



Full wwPDB EM Validation Report ⓘ

Apr 6, 2026 – 11:09 AM EDT

PDB ID : 9OZN / pdb_00009ozn
EMDB ID : EMD-71060
Title : Flavobacterium johnsoniae 70S initiation complex with rpsU mRNA containing Shine-Dalgarno sequence. State 1.
Authors : Ortega, J.; Arpin, D.
Deposited on : 2025-06-05
Resolution : 2.70 Å(reported)

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

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

A user guide is available at

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

with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

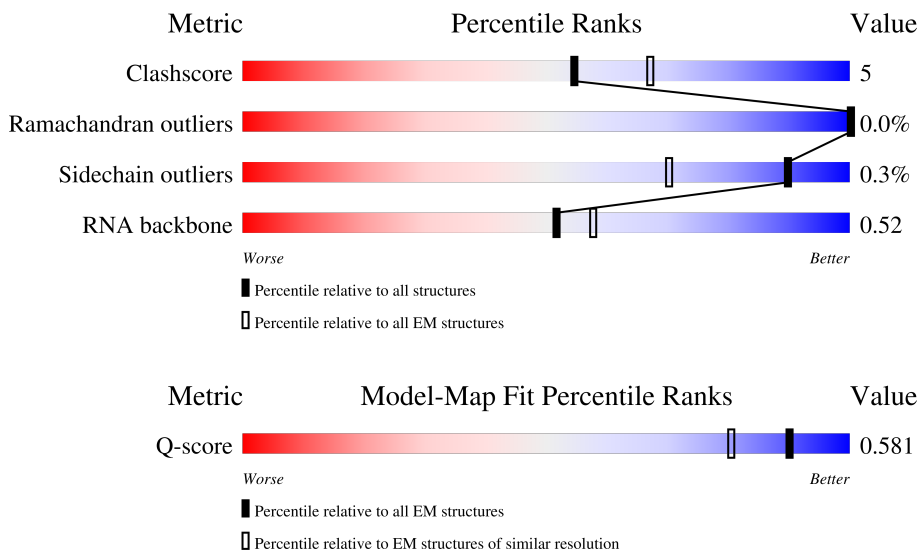
EMDB validation analysis : 0.0.1.dev132
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.48.1

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 2.70 Å.

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



Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	10327 (2.20 - 3.20)

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	3	111	
2	4	50	
3	5	30	

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Mol	Chain	Length	Quality of chain
4	6	6	33% 83% 17%
5	A	77	9% 56% 31% 8% 5%
6	B	274	86% 13%
7	C	205	82% 17%
8	D	209	93% 5%
9	E	183	80% 17%
10	F	180	89% 9%
11	G	146	42% 64% 18% 16%
12	H	254	34% 65% 21% 14%
13	J	151	91% 8%
14	K	122	93% 6%
15	L	150	90% 9%
16	M	141	89% 10%
17	N	163	72% 5% 23%
18	O	116	83% 16%
19	P	116	85% 11%
20	Q	114	90% 9%
21	R	147	65% 5% 29%
22	S	137	85% 9% 7%
23	T	96	76% 12% 11%
24	U	104	85% 6% 10%
25	V	203	54% 6% 39%
26	W	86	85% 6% 9%
27	X	78	87% 10%
28	Y	63	87% 6% 6%

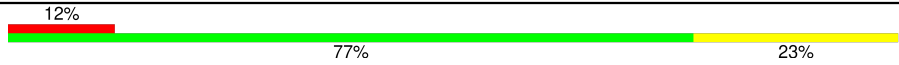
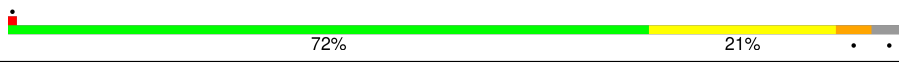

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Mol	Chain	Length	Quality of chain
29	Z	60	73% 20% 7%
30	a	84	54% 15% 31%
31	b	64	84% 8% 8%
32	c	60	72% 18% 10%
33	d	53	94% . .
34	e	65	88% 11% .
35	f	38	95% 5%
36	h	252	72% 13% 15%
37	i	201	83% 17%
38	j	173	5% 87% 13% .
39	k	113	80% 15% 5%
40	l	158	8% 76% 21% .
41	m	132	92% 7% .
42	n	128	68% 29% . .
43	o	101	14% 78% 19% .
44	p	127	74% 18% 8%
45	q	127	89% 6% 5%
46	r	124	6% 65% 29% 6%
47	s	89	82% 17% .
48	t	88	84% 16%
49	u	188	48% 10% 42%
50	v	86	85% 8% 7%
51	w	98	55% 11% 34%
52	x	92	71% 20% 10%
53	y	83	83% 12% 5%

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Mol	Chain	Length	Quality of chain
54	z	64	 12% 77% 23%
55	1	2862	 72% 21% 5%
56	2	1520	 65% 27% 5%

2 Entry composition [i](#)

There are 56 unique types of molecules in this entry. The entry contains 138341 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 RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	3	110	2339	1043	406	780	110	0	0

- Molecule 2 is a protein called 50S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	4	36	278	183	44	49	2	0	0

- Molecule 3 is a protein called 30S ribosomal protein S22.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
3	5	27	231	140	61	30	0	0

- Molecule 4 is a RNA chain called rpsU mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
4	6	6	127	57	21	43	6	0	0

- Molecule 5 is a RNA chain called fMet-tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
5	A	73	1562	696	286	507	73	0	0

- Molecule 6 is a protein called 50S ribosomal protein L2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	B	271	2053	1277	403	365	8	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
B	35	SER	ALA	conflict	UNP A0A1B2U0Q0
B	194	GLU	ALA	conflict	UNP A0A1B2U0Q0

- Molecule 7 is a protein called 50S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	C	204	1515	956	280	272	7	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
C	87	ALA	THR	conflict	UNP A0A1M5L9Q4
C	88	ALA	GLU	conflict	UNP A0A1M5L9Q4
C	90	ALA	LYS	conflict	UNP A0A1M5L9Q4
C	138	GLN	ASN	conflict	UNP A0A1M5L9Q4

- Molecule 8 is a protein called 50S ribosomal protein L4.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
8	D	206	1509	964	281	264	0	0

- Molecule 9 is a protein called 50S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	E	179	1300	836	229	230	5	0	0

- Molecule 10 is a protein called 50S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
10	F	177	1255	805	230	219	1	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
F	96	ALA	SER	conflict	UNP A0A1M5L807
F	100	ASN	GLN	conflict	UNP A0A1M5L807

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Chain	Residue	Modelled	Actual	Comment	Reference
F	128	ALA	LYS	conflict	UNP A0A1M5L807
F	130	ALA	LYS	conflict	UNP A0A1M5L807

- Molecule 11 is a protein called 50S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	G	122	866	556	154	155	1	0	0

- Molecule 12 is a protein called 30S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	H	219	1673	1064	294	307	8	0	0

- Molecule 13 is a protein called 50S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	J	150	1112	705	207	195	5	0	0

- Molecule 14 is a protein called 50S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
14	K	121	889	559	173	153	4	0	0

- Molecule 15 is a protein called 50S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
15	L	150	1048	654	209	183	2	0	0

- Molecule 16 is a protein called 50S ribosomal protein L16.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
16	M	139	1056	683	199	167	7	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
M	96	TRP	ALA	conflict	UNP A0A1B2U0I0

- Molecule 17 is a protein called 50S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
17	N	125	980	615	189	170	6	0	0

- Molecule 18 is a protein called 50S ribosomal protein L18.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
18	O	115	846	532	164	150	0	0

- Molecule 19 is a protein called 50S ribosomal protein L19.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
19	P	112	848	554	154	140	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
P	115	LEU	ARG	conflict	UNP A0A1M5PX52

- Molecule 20 is a protein called 50S ribosomal protein L20.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
20	Q	113	904	571	185	143	5	0	0

- Molecule 21 is a protein called 50S ribosomal protein L21.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
21	R	104	768	499	145	124	0	0

- Molecule 22 is a protein called 50S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
22	S	128	964	600	198	163	3	0	0

- Molecule 23 is a protein called 50S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
23	T	85	647	416	116	114	1	0	0

- Molecule 24 is a protein called 50S ribosomal protein L24.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
24	U	94	679	433	134	112	0	0

- Molecule 25 is a protein called 50S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
25	V	124	871	570	148	151	2	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
V	66	ALA	LYS	conflict	UNP A0A1M5HDD0
V	137	ILE	LEU	conflict	UNP A0A1M5HDD0
V	139	GLU	ASP	conflict	UNP A0A1M5HDD0
V	175	ALA	CYS	conflict	UNP A0A1M5HDD0

- Molecule 26 is a protein called 50S ribosomal protein L27.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
26	W	78	586	365	119	102	0	0

- Molecule 27 is a protein called 50S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
27	X	76	586	370	114	99	3	0	0

There are 3 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
X	52	GLN	ALA	conflict	UNP A0A1B2U1R1
X	53	ARG	ALA	conflict	UNP A0A1B2U1R1

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Chain	Residue	Modelled	Actual	Comment	Reference
X	74	ALA	GLU	conflict	UNP A0A1B2U1R1

- Molecule 28 is a protein called 50S ribosomal protein L29.

Mol	Chain	Residues	Atoms				AltConf	Trace
28	Y	59	Total	C	N	O	0	0
			409	257	80	72		

- Molecule 29 is a protein called 50S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Z	56	Total	C	N	O	S	0	0
			400	254	77	67	2		

- Molecule 30 is a protein called 50S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	a	58	Total	C	N	O	S	0	0
			421	271	71	77	2		

- Molecule 31 is a protein called 50S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	b	59	Total	C	N	O	S	0	0
			475	300	99	75	1		

- Molecule 32 is a protein called 50S ribosomal protein L33.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	c	54	Total	C	N	O	S	0	0
			415	263	81	70	1		

- Molecule 33 is a protein called 50S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	d	51	Total	C	N	O	S	0	0
			416	252	101	61	2		

- Molecule 34 is a protein called 50S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	e	64	Total	C	N	O	S	0	0
			506	322	103	80	1		

- Molecule 35 is a protein called 50S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	f	38	Total	C	N	O	S	0	0
			305	190	68	45	2		

- Molecule 36 is a protein called 30S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	h	215	Total	C	N	O	S	0	0
			1600	1015	290	289	6		

- Molecule 37 is a protein called 30S ribosomal protein S4.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	i	200	Total	C	N	O	S	0	0
			1576	998	291	284	3		

- Molecule 38 is a protein called 30S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	j	172	Total	C	N	O	S	0	0
			1179	744	229	205	1		

- Molecule 39 is a protein called 30S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	k	107	Total	C	N	O	S	0	0
			815	534	149	130	2		

- Molecule 40 is a protein called 30S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	l	153	Total	C	N	O	S	0	0
			1183	747	231	200	5		

- Molecule 41 is a protein called 30S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	m	131	961	623	167	169	2	0	0

- Molecule 42 is a protein called 30S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
42	n	125	972	612	188	168	4	0	0

- Molecule 43 is a protein called 30S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
43	o	98	701	450	123	126	2	0	0

- Molecule 44 is a protein called 30S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	p	117	823	515	160	143	5	0	0

- Molecule 45 is a protein called 30S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	q	121	922	567	195	157	3	0	0

- Molecule 46 is a protein called 30S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	r	117	883	544	181	155	3	0	0

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
r	115	THR	-	expression tag	UNP P0A7T1
r	116	VAL	-	expression tag	UNP P0A7T1
r	117	ALA	-	expression tag	UNP P0A7T1
r	118	ASN	-	expression tag	UNP P0A7T1
r	119	LYS	-	expression tag	UNP P0A7T1
r	120	LYS	-	expression tag	UNP P0A7T1

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Chain	Residue	Modelled	Actual	Comment	Reference
r	121	LYS	-	expression tag	UNP P0A7T1
r	122	ALA	-	expression tag	UNP P0A7T1
r	123	THR	-	expression tag	UNP P0A7T1
r	124	LYS	-	expression tag	UNP P0A7T1

- Molecule 47 is a protein called 30S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
47	s	88	665	416	136	110	3	0	0

- Molecule 48 is a protein called 30S ribosomal protein S15.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
48	t	88	694	443	136	115	0	0

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
t	71	ARG	LYS	conflict	UNP A0A1M6QTP8

- Molecule 49 is a protein called 30S ribosomal protein S16.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
49	u	109	783	492	151	140	0	0

There are 2 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
u	56	ILE	ALA	conflict	UNP A0A1M6QGN9
u	62	GLN	ASN	conflict	UNP A0A1M6QGN9

- Molecule 50 is a protein called 30S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
50	v	80	638	404	124	107	3	0	0

- Molecule 51 is a protein called 30S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	w	65	Total	C	N	O	S	0	0
			521	342	96	81	2		

- Molecule 52 is a protein called 30S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	x	83	Total	C	N	O	S	0	0
			636	406	118	110	2		

- Molecule 53 is a protein called 30S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	y	79	Total	C	N	O	S	0	0
			615	381	129	104	1		

- Molecule 54 is a protein called 30S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	z	64	Total	C	N	O	S	0	0
			522	331	99	91	1		

- Molecule 55 is a RNA chain called 23S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	1	2754	Total	C	N	O	P	0	0
			59085	26384	10861	19086	2754		

There are 16 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	342	A	U	conflict	GB 1735479352
1	406	A	G	conflict	GB 1735479352
1	429	C	U	conflict	GB 1735479352
1	645	C	U	conflict	GB 1735479352
1	925	C	U	conflict	GB 1735479352
1	1510	A	U	conflict	GB 1735479352
1	1687	U	G	conflict	GB 1735479352
1	1745	U	C	conflict	GB 1735479352
1	1746	G	C	conflict	GB 1735479352
1	1753	C	G	conflict	GB 1735479352
1	1754	A	G	conflict	GB 1735479352
1	1815	U	C	conflict	GB 1735479352
1	2098	C	U	conflict	GB 1735479352

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Chain	Residue	Modelled	Actual	Comment	Reference
1	2209	U	C	conflict	GB 1735479352
1	2471	U	C	conflict	GB 1735479352
1	2569	U	C	conflict	GB 1735479352


- Molecule 56 is a RNA chain called 16S rRNA.

