



Full wwPDB EM Validation Report ⓘ

Nov 2, 2022 – 01:07 AM EDT

PDB ID : 5T62
EMDB ID : EMD-8362
Title : Nmd3 is a structural mimic of eIF5A, and activates the cpGTPase Lsg1 during 60S ribosome biogenesis: 60S-Nmd3-Tif6-Lsg1 Complex
Authors : Malyutin, A.G.; Musalgaonkar, S.; Patchett, S.; Frank, J.; Johnson, A.W.
Deposited on : 2016-09-01
Resolution : 3.30 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 : 1.8.5 (274361), CSD as541be (2020)
MolProbity : 4.02b-467
buster-report : 1.1.7 (2018)
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

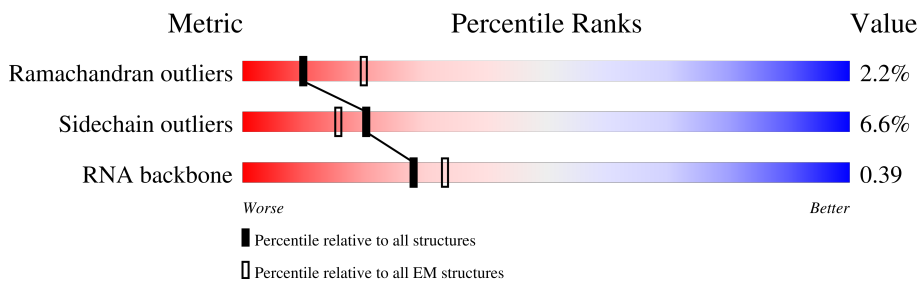
1 Overall quality at a glance

The following experimental techniques were used to determine the structure:

ELECTRON MICROSCOPY

The reported resolution of this entry is 3.30 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)
Ramachandran outliers	154571	4023
Sidechain outliers	154315	3826
RNA backbone	4643	859

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	X	264	
2	A	3396	
3	B	121	
4	C	158	
5	D	254	
6	E	387	
7	F	362	
8	G	297	

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Mol	Chain	Length	Quality of chain
9	H	176	85% 11%
10	I	244	85% 6% 9%
11	J	256	5% 82% 9% 9%
12	K	191	91% 9%
13	L	221	29% 86% 9% 5%
14	M	174	90% 6% ..
15	N	199	88% 8% ..
16	O	138	90% 9% .
17	a	204	95% 5%
18	b	199	96% ..
19	c	184	5% 93% 6% .
20	d	186	95% 5% .
21	e	189	22% 94% 6% .
22	f	172	92% 8%
23	g	160	91% 8% ..
24	h	121	79% . 17%
25	i	137	96% ..
26	j	155	23% 61% . 37%
27	k	142	79% 6% 15%
28	l	127	93% 6% ..
29	m	136	93% 6% ..
30	n	149	88% 11% ..
31	o	59	7% 88% 8% ..
32	p	105	6% 90% . 8%
33	q	113	89% 7% .

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Mol	Chain	Length	Quality of chain
34	r	130	 91% 7%
35	s	107	 91% 8%
36	t	121	 7% 86% 7% 7%
37	u	120	 90% 8%
38	v	100	 94% 5%
39	w	88	 88% 11%
40	x	78	 91% 8%
41	y	51	 94%
42	z	128	 38% 59%
43	Q	106	 9% 90% 9%
44	R	92	 95%
45	S	217	 9% 97%
46	V	524	 57% 9% 33%
47	W	651	 40% 7% 53%

2 Entry composition

There are 51 unique types of molecules in this entry. The entry contains 131766 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 Eukaryotic translation initiation factor 6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
1	X	224	1633	1019	279	328	7	0	0

There are 19 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
X	-18	MET	-	initiating methionine	UNP Q12522
X	-17	GLY	-	expression tag	UNP Q12522
X	-16	SER	-	expression tag	UNP Q12522
X	-15	SER	-	expression tag	UNP Q12522
X	-14	HIS	-	expression tag	UNP Q12522
X	-13	HIS	-	expression tag	UNP Q12522
X	-12	HIS	-	expression tag	UNP Q12522
X	-11	HIS	-	expression tag	UNP Q12522
X	-10	HIS	-	expression tag	UNP Q12522
X	-9	HIS	-	expression tag	UNP Q12522
X	-8	SER	-	expression tag	UNP Q12522
X	-7	LEU	-	expression tag	UNP Q12522
X	-6	ARG	-	expression tag	UNP Q12522
X	-5	ARG	-	expression tag	UNP Q12522
X	-4	ALA	-	expression tag	UNP Q12522
X	-3	SER	-	expression tag	UNP Q12522
X	-2	LEU	-	expression tag	UNP Q12522
X	-1	GLY	-	expression tag	UNP Q12522
X	0	SER	-	expression tag	UNP Q12522

- Molecule 2 is a RNA chain called 25S Ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
2	A	3204	68535	30613	12358	22360	3204	0	0

- Molecule 3 is a RNA chain called 5S Ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
3	B	121	2579	1152	461	845	121	0	0

- Molecule 4 is a RNA chain called 5.8S Ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	C	158	3353	1500	586	1109	158	0	0

- Molecule 5 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	D	252	1914	1191	388	334	1	0	0

- Molecule 6 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	E	386	3075	1950	584	533	8	0	0

- Molecule 7 is a protein called 60S ribosomal protein L4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	F	361	2748	1729	522	494	3	0	0

- Molecule 8 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	G	296	2375	1501	414	458	2	0	0

- Molecule 9 is a protein called 60S ribosomal protein L6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	H	156	1239	800	222	216	1	0	0

- Molecule 10 is a protein called 60S ribosomal protein L7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	I	222	Total	C	N	O	S	0	0
			1784	1151	324	308	1		

- Molecule 11 is a protein called 60S ribosomal protein L8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	J	233	Total	C	N	O	S	0	0
			1804	1151	323	327	3		

- Molecule 12 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	K	191	Total	C	N	O	S	0	0
			1518	963	274	277	4		

- Molecule 13 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	L	211	Total	C	N	O	S	0	0
			1705	1083	322	294	6		

- Molecule 14 is a protein called 60S ribosomal protein L11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	M	169	Total	C	N	O	S	0	0
			1353	847	253	249	4		

- Molecule 15 is a protein called 60S ribosomal protein L13-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
15	N	193	Total	C	N	O	0	0
			1543	962	315	266		

- Molecule 16 is a protein called 60S ribosomal protein L14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	O	136	Total	C	N	O	S	0	0
			1053	675	199	177	2		

- Molecule 17 is a protein called 60S ribosomal protein L15-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	a	203	Total	C	N	O	S	0	0
			1720	1077	361	281	1		

- Molecule 18 is a protein called 60S ribosomal protein L16-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	b	197	Total	C	N	O	S	0	0
			1555	1003	289	262	1		

- Molecule 19 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
19	c	183	Total	C	N	O	0	0
			1420	882	281	257		

- Molecule 20 is a protein called 60S ribosomal protein L18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	d	185	Total	C	N	O	S	0	0
			1441	908	290	241	2		

- Molecule 21 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
21	e	188	Total	C	N	O	0	0
			1521	935	326	260		

- Molecule 22 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	f	172	Total	C	N	O	S	0	0
			1445	930	267	244	4		

- Molecule 23 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	g	159	Total	C	N	O	S	0	0
			1276	805	246	221	4		

- Molecule 24 is a protein called 60S ribosomal protein L22-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
24	h	100	Total	C	N	O	0	0
			796	516	131	149		

- Molecule 25 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	i	136	Total	C	N	O	S	0	0
			1003	628	189	179	7		

- Molecule 26 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	j	98	Total	C	N	O	S	0	0
			699	443	137	118	1		

- Molecule 27 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	k	121	Total	C	N	O	S	0	0
			964	620	169	173	2		

- Molecule 28 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	l	126	Total	C	N	O	0	0
			993	625	192	176		

- Molecule 29 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
29	m	135	Total	C	N	O	0	0
			1092	710	202	180		

- Molecule 30 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	n	148	Total	C	N	O	S	0	0
			1173	749	231	190	3		

- Molecule 31 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
31	o	58	Total	C	N	O	0	0
			462	289	100	73		

- Molecule 32 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	p	97	Total	C	N	O	S	0	0
			743	479	124	139	1		

- Molecule 33 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	q	109	Total	C	N	O	S	0	0
			876	556	167	152	1		

- Molecule 34 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	r	127	Total	C	N	O	S	0	0
			1020	647	205	167	1		

- Molecule 35 is a protein called 60S ribosomal protein L33-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	s	106	Total	C	N	O	S	0	0
			850	540	165	144	1		

- Molecule 36 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	t	112	Total	C	N	O	S	0	0
			880	545	179	152	4		

- Molecule 37 is a protein called 60S ribosomal protein L35-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	u	119	Total	C	N	O	S	0	0
			969	615	186	167	1		

- Molecule 38 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	v	99	Total	C	N	O	S	0	0
			771	481	156	132	2		

- Molecule 39 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	w	87	Total	C	N	O	S	0	0
			681	414	148	114	5		

- Molecule 40 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms				AltConf	Trace
40	x	77	Total	C	N	O	0	0
			612	391	115	106		

- Molecule 41 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	y	50	Total	C	N	O	S	0	0
			436	272	97	65	2		

- Molecule 42 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	z	52	Total	C	N	O	S	0	0
			417	259	86	67	5		

- Molecule 43 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Q	105	Total	C	N	O	S	0	0
			847	534	170	138	5		

- Molecule 44 is a protein called 60S ribosomal protein L43-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	R	91	Total	C	N	O	S	0	0
			694	429	138	121	6		

- Molecule 45 is a protein called Ribosomal Protein uL1.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
45	S	210	1050	630	210	210	0	0

- Molecule 46 is a protein called 60S ribosomal export protein NMD3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	V	350	2713	1729	468	504	12	0	0

There are 6 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
V	-5	HIS	-	expression tag	UNP P38861
V	-4	HIS	-	expression tag	UNP P38861
V	-3	HIS	-	expression tag	UNP P38861
V	-2	HIS	-	expression tag	UNP P38861
V	-1	HIS	-	expression tag	UNP P38861
V	0	HIS	-	expression tag	UNP P38861

- Molecule 47 is a protein called Large subunit GTPase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	W	306	2236	1432	390	409	5	0	0

There are 77 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
W	135	UNK	ARG	see remark 999	UNP P53145
W	136	UNK	PRO	see remark 999	UNP P53145
W	137	UNK	GLU	see remark 999	UNP P53145
W	138	UNK	TRP	see remark 999	UNP P53145
W	139	UNK	ASN	see remark 999	UNP P53145
W	140	UNK	GLU	see remark 999	UNP P53145
W	141	UNK	GLY	see remark 999	UNP P53145
W	142	UNK	MET	see remark 999	UNP P53145
W	143	UNK	SER	see remark 999	UNP P53145
W	144	UNK	LYS	see remark 999	UNP P53145
W	145	UNK	PHE	see remark 999	UNP P53145
W	146	UNK	GLN	see remark 999	UNP P53145
W	147	UNK	LEU	see remark 999	UNP P53145
W	148	UNK	ASP	see remark 999	UNP P53145
W	149	UNK	ARG	see remark 999	UNP P53145

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Chain	Residue	Modelled	Actual	Comment	Reference
W	150	UNK	GLN	see remark 999	UNP P53145
W	151	UNK	GLU	see remark 999	UNP P53145
W	152	UNK	LYS	see remark 999	UNP P53145
W	153	UNK	GLU	see remark 999	UNP P53145
W	154	UNK	ALA	see remark 999	UNP P53145
W	155	UNK	PHE	see remark 999	UNP P53145
W	156	UNK	LEU	see remark 999	UNP P53145
W	157	UNK	GLU	see remark 999	UNP P53145
W	158	UNK	TRP	see remark 999	UNP P53145
W	159	UNK	ARG	see remark 999	UNP P53145
W	160	UNK	ARG	see remark 999	UNP P53145
W	161	UNK	LYS	see remark 999	UNP P53145
W	162	UNK	LEU	see remark 999	UNP P53145
W	163	UNK	ALA	see remark 999	UNP P53145
W	164	UNK	HIS	see remark 999	UNP P53145
W	165	UNK	LEU	see remark 999	UNP P53145
W	166	UNK	GLN	see remark 999	UNP P53145
W	167	UNK	GLU	see remark 999	UNP P53145
W	168	UNK	SER	see remark 999	UNP P53145
W	169	UNK	ASN	see remark 999	UNP P53145
W	170	UNK	GLU	see remark 999	UNP P53145
W	171	UNK	ASP	see remark 999	UNP P53145
W	172	UNK	LEU	see remark 999	UNP P53145
W	173	UNK	LEU	see remark 999	UNP P53145
W	174	UNK	LEU	see remark 999	UNP P53145
W	175	UNK	THR	see remark 999	UNP P53145
W	276	UNK	LEU	see remark 999	UNP P53145
W	277	UNK	GLU	see remark 999	UNP P53145
W	278	UNK	GLU	see remark 999	UNP P53145
W	279	UNK	LEU	see remark 999	UNP P53145
W	280	UNK	PHE	see remark 999	UNP P53145
W	281	UNK	LEU	see remark 999	UNP P53145
W	282	UNK	SER	see remark 999	UNP P53145
W	283	UNK	LYS	see remark 999	UNP P53145
W	284	UNK	ALA	see remark 999	UNP P53145
W	285	UNK	PRO	see remark 999	UNP P53145
W	286	UNK	ASN	see remark 999	UNP P53145
W	287	UNK	GLU	see remark 999	UNP P53145
W	288	UNK	PRO	see remark 999	UNP P53145
W	289	UNK	LEU	see remark 999	UNP P53145
W	290	UNK	LEU	see remark 999	UNP P53145
W	291	UNK	PRO	see remark 999	UNP P53145

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Chain	Residue	Modelled	Actual	Comment	Reference
W	292	UNK	PRO	see remark 999	UNP P53145
W	293	UNK	LEU	see remark 999	UNP P53145
W	294	UNK	PRO	see remark 999	UNP P53145
W	295	UNK	GLY	see remark 999	UNP P53145
W	296	UNK	GLN	see remark 999	UNP P53145
W	297	UNK	PRO	see remark 999	UNP P53145
W	298	UNK	PRO	see remark 999	UNP P53145
W	299	UNK	LEU	see remark 999	UNP P53145
W	504	UNK	HIS	see remark 999	UNP P53145
W	641	ALA	-	expression tag	UNP P53145
W	642	ALA	-	expression tag	UNP P53145
W	643	ALA	-	expression tag	UNP P53145
W	644	LEU	-	expression tag	UNP P53145
W	645	GLU	-	expression tag	UNP P53145
W	646	HIS	-	expression tag	UNP P53145
W	647	HIS	-	expression tag	UNP P53145
W	648	HIS	-	expression tag	UNP P53145
W	649	HIS	-	expression tag	UNP P53145
W	650	HIS	-	expression tag	UNP P53145
W	651	HIS	-	expression tag	UNP P53145

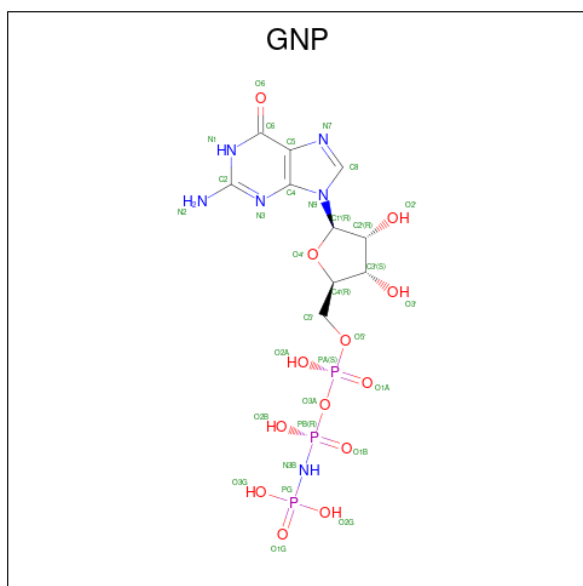
- Molecule 48 is MAGNESIUM ION (three-letter code: MG) (formula: Mg).

Mol	Chain	Residues	Atoms	AltConf
48	A	148	Total Mg 148 148	0
48	B	5	Total Mg 5 5	0
48	C	2	Total Mg 2 2	0
48	D	1	Total Mg 1 1	0
48	a	1	Total Mg 1 1	0
48	c	1	Total Mg 1 1	0
48	i	1	Total Mg 1 1	0
48	W	1	Total Mg 1 1	0

- Molecule 49 is POTASSIUM ION (three-letter code: K) (formula: K).

Mol	Chain	Residues	Atoms	AltConf
49	A	2	Total K 2 2	0

- Molecule 50 is PHOSPHOAMINOPHOSPHONIC ACID-GUANYLATE ESTER (three-letter code: GNP) (formula: $C_{10}H_{17}N_6O_{13}P_3$).



Mol	Chain	Residues	Atoms	AltConf
50	W	1	Total C N O P 32 10 6 13 3	0

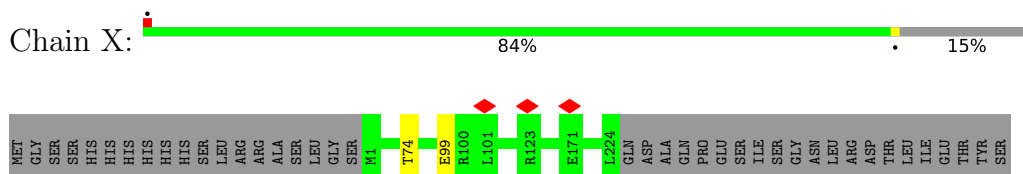
- Molecule 51 is water.

