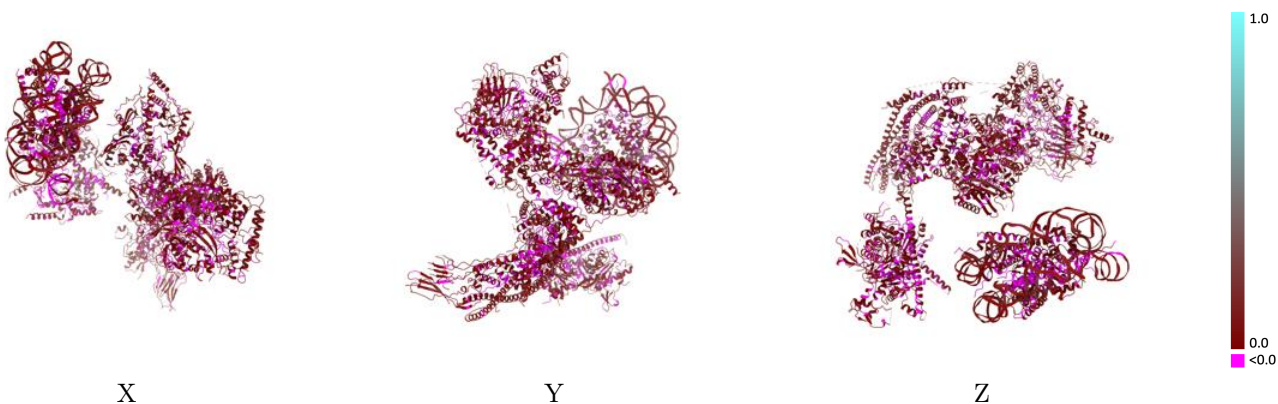
This section contains information regarding the fit between EMDB map EMD-21114 and PDB model 6V92. Per-residue inclusion information can be found in section 3 on page 10.

9.1 Map-model overlay [i](#)



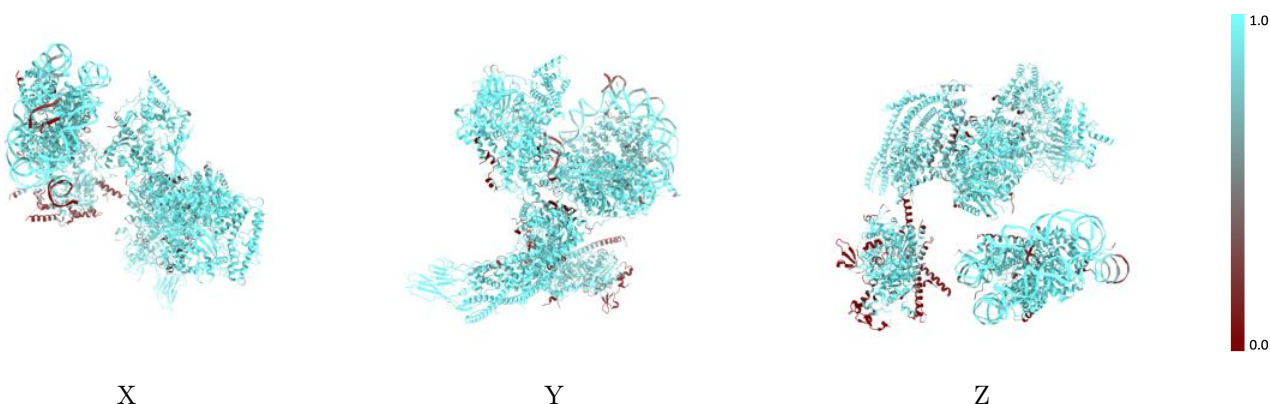
The images above show the 3D surface view of the map at the recommended contour level 0.03 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