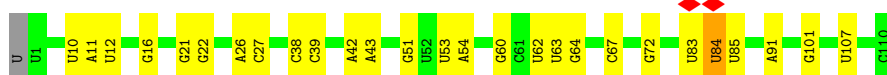
Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
56	2	1481	31728	14167	5801	10279	1481	0	0

3 Residue-property plots [i](#)

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

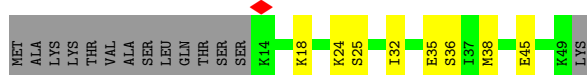
- Molecule 1: 5S rRNA

Chain 3: 




- Molecule 2: 50S ribosomal protein L38

Chain 4: 




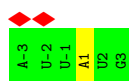
- Molecule 3: 30S ribosomal protein S22

Chain 5: 



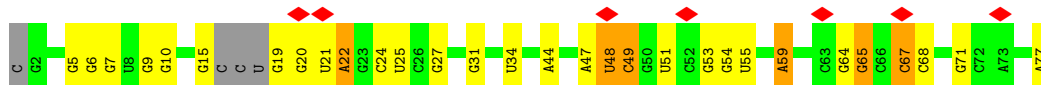
- Molecule 4: rpsU mRNA

Chain 6: 




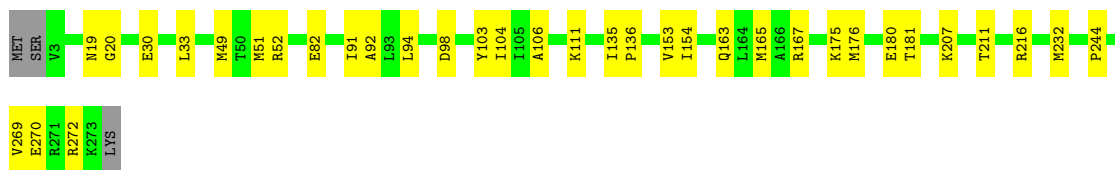
- Molecule 5: fMet-tRNA

Chain A: 




- Molecule 6: 50S ribosomal protein L2

Chain B:  86% 13%



• Molecule 7: 50S ribosomal protein L3

Chain C:  82% 17%




• Molecule 8: 50S ribosomal protein L4

Chain D:  93% 5%




• Molecule 9: 50S ribosomal protein L5

Chain E:  80% 17%



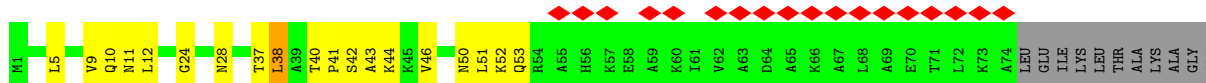
• Molecule 10: 50S ribosomal protein L6

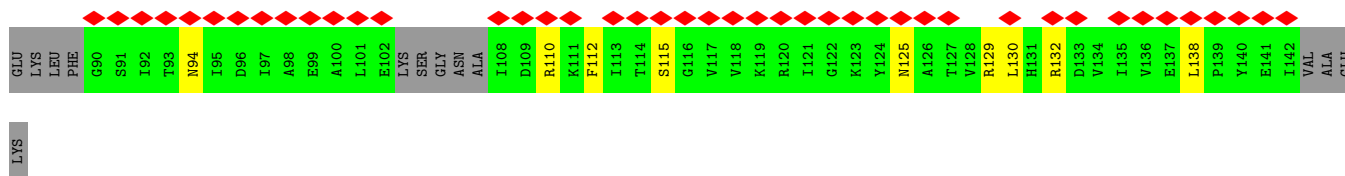
Chain F:  89% 9%



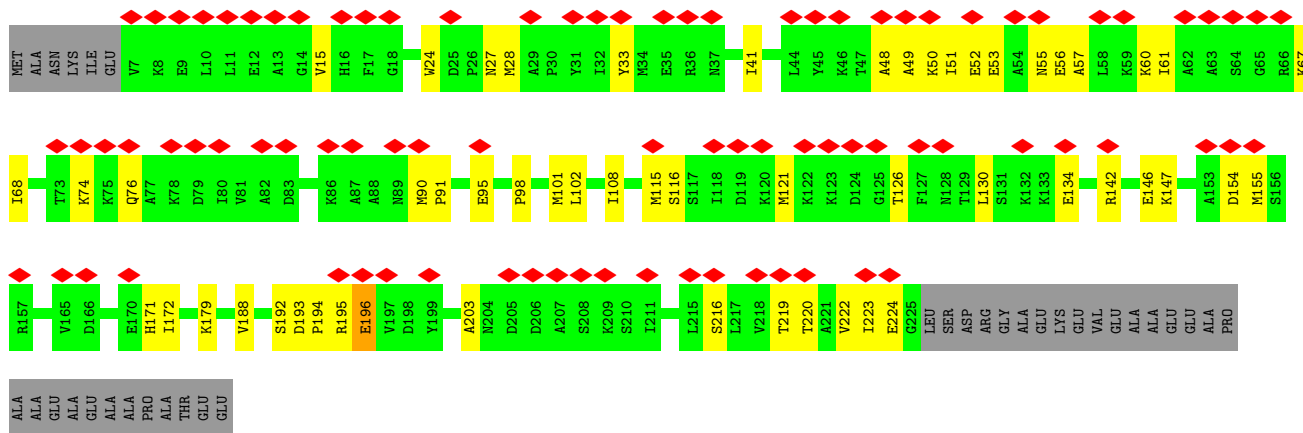
• Molecule 11: 50S ribosomal protein L9

Chain G:  42% 64% 18% 16%

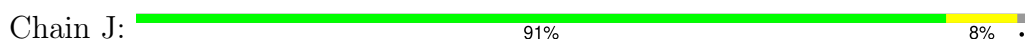




• Molecule 12: 30S ribosomal protein S2



• Molecule 13: 50S ribosomal protein L13



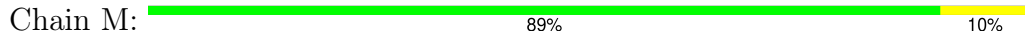
• Molecule 14: 50S ribosomal protein L14



• Molecule 15: 50S ribosomal protein L15

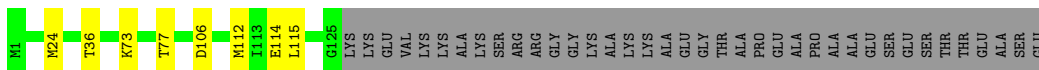


• Molecule 16: 50S ribosomal protein L16

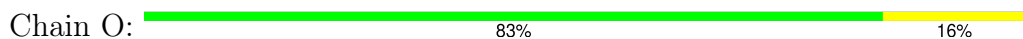




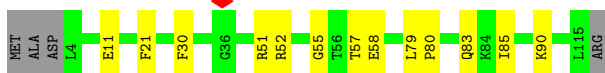
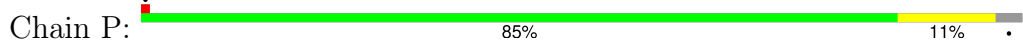
- Molecule 17: 50S ribosomal protein L17



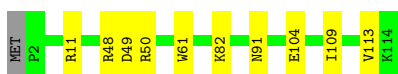
- Molecule 18: 50S ribosomal protein L18



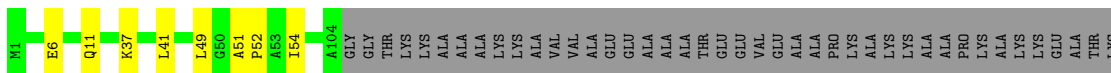
- Molecule 19: 50S ribosomal protein L19



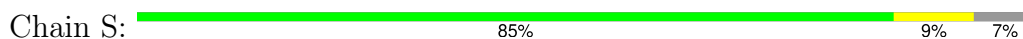
- Molecule 20: 50S ribosomal protein L20




- Molecule 21: 50S ribosomal protein L21

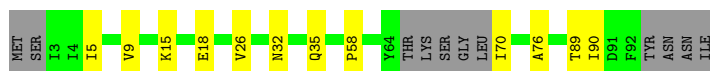


- Molecule 22: 50S ribosomal protein L22




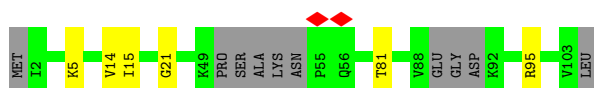
- Molecule 23: 50S ribosomal protein L23

Chain T:  76% 12% 11%



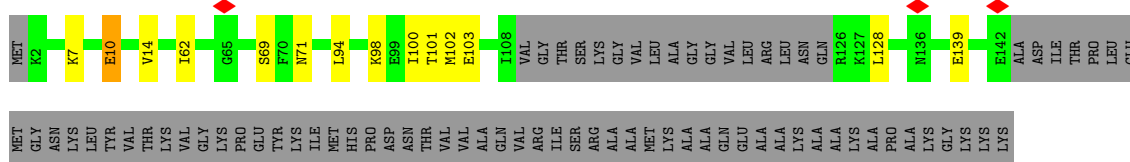
- Molecule 24: 50S ribosomal protein L24

Chain U:  85% 6% 10%



- Molecule 25: 50S ribosomal protein L25

Chain V:  54% 6% 39%




- Molecule 26: 50S ribosomal protein L27

Chain W:  85% 6% 9%




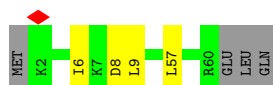
- Molecule 27: 50S ribosomal protein L28

Chain X:  87% 10% 3%



- Molecule 28: 50S ribosomal protein L29

Chain Y:  87% 6% 6%

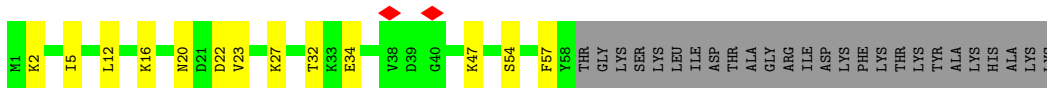


- Molecule 29: 50S ribosomal protein L30

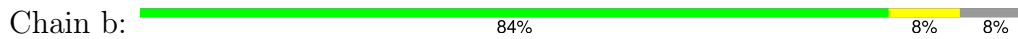
Chain Z:  73% 20% 7%



- Molecule 30: 50S ribosomal protein L31



- Molecule 31: 50S ribosomal protein L32



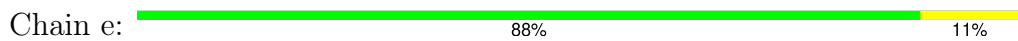
- Molecule 32: 50S ribosomal protein L33



- Molecule 33: 50S ribosomal protein L34



- Molecule 34: 50S ribosomal protein L35

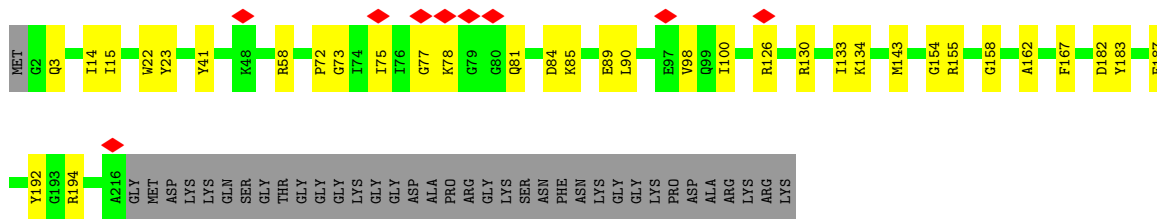


- Molecule 35: 50S ribosomal protein L36

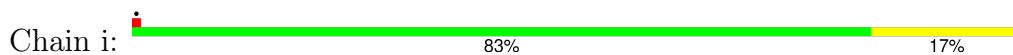


- Molecule 36: 30S ribosomal protein S3

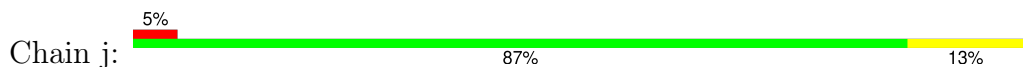




• Molecule 37: 30S ribosomal protein S4



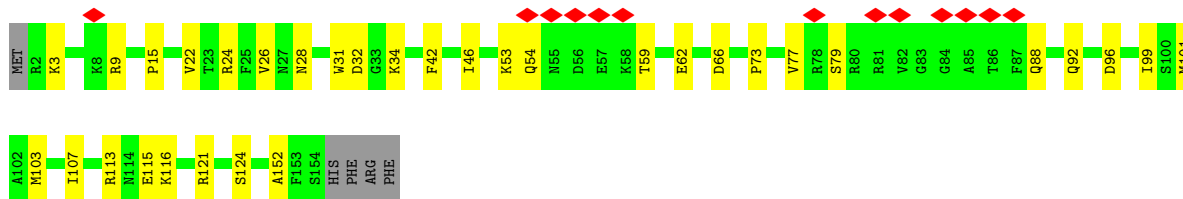
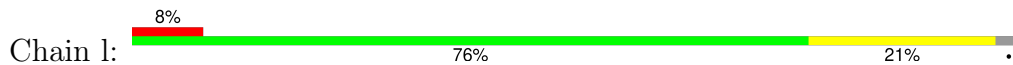
• Molecule 38: 30S ribosomal protein S5



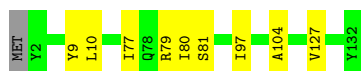
• Molecule 39: 30S ribosomal protein S6



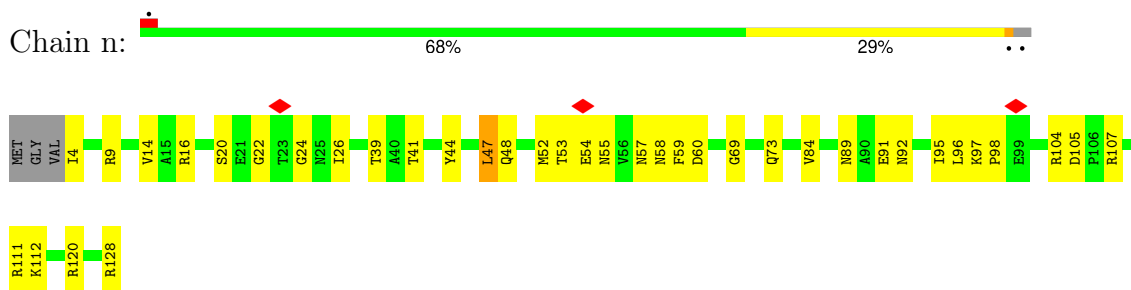
• Molecule 40: 30S ribosomal protein S7



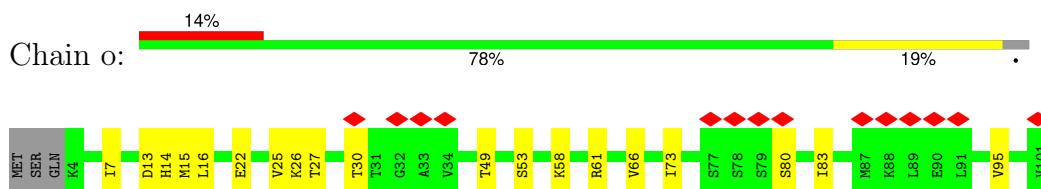
• Molecule 41: 30S ribosomal protein S8



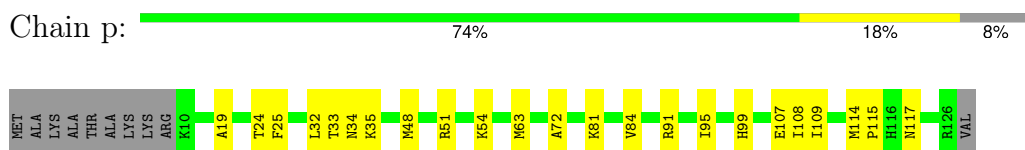
• Molecule 42: 30S ribosomal protein S9



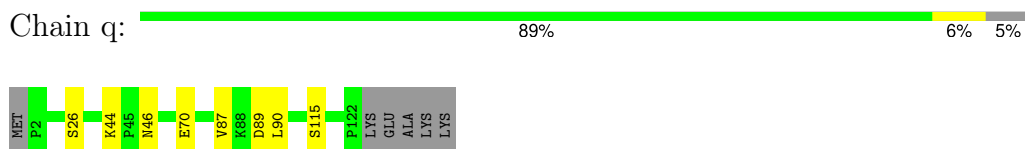
• Molecule 43: 30S ribosomal protein S10



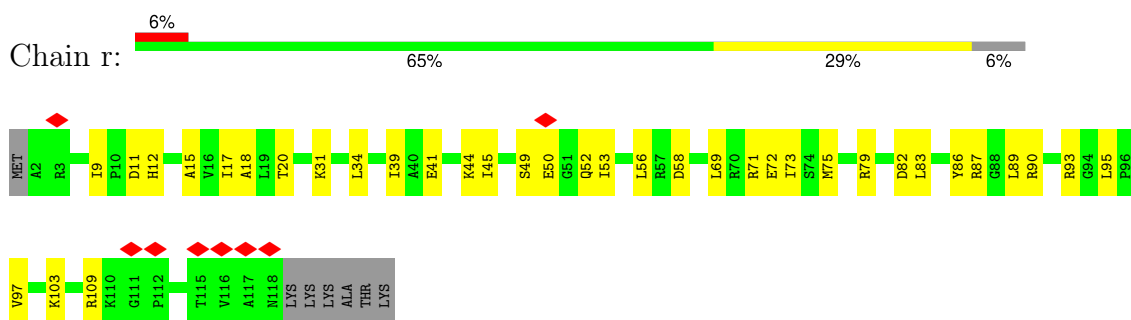
• Molecule 44: 30S ribosomal protein S11



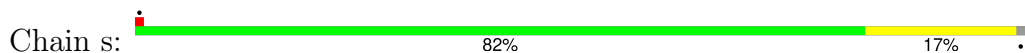
• Molecule 45: 30S ribosomal protein S12