Mol	Chain	Residues	Atoms	AltConf
51	A	5	Total O 5 5	0
51	e	1	Total O 1 1	0

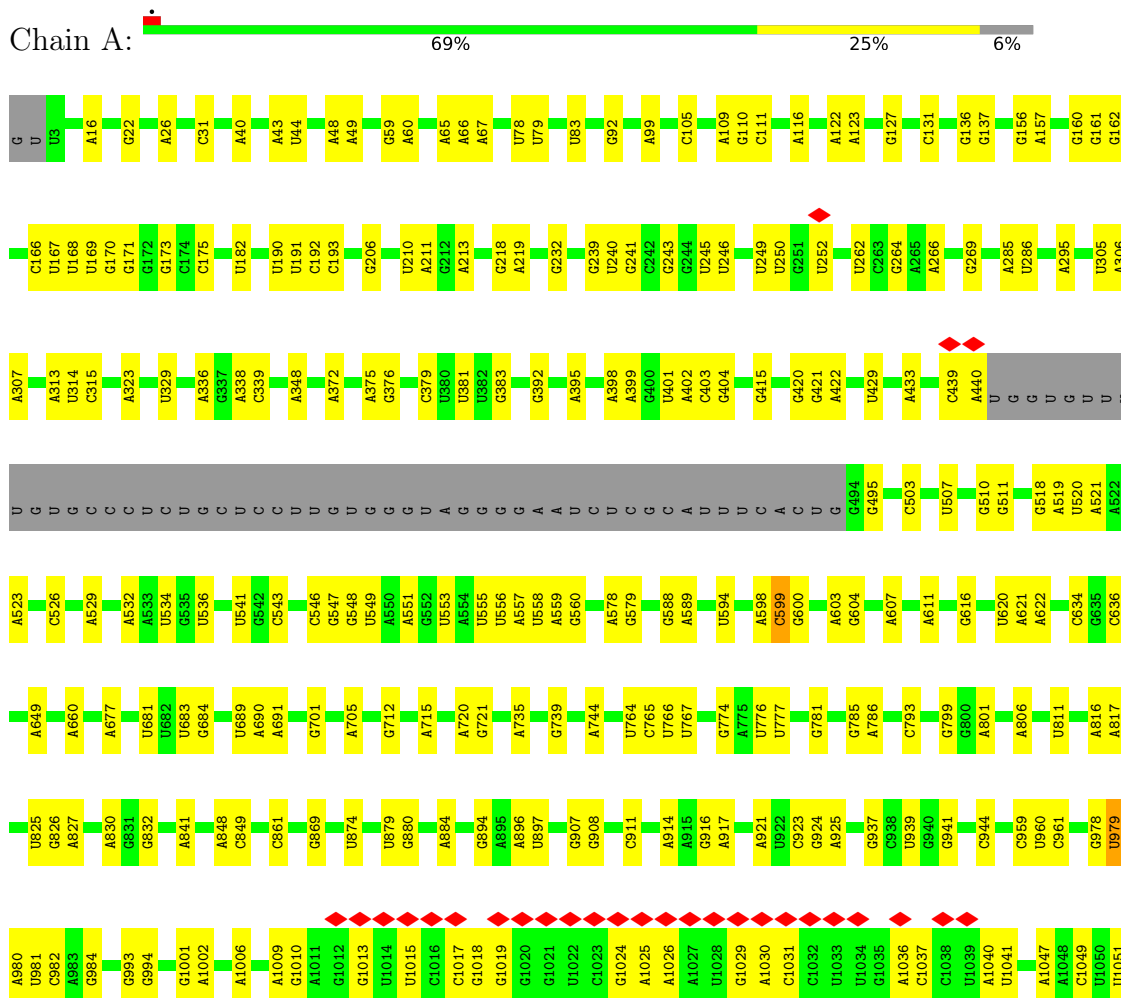
3 Residue-property plots

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.

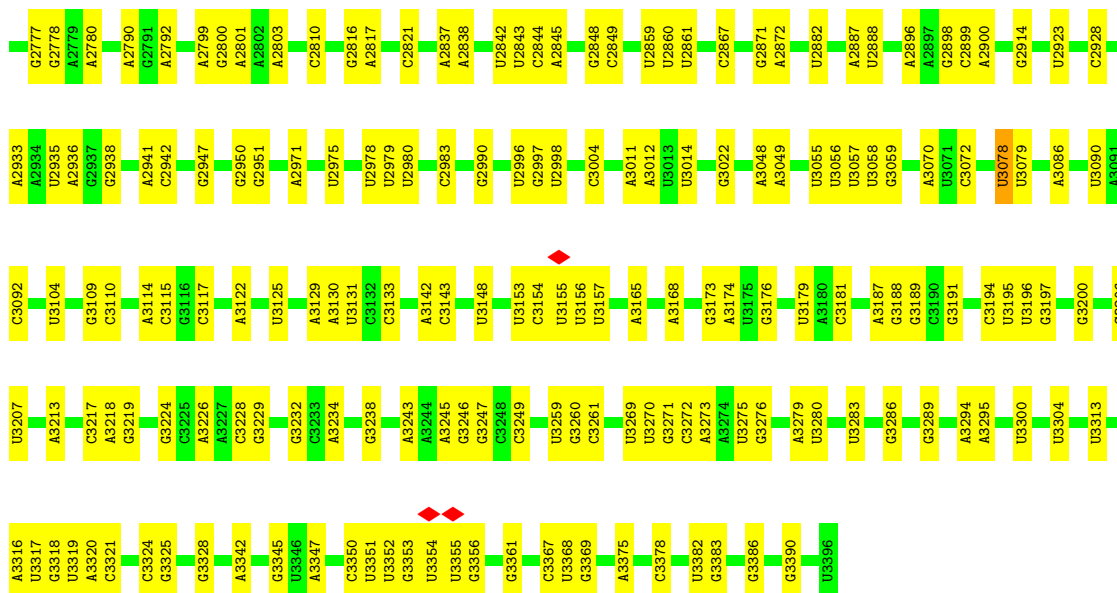
- Molecule 1: Eukaryotic translation initiation factor 6



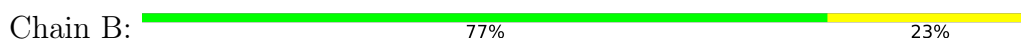
- Molecule 2: 25S Ribosomal RNA



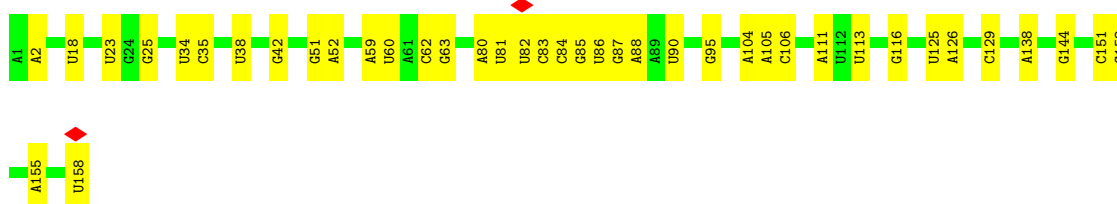
C1069	U1070	U1071	G1072	U1081	A1093	U1094	U1095	U1096	G1097	A1098	A1099	A1103	G1104	G1117	U1122	U1123	U1124	A1129	A1130	G1131	G1140	G1145	A1153	G1157	A1158	A1159	G1178	A1179	A1180	U1181	A1190	U1191	C1192	A1200	C1201	U1208	A1212	G1213	U1217	U1218	C1219	G1222									
A1223	G1230	A1231	G1232	G1233	G1236	G1237	A1240	U1241	G1242	G1243	A1244	A1245	G1246	U1247	C1248	G1249	A1252	U1253	C1254	C1255	G1256	U1257	U1258	G1262	A1263	G1264	U1265	G1266	U1267	A1270	A1271	C1272	A1273	A1274	C1275	U1276	C1277	A1278	C1279	C1280	G1286	A1287	G1288	U1289	A1291	A1303	A1304	U1306			
G1307	A1308	U1309	G1313	C1314	U1315	G1319	U1325	U1329	A1330	U1334	U1348	G1349	A1350	U1351	A1352	U1353	G1354	A1355	U1356	G1357	C1364	G1383	A1386	C1391	G1392	A1393	A1394	A1399	G1400	C1409	G1414	C1415	C1416	A1419	U1430	G1434	C1437	A1446	G1450												
U1455	A1460	G1466	G1480	A1481	A1482	A1489	C1496	U1501	A1502	A1503	C1508	G1521	C1527	G1531	C1532	U1533	G1536	A1537	G1547	U1553	U1554	U1555	U1556	A1557	G1560	G1561	C1562	C1563	U1564	G1565	A1566	U1567	U1568	U1569	U1570	A1571	U1572	G1576	C1577	C1578	C1579	A1580	C1581	C1582							
A1583	A1587	A1588	A1589	G1589	A1605	C1615	A1619	U1620	G1623	U1627	C1628	U1629	U1630	C1631	A1632	A1642	A1643	C1644	U1645	C1657	G1658	G1664	C1665	G1666	G1674	G1678	U1682	A1683	U1703	U1716	U1717	U1724	C1725	G1733	G1734	G1735	A1741	G1747	G1748	A1749											
A1750	G1751	A1760	C1761	C1762	U1765	G1766	G1770	G1775	G1780	C1788	C1789	G1790	U1795	G1796	A1797	A1798	C1803	G1808	G1812	A1813	U1814	U1815	A1816	G1817	U1820	U1821	A1839	U1840	A1841	A1842	G1845	G1849	A1850	A1867	U1871	U1880	A1886	A1893	U1894	A1895											
G1906	C1907	A1908	A1909	C1917	C1926	A1930	A1936	C1951	G1952	G1953	G1954	U1955	A	G	U	U	A	G	G	G	C	C	U	U	U	A	C	C	C	A	G	G	G	G	C	U	A	U	U	U	U	C	U	U	U	C					
U	G	U	U	G	U	G	G	U	U	A	C	U	G	C	U	C	C	A	G	U	U	U	A	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	U	
G	G	U	A	G	U	C	U	U	A	C	C	U	U	C	C	U	U	U	U	U	U	U	U	U	A2093	A2096	A2100	C2101	U2102	G2111	U2112	A2113	C2114	C2118	G2121	G2122	A2131	U2140	U2141	A2142	A2143										
A2144	G2157	C2160	G2169	G2185	U2196	G2187	C2192	A2198	U2205	U2209	G2210	G2221	A2228	G2239	A2244	C2245	G2246	G2249	G2250	G2253	U2255	A2256	C2257	U2258	A2259	U2260	G2261	A2262	C2263	U2264	C2265	U2266	C2267	U2268	U2269	A2270	G2273	U2274	A2281	U2282	G2288										
U2298	G2307	C2308	A2309	U2310	A2313	U2314	G2315	A2332	G2335	U2336	C2337	A2372	C2373	C2374	G2375	U2379	G2385	U2388	G2393	A2397	A2401	A2402	G2403	A2404	C2405	C2406	C2407	U2411	G2412	G2418	A2419	G2425	U2428	G2429	U2434	G2437	G2440	A2441	G2442	C2444											
A2445	U2446	A2449	G2450	G2451	G2452	U2453	G2454	U2455	A2456	G2457	A2458	A2459	U2460	A2461	A2462	G2463	U2464	A2468	G2469	C2470	U2471	U2472	C2473	G2474	G2475	C2476	G2477	C2478	C2479	A2480	G2481	U2482	C2483	A2484	A2485	A2488	A2491	A2494	C2495	C2496	U2497	U2498	U2501	A2502	U2505	U2506	C2507	U2508	U2513	U2514	A2515
G2522	C2531	G2532	U2533	G2534	A2535	U2536	U2537	U2538	C2539	U2540	U2541	U2542	U2543	U2544	A2547	G2548	C2549	U2550	U2551	C2552	U2553	A2554	G2555	A2561	A2562	G2563	G2564	U2565	C2566	A2569	U2570	U2571	C2572	C2573	G2574	G2575	G2576	C2577	U2581	G2585	G2586	A2593	C2594	G2602	G2606	G2607	G2614				
G2621	A2626	C2627	A2628	A2635	C2644	G2648	U2652	U2655	A2656	A2657	G2658	A2674	G2677	U2681	C2684	A2689	G2690	A2691	A2694	A2695	A2696	A2704	C2709	U2570	U2571	C2572	C2573	G2714	U2719	C2726	A2727	G2728	A2734	C2737	G2753	G2754	C2755	A2762	C2772	C2773	C2774										



• Molecule 3: 5S Ribosomal RNA



• Molecule 4: 5.8S Ribosomal RNA



• Molecule 5: 60S ribosomal protein L2-A



• Molecule 6: 60S ribosomal protein L3



- Molecule 7: 60S ribosomal protein L4-A

Chain F:  92% 8%




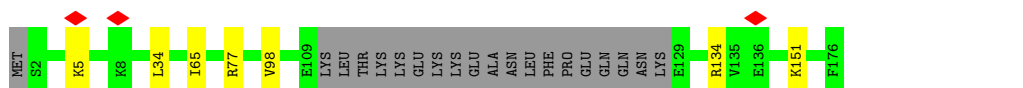
- Molecule 8: 60S ribosomal protein L5

Chain G:  94% 5%




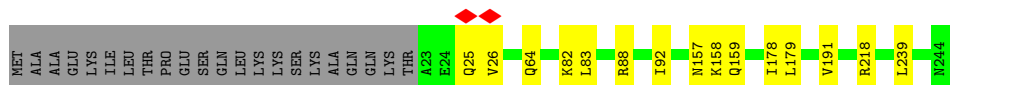
- Molecule 9: 60S ribosomal protein L6-A

Chain H:  85% 11%




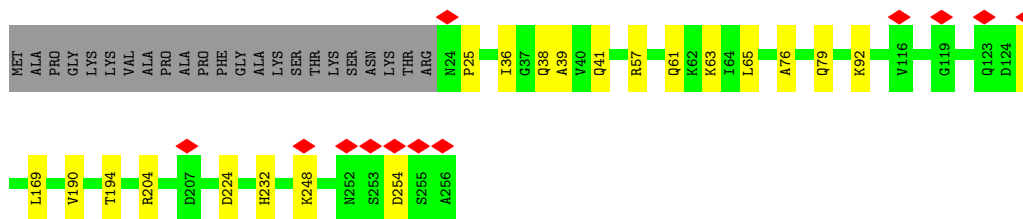
- Molecule 10: 60S ribosomal protein L7-A

Chain I:  85% 6% 9%



- Molecule 11: 60S ribosomal protein L8-A

Chain J:  5% 82% 9% 9%

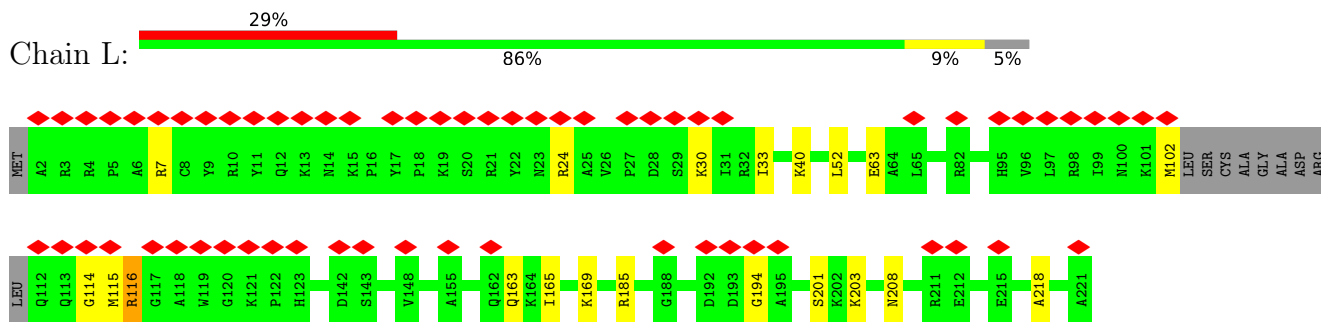


- Molecule 12: 60S ribosomal protein L9-A

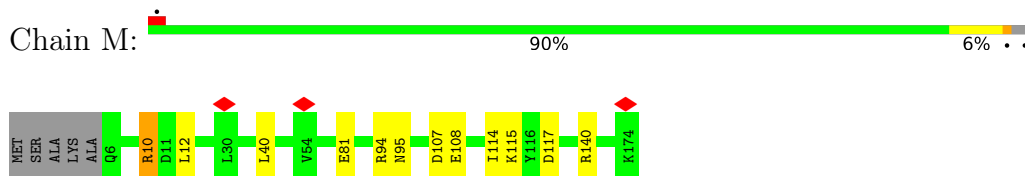
Chain K:  91% 9%



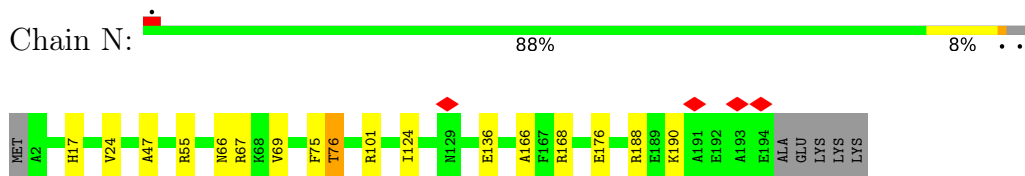
- Molecule 13: 60S ribosomal protein L10



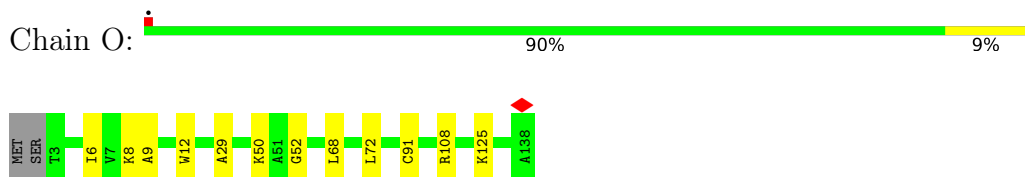
• Molecule 14: 60S ribosomal protein L11-A



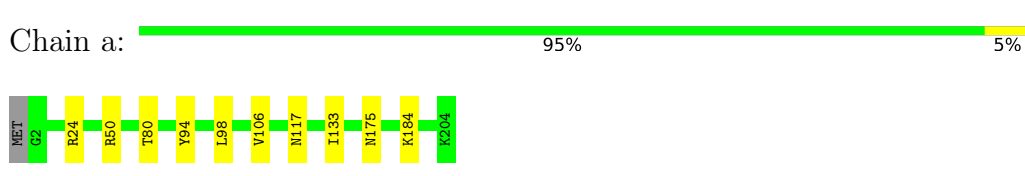
• Molecule 15: 60S ribosomal protein L13-A



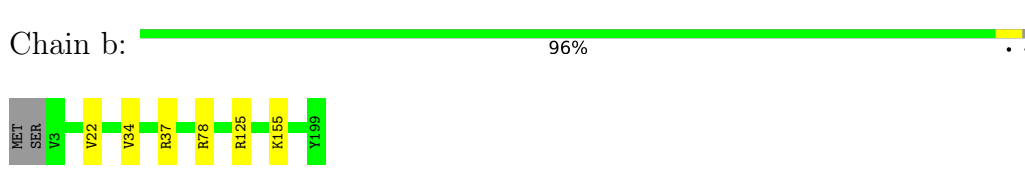
• Molecule 16: 60S ribosomal protein L14-A



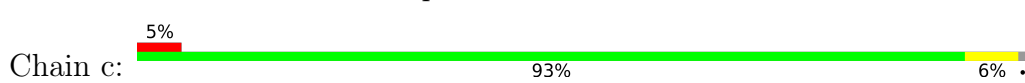
• Molecule 17: 60S ribosomal protein L15-A

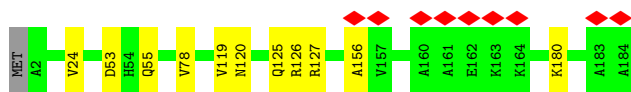


• Molecule 18: 60S ribosomal protein L16-A



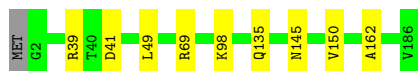
• Molecule 19: 60S ribosomal protein L17-A