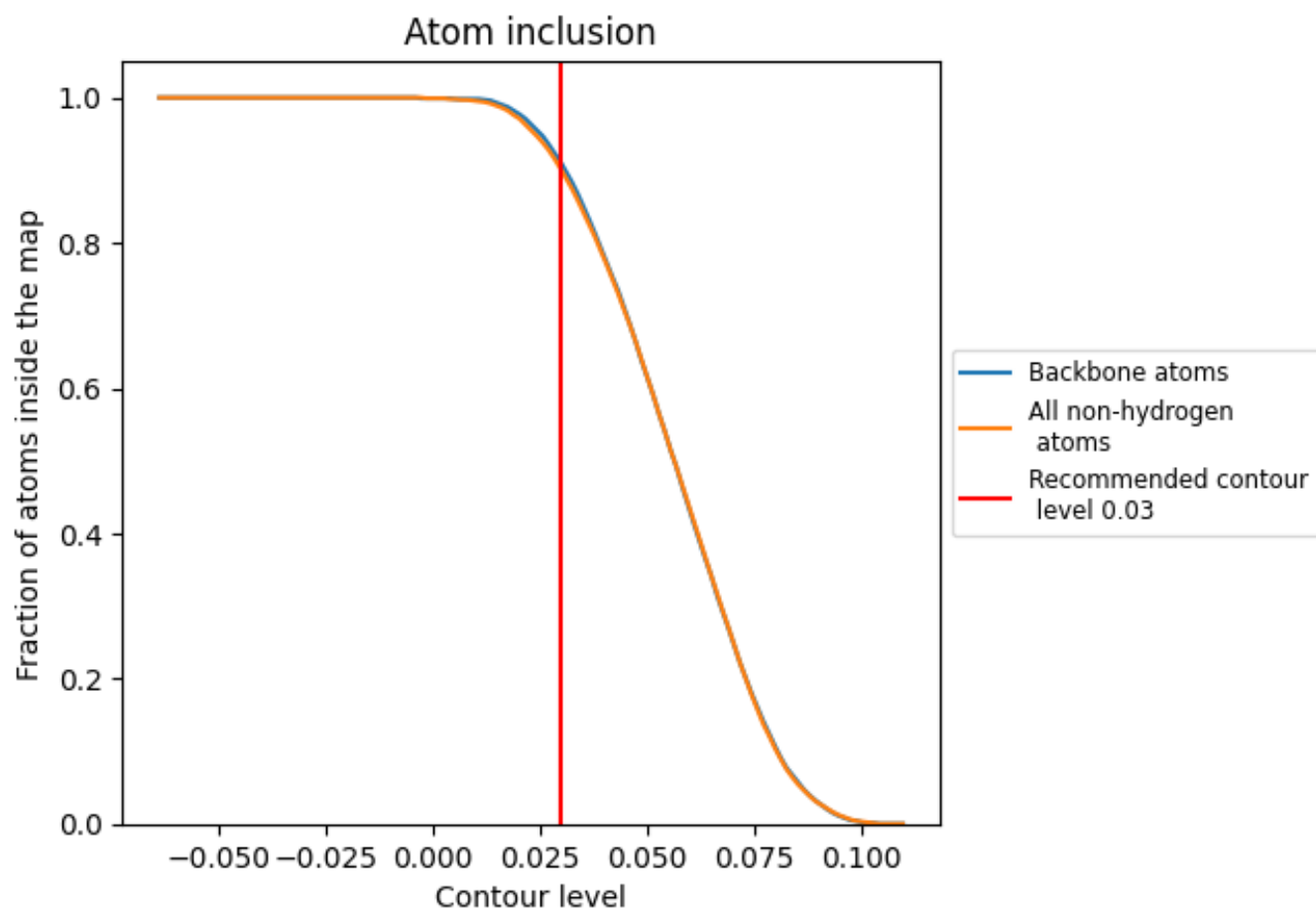
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.03).









































































9.4 Atom inclusion [i](#)



At the recommended contour level, 91% of all backbone atoms, 90% 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 (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9000	 0.0530
2	 1.0000	 0.0480
3	 0.5790	 0.0250
4	 0.9900	 0.0580
5	 0.5710	 0.0050
6	 1.0000	 0.0500
7	 0.9880	 0.0500
A	 0.6960	 0.0330
B	 0.7390	 0.0370
C	 0.9920	 0.0650
D	 0.8760	 0.0380
E	 0.9690	 0.0740
F	 1.0000	 0.0290
G	 0.8230	 0.0470
H	 0.9570	 0.0530
I	 0.9710	 0.0510
J	 0.9720	 0.0800
K	 0.9690	 0.0810
L	 0.9720	 0.0510
M	 0.9430	 0.0480
N	 0.9370	 0.0490
O	 0.9940	 0.0650
P	 0.6980	 0.0590
Q	 0.9560	 0.0660
R	 0.8230	 0.0410
S	 0.7630	 0.0680
a	 0.9360	 0.0280
b	 0.9900	 0.0440
c	 0.9580	 0.0380
d	 0.8560	 0.0200
e	 0.9550	 0.0430
f	 0.9950	 0.0050
g	 0.8830	 0.0110
h	 0.9370	 0.0120
i	 0.8990	 0.0860
j	 0.8970	 0.0930