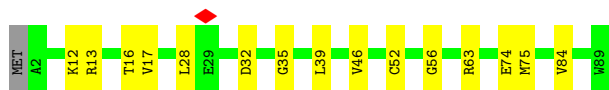


• Molecule 46: 30S ribosomal protein S13

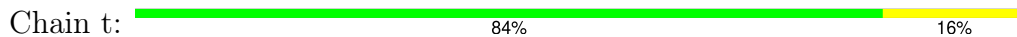


• Molecule 47: 30S ribosomal protein S14

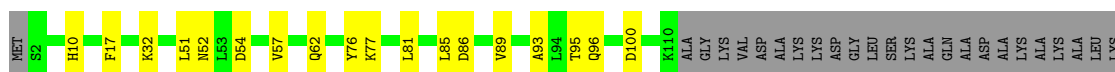




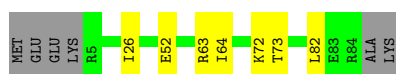
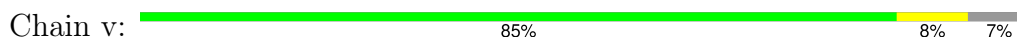
• Molecule 48: 30S ribosomal protein S15



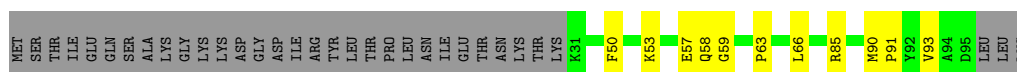
• Molecule 49: 30S ribosomal protein S16



• Molecule 50: 30S ribosomal protein S17



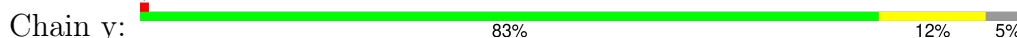
• Molecule 51: 30S ribosomal protein S18



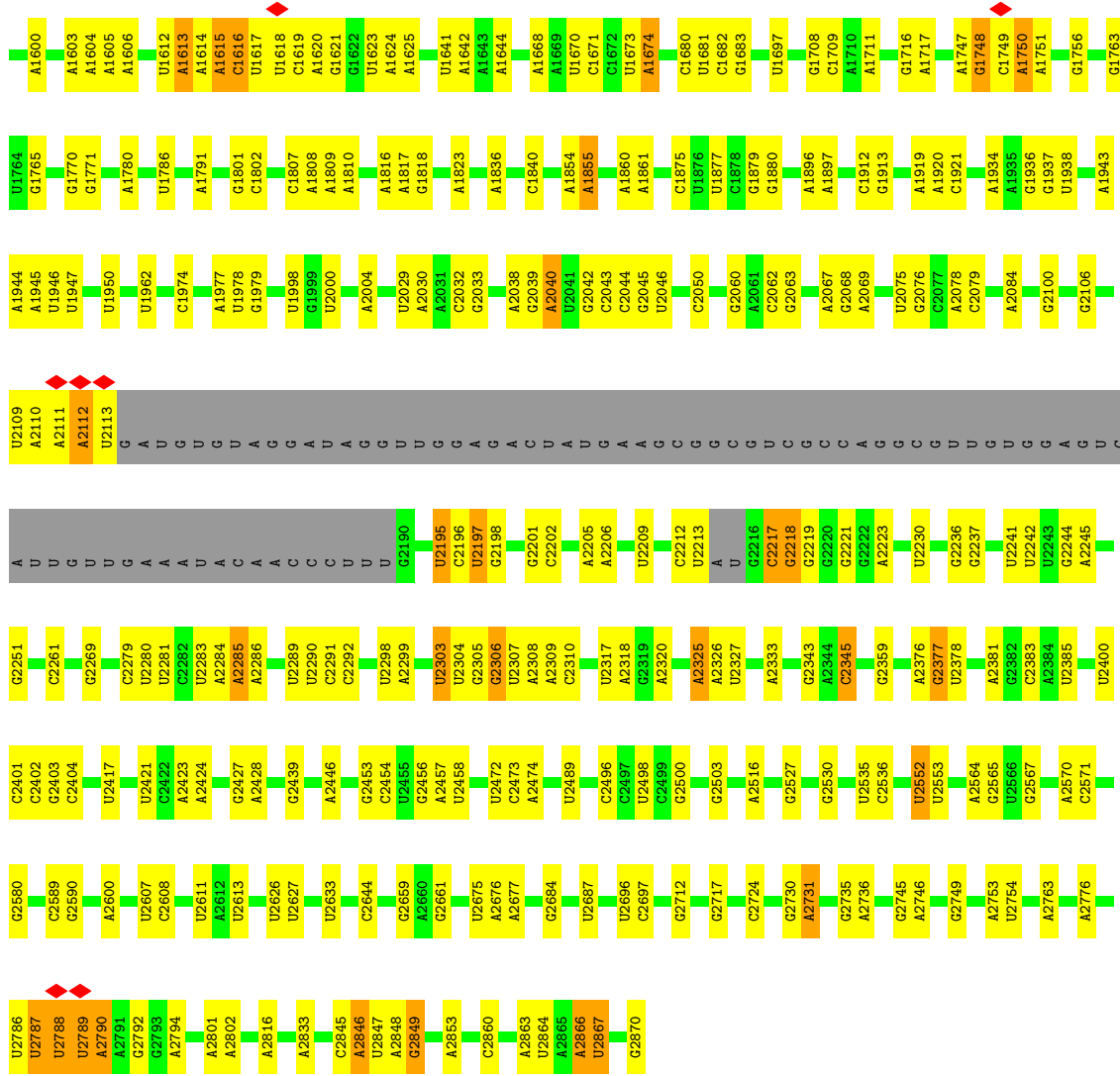
• Molecule 52: 30S ribosomal protein S19



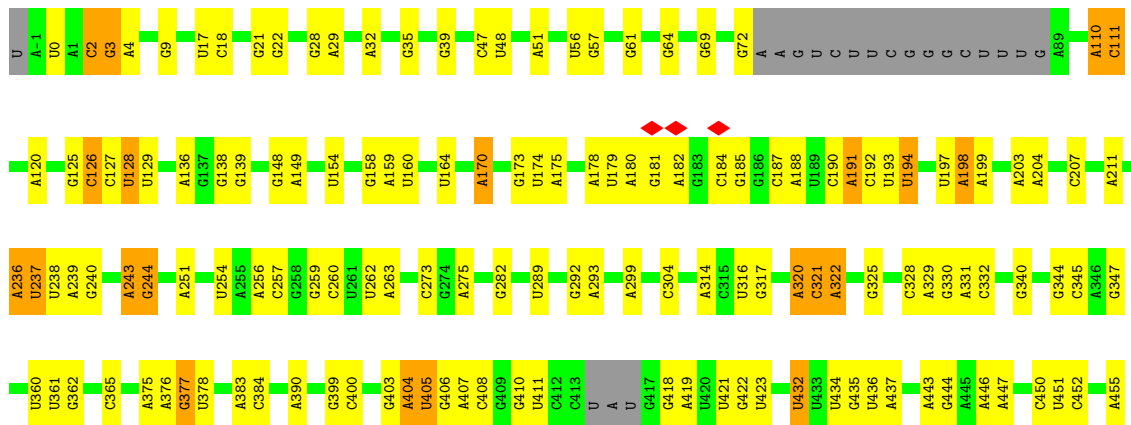
• Molecule 53: 30S ribosomal protein S20



• Molecule 54: 30S ribosomal protein S21



• Molecule 56: 16S rRNA



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	69489	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	50	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	2500	Depositor
Magnification	Not provided	
Image detector	GATAN K3 BIOQUANTUM (6k x 4k)	Depositor
Maximum map value	0.465	Depositor
Minimum map value	-0.112	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.020	Depositor
Recommended contour level	0.07	Depositor
Map size (\AA)	410.40002, 410.40002, 410.40002	wwPDB
Map dimensions	480, 480, 480	wwPDB
Map angles ($^\circ$)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (\AA)	0.8550001, 0.8550001, 0.8550001	Depositor

5 Model quality [i](#)

5.1 Standard geometry [i](#)

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	3	0.17	0/2611	0.24	0/4067
2	4	0.18	0/282	0.39	0/377
3	5	0.17	0/234	0.29	0/301
4	6	0.14	0/141	0.31	0/217
5	A	0.13	0/1745	0.26	0/2717
6	B	0.22	0/2090	0.38	0/2815
7	C	0.22	0/1538	0.37	0/2061
8	D	0.20	0/1530	0.34	0/2065
9	E	0.19	0/1321	0.39	0/1789
10	F	0.15	0/1272	0.31	0/1720
11	G	0.30	0/875	0.54	0/1188
12	H	0.16	0/1699	0.41	0/2296
13	J	0.23	0/1130	0.41	0/1529
14	K	0.21	0/896	0.33	0/1204
15	L	0.21	0/1060	0.38	1/1422 (0.1%)
16	M	0.21	0/1077	0.34	0/1442
17	N	0.21	0/994	0.32	0/1331
18	O	0.17	0/854	0.34	0/1144
19	P	0.21	0/863	0.35	0/1163
20	Q	0.23	0/918	0.34	0/1220
21	R	0.20	0/778	0.37	0/1045
22	S	0.21	0/974	0.35	0/1305
23	T	0.19	0/652	0.32	0/877
24	U	0.16	0/682	0.35	0/911
25	V	0.17	0/888	0.33	0/1216
26	W	0.20	0/594	0.35	0/794
27	X	0.21	0/593	0.36	0/794
28	Y	0.14	0/412	0.30	0/561
29	Z	0.20	0/403	0.37	0/545
30	a	0.15	0/431	0.32	0/586
31	b	0.22	0/488	0.34	0/657
32	c	0.18	0/421	0.35	0/569
33	d	0.21	0/422	0.30	0/553
34	e	0.21	0/512	0.43	0/672

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
35	f	0.20	0/307	0.31	0/405
36	h	0.17	0/1623	0.36	0/2190
37	i	0.16	0/1606	0.31	0/2157
38	j	0.19	0/1194	0.36	0/1615
39	k	0.17	0/834	0.32	0/1129
40	l	0.18	0/1204	0.38	0/1619
41	m	0.18	0/976	0.31	0/1324
42	n	0.17	0/986	0.39	0/1322
43	o	0.18	0/712	0.42	0/973
44	p	0.19	0/837	0.37	0/1134
45	q	0.19	0/935	0.36	0/1258
46	r	0.18	0/891	0.45	0/1192
47	s	0.16	0/676	0.33	0/906
48	t	0.20	0/704	0.33	0/946
49	u	0.18	0/799	0.39	0/1086
50	v	0.16	0/646	0.34	0/866
51	w	0.19	0/531	0.32	0/710
52	x	0.17	0/652	0.41	0/881
53	y	0.16	0/619	0.31	0/825
54	z	0.17	0/527	0.39	0/701
55	1	0.23	0/66183	0.31	0/103212
56	2	0.19	0/35523	0.30	0/55388
All	All	0.21	0/150345	0.32	1/224992 (0.0%)

There are no bond length outliers.

All (1) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
15	L	91	VAL	N-CA-C	-5.32	108.66	113.71

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	3	2339	0	1181	8	0
2	4	278	0	295	5	0
3	5	231	0	268	2	0
4	6	127	0	64	0	0
5	A	1562	0	794	8	0
6	B	2053	0	2127	25	0
7	C	1515	0	1548	27	0
8	D	1509	0	1532	7	0
9	E	1300	0	1267	26	0
10	F	1255	0	1275	12	0
11	G	866	0	854	28	0
12	H	1673	0	1709	47	0
13	J	1112	0	1149	11	0
14	K	889	0	946	4	0
15	L	1048	0	1048	9	0
16	M	1056	0	1109	11	0
17	N	980	0	1017	6	0
18	O	846	0	873	17	0
19	P	848	0	846	10	0
20	Q	904	0	956	10	0
21	R	768	0	810	8	0
22	S	964	0	992	11	0
23	T	647	0	696	6	0
24	U	679	0	733	3	0
25	V	871	0	839	11	0
26	W	586	0	607	4	0
27	X	586	0	618	9	0
28	Y	409	0	405	3	0
29	Z	400	0	416	11	0
30	a	421	0	384	8	0
31	b	475	0	468	3	0
32	c	415	0	432	10	0
33	d	416	0	449	1	0
34	e	506	0	574	5	0
35	f	305	0	337	2	0
36	h	1600	0	1604	29	0
37	i	1576	0	1592	26	0
38	j	1179	0	1185	18	0
39	k	815	0	780	10	0
40	l	1183	0	1192	25	0
41	m	961	0	978	5	0
42	n	972	0	1005	34	0
43	o	701	0	694	18	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
44	p	823	0	820	22	0
45	q	922	0	973	8	0
46	r	883	0	921	37	0
47	s	665	0	669	12	0
48	t	694	0	703	23	0
49	u	783	0	739	15	0
50	v	638	0	684	6	0
51	w	521	0	553	9	0
52	x	636	0	628	15	0
53	y	615	0	672	7	0
54	z	522	0	573	17	0
55	1	59085	0	29705	284	0
56	2	31728	0	15978	214	0
All	All	138341	0	92266	1113	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 5.

All (1113) 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)
37:i:200:ASN:HD22	38:j:112:ILE:HD12	1.13	1.13
18:O:78:ALA:O	18:O:82:LEU:HD23	1.51	1.11
7:C:42:VAL:HG13	7:C:43:ASP:OD1	1.59	1.01
9:E:171:SER:O	9:E:175:GLU:OE1	1.85	0.94
11:G:41:PRO:O	11:G:44:LYS:HG3	1.68	0.92
5:A:51:U:H3	5:A:65:G:H1	1.17	0.91
48:t:71:ARG:O	48:t:71:ARG:NH1	2.03	0.91
16:M:27:LEU:HD22	16:M:107:GLU:OE1	1.70	0.90
11:G:52:LYS:NZ	55:1:273:C:O2	2.04	0.90
12:H:121:MET:HE1	12:H:126:THR:OG1	1.73	0.89
46:r:49:SER:OG	46:r:52:GLN:NE2	2.05	0.89
9:E:136:ARG:HH22	55:1:2303:U:H1'	1.38	0.88
12:H:219:THR:O	12:H:223:ILE:HG13	1.71	0.88
6:B:82:GLU:HG3	6:B:91:ILE:CG2	2.04	0.87
55:1:2106:G:H1	55:1:2197:U:H3	1.22	0.87
51:w:63:PRO:HD2	51:w:66:LEU:HD12	1.56	0.87
26:W:73:ARG:HG3	26:W:74:ASP:OD2	1.75	0.86
13:J:8:THR:HG21	20:Q:61:TRP:HE1	1.40	0.85
37:i:113:GLN:OE1	56:2:400:C:O4'	1.95	0.85
46:r:90:ARG:HB2	46:r:97:VAL:HG22	1.57	0.85