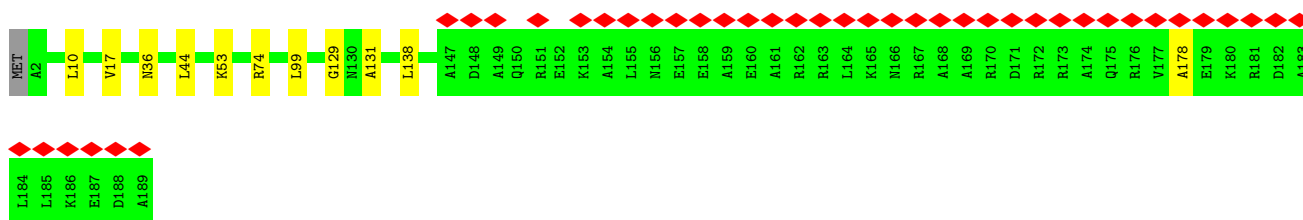
- Molecule 20: 60S ribosomal protein L18-A

Chain d: 95% 5%



- Molecule 21: 60S ribosomal protein L19-A

Chain e: 22% 94% 6%



- Molecule 22: 60S ribosomal protein L20-A

Chain f: 92% 8%



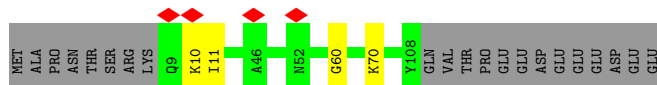
- Molecule 23: 60S ribosomal protein L21-A

Chain g: 91% 8%



- Molecule 24: 60S ribosomal protein L22-A

Chain h: 79% 17%

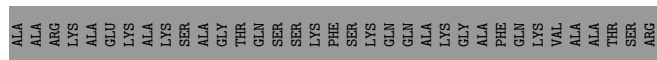
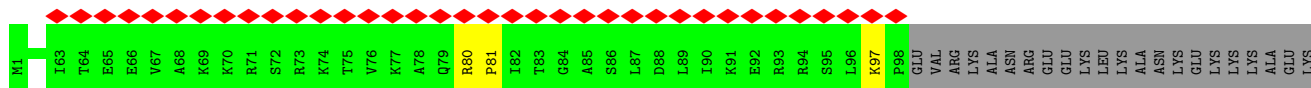


- Molecule 25: 60S ribosomal protein L23-A

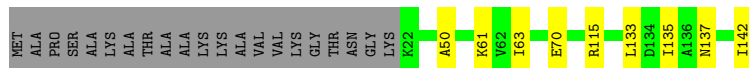
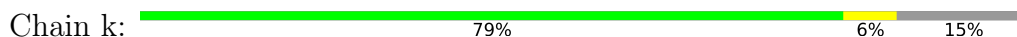
Chain i: 96%



• Molecule 26: 60S ribosomal protein L24-A



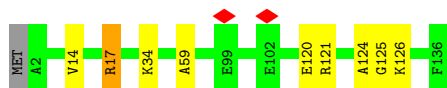
• Molecule 27: 60S ribosomal protein L25



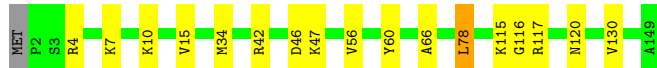
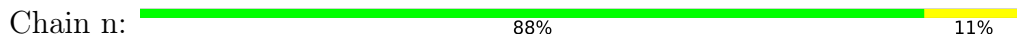
• Molecule 28: 60S ribosomal protein L26-A



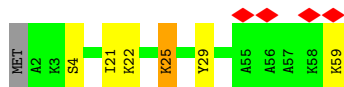
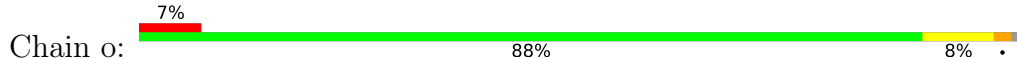
• Molecule 29: 60S ribosomal protein L27-A



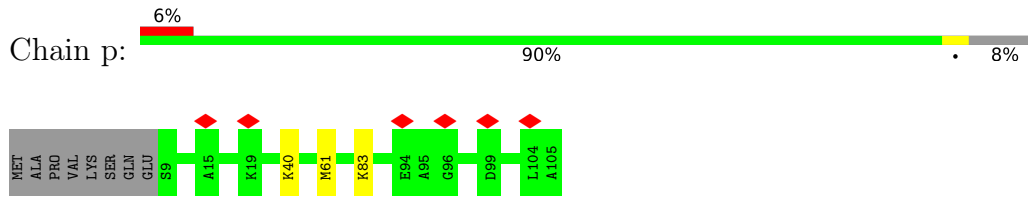
• Molecule 30: 60S ribosomal protein L28



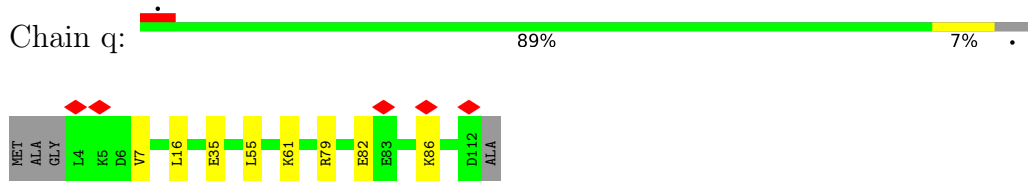
• Molecule 31: 60S ribosomal protein L29



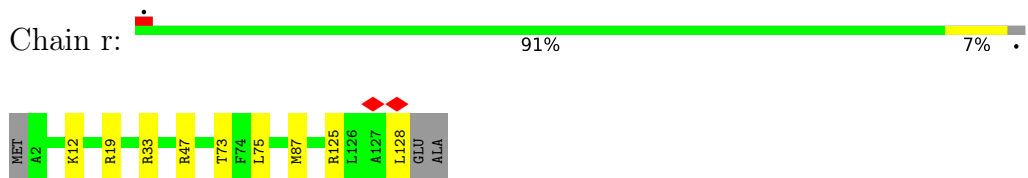
- Molecule 32: 60S ribosomal protein L30



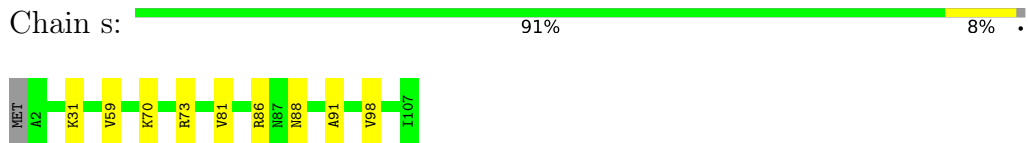
- Molecule 33: 60S ribosomal protein L31-A



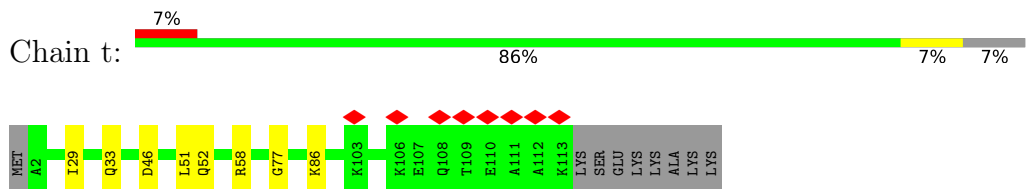
- Molecule 34: 60S ribosomal protein L32



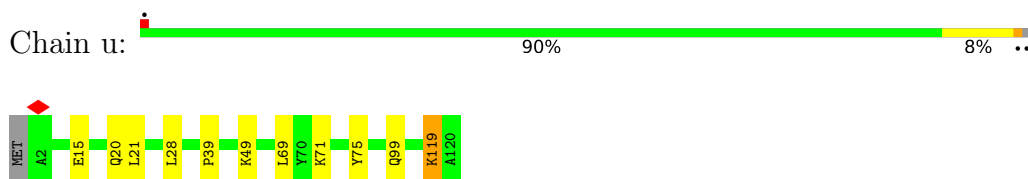
- Molecule 35: 60S ribosomal protein L33-A



- Molecule 36: 60S ribosomal protein L34-A

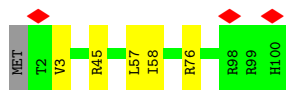


- Molecule 37: 60S ribosomal protein L35-A

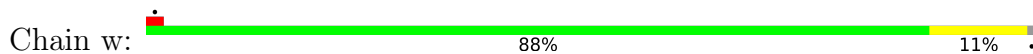


- Molecule 38: 60S ribosomal protein L36-A

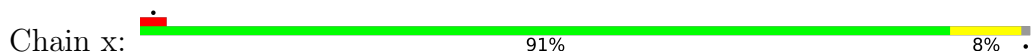




• Molecule 39: 60S ribosomal protein L37-A



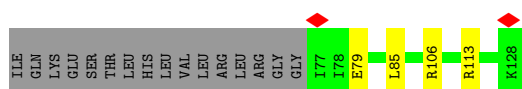
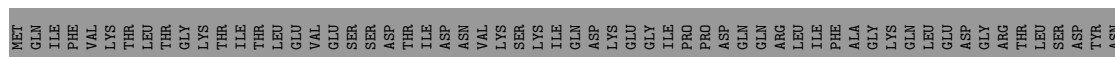
• Molecule 40: 60S ribosomal protein L38



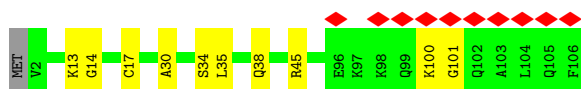
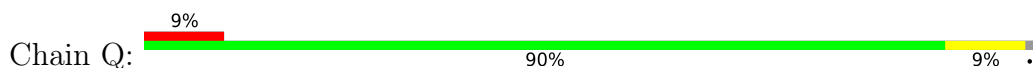
• Molecule 41: 60S ribosomal protein L39



• Molecule 42: Ubiquitin-60S ribosomal protein L40



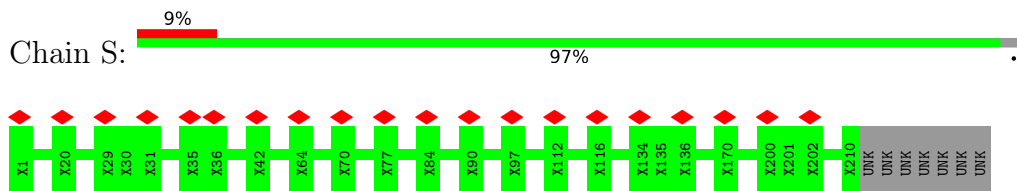
• Molecule 43: 60S ribosomal protein L42-A



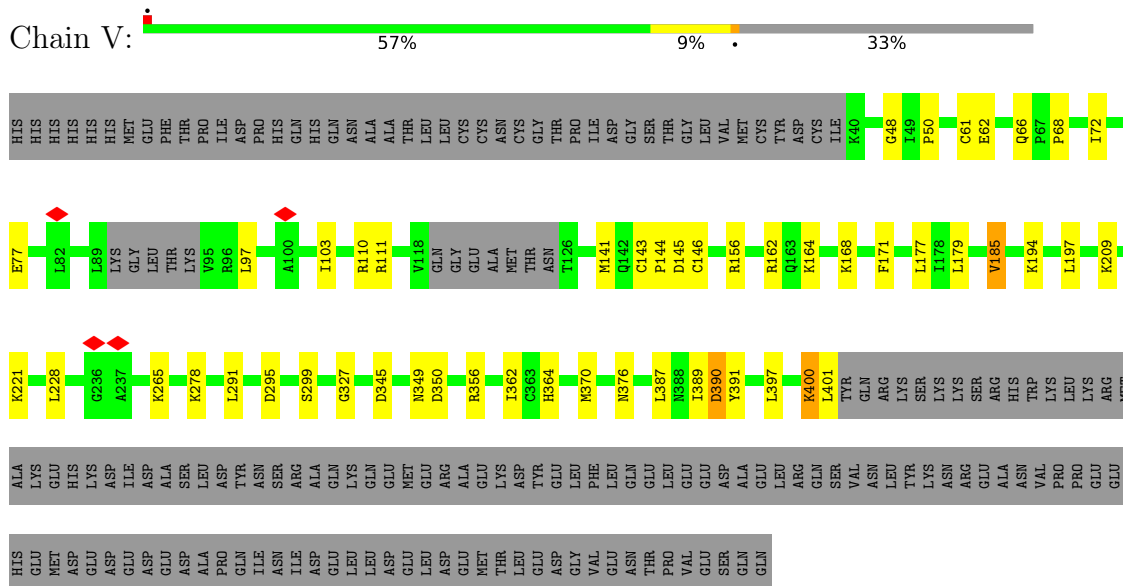
• Molecule 44: 60S ribosomal protein L43-A



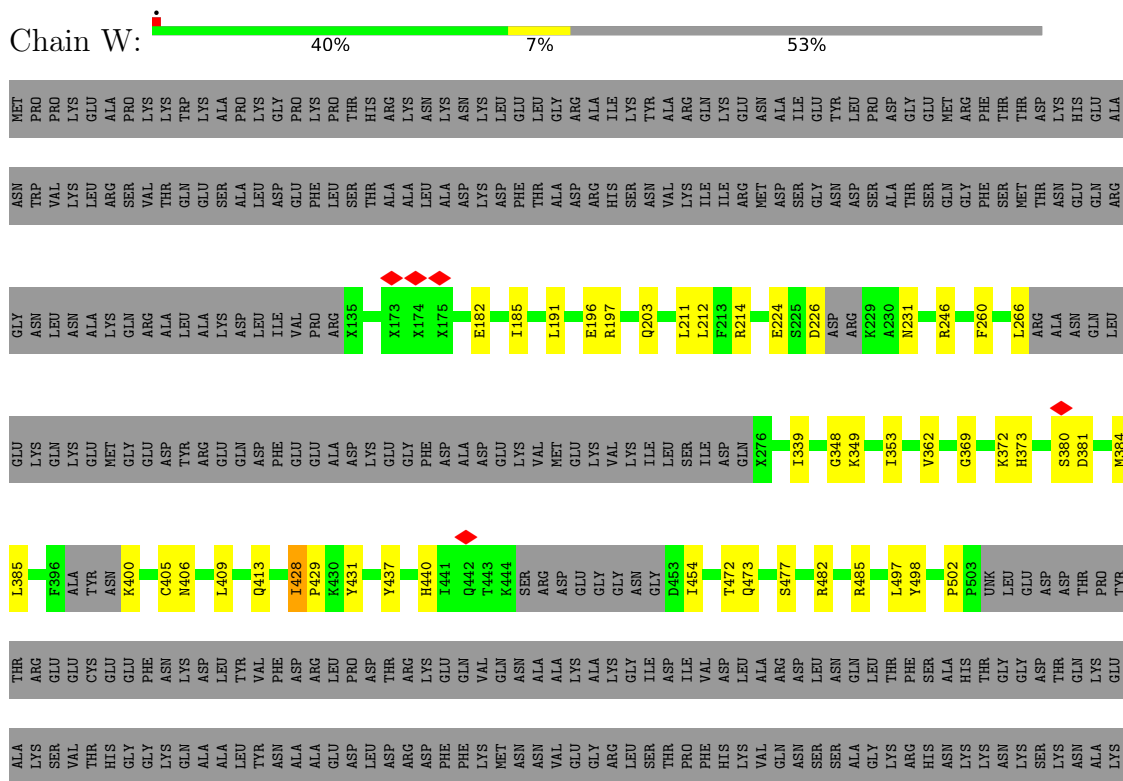
• Molecule 45: Ribosomal Protein uL1



• Molecule 46: 60S ribosomal export protein NMD3



• Molecule 47: Large subunit GTPase 1



SER
LYS
VAL
PHE
SER
ILE
GLU
ASN
ASN
ALA
ALA
ALA
LEU
GLU
HIS
HIS
HIS
HIS
HIS

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, POINT	Depositor
Number of particles used	226516, 19411	Depositor
Resolution determination method	FSC 0.143 CUT-OFF, FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION, PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TECNAI F30, FEI TITAN KRIOS	Depositor
Voltage (kV)	300, 300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40, 59.5	Depositor
Minimum defocus (nm)	1500, Not provided	Depositor
Maximum defocus (nm)	4000, Not provided	Depositor
Magnification	31000, Not provided	Depositor
Image detector	GATAN K2 SUMMIT (4k x 4k), GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	0.411	Depositor
Minimum map value	-0.233	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.015	Depositor
Recommended contour level	0.0225	Depositor
Map size (\AA)	392.40002, 392.40002, 392.40002	wwPDB
Map dimensions	360, 360, 360	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	1.09, 1.09, 1.09	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: MG, GNP, K, PSU

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	X	0.40	0/1653	0.55	0/2255
2	A	0.28	0/76629	0.70	3/119475 (0.0%)
3	B	0.26	0/2883	0.68	0/4491
4	C	0.29	0/3746	0.71	0/5832
5	D	0.41	0/1948	0.68	0/2617
6	E	0.42	0/3146	0.66	0/4228
7	F	0.39	0/2800	0.65	0/3790
8	G	0.41	0/2425	0.62	1/3271 (0.0%)
9	H	0.39	0/1260	0.59	0/1694
10	I	0.43	0/1821	0.63	0/2451
11	J	0.41	0/1836	0.58	0/2481
12	K	0.40	0/1539	0.60	0/2073
13	L	0.41	0/1741	0.61	0/2335
14	M	0.41	0/1374	0.65	0/1842
15	N	0.44	0/1568	0.69	0/2106
16	O	0.38	0/1068	0.61	0/1438
17	a	0.43	0/1757	0.74	0/2354
18	b	0.42	0/1585	0.61	0/2128
19	c	0.40	0/1443	0.66	0/1944
20	d	0.40	0/1465	0.72	0/1965
21	e	0.40	0/1538	0.67	0/2050
22	f	0.41	0/1481	0.64	0/1990
23	g	0.40	0/1300	0.62	0/1743
24	h	0.41	0/812	0.52	0/1099
25	i	0.40	0/1018	0.64	0/1369
26	j	0.41	0/712	0.59	0/958
27	k	0.39	0/979	0.59	0/1321
28	l	0.38	0/1004	0.64	0/1341
29	m	0.39	0/1118	0.56	0/1497
30	n	0.40	0/1204	0.67	0/1612
31	o	0.39	0/473	0.67	0/629
32	p	0.40	0/751	0.55	0/1008

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	q	0.39	0/890	0.64	0/1196
34	r	0.39	0/1041	0.67	0/1394
35	s	0.39	0/868	0.69	0/1168
36	t	0.40	0/890	0.71	0/1189
37	u	0.41	0/978	0.65	0/1301
38	v	0.42	0/778	0.62	0/1034
39	w	0.49	0/696	0.81	1/923 (0.1%)
40	x	0.40	0/618	0.57	0/826
41	y	0.41	0/443	0.73	0/588
42	z	0.39	0/423	0.64	0/562
43	Q	0.42	0/860	0.64	0/1136
44	R	0.45	0/701	0.71	0/934
46	V	0.41	0/2766	0.67	2/3759 (0.1%)
47	W	0.46	0/1950	0.68	1/2640 (0.0%)
All	All	0.34	0/139979	0.68	8/206037 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
11	J	0	1
30	n	0	1
31	o	0	1
All	All	0	3

There are no bond length outliers.

All (8) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
46	V	143	CYS	C-N-CD	-10.95	96.51	120.60
47	W	369	GLY	N-CA-C	6.68	129.79	113.10
46	V	50	PRO	N-CA-CB	5.54	109.94	103.30
2	A	599	C	C2'-C3'-O3'	5.33	122.23	113.70
2	A	979	U	C2'-C3'-O3'	5.25	122.10	113.70
2	A	3078	U	C4'-C3'-O3'	5.08	123.17	113.00
8	G	131	LEU	CA-CB-CG	5.05	126.91	115.30
39	w	11	ARG	NE-CZ-NH1	5.01	122.81	120.30

There are no chirality outliers.

All (3) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
11	J	76	ALA	Peptide
30	n	46	ASP	Peptide
31	o	4	SER	Peptide

5.2 Too-close contacts [i](#)

Due to software issues we are unable to calculate clashes - this section is therefore empty.

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	X	222/264 (84%)	202 (91%)	20 (9%)	0	100	100
5	D	250/254 (98%)	226 (90%)	22 (9%)	2 (1%)	19	51
6	E	384/387 (99%)	346 (90%)	31 (8%)	7 (2%)	8	35
7	F	359/362 (99%)	311 (87%)	32 (9%)	16 (4%)	2	15
8	G	294/297 (99%)	265 (90%)	25 (8%)	4 (1%)	11	38
9	H	152/176 (86%)	133 (88%)	16 (10%)	3 (2%)	7	32
10	I	220/244 (90%)	200 (91%)	14 (6%)	6 (3%)	5	26
11	J	231/256 (90%)	207 (90%)	17 (7%)	7 (3%)	4	24
12	K	189/191 (99%)	169 (89%)	17 (9%)	3 (2%)	9	36
13	L	207/221 (94%)	186 (90%)	16 (8%)	5 (2%)	6	28
14	M	167/174 (96%)	143 (86%)	19 (11%)	5 (3%)	4	24
15	N	191/199 (96%)	168 (88%)	18 (9%)	5 (3%)	5	27
16	O	134/138 (97%)	119 (89%)	10 (8%)	5 (4%)	3	20
17	a	201/204 (98%)	188 (94%)	11 (6%)	2 (1%)	15	46
18	b	195/199 (98%)	184 (94%)	11 (6%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
19	c	181/184 (98%)	163 (90%)	17 (9%)	1 (1%)	25	57
20	d	183/186 (98%)	162 (88%)	18 (10%)	3 (2%)	9	36
21	e	186/189 (98%)	173 (93%)	9 (5%)	4 (2%)	6	30
22	f	170/172 (99%)	156 (92%)	11 (6%)	3 (2%)	8	35
23	g	157/160 (98%)	141 (90%)	13 (8%)	3 (2%)	8	34
24	h	98/121 (81%)	79 (81%)	17 (17%)	2 (2%)	7	32
25	i	134/137 (98%)	124 (92%)	9 (7%)	1 (1%)	22	54
26	j	96/155 (62%)	81 (84%)	12 (12%)	3 (3%)	4	23
27	k	119/142 (84%)	107 (90%)	11 (9%)	1 (1%)	19	51
28	l	124/127 (98%)	115 (93%)	7 (6%)	2 (2%)	9	36
29	m	133/136 (98%)	111 (84%)	18 (14%)	4 (3%)	4	24
30	n	146/149 (98%)	126 (86%)	13 (9%)	7 (5%)	2	14
31	o	56/59 (95%)	48 (86%)	5 (9%)	3 (5%)	2	12
32	p	95/105 (90%)	88 (93%)	7 (7%)	0	100	100
33	q	107/113 (95%)	98 (92%)	6 (6%)	3 (3%)	5	25
34	r	125/130 (96%)	121 (97%)	3 (2%)	1 (1%)	19	51
35	s	104/107 (97%)	95 (91%)	7 (7%)	2 (2%)	8	34
36	t	110/121 (91%)	102 (93%)	6 (6%)	2 (2%)	8	35
37	u	117/120 (98%)	109 (93%)	4 (3%)	4 (3%)	3	22
38	v	97/100 (97%)	88 (91%)	8 (8%)	1 (1%)	15	46
39	w	85/88 (97%)	77 (91%)	6 (7%)	2 (2%)	6	28
40	x	75/78 (96%)	67 (89%)	5 (7%)	3 (4%)	3	18
41	y	48/51 (94%)	44 (92%)	3 (6%)	1 (2%)	7	31
42	z	50/128 (39%)	47 (94%)	2 (4%)	1 (2%)	7	32
43	Q	103/106 (97%)	88 (85%)	10 (10%)	5 (5%)	2	14
44	R	89/92 (97%)	83 (93%)	6 (7%)	0	100	100
46	V	344/524 (66%)	302 (88%)	27 (8%)	15 (4%)	2	16
47	W	231/651 (36%)	198 (86%)	25 (11%)	8 (4%)	3	21
All	All	6959/7997 (87%)	6240 (90%)	564 (8%)	155 (2%)	10	30

All (155) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
6	E	351	LEU
10	I	159	GLN
11	J	157	VAL
15	N	47	ALA
17	a	184	LYS
21	e	131	ALA
23	g	124	VAL
26	j	81	PRO
30	n	78	LEU
33	q	61	LYS
43	Q	30	ALA
46	V	72	ILE
46	V	97	LEU
46	V	110	ARG
46	V	144	PRO
46	V	185	VAL
46	V	389	ILE
46	V	400	LYS
47	W	348	GLY
47	W	498	TYR
6	E	187	SER
6	E	347	SER
6	E	348	ARG
7	F	182	LEU
7	F	269	SER
7	F	293	SER
7	F	305	ALA
10	I	178	ILE
14	M	10	ARG
14	M	95	ASN
14	M	114	ILE
15	N	76	THR
16	O	8	LYS
16	O	29	ALA
20	d	41	ASP
20	d	98	LYS
26	j	97	LYS
28	l	84	LYS
30	n	66	ALA
35	s	88	ASN
36	t	77	GLY
46	V	77	GLU
46	V	390	ASP

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Mol	Chain	Res	Type
47	W	454	ILE
7	F	140	HIS
7	F	173	GLY
7	F	232	SER
7	F	233	LEU
7	F	268	ALA
8	G	259	LYS
8	G	260	PHE
10	I	158	LYS
11	J	25	PRO
11	J	36	ILE
15	N	166	ALA
22	f	167	ARG
23	g	159	PHE
31	o	25	LYS
35	s	91	ALA
37	u	39	PRO
38	v	3	VAL
40	x	18	ALA
43	Q	34	SER
46	V	62	GLU
46	V	194	LYS
47	W	380	SER
47	W	502	PRO
5	D	144	ASN
7	F	292	SER
7	F	311	HIS
8	G	253	PHE
9	H	5	LYS
11	J	39	ALA
11	J	79	GLN
11	J	125	ALA
12	K	2	LYS
12	K	22	SER
12	K	110	LYS
13	L	24	ARG
13	L	116	ARG
13	L	218	ALA
14	M	117	ASP
15	N	66	ASN
16	O	9	ALA
19	c	156	ALA

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Mol	Chain	Res	Type
20	d	162	ALA
21	e	53	LYS
22	f	24	LEU
27	k	50	ALA
28	l	126	LEU
29	m	59	ALA
30	n	56	VAL
30	n	117	ARG
31	o	29	TYR
33	q	82	GLU
34	r	12	LYS
37	u	75	TYR
40	x	33	LYS
40	x	34	ALA
41	y	3	ALA
42	z	79	GLU
43	Q	17	CYS
46	V	349	ASN
47	W	381	ASP
47	W	428	ILE
5	D	125	ALA
6	E	155	ALA
7	F	5	GLN
9	H	151	LYS
10	I	25	GLN
14	M	108	GLU
15	N	75	PHE
17	a	94	TYR
21	e	178	ALA
22	f	22	PRO
24	h	11	ILE
29	m	17	ARG
30	n	47	LYS
31	o	21	ILE
37	u	99	GLN
37	u	119	LYS
39	w	78	PHE
46	V	68	PRO
6	E	317	ILE
7	F	131	VAL
7	F	317	PRO
7	F	339	LEU

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Mol	Chain	Res	Type
8	G	125	VAL
10	I	26	VAL
29	m	124	ALA
30	n	15	VAL
33	q	7	VAL
36	t	46	ASP
39	w	84	SER
47	W	429	PRO
6	E	141	GLY
11	J	164	VAL
24	h	60	GLY
25	i	3	GLY
46	V	327	GLY
7	F	340	GLY
13	L	114	GLY
26	j	80	ARG
46	V	48	GLY
9	H	98	VAL
21	e	129	GLY
29	m	125	GLY
10	I	191	VAL
13	L	194	GLY
16	O	6	ILE
16	O	52	GLY
30	n	116	GLY
43	Q	14	GLY
23	g	126	VAL
43	Q	101	GLY

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	X	177/227 (78%)	175 (99%)	2 (1%)	73 85
5	D	193/196 (98%)	181 (94%)	12 (6%)	18 47
6	E	320/323 (99%)	300 (94%)	20 (6%)	18 47

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
7	F	288/289 (100%)	276 (96%)	12 (4%)	30	60
8	G	244/245 (100%)	231 (95%)	13 (5%)	22	53
9	H	134/153 (88%)	130 (97%)	4 (3%)	41	68
10	I	186/205 (91%)	177 (95%)	9 (5%)	25	56
11	J	187/208 (90%)	171 (91%)	16 (9%)	10	35
12	K	171/171 (100%)	157 (92%)	14 (8%)	11	36
13	L	177/187 (95%)	161 (91%)	16 (9%)	9	32
14	M	147/150 (98%)	139 (95%)	8 (5%)	22	53
15	N	154/159 (97%)	141 (92%)	13 (8%)	11	35
16	O	107/109 (98%)	100 (94%)	7 (6%)	17	46
17	a	175/176 (99%)	167 (95%)	8 (5%)	27	58
18	b	160/162 (99%)	154 (96%)	6 (4%)	33	62
19	c	140/146 (96%)	130 (93%)	10 (7%)	14	42
20	d	150/151 (99%)	144 (96%)	6 (4%)	31	61
21	e	153/154 (99%)	146 (95%)	7 (5%)	27	58
22	f	156/156 (100%)	145 (93%)	11 (7%)	14	42
23	g	136/137 (99%)	125 (92%)	11 (8%)	11	36
24	h	87/107 (81%)	85 (98%)	2 (2%)	50	73
25	i	104/105 (99%)	101 (97%)	3 (3%)	42	69
26	j	57/129 (44%)	57 (100%)	0	100	100
27	k	104/118 (88%)	96 (92%)	8 (8%)	13	38
28	l	109/110 (99%)	102 (94%)	7 (6%)	17	46
29	m	115/116 (99%)	109 (95%)	6 (5%)	23	54
30	n	118/119 (99%)	108 (92%)	10 (8%)	10	35
31	o	46/47 (98%)	43 (94%)	3 (6%)	17	46
32	p	81/88 (92%)	78 (96%)	3 (4%)	34	63
33	q	92/97 (95%)	87 (95%)	5 (5%)	22	53
34	r	109/111 (98%)	101 (93%)	8 (7%)	14	41
35	s	90/91 (99%)	83 (92%)	7 (8%)	12	38
36	t	95/103 (92%)	89 (94%)	6 (6%)	18	47
37	u	104/105 (99%)	96 (92%)	8 (8%)	13	38

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
38	v	81/82 (99%)	77 (95%)	4 (5%)	25	56
39	w	70/71 (99%)	63 (90%)	7 (10%)	7	27
40	x	68/69 (99%)	65 (96%)	3 (4%)	28	59
41	y	45/46 (98%)	44 (98%)	1 (2%)	52	74
42	z	47/116 (40%)	44 (94%)	3 (6%)	17	46
43	Q	90/91 (99%)	85 (94%)	5 (6%)	21	52
44	R	71/72 (99%)	67 (94%)	4 (6%)	21	52
46	V	291/473 (62%)	254 (87%)	37 (13%)	4	19
47	W	209/502 (42%)	171 (82%)	38 (18%)	1	7
All	All	5838/6672 (88%)	5455 (93%)	383 (7%)	20	46

All (383) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	X	74	THR
1	X	99	GLU
5	D	23	ARG
5	D	48	ILE
5	D	52	SER
5	D	116	VAL
5	D	122	ASP
5	D	128	ARG
5	D	160	SER
5	D	207	VAL
5	D	223	SER
5	D	227	ARG
5	D	230	VAL
5	D	246	LEU
6	E	10	ARG
6	E	25	ILE
6	E	74	GLU
6	E	84	VAL
6	E	85	VAL
6	E	103	THR
6	E	162	VAL
6	E	169	THR
6	E	211	GLN
6	E	235	THR
6	E	238	LEU

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Mol	Chain	Res	Type
6	E	242	THR
6	E	252	ILE
6	E	296	THR
6	E	305	ILE
6	E	318	LYS
6	E	328	ILE
6	E	331	ASN
6	E	332	ARG
6	E	382	THR
7	F	43	ASN
7	F	67	THR
7	F	69	ARG
7	F	74	ILE
7	F	99	MET
7	F	114	ASN
7	F	179	LEU
7	F	187	LEU
7	F	300	ARG
7	F	304	GLN
7	F	307	GLN
7	F	327	LEU
8	G	22	ARG
8	G	23	ARG
8	G	35	ARG
8	G	92	LEU
8	G	95	TRP
8	G	105	ILE
8	G	112	LYS
8	G	131	LEU
8	G	151	GLN
8	G	211	LEU
8	G	244	HIS
8	G	259	LYS
8	G	273	ARG
9	H	34	LEU
9	H	65	ILE
9	H	77	ARG
9	H	134	ARG
10	I	64	GLN
10	I	82	LYS
10	I	83	LEU
10	I	88	ARG

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Mol	Chain	Res	Type
10	I	92	ILE
10	I	157	ASN
10	I	179	LEU
10	I	218	ARG
10	I	239	LEU
11	J	38	GLN
11	J	41	GLN
11	J	57	ARG
11	J	61	GLN
11	J	63	LYS
11	J	65	LEU
11	J	92	LYS
11	J	136	LEU
11	J	169	LEU
11	J	190	VAL
11	J	194	THR
11	J	204	ARG
11	J	224	ASP
11	J	232	HIS
11	J	248	LYS
11	J	254	ASP
12	K	5	GLN
12	K	21	LYS
12	K	23	ARG
12	K	41	ILE
12	K	49	ASN
12	K	69	ARG
12	K	76	ASP
12	K	118	LEU
12	K	139	ASN
12	K	151	VAL
12	K	161	LEU
12	K	162	GLN
12	K	164	ILE
12	K	166	ARG
13	L	7	ARG
13	L	30	LYS
13	L	33	ILE
13	L	40	LYS
13	L	52	LEU
13	L	63	GLU
13	L	102	MET

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Mol	Chain	Res	Type
13	L	115	MET
13	L	116	ARG
13	L	163	GLN
13	L	165	ILE
13	L	169	LYS
13	L	185	ARG
13	L	201	SER
13	L	203	LYS
13	L	208	ASN
14	M	10	ARG
14	M	12	LEU
14	M	40	LEU
14	M	81	GLU
14	M	94	ARG
14	M	107	ASP
14	M	115	LYS
14	M	140	ARG
15	N	17	HIS
15	N	24	VAL
15	N	55	ARG
15	N	67	ARG
15	N	69	VAL
15	N	76	THR
15	N	101	ARG
15	N	124	ILE
15	N	136	GLU
15	N	168	ARG
15	N	176	GLU
15	N	188	ARG
15	N	190	LYS
16	O	12	TRP
16	O	50	LYS
16	O	68	LEU
16	O	72	LEU
16	O	91	CYS
16	O	108	ARG
16	O	125	LYS
17	a	24	ARG
17	a	50	ARG
17	a	80	THR
17	a	98	LEU
17	a	106	VAL

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Mol	Chain	Res	Type
17	a	117	ASN
17	a	133	ILE
17	a	175	ASN
18	b	22	VAL
18	b	34	VAL
18	b	37	ARG
18	b	78	ARG
18	b	125	ARG
18	b	155	LYS
19	c	24	VAL
19	c	53	ASP
19	c	55	GLN
19	c	78	VAL
19	c	119	VAL
19	c	120	ASN
19	c	125	GLN
19	c	126	ARG
19	c	127	ARG
19	c	180	LYS
20	d	39	ARG
20	d	49	LEU
20	d	69	ARG
20	d	135	GLN
20	d	145	ASN
20	d	150	VAL
21	e	10	LEU
21	e	17	VAL
21	e	36	ASN
21	e	44	LEU
21	e	74	ARG
21	e	99	LEU
21	e	138	LEU
22	f	51	VAL
22	f	58	ILE
22	f	61	ILE
22	f	71	LYS
22	f	82	ASP
22	f	87	THR
22	f	93	GLU
22	f	134	ASP
22	f	137	ARG
22	f	155	ARG

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Mol	Chain	Res	Type
22	f	172	TYR
23	g	12	ARG
23	g	32	LYS
23	g	75	ILE
23	g	79	MET
23	g	88	ARG
23	g	96	ILE
23	g	102	ARG
23	g	126	VAL
23	g	127	GLN
23	g	128	LEU
23	g	139	ARG
24	h	10	LYS
24	h	70	LYS
25	i	33	ASN
25	i	83	LYS
25	i	88	ARG
27	k	61	LYS
27	k	63	ILE
27	k	70	GLU
27	k	115	ARG
27	k	133	LEU
27	k	135	ILE
27	k	137	ASN
27	k	142	ILE
28	l	4	GLN
28	l	13	ARG
28	l	37	LYS
28	l	50	ILE
28	l	53	ASP
28	l	74	TYR
28	l	126	LEU
29	m	14	VAL
29	m	17	ARG
29	m	34	LYS
29	m	120	GLU
29	m	121	ARG
29	m	126	LYS
30	n	4	ARG
30	n	7	LYS
30	n	10	LYS
30	n	34	MET

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Mol	Chain	Res	Type
30	n	42	ARG
30	n	60	TYR
30	n	78	LEU
30	n	115	LYS
30	n	120	ASN
30	n	130	VAL
31	o	22	LYS
31	o	25	LYS
31	o	59	LYS
32	p	40	LYS
32	p	61	MET
32	p	83	LYS
33	q	16	LEU
33	q	35	GLU
33	q	55	LEU
33	q	79	ARG
33	q	86	LYS
34	r	19	ARG
34	r	33	ARG
34	r	47	ARG
34	r	73	THR
34	r	75	LEU
34	r	87	MET
34	r	125	ARG
34	r	128	LEU
35	s	31	LYS
35	s	59	VAL
35	s	70	LYS
35	s	73	ARG
35	s	81	VAL
35	s	86	ARG
35	s	98	VAL
36	t	29	ILE
36	t	33	GLN
36	t	51	LEU
36	t	52	GLN
36	t	58	ARG
36	t	86	LYS
37	u	15	GLU
37	u	20	GLN
37	u	21	LEU
37	u	28	LEU