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:2:410:G:H22	56:2:419:A:H2	1.21	0.85
6:B:163:GLN:HG2	6:B:165:MET:HE3	1.59	0.85
7:C:41:GLU:OE2	7:C:41:GLU:N	2.09	0.85
48:t:88:LYS:NZ	55:1:742:U:OP2	2.10	0.83
37:i:121:THR:OG1	37:i:124:GLY:O	1.94	0.83
9:E:143:GLU:N	9:E:143:GLU:OE2	2.13	0.82
46:r:31:LYS:NZ	46:r:41:GLU:OE1	2.12	0.82
55:1:924:C:H2'	55:1:925:C:C6	2.15	0.81
50:v:26:ILE:HD11	50:v:64:ILE:HD13	1.63	0.81
37:i:200:ASN:ND2	38:j:112:ILE:HD12	1.95	0.81
20:Q:104:GLU:OE2	20:Q:104:GLU:N	2.13	0.80
37:i:193:GLN:OE1	37:i:193:GLN:N	2.12	0.80
37:i:122:VAL:HG12	37:i:123:ASN:OD1	1.82	0.80
44:p:48:MET:HE3	44:p:48:MET:HA	1.63	0.79
13:J:141:LYS:HE2	13:J:141:LYS:H	1.48	0.78
12:H:28:MET:HE3	12:H:28:MET:HA	1.66	0.78
9:E:136:ARG:CZ	9:E:136:ARG:HA	2.14	0.78
12:H:52:GLU:OE1	12:H:53:GLU:OE2	2.00	0.77
25:V:10:GLU:OE2	25:V:10:GLU:N	2.14	0.77
32:c:40:ARG:HH21	32:c:57:LYS:HD3	1.49	0.77
55:1:1099:G:N2	55:1:1127:A:O2'	2.17	0.76
30:a:32:THR:HG22	30:a:34:GLU:H	1.49	0.76
52:x:1:MET:N	52:x:8:GLY:O	2.18	0.76
18:O:36:LYS:HB2	18:O:37:GLU:OE1	1.87	0.75
49:u:81:LEU:O	49:u:85:LEU:HD22	1.86	0.75
25:V:100:ILE:HD12	25:V:101:THR:H	1.51	0.75
22:S:47:GLU:N	22:S:47:GLU:OE2	2.20	0.74
40:l:99:ILE:HD12	40:l:99:ILE:H	1.52	0.74
48:t:88:LYS:NZ	55:1:742:U:P	2.61	0.74
9:E:171:SER:C	9:E:175:GLU:OE1	2.31	0.74
56:2:930:A:H61	56:2:1216:C:H42	1.36	0.74
55:1:138:G:H4'	55:1:139:A:H5'	1.70	0.73
55:1:25:G:H21	55:1:539:A:H62	1.36	0.73
56:2:986:U:O2	56:2:1020:G:N2	2.18	0.73
6:B:82:GLU:HG3	6:B:91:ILE:HG21	1.70	0.73
46:r:89:LEU:HD11	55:1:918:C:H1'	1.71	0.72
18:O:37:GLU:OE1	18:O:37:GLU:N	2.22	0.72
55:1:1943:A:H2	55:1:1950:U:H5	1.37	0.71
7:C:39:THR:HA	7:C:46:GLU:OE2	1.91	0.71
36:h:158:GLY:HA2	36:h:192:TYR:CD2	2.26	0.71
56:2:661:A:H2'	56:2:662:G:C8	2.26	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:G:94:ASN:HB2	11:G:110:ARG:HH22	1.54	0.71
55:1:1137:U:H2'	55:1:1138:A:H8	1.56	0.70
9:E:136:ARG:NH2	55:1:2303:U:H1'	2.06	0.70
12:H:121:MET:HE2	12:H:121:MET:HA	1.73	0.70
46:r:53:ILE:H	46:r:53:ILE:HD12	1.56	0.70
5:A:48:U:H5''	5:A:49:C:H5'	1.73	0.70
56:2:1286:G:N2	56:2:1312:G:O2'	2.18	0.70
12:H:57:ALA:HA	12:H:60:LYS:HD2	1.74	0.70
46:r:49:SER:N	46:r:52:GLN:OE1	2.25	0.70
55:1:2456:G:H8	55:1:2457:A:H62	1.40	0.69
36:h:78:LYS:O	36:h:81:GLN:OE1	2.08	0.69
13:J:141:LYS:HE2	13:J:141:LYS:N	2.08	0.69
38:j:58:LYS:NZ	56:2:1062:G:N7	2.41	0.68
46:r:9:ILE:HG23	46:r:18:ALA:HB1	1.75	0.68
56:2:181:G:H1	56:2:194:U:H3	1.40	0.68
56:2:1140:C:C5	56:2:1142:G:H1'	2.28	0.68
22:S:4:ARG:HH22	22:S:6:ARG:HG2	1.59	0.68
55:1:911:G:H3'	55:1:912:G:H8	1.59	0.68
38:j:52:VAL:HG12	38:j:147:PHE:HZ	1.59	0.67
55:1:924:C:H2'	55:1:925:C:H6	1.58	0.67
42:n:55:ASN:HB3	42:n:59:PHE:HE1	1.58	0.67
10:F:17:VAL:HG12	10:F:26:VAL:HG22	1.76	0.67
46:r:90:ARG:CB	46:r:97:VAL:HG22	2.25	0.67
42:n:104:ARG:NH1	42:n:105:ASP:O	2.27	0.66
6:B:135:ILE:O	6:B:167:ARG:NH2	2.27	0.66
40:l:32:ASP:OD1	56:2:1331:A:O2'	2.14	0.66
53:y:68:LYS:NZ	56:2:254:U:OP1	2.25	0.66
22:S:6:ARG:NH2	55:1:529:A:OP2	2.28	0.66
40:l:115:GLU:HG3	40:l:121:ARG:HG2	1.77	0.66
32:c:10:VAL:HG23	32:c:58:GLU:HG3	1.76	0.66
36:h:14:ILE:HG22	36:h:15:ILE:HG23	1.77	0.66
46:r:83:LEU:HD12	52:x:66:MET:HB3	1.78	0.66
50:v:52:GLU:CD	50:v:52:GLU:H	2.03	0.66
55:1:1567:U:H1'	55:1:1569:G:C6	2.31	0.66
6:B:82:GLU:O	6:B:91:ILE:HG22	1.95	0.66
42:n:16:ARG:NH1	56:2:1129:C:O2	2.28	0.66
52:x:21:GLU:OE1	52:x:21:GLU:C	2.39	0.65
12:H:98:PRO:HD2	12:H:101:MET:HE1	1.78	0.65
55:1:27:A:HO2'	55:1:28:A:H8	1.43	0.65
56:2:1100:U:H2'	56:2:1101:G:H8	1.62	0.65
5:A:34:U:OP2	42:n:128:ARG:NH2	2.28	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:L:91:VAL:HG23	15:L:92:ILE:HG23	1.79	0.65
36:h:81:GLN:CD	36:h:81:GLN:H	2.05	0.65
55:1:2456:G:O2'	55:1:2458:U:O4	2.14	0.65
20:Q:48:ARG:NH1	20:Q:49:ASP:OD1	2.24	0.65
24:U:14:VAL:HG23	24:U:21:GLY:H	1.61	0.65
46:r:9:ILE:HG21	46:r:45:ILE:HG12	1.79	0.65
46:r:79:ARG:O	46:r:83:LEU:HD22	1.96	0.65
7:C:46:GLU:OE2	7:C:46:GLU:HA	1.95	0.65
40:l:103:MET:O	40:l:107:ILE:HG13	1.97	0.65
55:1:1234:A:H61	55:1:1268:G:H22	1.44	0.65
18:O:66:ASN:HB3	18:O:101:ARG:HD3	1.78	0.65
36:h:90:LEU:HD11	36:h:98:VAL:HG11	1.77	0.65
43:o:22:GLU:HA	43:o:25:VAL:HG12	1.78	0.65
55:1:1673:U:H2'	55:1:1674:A:H5''	1.77	0.65
40:l:113:ARG:NH2	40:l:124:SER:OG	2.29	0.65
56:2:125:G:O2'	56:2:126:C:O5'	2.14	0.65
56:2:1304:G:H2'	56:2:1305:A:C8	2.32	0.64
55:1:2032:C:H2'	55:1:2033:G:C8	2.33	0.64
55:1:1570:G:H2'	55:1:1571:A:C8	2.32	0.64
55:1:268:U:H2'	55:1:269:A:C8	2.32	0.64
3:5:17:ARG:NH2	56:2:873:G:OP1	2.30	0.64
23:T:58:PRO:HG3	23:T:76:ALA:HB2	1.79	0.64
56:2:959:G:OP2	56:2:1339:U:O2'	2.16	0.64
55:1:1615:A:O2'	55:1:1616:C:OP1	2.15	0.64
52:x:62:VAL:HA	52:x:66:MET:HE2	1.79	0.64
39:k:14:LEU:HD11	39:k:84:ARG:HG2	1.80	0.63
56:2:701:G:H2'	56:2:702:G:C8	2.33	0.63
6:B:181:THR:HG23	6:B:269:VAL:HB	1.80	0.63
55:1:925:C:H3'	55:1:926:A:C8	2.34	0.63
56:2:1163:G:O2'	56:2:1164:G:N7	2.32	0.63
55:1:1505:U:H2'	55:1:1506:A:H8	1.63	0.63
55:1:1749:C:H2'	55:1:1750:A:C8	2.34	0.63
17:N:106:ASP:OD2	55:1:1683:G:O2'	2.17	0.63
27:X:2:SER:OG	55:1:1393:A:OP2	2.16	0.63
27:X:2:SER:OG	27:X:3:ARG:N	2.32	0.63
21:R:51:ALA:HB3	21:R:52:PRO:HD3	1.80	0.62
40:l:92:GLN:OE1	40:l:92:GLN:N	2.32	0.62
36:h:77:GLY:HA3	36:h:81:GLN:HE22	1.64	0.62
2:4:45:GLU:C	2:4:45:GLU:OE2	2.42	0.62
55:1:1137:U:H2'	55:1:1138:A:C8	2.34	0.62
56:2:662:G:H2'	56:2:663:A:H8	1.64	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:c:7:ARG:NH1	55:1:2283:U:OP2	2.32	0.62
42:n:4:ILE:HD11	42:n:84:VAL:HG22	1.81	0.62
55:1:1919:A:HO2'	56:2:1467:G:HO2'	1.48	0.62
56:2:983:G:N2	56:2:1023:U:O2	2.33	0.62
12:H:74:LYS:HD2	12:H:76:GLN:HE22	1.65	0.62
12:H:90:MET:SD	12:H:91:PRO:HD2	2.40	0.61
26:W:18:SER:OG	55:1:2269:G:OP1	2.15	0.61
46:r:15:ALA:HB1	46:r:34:LEU:HD11	1.82	0.61
55:1:916:U:O2	55:1:922:G:O6	2.18	0.61
55:1:1562:A:N6	55:1:1573:A:O2'	2.33	0.61
56:2:1133:A:O2'	56:2:1134:A:O5'	2.17	0.61
31:b:52:ARG:NH2	55:1:2863:A:OP2	2.32	0.61
56:2:1337:U:H2'	56:2:1338:A:C8	2.36	0.61
11:G:42:SER:C	11:G:44:LYS:N	2.54	0.61
46:r:71:ARG:HD3	46:r:72:GLU:HG2	1.82	0.61
56:2:411:U:H3	56:2:418:G:H1	1.49	0.60
55:1:1510:A:H4'	55:1:1511:U:H5''	1.82	0.60
37:i:62:TYR:OH	37:i:92:GLU:OE1	2.20	0.60
9:E:27:ASN:OD1	9:E:29:MET:N	2.30	0.60
16:M:85:MET:CE	55:1:989:A:H61	2.13	0.60
55:1:2284:A:H4'	55:1:2285:A:O4'	2.01	0.60
15:L:56:MET:O	15:L:61:ARG:NH1	2.34	0.60
36:h:22:TRP:HB3	36:h:58:ARG:H	1.67	0.59
9:E:104:GLU:OE2	9:E:104:GLU:HA	2.00	0.59
25:V:139:GLU:HA	25:V:139:GLU:OE1	2.00	0.59
42:n:48:GLN:O	42:n:52:MET:HG2	2.02	0.59
53:y:40:ASP:OD1	53:y:42:SER:OG	2.20	0.59
7:C:40:ASN:HA	7:C:44:GLY:H	1.67	0.59
23:T:9:VAL:O	23:T:9:VAL:HG23	2.01	0.59
44:p:32:LEU:HD21	44:p:72:ALA:HB2	1.85	0.59
18:O:7:GLU:OE2	18:O:7:GLU:N	2.34	0.59
42:n:91:GLU:HA	42:n:91:GLU:OE1	2.02	0.59
56:2:702:G:H2'	56:2:703:A:C8	2.37	0.59
18:O:82:LEU:CD2	18:O:114:LEU:HD23	2.32	0.59
48:t:71:ARG:CA	48:t:71:ARG:HH11	2.15	0.59
34:e:12:LYS:NZ	55:1:232:G:O6	2.36	0.59
15:L:19:ARG:NH2	55:1:1278:G:N7	2.51	0.59
44:p:34:ASN:OD1	44:p:35:LYS:N	2.35	0.59
55:1:502:A:O2'	55:1:503:A:OP1	2.19	0.59
7:C:123:ARG:HG3	7:C:165:MET:HG3	1.82	0.59
9:E:161:THR:HG23	9:E:163:ALA:H	1.68	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:1:2106:G:O6	55:1:2197:U:O4	2.20	0.59
56:2:1405:G:H2'	56:2:1406:G:C8	2.38	0.58
37:i:47:GLU:OE1	37:i:47:GLU:N	2.32	0.58
45:q:70:GLU:O	45:q:70:GLU:OE1	2.21	0.58
12:H:49:ALA:O	12:H:53:GLU:OE2	2.22	0.58
23:T:15:LYS:HA	23:T:18:GLU:OE2	2.03	0.58
43:o:58:LYS:NZ	56:2:956:G:OP1	2.36	0.58
48:t:71:ARG:NH1	48:t:71:ARG:C	2.60	0.58
6:B:272:ARG:NH1	6:B:272:ARG:HA	2.19	0.58
51:w:93:VAL:HG23	51:w:93:VAL:O	2.03	0.58
6:B:98:ASP:OD2	6:B:98:ASP:N	2.37	0.58
49:u:32:LYS:NZ	56:2:304:C:OP1	2.37	0.58
56:2:1337:U:H2'	56:2:1338:A:H8	1.68	0.58
1:3:12:U:OP2	1:3:67:C:O2'	2.22	0.57
12:H:27:ASN:OD1	12:H:195:ARG:NH2	2.38	0.57
47:s:46:VAL:HG11	56:2:1297:G:H4'	1.87	0.57
50:v:72:LYS:HG2	50:v:73:THR:HG23	1.86	0.57
55:1:912:G:N3	55:1:912:G:H2'	2.20	0.57
55:1:915:C:H42	55:1:923:C:H42	1.51	0.57
19:P:11:GLU:OE2	19:P:11:GLU:C	2.46	0.57
45:q:70:GLU:OE1	45:q:70:GLU:C	2.47	0.57
50:v:26:ILE:HD11	50:v:64:ILE:CD1	2.32	0.57
11:G:38:LEU:HB3	11:G:40:THR:HG23	1.86	0.57
29:Z:6:VAL:CG1	29:Z:54:VAL:HG21	2.35	0.57
24:U:5:LYS:O	24:U:95:ARG:NH1	2.38	0.57
41:m:10:LEU:HD22	41:m:77:ILE:HD11	1.85	0.57
44:p:24:THR:HG22	44:p:25:PHE:H	1.70	0.57
49:u:93:ALA:H	49:u:96:GLN:NE2	2.03	0.57
55:1:1445:U:O2'	55:1:1621:G:O2'	2.23	0.57
6:B:82:GLU:HG3	6:B:91:ILE:HG23	1.84	0.57
40:l:3:LYS:HE2	56:2:915:C:H5''	1.87	0.57
18:O:23:SER:OG	18:O:25:ALA:O	2.22	0.57
32:c:40:ARG:NH2	32:c:57:LYS:HD3	2.18	0.57
56:2:1195:A:O2'	56:2:1197:G:N7	2.31	0.57
21:R:41:LEU:HD12	21:R:54:ILE:HD12	1.86	0.57
1:3:72:G:H5''	25:V:14:VAL:HG11	1.86	0.56
56:2:179:U:H2'	56:2:180:A:H8	1.70	0.56
7:C:196:HIS:O	7:C:199:SER:OG	2.23	0.56
51:w:59:GLY:O	51:w:85:ARG:NH2	2.38	0.56
6:B:153:VAL:HG23	6:B:154:ILE:HG13	1.86	0.56