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Mol	Chain	Res	Type
37	u	49	LYS
37	u	69	LEU
37	u	71	LYS
37	u	119	LYS
38	v	45	ARG
38	v	57	LEU
38	v	58	ILE
38	v	76	ARG
39	w	22	CYS
39	w	24	ARG
39	w	25	ARG
39	w	33	THR
39	w	37	CYS
39	w	67	LEU
39	w	71	SER
40	x	46	ARG
40	x	67	GLN
40	x	77	ARG
41	y	21	ARG
42	z	85	LEU
42	z	106	ARG
42	z	113	ARG
43	Q	13	LYS
43	Q	35	LEU
43	Q	38	GLN
43	Q	45	ARG
43	Q	100	LYS
44	R	38	ASP
44	R	45	LYS
44	R	49	ARG
44	R	60	CYS
46	V	61	CYS
46	V	66	GLN
46	V	103	ILE
46	V	111	ARG
46	V	141	MET
46	V	145	ASP
46	V	146	CYS
46	V	156	ARG
46	V	162	ARG
46	V	164	LYS
46	V	168	LYS

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Mol	Chain	Res	Type
46	V	171	PHE
46	V	177	LEU
46	V	179	LEU
46	V	185	VAL
46	V	197	LEU
46	V	209	LYS
46	V	221	LYS
46	V	228	LEU
46	V	265	LYS
46	V	278	LYS
46	V	291	LEU
46	V	295	ASP
46	V	299	SER
46	V	345	ASP
46	V	350	ASP
46	V	356	ARG
46	V	362	ILE
46	V	364	HIS
46	V	370	MET
46	V	376	ASN
46	V	387	LEU
46	V	390	ASP
46	V	391	TYR
46	V	397	LEU
46	V	400	LYS
46	V	401	LEU
47	W	182	GLU
47	W	185	ILE
47	W	191	LEU
47	W	196	GLU
47	W	197	ARG
47	W	203	GLN
47	W	211	LEU
47	W	212	LEU
47	W	214	ARG
47	W	224	GLU
47	W	226	ASP
47	W	231	ASN
47	W	246	ARG
47	W	260	PHE
47	W	266	LEU
47	W	339	ILE

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Mol	Chain	Res	Type
47	W	349	LYS
47	W	353	ILE
47	W	362	VAL
47	W	372	LYS
47	W	373	HIS
47	W	384	MET
47	W	385	LEU
47	W	400	LYS
47	W	405	CYS
47	W	406	ASN
47	W	409	LEU
47	W	413	GLN
47	W	428	ILE
47	W	431	TYR
47	W	437	TYR
47	W	440	HIS
47	W	472	THR
47	W	473	GLN
47	W	477	SER
47	W	482	ARG
47	W	485	ARG
47	W	497	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (38) such sidechains are listed below:

Mol	Chain	Res	Type
5	D	209	HIS
6	E	182	GLN
6	E	184	ASN
6	E	319	ASN
7	F	114	ASN
7	F	221	ASN
8	G	63	GLN
9	H	138	GLN
9	H	167	ASN
10	I	64	GLN
10	I	244	ASN
11	J	192	GLN
12	K	8	GLN
12	K	163	GLN
13	L	12	GLN
13	L	59	GLN

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Mol	Chain	Res	Type
13	L	95	HIS
15	N	137	GLN
18	b	31	GLN
19	c	120	ASN
19	c	125	GLN
20	d	9	GLN
20	d	73	GLN
20	d	145	ASN
29	m	57	HIS
33	q	57	GLN
37	u	68	GLN
37	u	104	GLN
37	u	108	GLN
40	x	67	GLN
46	V	163	GLN
46	V	231	GLN
47	W	209	ASN
47	W	375	GLN
47	W	440	HIS
47	W	442	GLN
47	W	473	GLN
47	W	500	ASN

5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	A	3201/3396 (94%)	839 (26%)	100 (3%)
3	B	120/121 (99%)	25 (20%)	3 (2%)
4	C	157/158 (99%)	39 (24%)	3 (1%)
All	All	3478/3675 (94%)	903 (25%)	106 (3%)

All (903) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	A	16	A
2	A	22	G
2	A	26	A
2	A	31	C
2	A	40	A
2	A	43	A
2	A	44	U

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Mol	Chain	Res	Type
2	A	48	A
2	A	49	A
2	A	59	G
2	A	60	A
2	A	65	A
2	A	66	A
2	A	67	A
2	A	78	U
2	A	79	U
2	A	83	U
2	A	92	G
2	A	99	A
2	A	105	C
2	A	109	A
2	A	110	G
2	A	111	C
2	A	116	A
2	A	122	A
2	A	123	A
2	A	127	G
2	A	131	C
2	A	136	G
2	A	137	G
2	A	156	G
2	A	157	A
2	A	160	G
2	A	161	G
2	A	162	G
2	A	166	C
2	A	167	U
2	A	168	U
2	A	170	G
2	A	171	G
2	A	173	G
2	A	175	C
2	A	182	U
2	A	190	U
2	A	191	U
2	A	192	C
2	A	193	C
2	A	206	G
2	A	210	U

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Mol	Chain	Res	Type
2	A	211	A
2	A	213	A
2	A	218	G
2	A	219	A
2	A	232	G
2	A	240	U
2	A	241	G
2	A	243	G
2	A	245	U
2	A	246	U
2	A	249	U
2	A	250	U
2	A	252	U
2	A	262	U
2	A	264	G
2	A	266	A
2	A	269	G
2	A	286	U
2	A	295	A
2	A	305	U
2	A	306	A
2	A	307	A
2	A	313	A
2	A	314	U
2	A	315	C
2	A	323	A
2	A	329	U
2	A	336	A
2	A	338	A
2	A	339	C
2	A	348	A
2	A	372	A
2	A	375	A
2	A	376	G
2	A	379	C
2	A	381	U
2	A	383	G
2	A	392	G
2	A	395	A
2	A	398	A
2	A	399	A
2	A	401	U

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Mol	Chain	Res	Type
2	A	402	A
2	A	403	C
2	A	404	G
2	A	415	G
2	A	420	G
2	A	421	G
2	A	422	A
2	A	429	U
2	A	433	A
2	A	439	C
2	A	440	A
2	A	495	G
2	A	503	C
2	A	507	U
2	A	510	G
2	A	511	G
2	A	519	A
2	A	520	U
2	A	521	A
2	A	523	A
2	A	526	C
2	A	529	A
2	A	532	A
2	A	534	U
2	A	536	U
2	A	541	U
2	A	543	C
2	A	546	C
2	A	547	G
2	A	548	G
2	A	549	U
2	A	551	A
2	A	553	U
2	A	555	U
2	A	556	U
2	A	557	A
2	A	559	A
2	A	560	G
2	A	578	A
2	A	579	G
2	A	588	G
2	A	589	A

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Mol	Chain	Res	Type
2	A	598	A
2	A	599	C
2	A	600	G
2	A	603	A
2	A	604	G
2	A	607	A
2	A	611	A
2	A	616	G
2	A	620	U
2	A	621	A
2	A	622	A
2	A	634	C
2	A	636	C
2	A	649	A
2	A	660	A
2	A	677	A
2	A	681	U
2	A	683	U
2	A	684	G
2	A	689	U
2	A	690	A
2	A	691	A
2	A	701	G
2	A	705	A
2	A	712	G
2	A	715	A
2	A	720	A
2	A	721	G
2	A	735	A
2	A	739	G
2	A	744	A
2	A	764	U
2	A	765	C
2	A	766	U
2	A	767	U
2	A	774	G
2	A	776	U
2	A	777	U
2	A	781	G
2	A	785	G
2	A	786	A
2	A	793	C

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Mol	Chain	Res	Type
2	A	799	G
2	A	801	A
2	A	806	A
2	A	811	U
2	A	816	A
2	A	817	A
2	A	825	U
2	A	826	G
2	A	827	A
2	A	830	A
2	A	832	G
2	A	841	A
2	A	848	A
2	A	849	C
2	A	861	C
2	A	869	G
2	A	874	U
2	A	879	U
2	A	880	G
2	A	884	A
2	A	894	G
2	A	896	A
2	A	897	U
2	A	907	G
2	A	908	G
2	A	911	C
2	A	914	A
2	A	916	G
2	A	917	A
2	A	921	A
2	A	923	C
2	A	924	G
2	A	925	A
2	A	937	G
2	A	939	U
2	A	941	G
2	A	944	C
2	A	959	C
2	A	960	U
2	A	961	C
2	A	978	G
2	A	979	U

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Mol	Chain	Res	Type
2	A	980	A
2	A	981	U
2	A	982	C
2	A	984	G
2	A	994	G
2	A	1001	G
2	A	1002	A
2	A	1006	A
2	A	1009	A
2	A	1010	G
2	A	1013	G
2	A	1015	U
2	A	1017	C
2	A	1018	G
2	A	1019	G
2	A	1024	G
2	A	1025	A
2	A	1026	A
2	A	1029	G
2	A	1030	A
2	A	1031	C
2	A	1036	A
2	A	1037	C
2	A	1040	A
2	A	1041	U
2	A	1047	A
2	A	1049	C
2	A	1051	U
2	A	1057	A
2	A	1063	G
2	A	1064	A
2	A	1065	A
2	A	1069	C
2	A	1071	U
2	A	1072	G
2	A	1081	U
2	A	1093	A
2	A	1094	U
2	A	1095	U
2	A	1097	G
2	A	1098	A
2	A	1099	A

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Mol	Chain	Res	Type
2	A	1103	A
2	A	1104	G
2	A	1117	G
2	A	1122	U
2	A	1124	U
2	A	1129	A
2	A	1131	G
2	A	1140	G
2	A	1145	G
2	A	1153	A
2	A	1157	G
2	A	1159	A
2	A	1178	G
2	A	1179	A
2	A	1180	A
2	A	1181	U
2	A	1190	A
2	A	1192	C
2	A	1200	A
2	A	1201	C
2	A	1208	U
2	A	1212	A
2	A	1213	G
2	A	1217	A
2	A	1219	C
2	A	1222	G
2	A	1223	A
2	A	1230	G
2	A	1232	C
2	A	1233	G
2	A	1236	G
2	A	1237	G
2	A	1240	A
2	A	1241	U
2	A	1242	G
2	A	1243	G
2	A	1244	A
2	A	1245	A
2	A	1246	G
2	A	1247	U
2	A	1248	C
2	A	1249	G

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Mol	Chain	Res	Type
2	A	1253	U
2	A	1257	C
2	A	1258	U
2	A	1262	G
2	A	1263	A
2	A	1264	G
2	A	1265	U
2	A	1267	U
2	A	1270	A
2	A	1271	A
2	A	1274	A
2	A	1276	U
2	A	1278	A
2	A	1279	C
2	A	1285	G
2	A	1287	A
2	A	1289	G
2	A	1291	A
2	A	1303	A
2	A	1305	U
2	A	1307	G
2	A	1309	U
2	A	1313	G
2	A	1315	U
2	A	1319	G
2	A	1325	U
2	A	1330	A
2	A	1334	U
2	A	1348	U
2	A	1349	G
2	A	1351	U
2	A	1352	A
2	A	1353	U
2	A	1356	U
2	A	1357	G
2	A	1364	C
2	A	1383	G
2	A	1386	A
2	A	1392	G
2	A	1393	A
2	A	1394	A
2	A	1399	A

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Mol	Chain	Res	Type
2	A	1400	G
2	A	1409	G
2	A	1414	G
2	A	1416	C
2	A	1419	A
2	A	1430	U
2	A	1434	G
2	A	1437	C
2	A	1446	A
2	A	1450	G
2	A	1455	U
2	A	1460	A
2	A	1466	G
2	A	1481	A
2	A	1482	A
2	A	1489	A
2	A	1496	C
2	A	1501	U
2	A	1503	A
2	A	1508	C
2	A	1521	G
2	A	1527	C
2	A	1531	C
2	A	1533	U
2	A	1536	G
2	A	1537	A
2	A	1547	G
2	A	1555	U
2	A	1556	C
2	A	1557	A
2	A	1560	G
2	A	1561	G
2	A	1562	C
2	A	1563	C
2	A	1564	U
2	A	1565	G
2	A	1566	A
2	A	1567	U
2	A	1568	U
2	A	1569	U
2	A	1570	U
2	A	1572	U

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Mol	Chain	Res	Type
2	A	1576	G
2	A	1577	G
2	A	1578	C
2	A	1579	C
2	A	1582	C
2	A	1583	A
2	A	1587	A
2	A	1589	A
2	A	1599	G
2	A	1605	A
2	A	1615	C
2	A	1619	A
2	A	1620	U
2	A	1623	G
2	A	1627	U
2	A	1628	C
2	A	1629	U
2	A	1630	U
2	A	1632	A
2	A	1642	A
2	A	1643	A
2	A	1645	U
2	A	1657	C
2	A	1658	G
2	A	1664	G
2	A	1666	G
2	A	1674	G
2	A	1678	G
2	A	1682	U
2	A	1683	A
2	A	1703	U
2	A	1716	U
2	A	1717	U
2	A	1724	U
2	A	1725	C
2	A	1733	G
2	A	1735	G
2	A	1741	A
2	A	1747	G
2	A	1749	A
2	A	1750	A
2	A	1751	G

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Mol	Chain	Res	Type
2	A	1760	A
2	A	1761	C
2	A	1765	U
2	A	1766	G
2	A	1770	G
2	A	1775	G
2	A	1780	G
2	A	1788	C
2	A	1790	G
2	A	1795	U
2	A	1797	A
2	A	1798	A
2	A	1803	C
2	A	1808	G
2	A	1812	G
2	A	1814	A
2	A	1815	U
2	A	1816	A
2	A	1817	G
2	A	1820	U
2	A	1821	U
2	A	1839	A
2	A	1841	A
2	A	1842	A
2	A	1845	G
2	A	1849	C
2	A	1850	A
2	A	1867	A
2	A	1871	U
2	A	1880	U
2	A	1886	A
2	A	1893	A
2	A	1895	A
2	A	1906	G
2	A	1908	A
2	A	1909	A
2	A	1917	C
2	A	1926	C
2	A	1930	A
2	A	1936	A
2	A	1951	C
2	A	1952	G

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Mol	Chain	Res	Type
2	A	1953	G
2	A	1954	G
2	A	2096	A
2	A	2100	A
2	A	2101	C
2	A	2102	U
2	A	2111	G
2	A	2113	A
2	A	2114	C
2	A	2118	C
2	A	2121	G
2	A	2122	G
2	A	2131	A
2	A	2140	U
2	A	2142	A
2	A	2158	A
2	A	2169	G
2	A	2185	G
2	A	2187	G
2	A	2192	C
2	A	2198	A
2	A	2205	U
2	A	2210	G
2	A	2221	G
2	A	2228	A
2	A	2239	G
2	A	2244	A
2	A	2246	G
2	A	2250	G
2	A	2253	G
2	A	2255	A
2	A	2256	A
2	A	2257	C
2	A	2258	PSU
2	A	2259	A
2	A	2262	A
2	A	2264	PSU
2	A	2266	PSU
2	A	2267	C
2	A	2268	U
2	A	2269	U
2	A	2270	A

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Mol	Chain	Res	Type
2	A	2273	G
2	A	2274	U
2	A	2281	A
2	A	2282	U
2	A	2288	G
2	A	2298	U
2	A	2307	G
2	A	2308	C
2	A	2310	U
2	A	2313	A
2	A	2314	U
2	A	2315	G
2	A	2332	A
2	A	2335	G
2	A	2336	U
2	A	2337	C
2	A	2372	A
2	A	2373	A
2	A	2374	C
2	A	2375	G
2	A	2379	U
2	A	2385	G
2	A	2388	U
2	A	2393	G
2	A	2397	A
2	A	2401	A
2	A	2402	A
2	A	2403	G
2	A	2404	A
2	A	2405	C
2	A	2407	C
2	A	2411	U
2	A	2412	G
2	A	2418	G
2	A	2419	A
2	A	2425	G
2	A	2428	U
2	A	2429	G
2	A	2434	U
2	A	2437	G
2	A	2440	G
2	A	2442	G

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Mol	Chain	Res	Type
2	A	2444	C
2	A	2445	A
2	A	2446	U
2	A	2449	A
2	A	2450	G
2	A	2451	G
2	A	2452	G
2	A	2453	U
2	A	2454	G
2	A	2455	U
2	A	2457	G
2	A	2458	A
2	A	2459	A
2	A	2461	A
2	A	2463	G
2	A	2464	U
2	A	2468	A
2	A	2470	C
2	A	2472	U
2	A	2473	C
2	A	2474	G
2	A	2475	G
2	A	2477	G
2	A	2479	C
2	A	2481	G
2	A	2482	U
2	A	2483	G
2	A	2485	A
2	A	2488	A
2	A	2491	A
2	A	2494	A
2	A	2495	C
2	A	2496	C
2	A	2497	U
2	A	2498	U
2	A	2501	U
2	A	2502	A
2	A	2505	U
2	A	2506	U
2	A	2508	U
2	A	2513	U
2	A	2514	U

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Mol	Chain	Res	Type
2	A	2515	A
2	A	2522	G
2	A	2531	C
2	A	2533	G
2	A	2537	U
2	A	2538	U
2	A	2539	C
2	A	2540	A
2	A	2541	U
2	A	2542	U
2	A	2543	U
2	A	2544	U
2	A	2547	A
2	A	2548	C
2	A	2549	G
2	A	2550	U
2	A	2552	C
2	A	2554	A
2	A	2555	G
2	A	2561	A
2	A	2562	A
2	A	2564	G
2	A	2565	U
2	A	2566	C
2	A	2569	A
2	A	2570	U
2	A	2571	U
2	A	2572	C
2	A	2573	G
2	A	2575	G
2	A	2577	C
2	A	2581	U
2	A	2585	G
2	A	2586	G
2	A	2593	A
2	A	2594	C
2	A	2602	G
2	A	2606	G
2	A	2607	G
2	A	2614	G
2	A	2621	G
2	A	2626	A

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Mol	Chain	Res	Type
2	A	2628	A
2	A	2635	A
2	A	2648	G
2	A	2652	U
2	A	2656	A
2	A	2657	A
2	A	2658	G
2	A	2674	A
2	A	2677	G
2	A	2681	U
2	A	2684	C
2	A	2689	A
2	A	2690	G
2	A	2691	A
2	A	2694	A
2	A	2696	A
2	A	2704	A
2	A	2709	C
2	A	2714	G
2	A	2719	U
2	A	2726	C
2	A	2727	A
2	A	2728	G
2	A	2734	A
2	A	2737	C
2	A	2753	G
2	A	2754	G
2	A	2755	C
2	A	2762	A
2	A	2772	C
2	A	2774	C
2	A	2777	G
2	A	2778	G
2	A	2780	A
2	A	2790	A
2	A	2792	A
2	A	2799	A
2	A	2800	G
2	A	2801	A
2	A	2803	A
2	A	2810	C
2	A	2816	G