7:C:149:SER:O	55:1:2060:G:H5'	2.05	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:G:43:ALA:O	11:G:46:VAL:HG12	2.05	0.56
46:r:97:VAL:HG12	46:r:97:VAL:O	2.06	0.56
55:1:925:C:H3'	55:1:926:A:H8	1.69	0.56
55:1:998:U:H2'	55:1:999:C:C6	2.40	0.56
56:2:1114:G:C2	56:2:1125:G:H5''	2.40	0.56
5:A:24:C:H2'	5:A:25:U:C6	2.41	0.56
38:j:10:VAL:O	38:j:13:SER:OG	2.16	0.56
39:k:94:ASP:OD1	39:k:94:ASP:C	2.48	0.56
44:p:117:ASN:HD22	56:2:705:U:H4'	1.69	0.56
56:2:1157:G:H2'	56:2:1158:A:C8	2.41	0.56
27:X:72:GLN:OE1	27:X:72:GLN:C	2.49	0.56
56:2:1506:C:H3'	56:2:1507:A:H8	1.70	0.56
11:G:50:ASN:O	11:G:53:GLN:HB3	2.05	0.56
56:2:716:A:H2'	56:2:717:A:C8	2.40	0.56
44:p:63:MET:HE2	44:p:63:MET:HA	1.87	0.56
56:2:1232:A:H2'	56:2:1233:G:C8	2.41	0.56
11:G:42:SER:O	11:G:43:ALA:C	2.48	0.56
16:M:21:SER:HB3	16:M:100:LYS:HB2	1.88	0.56
56:2:1157:G:H2'	56:2:1158:A:H8	1.70	0.56
19:P:52:ARG:NH2	55:1:2717:G:OP1	2.39	0.56
27:X:27:ARG:HG2	27:X:28:LYS:H	1.71	0.56
56:2:983:G:N1	56:2:1023:U:N3	2.54	0.56
12:H:67:LYS:HA	12:H:90:MET:HE1	1.87	0.55
48:t:88:LYS:HD2	55:1:742:U:C5	2.41	0.55
55:1:1100:A:H4'	55:1:1101:A:H5''	1.86	0.55
55:1:1172:U:H4'	55:1:1173:A:O4'	2.06	0.55
56:2:170:A:H62	56:2:203:A:H62	1.54	0.55
19:P:21:PHE:O	19:P:51:ARG:NH1	2.39	0.55
40:l:24:ARG:O	40:l:28:ASN:ND2	2.36	0.55
46:r:15:ALA:CB	46:r:34:LEU:HD11	2.36	0.55
48:t:88:LYS:NZ	55:1:742:U:O5'	2.37	0.55
55:1:1747:A:H3'	55:1:1748:G:H8	1.71	0.55
38:j:52:VAL:HG12	38:j:53:GLY:N	2.21	0.55
55:1:428:U:H4'	55:1:429:C:H5''	1.88	0.55
55:1:1860:A:H2'	55:1:1861:A:C8	2.41	0.55
56:2:138:G:H2'	56:2:139:G:C8	2.40	0.55
32:c:7:ARG:HG2	32:c:33:ASN:HB3	1.88	0.55
42:n:92:ASN:HA	42:n:95:ILE:CD1	2.36	0.55
56:2:974:U:H2'	56:2:1194:U:H3	1.72	0.55
7:C:49:GLN:HB3	7:C:81:GLU:HG3	1.89	0.55
43:o:27:THR:O	43:o:30:THR:OG1	2.25	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:o:7:ILE:HB	43:o:73:ILE:HD11	1.88	0.55
56:2:330:G:H2'	56:2:331:A:C8	2.42	0.55
36:h:84:ASP:OD1	36:h:85:LYS:N	2.40	0.55
46:r:52:GLN:O	46:r:56:LEU:HG	2.07	0.55
53:y:43:ASP:N	53:y:43:ASP:OD2	2.36	0.55
55:1:1101:A:N6	55:1:1128:A:O2'	2.39	0.54
29:Z:50:VAL:O	29:Z:54:VAL:HG12	2.07	0.54
13:J:149:ASP:OD2	13:J:149:ASP:C	2.50	0.54
56:2:120:A:C6	56:2:191:A:H1'	2.43	0.54
46:r:52:GLN:NE2	46:r:52:GLN:H	2.05	0.54
55:1:2217:C:O2'	55:1:2218:G:OP1	2.25	0.54
55:1:571:G:O2'	55:1:572:U:OP2	2.24	0.54
32:c:6:ASN:CG	32:c:7:ARG:H	2.15	0.54
46:r:11:ASP:O	46:r:11:ASP:OD2	2.26	0.54
40:l:53:LYS:O	40:l:54:GLN:HG3	2.07	0.54
42:n:92:ASN:O	42:n:96:LEU:HG	2.08	0.54
18:O:5:LYS:O	18:O:5:LYS:HG3	2.08	0.54
21:R:49:LEU:N	21:R:49:LEU:HD12	2.23	0.54
36:h:143:MET:HE2	36:h:143:MET:HA	1.90	0.54
38:j:52:VAL:HG12	38:j:147:PHE:CZ	2.40	0.54
56:2:812:U:H2'	56:2:813:A:H8	1.73	0.54
9:E:181:LYS:HA	30:a:57:PHE:HZ	1.72	0.54
20:Q:109:ILE:HG12	21:R:49:LEU:HD21	1.90	0.54
56:2:198:A:H2'	56:2:199:A:H8	1.72	0.54
56:2:466:C:H2'	56:2:467:U:C6	2.43	0.54
56:2:662:G:H2'	56:2:663:A:C8	2.42	0.54
1:3:83:U:H2'	1:3:84:U:O4'	2.09	0.54
44:p:51:ARG:NH2	56:2:678:G:O6	2.41	0.54
36:h:90:LEU:HD21	36:h:100:ILE:HD11	1.89	0.53
55:1:1309:G:H2'	55:1:1310:C:C6	2.43	0.53
55:1:25:G:N2	55:1:539:A:H62	2.06	0.53
55:1:153:C:O2'	55:1:154:G:O5'	2.25	0.53
56:2:463:G:H2'	56:2:464:A:H4'	1.89	0.53
44:p:81:LYS:HE3	44:p:107:GLU:N	2.23	0.53
55:1:2788:U:O3'	55:1:2789:U:H4'	2.09	0.53
6:B:163:GLN:HG2	6:B:165:MET:CE	2.35	0.53
7:C:96:ASP:OD2	7:C:96:ASP:N	2.41	0.53
42:n:105:ASP:OD2	42:n:107:ARG:HG3	2.08	0.53
48:t:71:ARG:HH11	48:t:71:ARG:HA	1.72	0.53
49:u:93:ALA:H	49:u:96:GLN:HE22	1.55	0.53
55:1:89:C:OP2	55:1:90:A:O2'	2.24	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:1:154:G:H21	55:1:157:A:H2	1.57	0.53
55:1:889:G:O2'	55:1:946:G:O6	2.24	0.53
22:S:4:ARG:NH2	55:1:1263:G:OP2	2.41	0.53
55:1:268:U:O2'	55:1:269:A:O4'	2.25	0.53
56:2:179:U:H2'	56:2:180:A:C8	2.43	0.53
56:2:464:A:H3'	56:2:465:G:H8	1.73	0.53
29:Z:5:LEU:N	29:Z:58:GLU:O	2.42	0.53
7:C:55:LYS:HG3	7:C:77:LYS:HG2	1.91	0.53
34:e:17:THR:HG22	34:e:21:LYS:H	1.72	0.53
12:H:33:TYR:N	12:H:41:ILE:O	2.40	0.53
18:O:82:LEU:HD22	18:O:114:LEU:HD23	1.91	0.53
29:Z:50:VAL:O	29:Z:50:VAL:HG23	2.08	0.53
6:B:94:LEU:HD13	6:B:104:ILE:HG12	1.90	0.53
18:O:2:SER:HA	18:O:7:GLU:HG3	1.90	0.53
25:V:100:ILE:HD12	25:V:101:THR:N	2.21	0.53
48:t:36:SER:O	48:t:39:THR:HG22	2.08	0.53
56:2:1058:G:N2	56:2:1061:A:OP2	2.38	0.53
37:i:171:ASP:OD1	37:i:171:ASP:N	2.38	0.52
39:k:76:GLU:O	39:k:80:ARG:HG2	2.09	0.52
55:1:613:A:H2'	55:1:614:A:C8	2.44	0.52
55:1:967:A:H2'	55:1:968:A:C8	2.43	0.52
56:2:17:U:H2'	56:2:18:C:C6	2.44	0.52
56:2:812:U:H2'	56:2:813:A:C8	2.44	0.52
3:5:12:VAL:O	3:5:16:LYS:HG2	2.09	0.52
37:i:102:MET:HE2	37:i:175:GLY:HA3	1.91	0.52
38:j:31:THR:OG1	38:j:32:LYS:N	2.43	0.52
42:n:92:ASN:HA	42:n:95:ILE:HD12	1.91	0.52
55:1:1087:G:N1	55:1:1134:C:OP2	2.26	0.52
56:2:1238:C:O2'	56:2:1239:A:OP2	2.22	0.52
7:C:150:SER:OG	55:1:2570:A:N7	2.40	0.52
12:H:115:MET:SD	12:H:116:SER:N	2.83	0.52
37:i:10:LYS:HG2	37:i:33:PRO:HG3	1.91	0.52
55:1:911:G:H3'	55:1:912:G:C8	2.42	0.52
46:r:58:ASP:C	46:r:58:ASP:OD2	2.52	0.52
46:r:69:LEU:O	46:r:73:ILE:HG23	2.08	0.52
52:x:20:GLN:HA	52:x:20:GLN:OE1	2.09	0.52
56:2:710:A:H2	56:2:721:A:H61	1.57	0.52
55:1:28:A:N6	55:1:536:G:H1'	2.25	0.52
55:1:1582:G:H2'	55:1:1584:G:H5''	1.90	0.52
56:2:432:U:O2'	56:2:434:U:O4	2.27	0.52
14:K:34:SER:N	14:K:37:ASP:OD1	2.42	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:1:1809:A:H2'	55:1:1810:A:C8	2.44	0.52
6:B:165:MET:HE2	6:B:165:MET:HA	1.90	0.52
43:o:13:ASP:HB3	43:o:16:LEU:HB2	1.91	0.52
46:r:49:SER:HG	46:r:52:GLN:NE2	2.04	0.52
55:1:568:U:O2'	55:1:569:U:OP1	2.25	0.52
55:1:1116:A:H2'	55:1:1117:A:C8	2.44	0.52
55:1:1605:A:H2'	55:1:1606:A:C8	2.45	0.52
56:2:383:A:H2'	56:2:384:C:C6	2.44	0.52
56:2:983:G:C2	56:2:1023:U:O2	2.63	0.52
56:2:987:G:C6	56:2:1019:A:H2	2.27	0.52
10:F:11:ILE:HG13	10:F:11:ILE:O	2.09	0.52
16:M:137:ARG:HG2	16:M:137:ARG:HH11	1.75	0.52
22:S:50:LEU:CD2	22:S:68:LEU:HD23	2.39	0.52
25:V:7:LYS:HB2	25:V:7:LYS:NZ	2.24	0.52
48:t:87:ARG:HD3	48:t:88:LYS:H	1.74	0.52
55:1:1670:U:H2'	55:1:1671:C:C6	2.45	0.52
56:2:330:G:H2'	56:2:331:A:H8	1.75	0.52
55:1:923:C:C2'	55:1:924:C:H5'	2.39	0.52
56:2:983:G:O6	56:2:984:A:N6	2.42	0.52
11:G:10:GLN:HG3	11:G:11:ASN:OD1	2.11	0.51
55:1:1570:G:H2'	55:1:1571:A:H8	1.75	0.51
55:1:1623:U:H2'	55:1:1624:A:H8	1.74	0.51
56:2:1417:G:H2'	56:2:1418:U:C6	2.44	0.51
7:C:16:ASP:OD2	7:C:16:ASP:C	2.53	0.51
12:H:52:GLU:CD	12:H:53:GLU:OE2	2.53	0.51
20:Q:48:ARG:C	20:Q:50:ARG:H	2.18	0.51
55:1:874:U:O2'	55:1:875:A:H5'	2.10	0.51
55:1:1267:U:H2'	55:1:1268:G:C8	2.46	0.51
2:4:36:SER:OG	2:4:38:MET:HE3	2.10	0.51
6:B:232:MET:HE3	6:B:244:PRO:HA	1.92	0.51
9:E:169:ALA:C	9:E:171:SER:H	2.19	0.51
47:s:52:CYS:HB3	47:s:56:GLY:H	1.76	0.51
55:1:153:C:O2'	55:1:154:G:H8	1.94	0.51
55:1:2044:C:H2'	55:1:2045:G:C8	2.45	0.51
56:2:1446:A:H2'	56:2:1447:A:C8	2.45	0.51
19:P:51:ARG:NE	19:P:58:GLU:OE2	2.40	0.51
27:X:27:ARG:NH2	55:1:2230:U:OP2	2.44	0.51
36:h:130:ARG:O	36:h:134:LYS:HG2	2.11	0.51
42:n:120:ARG:NH1	56:2:1327:A:OP1	2.40	0.51
49:u:62:GLN:OE1	49:u:62:GLN:HA	2.10	0.51
55:1:1442:C:H2'	55:1:1443:U:C6	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:B:92:ALA:HB2	6:B:106:ALA:HB2	1.93	0.51
8:D:140:ILE:HG22	8:D:171:LEU:HD21	1.91	0.51
44:p:84:VAL:HG21	54:z:19:TYR:OH	2.11	0.51
49:u:76:TYR:HD2	49:u:77:LYS:HD2	1.75	0.51
11:G:112:PHE:CD2	11:G:112:PHE:N	2.79	0.51
19:P:79:LEU:HD12	19:P:80:PRO:HD2	1.92	0.51
29:Z:50:VAL:O	29:Z:54:VAL:CG1	2.59	0.51
51:w:93:VAL:O	51:w:93:VAL:CG2	2.58	0.51
55:1:2289:U:H2'	55:1:2290:U:C6	2.45	0.51
10:F:53:ARG:NH1	10:F:61:ARG:HG2	2.25	0.51
18:O:69:ILE:O	18:O:73:VAL:HG23	2.10	0.51
37:i:144:GLU:HA	37:i:147:LYS:HE2	1.92	0.51
43:o:80:SER:HB2	43:o:83:ILE:HD11	1.92	0.51
46:r:49:SER:HG	46:r:52:GLN:CD	2.19	0.51
55:1:562:A:N6	55:1:578:G:O2'	2.43	0.51
56:2:1267:U:O2'	56:2:1268:A:O5'	2.22	0.51
12:H:130:LEU:HD23	12:H:134:GLU:HB3	1.93	0.51
46:r:17:ILE:O	46:r:20:THR:OG1	2.22	0.51
55:1:176:A:H2'	55:1:177:C:C6	2.46	0.51
55:1:911:G:C3'	55:1:912:G:H8	2.22	0.51
56:2:480:A:H2'	56:2:481:A:N3	2.26	0.51
56:2:1295:C:H2'	56:2:1296:U:C6	2.46	0.51
12:H:142:ARG:O	12:H:146:GLU:HG2	2.11	0.50
15:L:20:VAL:CG1	15:L:32:ALA:HB1	2.42	0.50
55:1:1514:G:H22	55:1:1537:A:H2	1.59	0.50
38:j:121:LEU:HD13	38:j:129:VAL:HG21	1.93	0.50
13:J:78:ILE:HG23	13:J:91:THR:HG23	1.92	0.50
55:1:1557:C:H2'	55:1:1558:U:C6	2.45	0.50
7:C:57:GLU:C	7:C:57:GLU:OE1	2.55	0.50
44:p:91:ARG:O	44:p:95:ILE:HG22	2.11	0.50
55:1:1565:C:H2'	55:1:1566:U:O4'	2.10	0.50
56:2:929:A:H2'	56:2:930:A:C8	2.46	0.50
9:E:6:ARG:NH2	9:E:104:GLU:OE1	2.45	0.50
42:n:55:ASN:CB	42:n:59:PHE:HE1	2.22	0.50
56:2:128:U:H2'	56:2:129:U:H6	1.76	0.50
12:H:134:GLU:HA	12:H:134:GLU:OE2	2.11	0.50
52:x:50:ALA:HB1	52:x:57:PHE:HB3	1.94	0.50
55:1:1505:U:H2'	55:1:1506:A:C8	2.46	0.50
56:2:408:C:N4	56:2:421:U:H3	2.09	0.50
56:2:489:G:H2'	56:2:490:A:C8	2.47	0.50
44:p:108:ILE:HB	54:z:4:ILE:HD12	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:1:1854:A:O2'	55:1:1855:A:N7	2.41	0.50
55:1:2109:U:H2'	55:1:2110:A:C8	2.46	0.50
37:i:27:GLU:OE1	37:i:27:GLU:N	2.43	0.50
55:1:875:A:H2'	55:1:876:A:C8	2.46	0.50
55:1:1536:A:H2'	55:1:1537:A:C8	2.47	0.50
38:j:167:LEU:O	38:j:168:GLU:OE2	2.30	0.50
55:1:387:G:N2	55:1:388:U:O4	2.41	0.50
56:2:198:A:H2'	56:2:199:A:C8	2.47	0.50
56:2:463:G:C6	56:2:464:A:C8	2.99	0.50
56:2:127:C:O2'	56:2:128:U:H6	1.94	0.49
42:n:89:ASN:OD1	42:n:89:ASN:C	2.55	0.49
46:r:87:ARG:HG2	46:r:97:VAL:CG1	2.42	0.49
55:1:1570:G:O2'	55:1:1571:A:OP1	2.29	0.49
55:1:2325:A:H2'	55:1:2326:A:C8	2.47	0.49
56:2:1165:U:O2'	56:2:1166:G:OP1	2.24	0.49
7:C:12:THR:OG1	7:C:13:SER:N	2.44	0.49
8:D:136:THR:O	8:D:140:ILE:HG23	2.13	0.49
12:H:95:GLU:HG2	12:H:147:LYS:HD3	1.94	0.49
43:o:26:LYS:O	43:o:30:THR:HG23	2.13	0.49
45:q:26:SER:O	45:q:26:SER:OG	2.20	0.49
49:u:100:ASP:OD1	49:u:100:ASP:N	2.38	0.49
55:1:2789:U:H2'	55:1:2870:G:C5	2.48	0.49
56:2:1109:C:O2'	56:2:1110:C:OP1	2.29	0.49
56:2:1158:A:H2'	56:2:1159:G:C8	2.47	0.49
11:G:5:LEU:HD13	11:G:9:VAL:HG23	1.94	0.49
42:n:16:ARG:NH2	56:2:1110:C:OP1	2.46	0.49
42:n:44:TYR:HD2	42:n:44:TYR:O	1.95	0.49
46:r:95:LEU:O	46:r:109:ARG:NH1	2.46	0.49
54:z:18:ARG:HG3	54:z:18:ARG:HH11	1.76	0.49
56:2:28:G:O2'	56:2:289:U:OP1	2.27	0.49
56:2:703:A:H2'	56:2:704:A:C8	2.48	0.49
56:2:960:A:H2'	56:2:961:A:H5''	1.94	0.49
56:2:1139:A:H4'	56:2:1140:C:O5'	2.12	0.49
12:H:48:ALA:O	12:H:51:ILE:HG22	2.13	0.49
42:n:20:SER:O	42:n:60:ASP:N	2.33	0.49
48:t:1:MET:HA	48:t:37:HIS:CG	2.47	0.49
55:1:894:G:H2'	55:1:895:C:C6	2.47	0.49
56:2:1486:A:H2'	56:2:1487:C:C6	2.48	0.49
12:H:28:MET:SD	12:H:194:PRO:HD3	2.52	0.49
23:T:89:THR:OG1	23:T:90:ILE:N	2.43	0.49
43:o:14:HIS:NE2	56:2:1134:A:H5'	2.27	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:1:2789:U:H2'	55:1:2870:G:C6	2.47	0.49
19:P:85:ILE:HD12	19:P:85:ILE:C	2.37	0.49
45:q:87:VAL:HG11	45:q:90:LEU:HD12	1.94	0.49
47:s:63:ARG:NH2	56:2:1340:C:O2	2.45	0.49
55:1:1329:A:O2'	55:1:1330:A:H2'	2.12	0.49
55:1:2326:A:H2'	55:1:2327:U:C6	2.48	0.49
55:1:2786:U:H2'	55:1:2787:U:O4'	2.13	0.49
23:T:5:ILE:HB	23:T:26:VAL:HG23	1.94	0.49
37:i:29:ARG:HA	37:i:31:TYR:CE1	2.47	0.49
38:j:168:GLU:OE2	38:j:168:GLU:HA	2.13	0.49
46:r:90:ARG:HB2	46:r:97:VAL:CG2	2.35	0.49
56:2:983:G:N1	56:2:1023:U:C2	2.80	0.49
30:a:12:LEU:HD23	30:a:27:LYS:HG2	1.95	0.49
49:u:86:ASP:O	49:u:89:VAL:HG12	2.13	0.49
49:u:96:GLN:O	49:u:100:ASP:OD1	2.30	0.49
55:1:25:G:H2'	55:1:26:G:C8	2.48	0.49
20:Q:11:ARG:NH2	55:1:537:A:N3	2.61	0.48
55:1:1100:A:H5''	55:1:1101:A:H8	1.78	0.48
55:1:2241:U:H2'	55:1:2242:U:C6	2.48	0.48
55:1:2456:G:H1'	55:1:2457:A:N7	2.28	0.48
36:h:158:GLY:CA	36:h:192:TYR:CE2	2.96	0.48
49:u:10:HIS:O	49:u:17:PHE:HB3	2.12	0.48
55:1:2675:U:H2'	55:1:2676:A:C8	2.48	0.48
15:L:44:GLY:HA2	55:1:698:A:H3'	1.95	0.48
40:l:9:ARG:NH2	56:2:1358:U:O4	2.44	0.48
55:1:1116:A:H1'	55:1:1137:U:O2'	2.13	0.48
55:1:2735:G:H2'	55:1:2736:A:C8	2.48	0.48
56:2:236:A:H4'	56:2:237:U:O5'	2.13	0.48
42:n:9:ARG:HG2	42:n:14:VAL:HG12	1.94	0.48
43:o:49:THR:HG22	43:o:61:ARG:HG2	1.95	0.48
46:r:50:GLU:HA	46:r:53:ILE:HD13	1.96	0.48
48:t:32:THR:HG21	48:t:86:ILE:HD11	1.95	0.48
9:E:27:ASN:O	9:E:30:GLN:OE1	2.32	0.48
10:F:57:HIS:O	10:F:61:ARG:HG3	2.14	0.48
10:F:87:GLU:OE1	10:F:89:VAL:HG23	2.13	0.48
27:X:72:GLN:OE1	27:X:73:SER:N	2.47	0.48
28:Y:8:ASP:HB3	28:Y:9:LEU:HD22	1.95	0.48
51:w:57:GLU:OE1	51:w:58:GLN:N	2.46	0.48
56:2:170:A:N6	56:2:203:A:H62	2.11	0.48
56:2:929:A:H2'	56:2:930:A:H8	1.79	0.48
56:2:1343:C:O2'	56:2:1344:C:H5'	2.14	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:F:53:ARG:HH12	10:F:61:ARG:HG2	1.77	0.48
12:H:49:ALA:O	12:H:53:GLU:CD	2.57	0.48
52:x:21:GLU:OE1	52:x:22:ASN:N	2.47	0.48
55:1:2788:U:H4'	55:1:2790:A:C8	2.49	0.48
56:2:125:G:HO2'	56:2:126:C:H6	1.58	0.48
12:H:193:ASP:O	12:H:196:GLU:OE2	2.32	0.48
47:s:74:GLU:OE2	47:s:75:MET:N	2.47	0.48
56:2:1373:U:H2'	56:2:1374:G:C8	2.49	0.48
36:h:154:GLY:HA3	36:h:162:ALA:HB1	1.94	0.48
36:h:182:ASP:OD1	36:h:183:TYR:N	2.46	0.48
55:1:1488:U:O2'	55:1:1489:A:OP1	2.31	0.48
56:2:848:A:H2'	56:2:849:A:C8	2.49	0.48
56:2:987:G:OP1	56:2:988:A:N6	2.47	0.48
56:2:1394:C:H2'	56:2:1395:A:C8	2.49	0.48
10:F:102:LEU:HD13	10:F:122:LEU:HD21	1.95	0.48
18:O:4:THR:OG1	18:O:7:GLU:OE2	2.31	0.48
32:c:6:ASN:CG	32:c:7:ARG:N	2.72	0.48
55:1:1943:A:C2	55:1:1950:U:H5	2.25	0.48
55:1:2535:U:H2'	55:1:2536:C:H6	1.79	0.48
12:H:50:LYS:HA	12:H:53:GLU:OE1	2.14	0.48
55:1:915:C:H42	55:1:923:C:N4	2.11	0.48
55:1:1029:A:H2'	55:1:1030:A:C8	2.48	0.48
55:1:2535:U:H2'	55:1:2536:C:C6	2.48	0.48
56:2:443:A:H2'	56:2:444:G:O4'	2.13	0.48
9:E:114:ILE:HD12	9:E:115:ARG:H	1.78	0.47
10:F:4:ILE:HD11	55:1:2749:G:H4'	1.96	0.47
15:L:48:LYS:HB2	15:L:51:PHE:HB2	1.95	0.47
29:Z:56:VAL:HG13	29:Z:56:VAL:O	2.14	0.47
40:l:116:LYS:HE3	56:2:1278:A:H1'	1.95	0.47
42:n:26:ILE:HD11	42:n:47:LEU:HD11	1.95	0.47
47:s:12:LYS:O	47:s:16:THR:HG22	2.14	0.47
55:1:1786:U:H5	55:1:1791:A:N7	2.12	0.47
15:L:100:ASP:O	15:L:104:ASN:ND2	2.34	0.47
41:m:80:ILE:HD13	41:m:127:VAL:CG1	2.44	0.47
55:1:327:U:H2'	55:1:328:G:O4'	2.14	0.47
11:G:112:PHE:N	11:G:112:PHE:HD2	2.13	0.47
13:J:146:ASN:ND2	13:J:148:ASN:OD1	2.48	0.47
44:p:19:ALA:HA	44:p:32:LEU:HA	1.96	0.47
46:r:82:ASP:OD1	46:r:82:ASP:N	2.47	0.47
46:r:103:LYS:HD2	56:2:1208:C:N4	2.29	0.47
52:x:1:MET:HA	52:x:10:PHE:HB2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:1:925:C:C3'	55:1:926:A:C8	2.98	0.47
55:1:2304:U:H5'	55:1:2305:G:H2'	1.97	0.47
56:2:489:G:H2'	56:2:490:A:H8	1.79	0.47
56:2:987:G:H1	56:2:1020:G:H1	1.58	0.47
56:2:1018:C:H2'	56:2:1019:A:C5	2.49	0.47
16:M:27:LEU:HD23	16:M:104:ILE:HD13	1.96	0.47
21:R:37:LYS:HD2	21:R:37:LYS:HA	1.73	0.47
44:p:109:ILE:HA	54:z:2:LEU:O	2.14	0.47
18:O:103:LYS:O	18:O:107:GLU:HG2	2.15	0.47
30:a:2:LYS:HB2	30:a:5:ILE:HD11	1.97	0.47
55:1:204:A:N3	55:1:219:U:O2'	2.43	0.47
55:1:1090:G:H2'	55:1:1091:U:C6	2.49	0.47
56:2:710:A:O2'	56:2:712:U:OP2	2.32	0.47
56:2:998:A:H2	56:2:1201:U:H1'	1.80	0.47
37:i:70:ARG:O	37:i:74:GLU:HG2	2.14	0.47
55:1:570:C:HO2'	55:1:571:G:P	2.37	0.47
55:1:886:G:H2'	55:1:887:A:C8	2.50	0.47
55:1:1240:G:OP2	55:1:1240:G:H8	1.98	0.47
55:1:2244:G:H2'	55:1:2245:A:C8	2.50	0.47
55:1:2848:A:H2'	55:1:2849:G:C8	2.49	0.47
56:2:173:G:O2'	56:2:174:U:H3'	2.15	0.47
5:A:19:G:N2	5:A:59:A:OP2	2.48	0.47
17:N:112:MET:O	17:N:112:MET:HE3	2.14	0.47
37:i:85:GLU:HG3	37:i:183:ARG:HB2	1.97	0.47
42:n:97:LYS:HB3	42:n:98:PRO:HD3	1.97	0.47
56:2:56:U:H2'	56:2:57:G:H8	1.80	0.47
56:2:377:G:H2'	56:2:378:U:C6	2.50	0.47
56:2:421:U:OP2	56:2:422:G:O2'	2.30	0.47
56:2:464:A:C5	56:2:465:G:C5	3.03	0.47
56:2:464:A:C6	56:2:465:G:C6	3.03	0.47
56:2:527:A:H2'	56:2:528:G:C8	2.49	0.47
56:2:1127:A:OP2	56:2:1127:A:H8	1.97	0.47
9:E:54:ASP:OD1	9:E:54:ASP:C	2.58	0.47
48:t:87:ARG:HA	48:t:87:ARG:NE	2.30	0.47
55:1:310:G:N1	55:1:371:A:N1	2.62	0.47
56:2:1072:U:O2'	56:2:1073:A:O5'	2.33	0.47
22:S:4:ARG:NH2	22:S:6:ARG:HG2	2.26	0.47
25:V:71:ASN:O	25:V:94:LEU:HB2	2.15	0.47
55:1:1158:A:H4'	55:1:1159:U:O5'	2.14	0.47
55:1:612:U:H2'	55:1:613:A:H8	1.79	0.47
55:1:1561:G:H2'	55:1:1573:A:C2	2.50	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:1:1896:A:H2'	55:1:1897:A:C8	2.50	0.47
55:1:2290:U:H2'	55:1:2291:C:C6	2.49	0.47
2:4:18:LYS:HD3	2:4:35:GLU:OE1	2.15	0.46
48:t:88:LYS:HA	48:t:88:LYS:HD3	1.58	0.46
52:x:75:SER:O	52:x:75:SER:OG	2.32	0.46
55:1:1477:A:H2'	55:1:1478:A:C8	2.50	0.46
56:2:375:A:H2'	56:2:376:A:C8	2.50	0.46
56:2:512:G:H2'	56:2:513:C:C6	2.51	0.46
7:C:61:THR:HG22	7:C:63:ALA:H	1.78	0.46
12:H:219:THR:O	12:H:223:ILE:CG1	2.55	0.46
26:W:15:GLU:OE1	55:1:2261:C:N4	2.48	0.46
52:x:38:SER:O	52:x:71:LEU:HD12	2.15	0.46
55:1:535:U:H4'	55:1:1263:G:H4'	1.98	0.46
56:2:125:G:O2'	56:2:126:C:H6	1.98	0.46
56:2:647:A:H2'	56:2:648:C:C6	2.50	0.46
5:A:10:G:N2	5:A:27:G:H1'	2.29	0.46
6:B:49:MET:HE3	6:B:52:ARG:HB3	1.96	0.46
12:H:154:ASP:OD2	12:H:155:MET:N	2.48	0.46
22:S:29:THR:O	22:S:121:ASN:ND2	2.42	0.46
27:X:22:MET:HB3	27:X:22:MET:HE3	1.79	0.46
55:1:388:U:C2	55:1:389:A:C8	3.04	0.46
36:h:23:TYR:HB2	43:o:95:VAL:O	2.15	0.46
49:u:95:THR:HG23	49:u:96:GLN:N	2.31	0.46
55:1:1381:A:H2'	55:1:1382:A:C8	2.51	0.46
55:1:1561:G:O2'	55:1:1562:A:O5'	2.29	0.46
56:2:316:U:H2'	56:2:317:G:O4'	2.15	0.46
56:2:435:G:H1	56:2:481:A:N6	2.13	0.46
56:2:463:G:C2	56:2:464:A:H1'	2.50	0.46
56:2:1106:U:H2'	56:2:1108:G:H21	1.80	0.46
20:Q:109:ILE:CG1	21:R:49:LEU:HD21	2.46	0.46
43:o:14:HIS:CD2	56:2:1134:A:H5'	2.50	0.46
56:2:128:U:H2'	56:2:129:U:C6	2.50	0.46
56:2:1295:C:H2'	56:2:1296:U:H6	1.80	0.46
11:G:37:THR:HG22	11:G:38:LEU:H	1.79	0.46
42:n:53:THR:O	42:n:54:GLU:OE1	2.34	0.46
42:n:107:ARG:HB3	56:2:1328:G:H5'	1.97	0.46
44:p:99:HIS:CD2	54:z:12:ILE:HB	2.51	0.46
56:2:527:A:H2'	56:2:528:G:H8	1.79	0.46
36:h:73:GLY:O	36:h:77:GLY:N	2.44	0.46
37:i:40:LYS:HB3	37:i:40:LYS:HE3	1.65	0.46
39:k:94:ASP:O	39:k:98:ILE:HG13	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:s:28:LEU:HD23	47:s:28:LEU:HA	1.82	0.46