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Mol	Chain	Res	Type
2	A	2817	A
2	A	2821	C
2	A	2837	A
2	A	2838	A
2	A	2842	U
2	A	2843	U
2	A	2844	C
2	A	2845	A
2	A	2848	G
2	A	2849	C
2	A	2860	U
2	A	2861	U
2	A	2867	C
2	A	2871	G
2	A	2872	A
2	A	2882	U
2	A	2887	A
2	A	2888	U
2	A	2896	A
2	A	2898	G
2	A	2899	C
2	A	2900	A
2	A	2914	G
2	A	2923	U
2	A	2928	C
2	A	2933	A
2	A	2935	U
2	A	2936	A
2	A	2938	G
2	A	2941	A
2	A	2942	C
2	A	2947	G
2	A	2951	G
2	A	2971	A
2	A	2975	U
2	A	2978	U
2	A	2979	U
2	A	2980	U
2	A	2983	C
2	A	2990	G
2	A	2996	U
2	A	2997	G

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Mol	Chain	Res	Type
2	A	2998	U
2	A	3004	C
2	A	3011	A
2	A	3012	A
2	A	3014	U
2	A	3022	G
2	A	3049	A
2	A	3056	U
2	A	3057	U
2	A	3058	U
2	A	3059	G
2	A	3070	A
2	A	3072	C
2	A	3078	U
2	A	3079	U
2	A	3086	A
2	A	3090	U
2	A	3092	C
2	A	3104	U
2	A	3109	G
2	A	3110	C
2	A	3114	A
2	A	3115	C
2	A	3117	C
2	A	3122	A
2	A	3125	U
2	A	3129	A
2	A	3130	A
2	A	3131	U
2	A	3133	C
2	A	3142	A
2	A	3143	C
2	A	3148	U
2	A	3153	U
2	A	3154	C
2	A	3155	U
2	A	3156	U
2	A	3157	U
2	A	3165	A
2	A	3168	A
2	A	3173	G
2	A	3174	A

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Mol	Chain	Res	Type
2	A	3176	G
2	A	3179	U
2	A	3181	C
2	A	3187	A
2	A	3188	G
2	A	3189	G
2	A	3191	G
2	A	3194	C
2	A	3196	U
2	A	3197	G
2	A	3200	G
2	A	3206	C
2	A	3207	U
2	A	3213	A
2	A	3217	C
2	A	3218	A
2	A	3219	G
2	A	3224	G
2	A	3226	A
2	A	3229	G
2	A	3232	G
2	A	3234	A
2	A	3238	G
2	A	3243	A
2	A	3245	A
2	A	3246	G
2	A	3247	G
2	A	3249	C
2	A	3259	U
2	A	3260	G
2	A	3261	C
2	A	3269	U
2	A	3270	U
2	A	3271	G
2	A	3273	A
2	A	3275	U
2	A	3276	G
2	A	3279	A
2	A	3280	U
2	A	3283	U
2	A	3286	G
2	A	3289	G

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Mol	Chain	Res	Type
2	A	3294	A
2	A	3295	A
2	A	3300	U
2	A	3304	U
2	A	3313	U
2	A	3316	A
2	A	3317	U
2	A	3318	G
2	A	3319	U
2	A	3320	A
2	A	3321	C
2	A	3324	C
2	A	3325	G
2	A	3328	G
2	A	3342	A
2	A	3345	G
2	A	3347	A
2	A	3350	C
2	A	3351	U
2	A	3352	U
2	A	3353	G
2	A	3354	U
2	A	3355	U
2	A	3356	G
2	A	3361	G
2	A	3367	C
2	A	3368	U
2	A	3369	G
2	A	3375	A
2	A	3378	C
2	A	3382	U
2	A	3383	G
2	A	3386	G
2	A	3390	G
3	B	10	C
3	B	20	A
3	B	22	A
3	B	38	U
3	B	42	A
3	B	49	G
3	B	53	U
3	B	54	U

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Mol	Chain	Res	Type
3	B	55	A
3	B	60	G
3	B	65	G
3	B	67	G
3	B	70	U
3	B	71	G
3	B	73	C
3	B	75	G
3	B	91	G
3	B	98	C
3	B	99	G
3	B	102	A
3	B	103	A
3	B	104	A
3	B	112	G
3	B	120	C
3	B	121	U
4	C	2	A
4	C	18	U
4	C	23	U
4	C	25	G
4	C	34	U
4	C	35	C
4	C	38	U
4	C	42	G
4	C	51	G
4	C	52	A
4	C	59	A
4	C	60	U
4	C	62	C
4	C	63	G
4	C	80	A
4	C	81	U
4	C	82	U
4	C	83	C
4	C	84	C
4	C	86	U
4	C	87	G
4	C	88	A
4	C	90	U
4	C	95	G
4	C	104	A

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Mol	Chain	Res	Type
4	C	105	A
4	C	106	C
4	C	111	A
4	C	113	U
4	C	116	G
4	C	125	U
4	C	126	A
4	C	129	C
4	C	138	A
4	C	144	G
4	C	151	C
4	C	152	G
4	C	155	A
4	C	158	U

All (106) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	A	65	A
2	A	66	A
2	A	78	U
2	A	116	A
2	A	169	U
2	A	239	G
2	A	285	A
2	A	518	G
2	A	547	G
2	A	558	U
2	A	588	G
2	A	594	U
2	A	599	C
2	A	816	A
2	A	896	A
2	A	916	G
2	A	937	G
2	A	960	U
2	A	978	G
2	A	979	U
2	A	993	G
2	A	1064	A
2	A	1097	G
2	A	1103	A

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Mol	Chain	Res	Type
2	A	1263	A
2	A	1308	A
2	A	1329	U
2	A	1352	A
2	A	1355	A
2	A	1391	C
2	A	1480	G
2	A	1482	A
2	A	1553	U
2	A	1554	U
2	A	1556	C
2	A	1562	C
2	A	1576	G
2	A	1643	A
2	A	1716	U
2	A	1795	U
2	A	1815	U
2	A	1816	A
2	A	1820	U
2	A	1841	A
2	A	2101	C
2	A	2112	U
2	A	2144	A
2	A	2157	G
2	A	2158	A
2	A	2209	U
2	A	2249	G
2	A	2258	PSU
2	A	2266	PSU
2	A	2269	U
2	A	2281	A
2	A	2335	G
2	A	2385	G
2	A	2404	A
2	A	2418	G
2	A	2434	U
2	A	2453	U
2	A	2495	C
2	A	2496	C
2	A	2501	U
2	A	2505	U
2	A	2513	U

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Mol	Chain	Res	Type
2	A	2537	U
2	A	2541	U
2	A	2585	G
2	A	2593	A
2	A	2627	C
2	A	2644	C
2	A	2655	U
2	A	2657	A
2	A	2727	A
2	A	2728	G
2	A	2754	G
2	A	2801	A
2	A	2803	A
2	A	2837	A
2	A	2843	U
2	A	2859	U
2	A	2950	G
2	A	2979	U
2	A	2983	C
2	A	3022	G
2	A	3048	A
2	A	3055	U
2	A	3056	U
2	A	3057	U
2	A	3078	U
2	A	3195	U
2	A	3218	A
2	A	3228	C
2	A	3269	U
2	A	3272	C
2	A	3317	U
2	A	3350	C
2	A	3351	U
2	A	3353	G
3	B	76	A
3	B	86	U
3	B	111	U
4	C	80	A
4	C	82	U
4	C	85	G

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

4 non-standard protein/DNA/RNA residues are modelled in this entry.

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
2	PSU	A	2266	2	18,21,22	1.36	2 (11%)	22,30,33	2.00	4 (18%)
2	PSU	A	2260	2	18,21,22	1.34	2 (11%)	22,30,33	1.92	4 (18%)
2	PSU	A	2258	2	18,21,22	1.38	3 (16%)	22,30,33	1.96	5 (22%)
2	PSU	A	2264	2	18,21,22	1.32	2 (11%)	22,30,33	1.99	6 (27%)

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
2	PSU	A	2266	2	-	1/7/25/26	0/2/2/2
2	PSU	A	2260	2	-	0/7/25/26	0/2/2/2
2	PSU	A	2258	2	-	2/7/25/26	0/2/2/2
2	PSU	A	2264	2	-	2/7/25/26	0/2/2/2

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
2	A	2264	PSU	C6-C5	3.07	1.38	1.35
2	A	2260	PSU	C6-C5	3.06	1.38	1.35
2	A	2258	PSU	C6-C5	3.06	1.38	1.35
2	A	2266	PSU	C6-C5	2.92	1.38	1.35
2	A	2260	PSU	C4-N3	-2.75	1.33	1.38
2	A	2258	PSU	C4-N3	-2.73	1.33	1.38
2	A	2264	PSU	C4-N3	-2.72	1.33	1.38
2	A	2266	PSU	C4-N3	-2.70	1.33	1.38
2	A	2258	PSU	C2'-C1'	-2.04	1.51	1.53

All (19) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
2	A	2260	PSU	N1-C2-N3	6.06	121.99	115.13
2	A	2258	PSU	N1-C2-N3	6.05	121.98	115.13
2	A	2266	PSU	N1-C2-N3	5.98	121.91	115.13
2	A	2264	PSU	N1-C2-N3	5.97	121.90	115.13
2	A	2258	PSU	C4-N3-C2	-4.06	120.48	126.34
2	A	2260	PSU	C4-N3-C2	-4.03	120.53	126.34
2	A	2266	PSU	C4-N3-C2	-3.91	120.70	126.34
2	A	2264	PSU	C4-N3-C2	-3.91	120.71	126.34
2	A	2266	PSU	O2-C2-N1	-3.56	118.87	122.79
2	A	2260	PSU	O2-C2-N1	-3.44	119.00	122.79
2	A	2264	PSU	O2-C2-N1	-3.38	119.07	122.79
2	A	2258	PSU	O2-C2-N1	-3.35	119.10	122.79
2	A	2264	PSU	C3'-C2'-C1'	2.38	104.41	101.64
2	A	2266	PSU	O3'-C3'-C4'	2.22	117.48	111.05
2	A	2258	PSU	C5-C6-N1	-2.19	118.83	122.11
2	A	2264	PSU	O3'-C3'-C4'	-2.13	104.88	111.05
2	A	2258	PSU	O3'-C3'-C4'	2.12	117.17	111.05
2	A	2260	PSU	C5-C6-N1	-2.05	119.04	122.11
2	A	2264	PSU	C5-C6-N1	-2.03	119.06	122.11

There are no chirality outliers.

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
2	A	2258	PSU	C3'-C4'-C5'-O5'
2	A	2258	PSU	O4'-C4'-C5'-O5'
2	A	2264	PSU	C2'-C1'-C5-C4
2	A	2266	PSU	O4'-C1'-C5-C4
2	A	2264	PSU	O4'-C4'-C5'-O5'

There are no ring outliers.

No monomer is involved in short contacts.

5.5 Carbohydrates [i](#)

There are no monosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 163 ligands modelled in this entry, 162 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
50	GNP	W	701	48	29,34,34	1.71	4 (13%)	33,54,54	1.97	9 (27%)

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
50	GNP	W	701	48	-	6/14/38/38	0/3/3/3

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
50	W	701	GNP	PG-N3B	4.46	1.75	1.63
50	W	701	GNP	PB-N3B	4.45	1.75	1.63
50	W	701	GNP	C5-C6	4.25	1.48	1.41
50	W	701	GNP	C5-C4	2.43	1.47	1.40

All (9) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
50	W	701	GNP	C2-N3-C4	5.06	121.14	115.36
50	W	701	GNP	C5-C6-N1	-3.94	118.04	123.43
50	W	701	GNP	C2-N1-C6	3.91	122.14	115.93
50	W	701	GNP	PB-O3A-PA	-3.64	119.78	132.62
50	W	701	GNP	C4-C5-C6	-3.47	117.49	120.80
50	W	701	GNP	N3-C2-N1	-3.18	122.98	127.22
50	W	701	GNP	C3'-C2'-C1'	2.76	105.14	100.98
50	W	701	GNP	C4-C5-N7	-2.62	106.67	109.40
50	W	701	GNP	O1B-PB-N3B	-2.21	108.52	111.77

There are no chirality outliers.

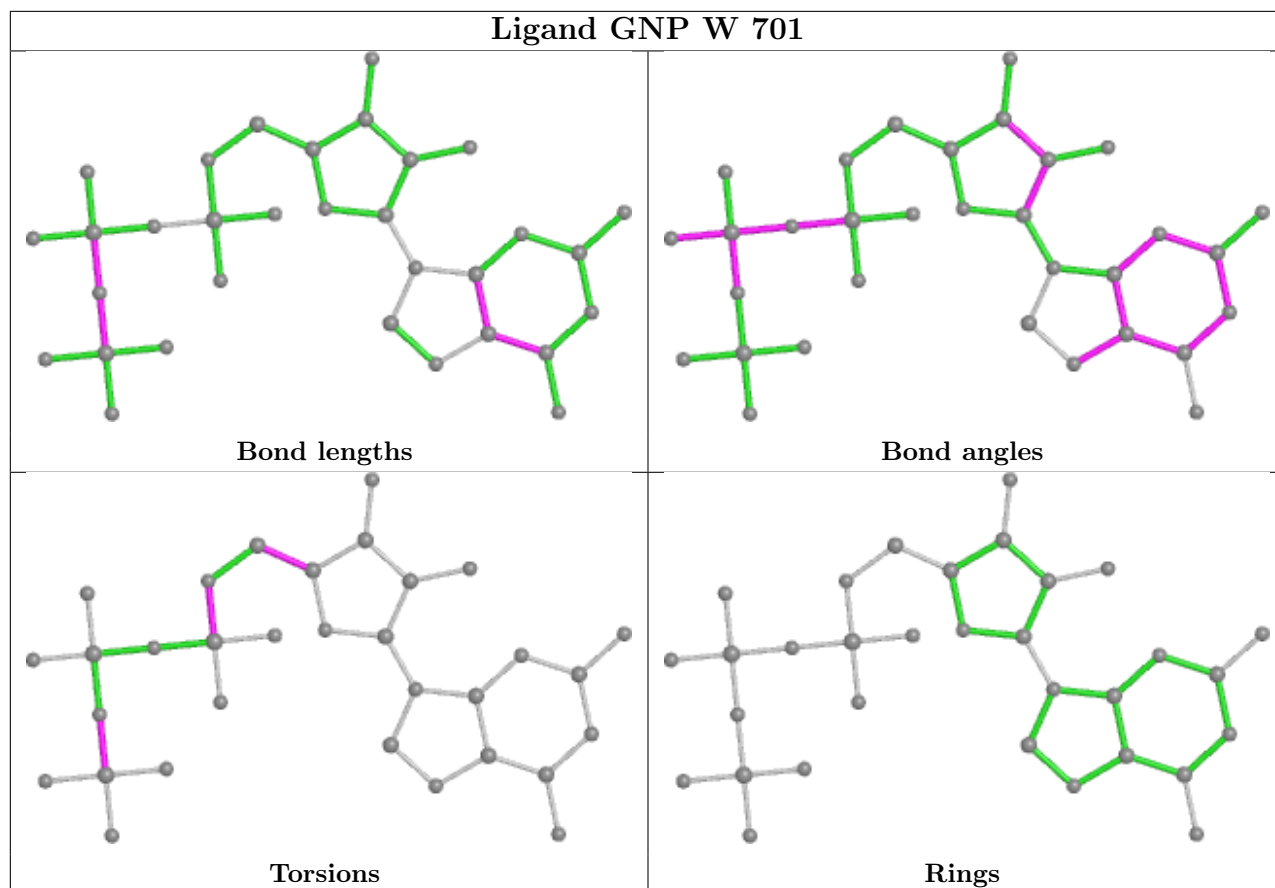
All (6) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
50	W	701	GNP	PB-N3B-PG-O1G
50	W	701	GNP	C5'-O5'-PA-O3A
50	W	701	GNP	C5'-O5'-PA-O1A
50	W	701	GNP	C5'-O5'-PA-O2A
50	W	701	GNP	O4'-C4'-C5'-O5'
50	W	701	GNP	C3'-C4'-C5'-O5'

There are no ring outliers.

No monomer is involved in short contacts.

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



5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
47	W	2

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	W	175:UNK	C	180:PRO	N	16.95
1	W	299:UNK	C	337:ILE	N	5.51

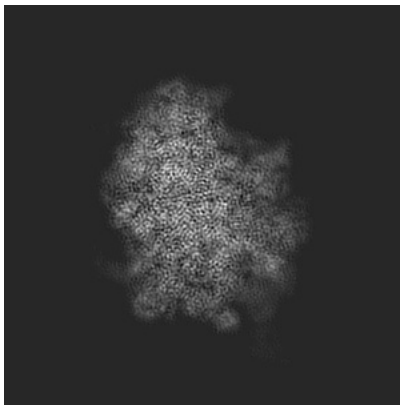
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-8362. These allow visual inspection of the internal detail of the map and identification of artifacts.

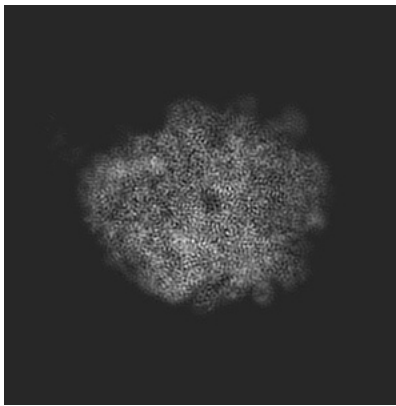
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

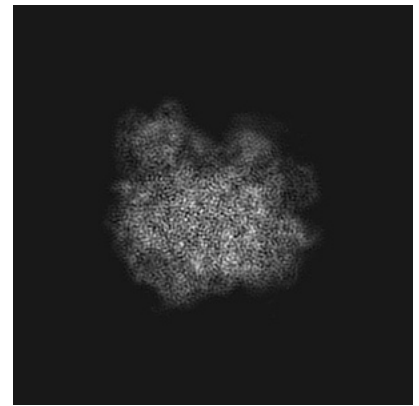
6.1.1 Primary map



X

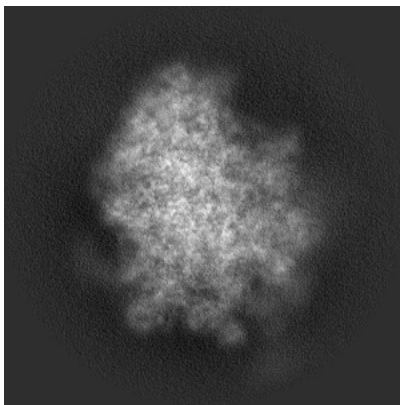


Y

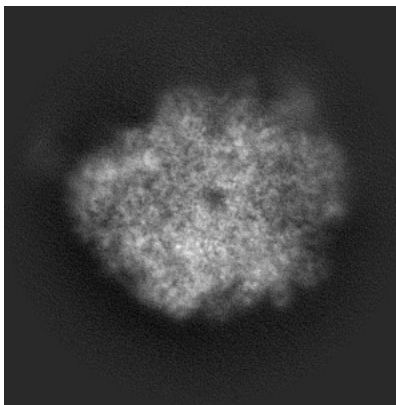


Z

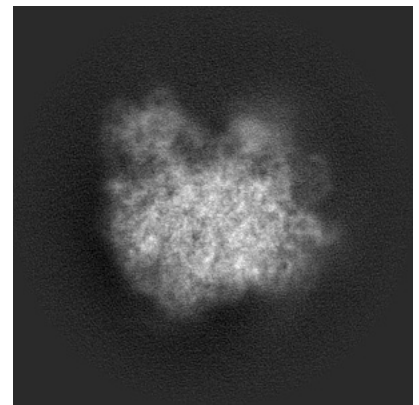
6.1.2 Raw map



X



Y

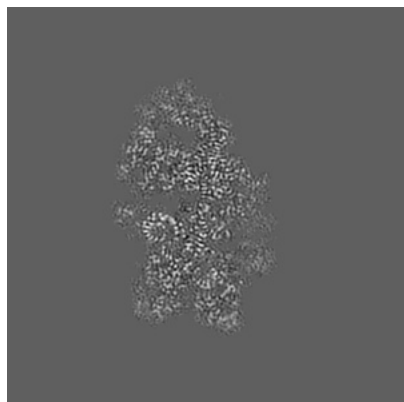


Z

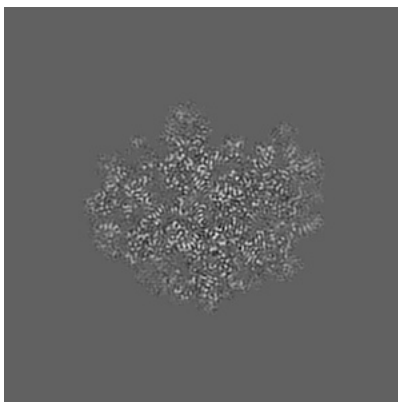
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

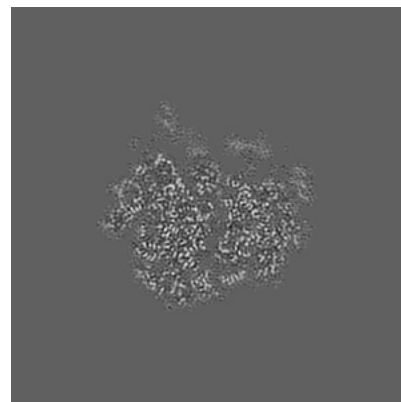
6.2.1 Primary map



X Index: 180

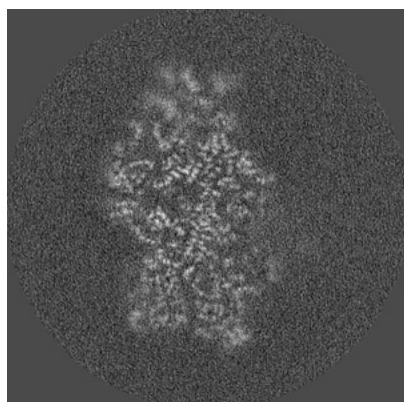


Y Index: 180

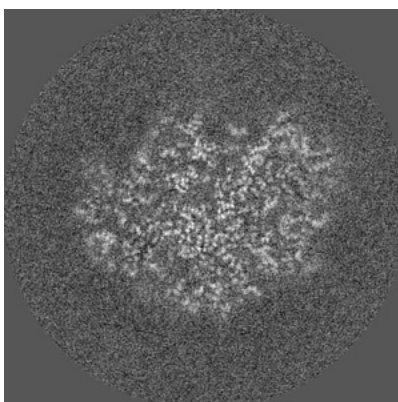


Z Index: 180

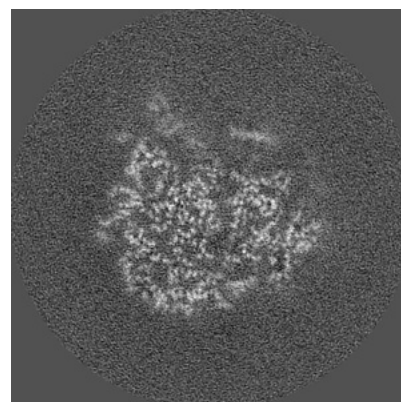
6.2.2 Raw map



X Index: 160



Y Index: 160

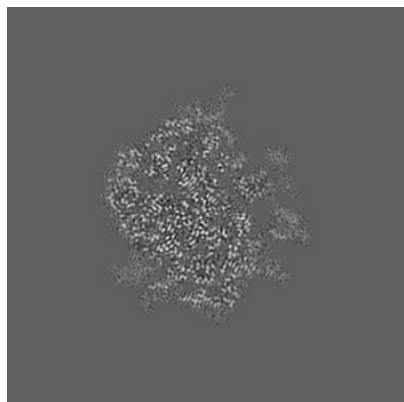


Z Index: 160

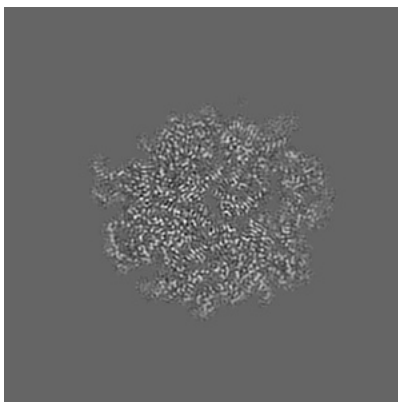
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

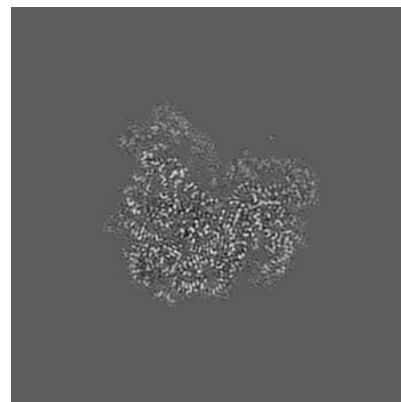
6.3.1 Primary map



X Index: 153

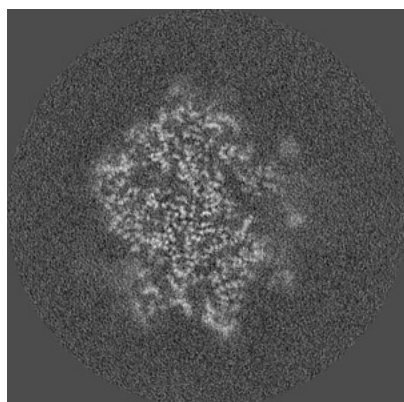


Y Index: 163

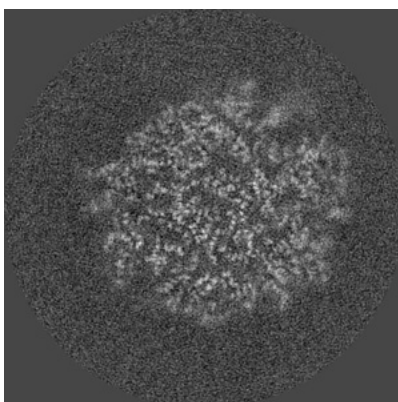


Z Index: 169

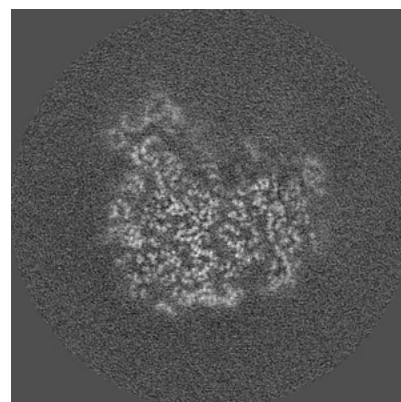
6.3.2 Raw map



X Index: 137



Y Index: 139

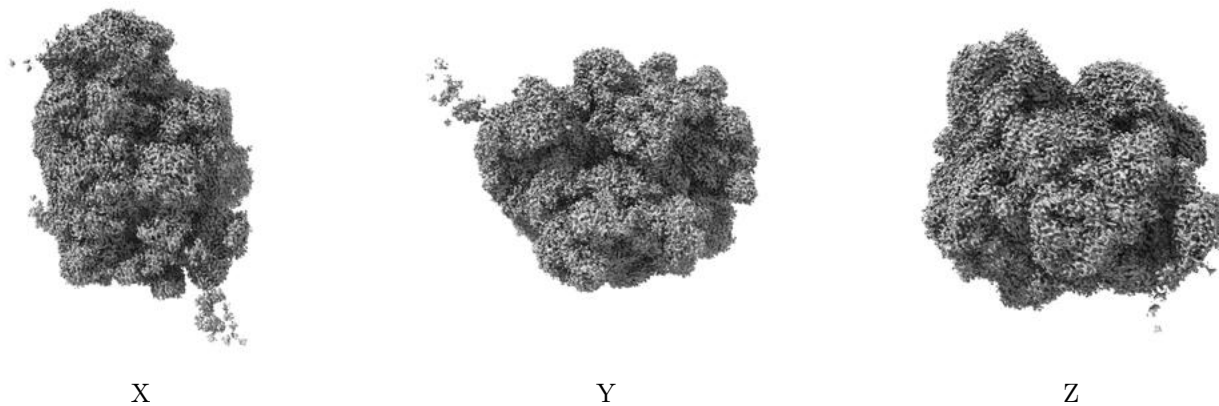


Z Index: 155

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

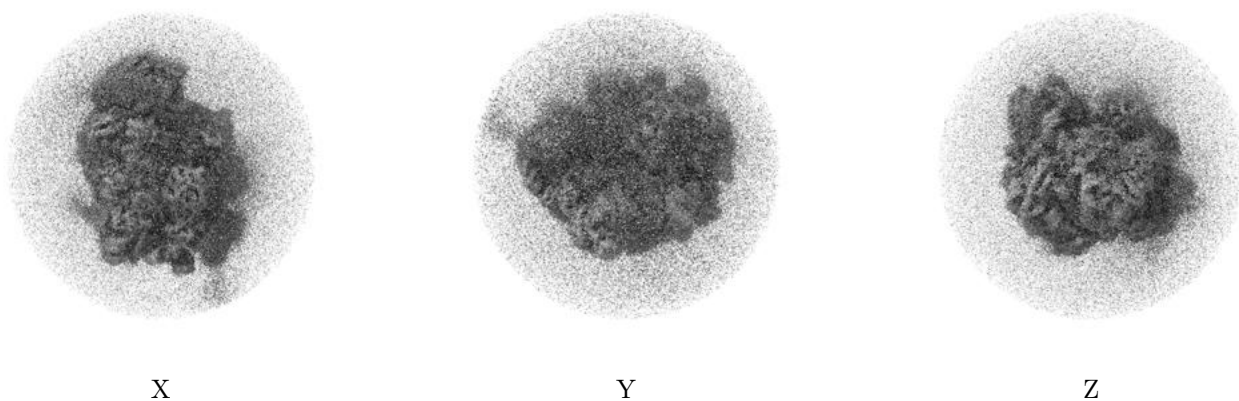
6.4 Orthogonal surface views [i](#)

6.4.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0225. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

6.4.2 Raw map



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

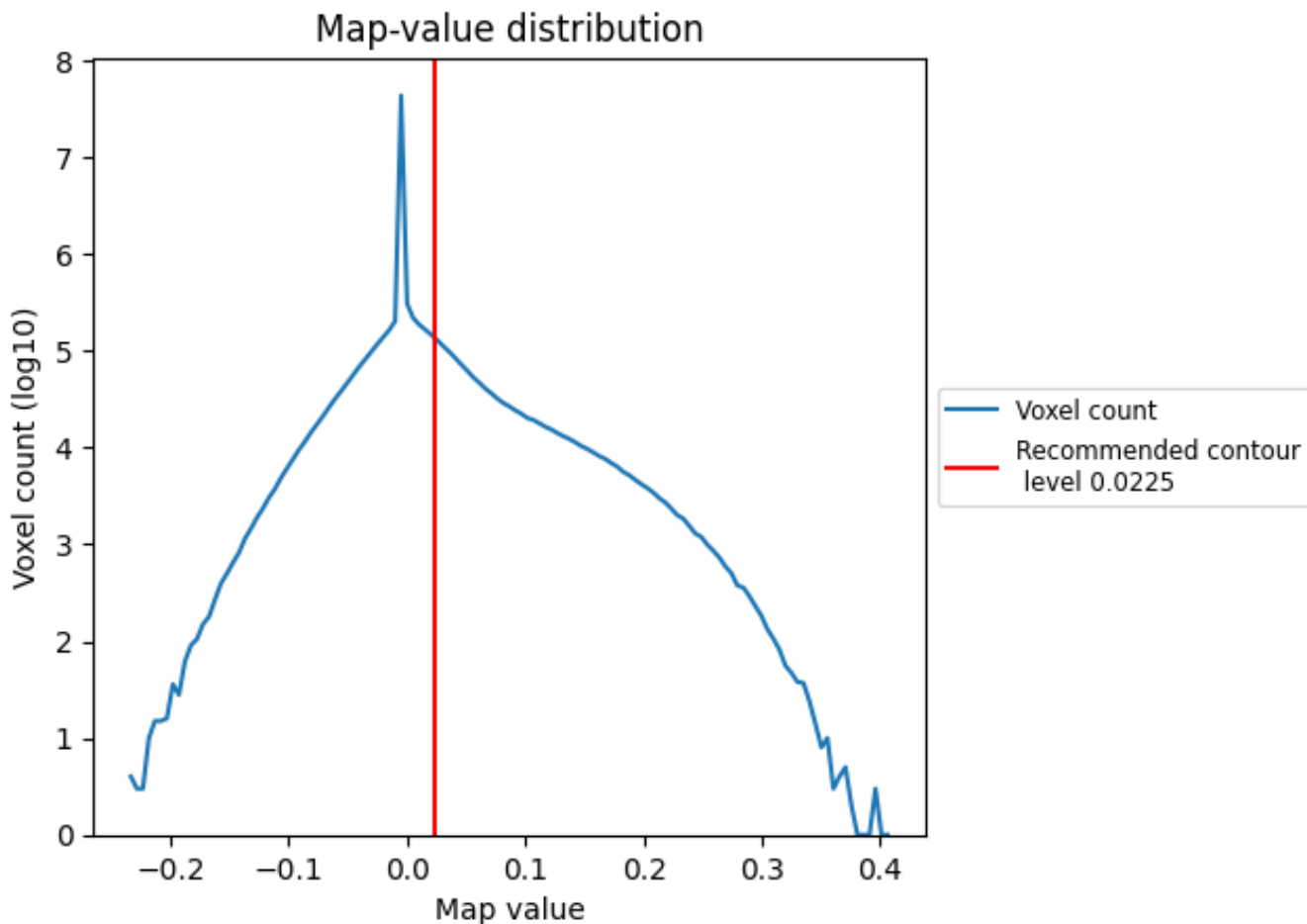
6.5 Mask visualisation [i](#)

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

7 Map analysis [i](#)

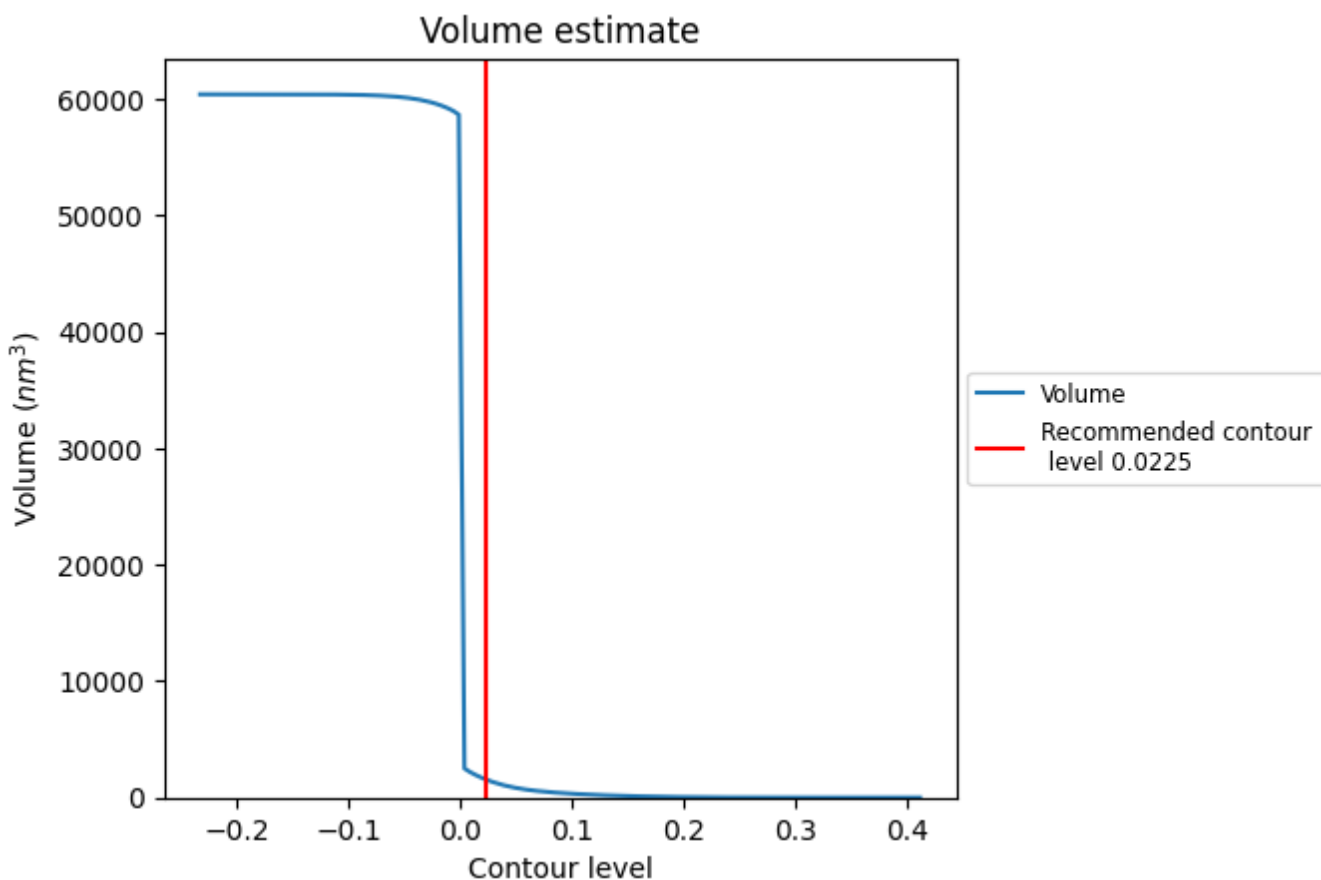
This section contains the results of statistical analysis of the map.