54:z:18:ARG:HG3	54:z:18:ARG:NH1	2.31	0.46
55:1:1613:A:H3'	55:1:1614:A:H8	1.80	0.46
56:2:1031:G:HO2'	56:2:1032:C:P	2.38	0.46
56:2:1031:G:O2'	56:2:1032:C:OP1	2.27	0.46
1:3:21:G:H2'	1:3:22:G:C8	2.50	0.46
11:G:51:LEU:C	11:G:53:GLN:N	2.71	0.46
36:h:3:GLN:NE2	56:2:1173:A:OP2	2.49	0.46
40:l:66:ASP:N	40:l:66:ASP:OD1	2.48	0.46
49:u:76:TYR:HD2	49:u:77:LYS:CD	2.28	0.46
55:1:155:A:H2'	55:1:156:U:C6	2.51	0.46
55:1:635:A:H2'	55:1:636:C:C6	2.51	0.46
55:1:1816:A:H2'	55:1:1817:A:C8	2.51	0.46
55:1:2109:U:H2'	55:1:2110:A:H8	1.81	0.46
56:2:197:U:H2'	56:2:198:A:H8	1.80	0.46
9:E:113:ARG:NH2	9:E:146:TYR:OH	2.35	0.46
11:G:42:SER:O	11:G:44:LYS:N	2.49	0.46
17:N:114:GLU:HG2	17:N:115:LEU:N	2.31	0.46
37:i:135:LYS:O	37:i:138:ASP:OD1	2.33	0.46
56:2:256:A:H2'	56:2:257:C:C6	2.51	0.46
39:k:7:VAL:HG23	39:k:61:HIS:O	2.16	0.46
39:k:22:THR:OG1	39:k:84:ARG:NH2	2.48	0.46
55:1:1101:A:H3'	55:1:1103:C:OP2	2.15	0.46
55:1:1433:U:H2'	55:1:1434:A:C8	2.51	0.46
56:2:745:U:H2'	56:2:746:G:O4'	2.16	0.46
7:C:113:LYS:H	7:C:113:LYS:HG2	1.61	0.45
34:e:29:LYS:HB3	34:e:29:LYS:HE2	1.71	0.45
36:h:158:GLY:HA3	36:h:192:TYR:CE2	2.51	0.45
44:p:99:HIS:CG	54:z:12:ILE:HD13	2.51	0.45
56:2:436:U:O4	56:2:437:A:N6	2.49	0.45
13:J:24:ASP:OD1	13:J:25:ALA:N	2.48	0.45
16:M:85:MET:HE2	55:1:989:A:H61	1.80	0.45
36:h:75:ILE:HD12	36:h:75:ILE:H	1.81	0.45
36:h:78:LYS:HB3	36:h:78:LYS:HE3	1.76	0.45
37:i:102:MET:HG3	37:i:166:ILE:HD12	1.97	0.45
54:z:6:ILE:HD12	54:z:6:ILE:O	2.16	0.45
56:2:1161:A:H2'	56:2:1162:A:O4'	2.16	0.45
11:G:94:ASN:OD1	11:G:115:SER:HB2	2.16	0.45
22:S:32:ARG:HH2	55:1:1294:G:H5''	1.81	0.45
33:d:23:MET:HE3	33:d:23:MET:HB3	1.82	0.45
38:j:94:LYS:HE2	38:j:99:ARG:NH2	2.31	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:o:15:MET:SD	43:o:16:LEU:N	2.90	0.45
46:r:86:TYR:CZ	46:r:90:ARG:HD2	2.52	0.45
46:r:97:VAL:O	46:r:97:VAL:CG1	2.65	0.45
54:z:6:ILE:HG21	54:z:15:ALA:HB2	1.99	0.45
55:1:406:A:H61	55:1:416:C:H42	1.64	0.45
55:1:1190:U:C2	55:1:1191:A:C8	3.05	0.45
55:1:2209:U:H3	55:1:2219:G:H1	1.64	0.45
56:2:317:G:N1	56:2:320:A:OP2	2.44	0.45
1:3:51:G:H21	9:E:29:MET:HE1	1.81	0.45
7:C:57:GLU:OE1	7:C:58:LYS:N	2.49	0.45
10:F:88:LEU:O	10:F:131:ASN:HB3	2.16	0.45
11:G:130:LEU:HD22	11:G:130:LEU:H	1.81	0.45
25:V:102:MET:HG2	25:V:103:GLU:N	2.31	0.45
55:1:1513:G:H2'	55:1:1514:G:C8	2.52	0.45
7:C:81:GLU:OE2	55:1:2633:U:O2'	2.25	0.45
8:D:155:PHE:HB2	8:D:176:VAL:HG22	1.98	0.45
37:i:56:GLN:NE2	56:2:532:C:OP1	2.49	0.45
40:l:77:VAL:CG2	40:l:88:GLN:HB3	2.46	0.45
55:1:1106:C:H2'	55:1:1107:C:C6	2.52	0.45
11:G:9:VAL:HB	11:G:12:LEU:HB2	1.99	0.45
11:G:53:GLN:NE2	55:1:268:U:OP1	2.50	0.45
19:P:55:GLY:C	19:P:57:THR:H	2.22	0.45
27:X:69:LYS:NZ	27:X:69:LYS:HB3	2.30	0.45
55:1:324:U:H2'	55:1:325:A:H8	1.81	0.45
55:1:812:G:H5'	55:1:813:G:OP1	2.16	0.45
55:1:1113:U:H2'	55:1:1114:U:C6	2.52	0.45
2:4:25:SER:HB2	2:4:32:ILE:HD13	1.98	0.45
6:B:176:MET:HG2	6:B:180:GLU:O	2.16	0.45
6:B:181:THR:HG22	6:B:270:GLU:HB2	1.99	0.45
7:C:43:ASP:OD1	7:C:43:ASP:N	2.50	0.45
9:E:62:LYS:HD2	9:E:62:LYS:HA	1.86	0.45
12:H:56:GLU:O	12:H:60:LYS:HG3	2.16	0.45
42:n:22:GLY:O	42:n:58:ASN:HA	2.16	0.45
53:y:51:VAL:O	53:y:55:ILE:HG13	2.17	0.45
56:2:321:C:H1'	56:2:322:A:OP2	2.17	0.45
11:G:40:THR:HB	11:G:41:PRO:HD2	1.98	0.45
12:H:68:ILE:HD12	12:H:90:MET:HE3	1.99	0.45
19:P:30:PHE:HB2	19:P:83:GLN:O	2.17	0.45
38:j:93:GLY:HA3	38:j:149:ALA:HB2	1.98	0.45
40:l:152:ALA:HB3	44:p:54:LYS:HD2	1.98	0.45
43:o:53:SER:HB2	56:2:1041:U:O2'	2.17	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:2:1110:C:O2'	56:2:1125:G:N2	2.49	0.45
56:2:1506:C:H3'	56:2:1507:A:C8	2.50	0.45
53:y:35:LEU:HD12	53:y:35:LEU:O	2.16	0.45
55:1:1801:G:H2'	55:1:1802:C:C6	2.52	0.45
55:1:2078:A:H2'	55:1:2079:C:C6	2.51	0.45
46:r:39:ILE:HD12	46:r:39:ILE:N	2.32	0.44
55:1:1069:G:H2'	55:1:1070:U:C6	2.52	0.44
55:1:1124:C:H2'	55:1:1125:G:O4'	2.16	0.44
55:1:2833:A:H61	55:1:2846:A:H62	1.65	0.44
40:l:15:PRO:HA	42:n:44:TYR:CD1	2.52	0.44
47:s:32:ASP:O	47:s:32:ASP:OD2	2.34	0.44
51:w:90:MET:HG3	51:w:91:PRO:HD2	1.99	0.44
55:1:1004:A:H1'	55:1:1019:A:C2	2.52	0.44
56:2:292:G:H2'	56:2:293:A:C8	2.53	0.44
56:2:1068:A:H2'	56:2:1069:G:H8	1.82	0.44
36:h:133:ILE:HG21	36:h:167:PHE:CD1	2.53	0.44
42:n:39:THR:HG22	42:n:41:THR:HG22	1.98	0.44
55:1:1488:U:H4'	55:1:1489:A:OP2	2.18	0.44
56:2:197:U:H2'	56:2:198:A:C8	2.52	0.44
56:2:239:A:C2	56:2:275:A:C5	3.05	0.44
56:2:651:G:H2'	56:2:652:G:C8	2.52	0.44
56:2:987:G:H22	56:2:1020:G:N2	2.14	0.44
10:F:27:LYS:HE3	10:F:27:LYS:HB2	1.74	0.44
12:H:28:MET:HE1	12:H:194:PRO:HG3	1.99	0.44
12:H:121:MET:HE1	12:H:126:THR:HG1	1.78	0.44
36:h:81:GLN:CD	36:h:81:GLN:N	2.74	0.44
38:j:74:LYS:HE3	38:j:74:LYS:HB2	1.85	0.44
40:l:113:ARG:HB2	40:l:121:ARG:HD2	1.99	0.44
55:1:293:C:H2'	55:1:294:A:H8	1.81	0.44
55:1:913:G:N3	55:1:913:G:H2'	2.32	0.44
55:1:1101:A:H5'	55:1:1103:C:OP1	2.17	0.44
55:1:1501:U:C2	55:1:1502:A:C8	3.06	0.44
55:1:1619:C:H2'	55:1:1620:A:O4'	2.17	0.44
56:2:446:A:H2'	56:2:447:A:O4'	2.17	0.44
19:P:11:GLU:OE2	19:P:11:GLU:O	2.35	0.44
37:i:143:ARG:HH21	37:i:145:LYS:HE3	1.83	0.44
47:s:13:ARG:O	47:s:17:VAL:HG23	2.18	0.44
48:t:25:GLU:HG3	48:t:80:ILE:HD13	1.98	0.44
52:x:13:TYR:OH	52:x:14:LYS:NZ	2.46	0.44
54:z:58:LEU:HD23	54:z:58:LEU:H	1.82	0.44
55:1:308:A:H2'	55:1:309:U:C6	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:1:502:A:HO2'	55:1:503:A:P	2.41	0.44
55:1:1117:A:H2'	55:1:1118:A:C4	2.52	0.44
56:2:377:G:H2'	56:2:378:U:H6	1.83	0.44
10:F:127:GLU:CD	10:F:127:GLU:C	2.85	0.44
12:H:15:VAL:HB	12:H:203:ALA:HB1	1.99	0.44
38:j:52:VAL:CG1	38:j:53:GLY:N	2.80	0.44
40:l:79:SER:HA	40:l:88:GLN:OE1	2.17	0.44
54:z:8:ASP:OD1	54:z:8:ASP:N	2.50	0.44
55:1:1750:A:H2'	55:1:1751:A:O4'	2.16	0.44
56:2:178:A:H2'	56:2:179:U:C6	2.52	0.44
8:D:144:LYS:H	8:D:144:LYS:HG2	1.68	0.44
18:O:82:LEU:HD21	18:O:114:LEU:HD23	1.99	0.44
48:t:1:MET:HA	48:t:37:HIS:ND1	2.33	0.44
54:z:1:MET:C	54:z:2:LEU:HD23	2.41	0.44
55:1:324:U:H2'	55:1:325:A:C8	2.53	0.44
56:2:1139:A:H5''	56:2:1140:C:C6	2.52	0.44
56:2:1422:U:H2'	56:2:1423:G:O4'	2.17	0.44
9:E:69:VAL:HG22	9:E:70:ILE:H	1.83	0.44
40:l:96:ASP:OD2	40:l:96:ASP:C	2.60	0.44
42:n:55:ASN:HB3	42:n:59:PHE:CE1	2.45	0.44
55:1:438:C:H2'	55:1:439:A:H8	1.83	0.44
7:C:5:ILE:HD11	7:C:80:VAL:HG12	1.98	0.44
11:G:43:ALA:O	11:G:44:LYS:C	2.61	0.44
12:H:188:VAL:HG13	12:H:192:SER:HB2	2.00	0.44
36:h:41:TYR:OH	36:h:89:GLU:HG2	2.17	0.44
45:q:46:ASN:ND2	45:q:89:ASP:OD2	2.48	0.44
46:r:12:HIS:C	46:r:44:LYS:HZ1	2.25	0.44
46:r:93:ARG:NE	46:r:95:LEU:HG	2.32	0.44
53:y:61:LYS:HA	53:y:61:LYS:HD2	1.71	0.44
56:2:982:A:H61	56:2:1023:U:H3	1.65	0.44
8:D:123:ILE:HD13	8:D:193:LEU:HD11	2.00	0.43
44:p:115:PRO:HG2	54:z:35:ARG:HH12	1.82	0.43
56:2:408:C:H42	56:2:421:U:H3	1.65	0.43
56:2:1039:G:O2'	56:2:1040:U:OP1	2.32	0.43
8:D:148:LEU:HD12	8:D:153:SER:HB3	2.00	0.43
13:J:133:SER:O	13:J:133:SER:OG	2.34	0.43
17:N:73:LYS:O	17:N:77:THR:HG22	2.18	0.43
42:n:44:TYR:CE2	42:n:48:GLN:NE2	2.84	0.43
42:n:95:ILE:HD12	42:n:95:ILE:H	1.82	0.43
50:v:52:GLU:CD	50:v:52:GLU:N	2.74	0.43
56:2:982:A:N6	56:2:1023:U:H3	2.16	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:2:998:A:H2'	56:2:999:A:C8	2.53	0.43
12:H:101:MET:HB3	12:H:102:LEU:HD22	1.99	0.43
12:H:196:GLU:CD	12:H:196:GLU:N	2.76	0.43
21:R:6:GLU:C	21:R:6:GLU:OE2	2.61	0.43
30:a:20:ASN:ND2	30:a:54:SER:HB3	2.33	0.43
40:l:22:VAL:O	40:l:26:VAL:HG23	2.17	0.43
48:t:69:LEU:HD23	48:t:69:LEU:HA	1.82	0.43
55:1:931:U:H2'	55:1:932:U:H6	1.83	0.43
55:1:1464:U:H2'	55:1:1465:G:O4'	2.18	0.43
55:1:1476:G:H2'	55:1:1477:A:C8	2.53	0.43
55:1:1557:C:H2'	55:1:1558:U:H6	1.81	0.43
55:1:1572:C:H2'	55:1:1573:A:O4'	2.18	0.43
1:3:26:A:H2'	1:3:27:C:H6	1.84	0.43
5:A:67:C:H2'	5:A:68:C:C6	2.53	0.43
7:C:133:THR:O	7:C:133:THR:OG1	2.32	0.43
11:G:40:THR:HB	11:G:41:PRO:CD	2.49	0.43
18:O:36:LYS:C	18:O:37:GLU:OE1	2.61	0.43
18:O:89:ILE:HG12	18:O:114:LEU:HD12	1.99	0.43
38:j:59:SER:OG	38:j:60:LYS:N	2.50	0.43
55:1:604:C:H2'	55:1:605:U:C6	2.54	0.43
55:1:631:A:H2'	55:1:632:A:C8	2.54	0.43
55:1:1080:C:C2	55:1:1081:A:C8	3.06	0.43
55:1:2402:C:H2'	55:1:2403:G:O4'	2.18	0.43
56:2:125:G:O2'	56:2:126:C:C6	2.72	0.43
56:2:1139:A:H5''	56:2:1140:C:N1	2.33	0.43
56:2:1223:G:H2'	56:2:1224:G:H8	1.83	0.43
12:H:101:MET:HE2	12:H:101:MET:HB2	1.90	0.43
12:H:146:GLU:OE1	12:H:146:GLU:HA	2.19	0.43
29:Z:4:LEU:HA	29:Z:58:GLU:C	2.43	0.43
55:1:1477:A:H2'	55:1:1478:A:H8	1.82	0.43
32:c:48:PRO:O	32:c:51:LYS:HD3	2.18	0.43
37:i:122:VAL:C	37:i:123:ASN:OD1	2.61	0.43
42:n:57:ASN:OD1	42:n:57:ASN:N	2.51	0.43
55:1:912:G:H5''	55:1:913:G:OP2	2.18	0.43
55:1:2676:A:H2'	55:1:2677:A:C8	2.53	0.43
20:Q:91:ASN:OD1	21:R:11:GLN:NE2	2.52	0.43
22:S:94:ILE:HD12	22:S:125:ILE:HG12	2.00	0.43
48:t:71:ARG:HH11	48:t:71:ARG:C	2.27	0.43
54:z:11:ASN:ND2	54:z:13:ASP:HB3	2.34	0.43
55:1:855:U:O2'	55:1:2075:U:C2	2.71	0.43
55:1:931:U:H2'	55:1:932:U:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:1:967:A:H2'	55:1:968:A:H8	1.81	0.43