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.

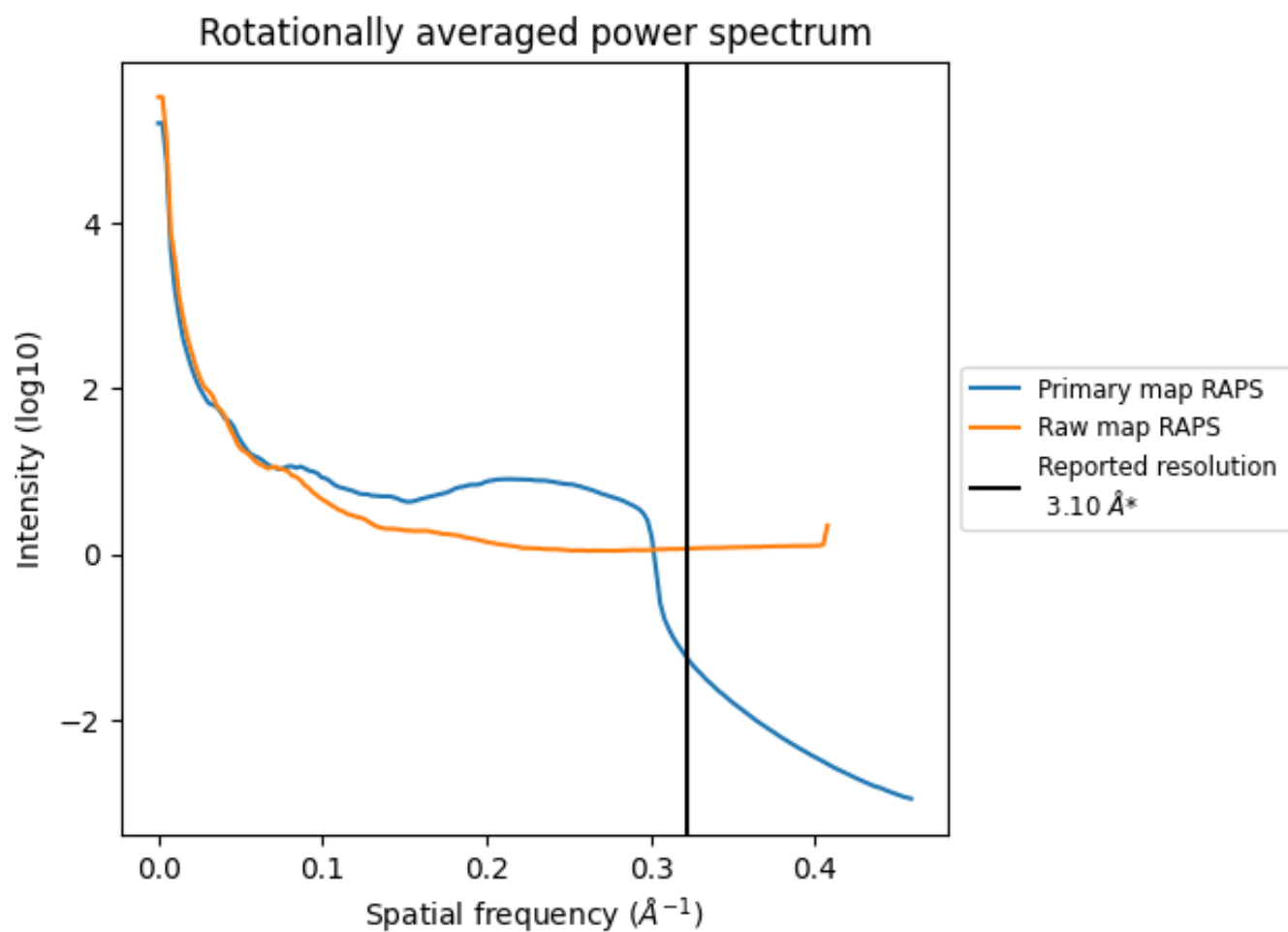
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1555 nm³; this corresponds to an approximate mass of 1405 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

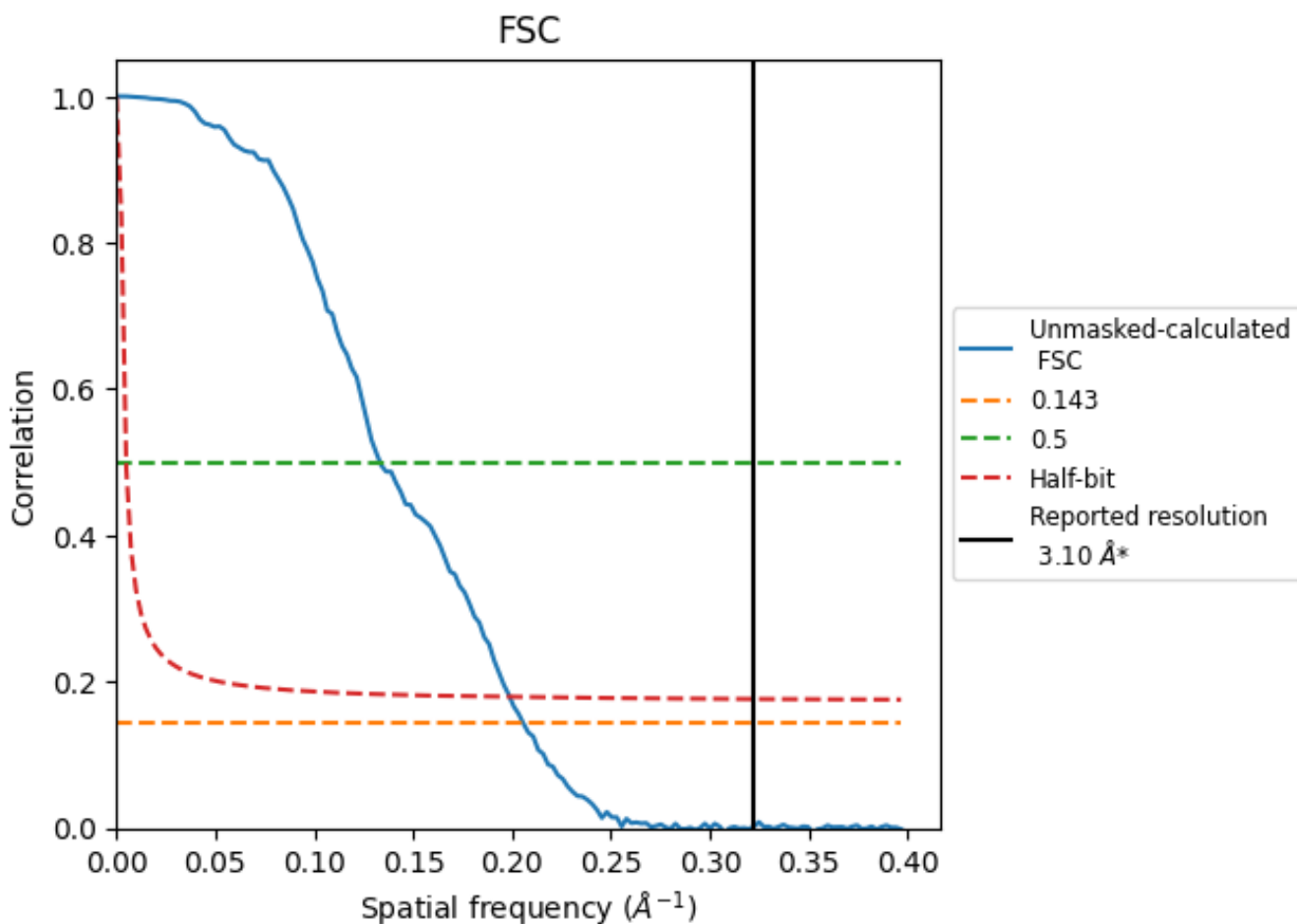


*Reported resolution corresponds to spatial frequency of 0.323 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.323 Å⁻¹

8.2 Resolution estimates [i](#)

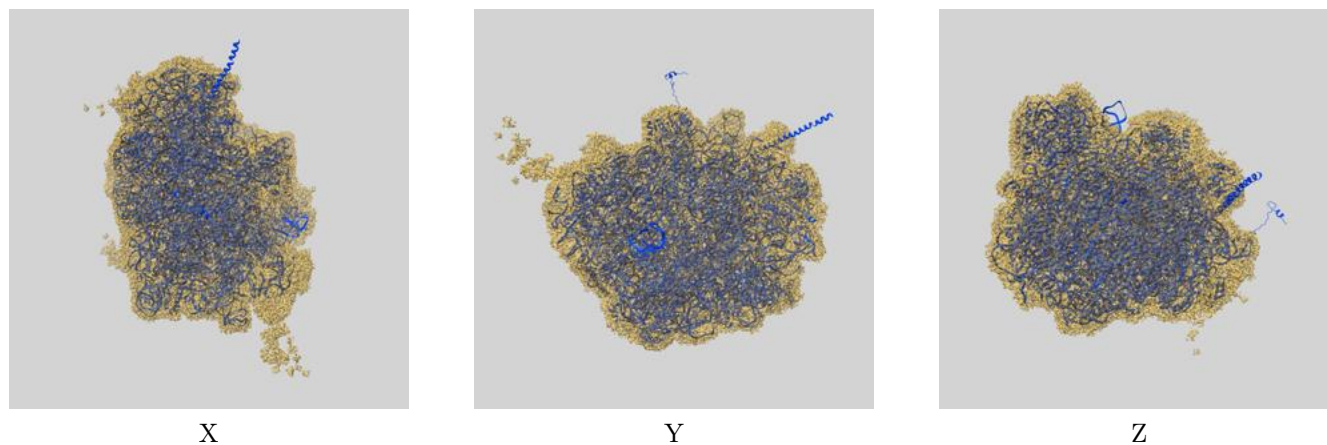
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	-	-	-
Author-provided FSC curve	-	-	-
Unmasked-calculated*	4.86	7.50	5.03

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps.

9 Map-model fit [i](#)

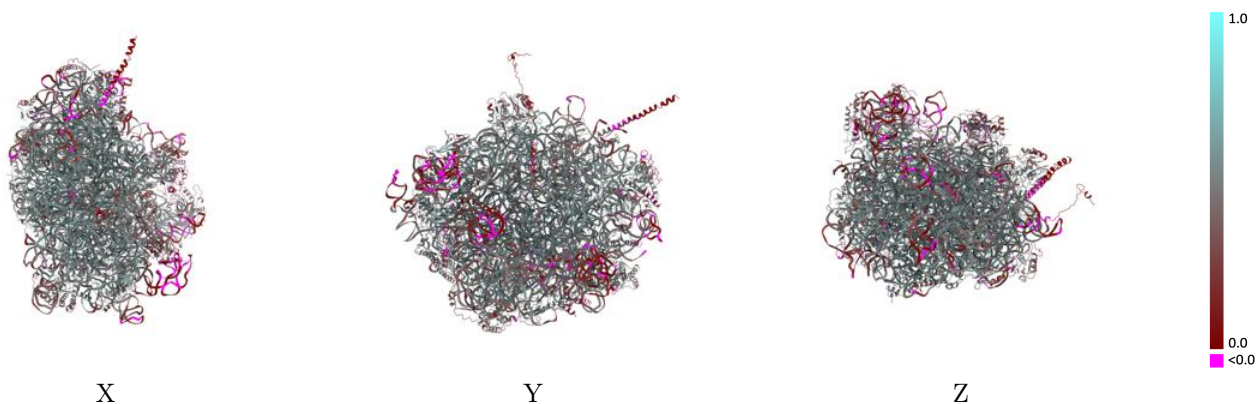
This section contains information regarding the fit between EMDB map EMD-8362 and PDB model 5T62. Per-residue inclusion information can be found in section 3 on page 16.

9.1 Map-model overlay [i](#)



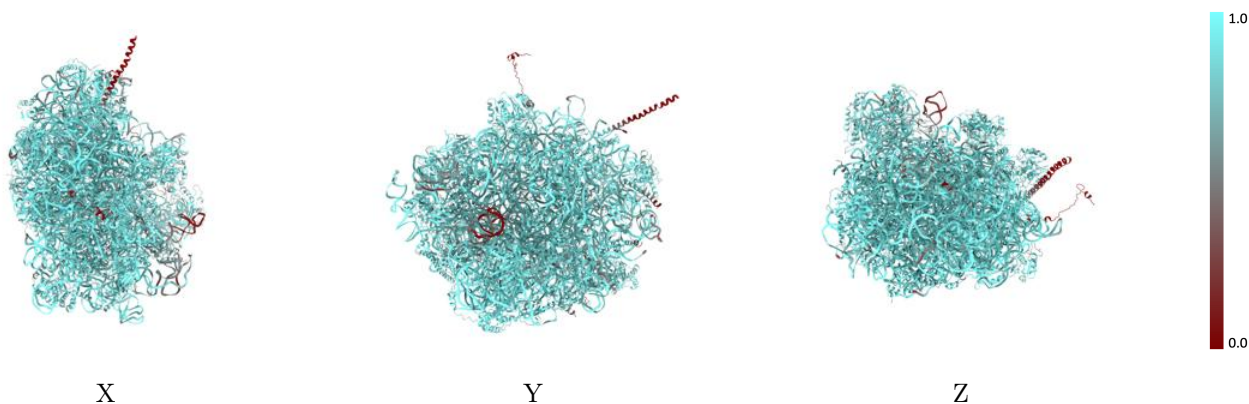
The images above show the 3D surface view of the map at the recommended contour level 0.0225 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



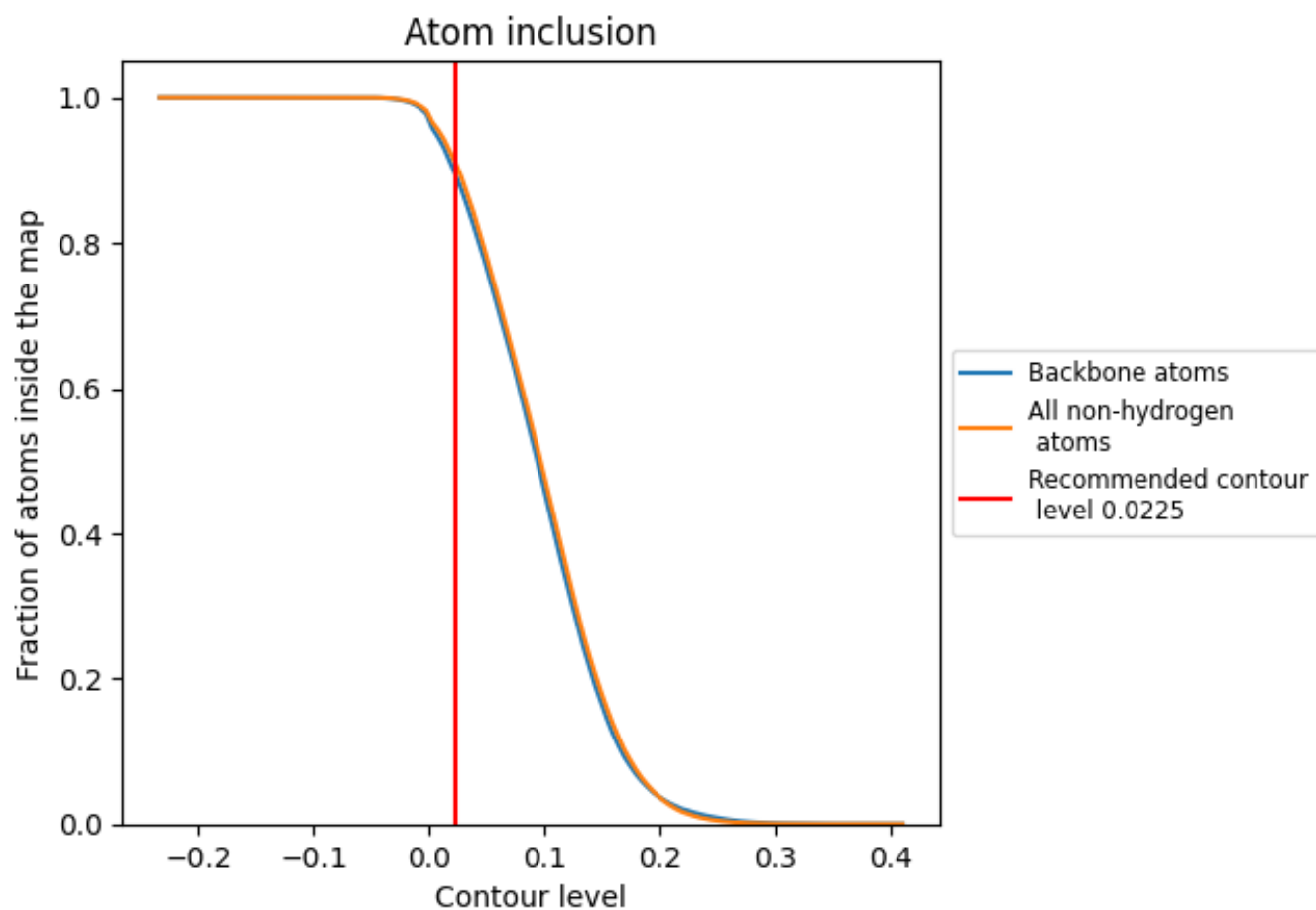
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0225).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 90% of all backbone atoms, 91% 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 (0.0225) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9133	 0.4770
A	 0.9375	 0.4820
B	 0.9648	 0.4820
C	 0.9651	 0.5220
D	 0.9251	 0.5390
E	 0.9294	 0.5210
F	 0.9274	 0.5160
G	 0.8707	 0.4280
H	 0.8763	 0.4460
I	 0.9294	 0.5210
J	 0.8589	 0.4230
K	 0.8946	 0.4760
L	 0.5490	 0.2430
M	 0.8236	 0.3580
N	 0.9052	 0.4930
O	 0.9045	 0.4810
Q	 0.8394	 0.4810
R	 0.8909	 0.4770
S	 0.7895	 0.2240
V	 0.8871	 0.4730
W	 0.8796	 0.4250
X	 0.8610	 0.4060
a	 0.9621	 0.5750
b	 0.9373	 0.5310
c	 0.9078	 0.5080
d	 0.9391	 0.5390
e	 0.7320	 0.3920
f	 0.9358	 0.5250
g	 0.9137	 0.5060
h	 0.8082	 0.3690
i	 0.9204	 0.5250
j	 0.6618	 0.3600
k	 0.9130	 0.4990
l	 0.9068	 0.5060
m	 0.8627	 0.4050



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Chain	Atom inclusion	Q-score
n	 0.9475	 0.5430
o	 0.8850	 0.4710
p	 0.8345	 0.3860
q	 0.8918	 0.5020
r	 0.9266	 0.5360
s	 0.9574	 0.5600
t	 0.8590	 0.4810
u	 0.9046	 0.4850
v	 0.8711	 0.4580
w	 0.9298	 0.5500
x	 0.8314	 0.3720
y	 0.9566	 0.5470
z	 0.8734	 0.4650