56:2:375:A:H2'	56:2:376:A:H8	1.83	0.43
56:2:404:A:H2'	56:2:405:U:C4'	2.48	0.43
56:2:987:G:O2'	56:2:988:A:OP2	2.33	0.43
56:2:1218:A:H2'	56:2:1219:C:C6	2.53	0.43
56:2:1429:A:H3'	56:2:1430:A:C8	2.53	0.43
15:L:108:SER:OG	15:L:109:LYS:N	2.51	0.43
36:h:126:ARG:HA	36:h:126:ARG:HD3	1.85	0.43
42:n:24:GLY:HA2	42:n:59:PHE:O	2.19	0.43
55:1:603:C:H2'	55:1:604:C:C6	2.54	0.43
55:1:738:G:H2'	55:1:739:U:C6	2.54	0.43
55:1:1624:A:H2'	55:1:1625:A:C8	2.53	0.43
40:l:42:PHE:O	40:l:46:ILE:HG22	2.19	0.43
40:l:59:THR:HG23	40:l:62:GLU:H	1.82	0.43
43:o:73:ILE:HD12	43:o:73:ILE:O	2.18	0.43
47:s:32:ASP:OD2	47:s:35:GLY:N	2.45	0.43
55:1:438:C:H2'	55:1:439:A:C8	2.54	0.43
55:1:731:U:H2'	55:1:732:G:O4'	2.19	0.43
55:1:2195:U:H2'	55:1:2196:C:C6	2.53	0.43
55:1:2289:U:OP1	55:1:2378:U:O2'	2.37	0.43
55:1:2306:G:N3	55:1:2306:G:H2'	2.33	0.43
56:2:995:U:H2'	56:2:996:G:H8	1.83	0.43
25:V:128:LEU:HD12	25:V:128:LEU:HA	1.84	0.43
35:f:37:GLN:O	35:f:37:GLN:HG3	2.19	0.43
41:m:97:ILE:HD13	41:m:104:ALA:HB2	2.00	0.43
48:t:71:ARG:NH1	48:t:71:ARG:CA	2.80	0.43
55:1:1604:A:H2'	55:1:1605:A:C8	2.54	0.43
55:1:2040:A:O2'	55:1:2042:G:OP2	2.31	0.43
55:1:2279:C:O2'	55:1:2280:U:H5'	2.19	0.43
1:3:16:G:H1	1:3:62:U:H3	1.66	0.42
12:H:76:GLN:OE1	12:H:76:GLN:N	2.45	0.42
22:S:108:ALA:HB3	22:S:112:ARG:HG3	2.00	0.42
39:k:38:VAL:HB	39:k:64:GLU:O	2.19	0.42
44:p:95:ILE:HD12	44:p:95:ILE:O	2.18	0.42
45:q:115:SER:O	56:2:35:G:O2'	2.35	0.42
47:s:32:ASP:OD2	47:s:32:ASP:C	2.62	0.42
55:1:611:U:H2'	55:1:612:U:C6	2.54	0.42
7:C:4:LEU:HA	7:C:4:LEU:HD12	1.83	0.42
55:1:151:A:H2'	55:1:152:C:H6	1.85	0.42
55:1:317:C:H2'	55:1:318:G:C8	2.55	0.42
55:1:630:U:C5	55:1:647:G:C5	3.07	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:1:1476:G:H2'	55:1:1477:A:H8	1.83	0.42
55:1:2201:G:H2'	55:1:2202:C:C6	2.54	0.42
55:1:2730:G:H5''	55:1:2731:A:C8	2.54	0.42
56:2:451:U:C2	56:2:464:A:C6	3.07	0.42
56:2:985:C:H2'	56:2:986:U:N3	2.34	0.42
6:B:175:LYS:HE3	6:B:175:LYS:HB3	1.66	0.42
30:a:20:ASN:OD1	30:a:22:ASP:OD1	2.37	0.42
48:t:73:ASP:OD2	48:t:73:ASP:C	2.62	0.42
49:u:54:ASP:O	49:u:57:VAL:HG12	2.19	0.42
55:1:153:C:HO2'	55:1:154:G:C5'	2.32	0.42
55:1:925:C:C3'	55:1:926:A:H8	2.30	0.42
56:2:56:U:H2'	56:2:57:G:C8	2.54	0.42
56:2:178:A:H2'	56:2:179:U:H6	1.85	0.42
56:2:262:U:H2'	56:2:263:A:C8	2.54	0.42
13:J:147:LEU:HD23	13:J:147:LEU:HA	1.86	0.42
28:Y:6:ILE:H	28:Y:6:ILE:HG12	1.68	0.42
32:c:32:LYS:HB3	32:c:32:LYS:HE2	1.78	0.42
41:m:9:TYR:HD2	41:m:10:LEU:HD23	1.84	0.42
46:r:12:HIS:C	46:r:44:LYS:NZ	2.78	0.42
55:1:151:A:H2'	55:1:152:C:C6	2.54	0.42
55:1:1088:A:H2'	55:1:1089:U:O4'	2.19	0.42
55:1:1234:A:N6	55:1:1268:G:H22	2.14	0.42
56:2:451:U:H2'	56:2:452:C:C6	2.55	0.42
56:2:1068:A:H2'	56:2:1069:G:C8	2.54	0.42
56:2:1179:A:O2'	56:2:1180:A:OP1	2.35	0.42
56:2:1280:A:H2'	56:2:1280:A:N3	2.34	0.42
56:2:1351:C:H2'	56:2:1352:G:C8	2.54	0.42
16:M:130:LYS:HE3	16:M:130:LYS:HB2	1.73	0.42
36:h:41:TYR:C	36:h:41:TYR:CD2	2.97	0.42
48:t:88:LYS:HZ3	55:1:742:U:P	2.35	0.42
51:w:50:PHE:O	51:w:53:LYS:HG2	2.19	0.42
55:1:1009:A:N3	55:1:2044:C:O2'	2.50	0.42
55:1:2298:U:H2'	55:1:2299:A:H8	1.85	0.42
55:1:2377:G:H2'	55:1:2378:U:C6	2.54	0.42
56:2:159:A:H2'	56:2:160:U:O4'	2.19	0.42
56:2:1142:G:C2	56:2:1143:C:C6	3.07	0.42
9:E:115:ARG:HG3	9:E:115:ARG:HH11	1.83	0.42
38:j:52:VAL:HG21	38:j:124:VAL:HB	2.01	0.42
42:n:69:GLY:O	42:n:73:GLN:HG3	2.19	0.42
55:1:960:G:OP2	55:1:960:G:N2	2.44	0.42
55:1:1125:G:N2	55:1:1131:G:O6	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:1:1624:A:H2'	55:1:1625:A:H8	1.84	0.42
7:C:16:ASP:OD2	7:C:18:ASN:N	2.48	0.42
56:2:184:C:H2'	56:2:185:G:C8	2.55	0.42
56:2:751:A:H2'	56:2:752:C:C6	2.54	0.42
16:M:48:GLN:OE1	16:M:128:PRO:HD3	2.19	0.42
29:Z:54:VAL:HG22	29:Z:55:SER:N	2.35	0.42
31:b:31:PRO:O	31:b:32:ILE:HD12	2.20	0.42
55:1:953:G:H2'	55:1:954:U:C6	2.55	0.42
56:2:243:A:H4'	56:2:244:G:O5'	2.19	0.42
56:2:650:G:C2'	56:2:651:G:H5'	2.49	0.42
6:B:111:LYS:HB3	6:B:111:LYS:HE3	1.78	0.42
29:Z:6:VAL:CG1	29:Z:54:VAL:CG2	2.98	0.42
43:o:15:MET:HE2	43:o:15:MET:O	2.20	0.42
55:1:2530:G:N2	55:1:2661:G:O2'	2.52	0.42
55:1:2589:C:H2'	55:1:2590:G:C8	2.54	0.42
12:H:101:MET:HA	12:H:108:ILE:HG13	2.02	0.42
37:i:139:LYS:NZ	37:i:139:LYS:HB3	2.35	0.42
42:n:111:ARG:HG2	42:n:112:LYS:N	2.33	0.42
55:1:927:C:H2'	55:1:928:C:C6	2.55	0.42
55:1:1943:A:H2	55:1:1950:U:C5	2.26	0.42
56:2:127:C:O2'	56:2:128:U:O5'	2.36	0.42
22:S:4:ARG:HD2	55:1:1262:U:OP2	2.20	0.41
27:X:69:LYS:O	27:X:72:GLN:NE2	2.54	0.41
37:i:126:VAL:HG21	37:i:143:ARG:NH1	2.35	0.41
43:o:15:MET:SD	43:o:15:MET:C	3.03	0.41
44:p:48:MET:HA	44:p:48:MET:CE	2.43	0.41
49:u:51:LEU:HD12	49:u:52:ASN:H	1.85	0.41
55:1:155:A:O2'	55:1:156:U:P	2.78	0.41
55:1:613:A:H2'	55:1:614:A:H8	1.85	0.41
55:1:876:A:H2'	55:1:877:A:O4'	2.20	0.41
55:1:2110:A:H2'	55:1:2111:A:H8	1.85	0.41
55:1:2112:A:H2'	55:1:2113:U:C6	2.55	0.41
7:C:20:LYS:HB3	7:C:20:LYS:HE2	1.60	0.41
9:E:4:THR:HB	9:E:5:PRO:HD3	2.01	0.41
9:E:7:LEU:HD13	9:E:103:PHE:HD2	1.85	0.41
9:E:106:LEU:HD12	9:E:110:ALA:HB3	2.02	0.41
10:F:48:GLN:OE1	10:F:48:GLN:N	2.53	0.41
12:H:171:HIS:CE1	12:H:172:ILE:HG12	2.55	0.41
13:J:104:LEU:HD23	13:J:104:LEU:HA	1.86	0.41
35:f:19:ARG:NE	55:1:2754:U:OP2	2.37	0.41
39:k:46:LYS:HB3	39:k:46:LYS:HE3	1.82	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:2:891:A:H2'	56:2:892:A:H8	1.85	0.41
11:G:138:LEU:HD23	11:G:138:LEU:O	2.20	0.41
12:H:219:THR:HA	12:H:222:VAL:HG12	2.02	0.41
23:T:32:ASN:OD1	23:T:35:GLN:NE2	2.40	0.41
30:a:16:LYS:HG3	30:a:23:VAL:HG22	2.02	0.41
55:1:1561:G:H8	55:1:1561:G:OP2	2.04	0.41
55:1:1587:C:H2'	55:1:1588:C:O4'	2.19	0.41
55:1:2217:C:HO2'	55:1:2218:G:P	2.42	0.41
2:4:24:LYS:HE2	2:4:24:LYS:HB3	1.72	0.41
6:B:30:GLU:HG2	6:B:33:LEU:HD12	2.02	0.41
12:H:146:GLU:OE1	12:H:146:GLU:CA	2.68	0.41
25:V:62:ILE:O	25:V:69:SER:HA	2.21	0.41
28:Y:57:LEU:HD12	28:Y:57:LEU:HA	1.88	0.41
29:Z:11:SER:OG	29:Z:13:ILE:HG12	2.20	0.41
34:e:32:ILE:HG22	34:e:32:ILE:O	2.20	0.41
36:h:182:ASP:OD1	36:h:182:ASP:C	2.62	0.41
56:2:980:G:H2'	56:2:981:C:C6	2.55	0.41
56:2:1102:U:H2'	56:2:1103:U:H6	1.84	0.41
16:M:13:GLN:HG2	55:1:940:A:N7	2.36	0.41
29:Z:40:ASN:OD1	29:Z:43:ILE:HG23	2.21	0.41
42:n:26:ILE:CD1	42:n:47:LEU:HD11	2.50	0.41
42:n:39:THR:CG2	42:n:41:THR:HG22	2.50	0.41
48:t:63:ARG:HH12	48:t:87:ARG:HH22	1.68	0.41
52:x:1:MET:O	56:2:1299:A:H5''	2.19	0.41
54:z:45:LYS:HE3	54:z:45:LYS:HB2	1.83	0.41
55:1:2552:U:H2'	55:1:2553:U:C6	2.56	0.41
55:1:2845:C:H2'	55:1:2846:A:C2	2.55	0.41
56:2:328:C:H2'	56:2:329:A:H8	1.86	0.41
56:2:878:A:H2'	56:2:879:A:C8	2.56	0.41
56:2:1126:G:H8	56:2:1126:G:P	2.42	0.41
11:G:51:LEU:O	11:G:52:LYS:C	2.62	0.41
16:M:47:ARG:H	16:M:47:ARG:HG3	1.62	0.41
36:h:155:ARG:NH1	56:2:1036:A:N3	2.69	0.41
45:q:44:LYS:N	45:q:44:LYS:HD2	2.35	0.41
52:x:6:LYS:HE2	52:x:6:LYS:HB2	1.77	0.41
53:y:8:LEU:HD23	53:y:11:ILE:HD12	2.03	0.41
55:1:926:A:N3	55:1:926:A:H2'	2.35	0.41
56:2:2:C:O2'	56:2:3:G:OP1	2.39	0.41
56:2:110:A:H4'	56:2:111:C:OP1	2.21	0.41
56:2:1437:G:H2'	56:2:1438:C:H6	1.86	0.41
11:G:24:GLY:O	11:G:28:ASN:HB2	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:G:125:ASN:OD1	11:G:125:ASN:N	2.53	0.41
12:H:121:MET:SD	12:H:121:MET:C	3.04	0.41
12:H:179:LYS:HE3	12:H:179:LYS:HB3	1.92	0.41
17:N:106:ASP:OD1	17:N:106:ASP:N	2.51	0.41
37:i:75:LYS:HE2	37:i:75:LYS:HB2	1.92	0.41
40:l:77:VAL:HG21	40:l:88:GLN:HB3	2.01	0.41
51:w:90:MET:HE2	51:w:90:MET:HB2	1.99	0.41
54:z:25:LYS:HB3	54:z:25:LYS:HE3	1.82	0.41
55:1:1697:U:O2'	55:1:2684:G:H4'	2.21	0.41
55:1:1716:G:H2'	55:1:1717:A:C8	2.56	0.41
56:2:488:G:H2'	56:2:489:G:C8	2.56	0.41
56:2:878:A:H2'	56:2:879:A:H8	1.85	0.41
6:B:211:THR:HG22	6:B:216:ARG:HB2	2.03	0.41
12:H:51:ILE:O	12:H:55:ASN:ND2	2.54	0.41
12:H:216:SER:O	12:H:220:THR:HG23	2.20	0.41
43:o:7:ILE:HD12	43:o:7:ILE:N	2.36	0.41
44:p:33:THR:HG23	44:p:34:ASN:O	2.20	0.41
45:q:46:ASN:HD22	45:q:89:ASP:CG	2.29	0.41
49:u:96:GLN:N	49:u:96:GLN:OE1	2.35	0.41
55:1:269:A:H2'	55:1:270:C:C6	2.55	0.41
55:1:1111:C:C2	55:1:1120:A:C6	3.08	0.41
55:1:2453:G:H2'	55:1:2454:C:C6	2.56	0.41
55:1:2745:G:O6	55:1:2753:A:H5''	2.21	0.41
1:3:42:A:C4	1:3:43:A:C8	3.09	0.41
6:B:51:MET:HE3	6:B:51:MET:HB3	1.92	0.41
13:J:8:THR:HG21	20:Q:61:TRP:NE1	2.22	0.41
14:K:48:PRO:HB3	56:2:1404:G:H5'	2.01	0.41
18:O:92:ASP:OD2	18:O:92:ASP:C	2.62	0.41
19:P:90:LYS:HZ3	19:P:90:LYS:HG3	1.80	0.41
20:Q:82:LYS:HB3	20:Q:113:VAL:HG22	2.02	0.41
25:V:98:LYS:HA	25:V:98:LYS:HE2	2.02	0.41
36:h:187:GLU:CD	36:h:194:ARG:HE	2.29	0.41
37:i:126:VAL:HG21	37:i:143:ARG:HH11	1.86	0.41
38:j:31:THR:HG23	38:j:34:GLY:H	1.86	0.41
40:l:73:PRO:HG2	40:l:101:MET:CE	2.51	0.41
44:p:81:LYS:HA	44:p:81:LYS:HD2	1.81	0.41
54:z:19:TYR:CD2	54:z:19:TYR:C	2.99	0.41
55:1:666:U:H2'	55:1:667:C:C6	2.56	0.41
55:1:881:A:H2'	55:1:882:U:C6	2.56	0.41
55:1:921:C:H3'	55:1:922:G:H8	1.85	0.41
55:1:1086:G:H3'	55:1:1087:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:1:1087:G:H4'	55:1:1118:A:C8	2.56	0.41
55:1:1199:G:H2'	55:1:1200:C:C6	2.56	0.41
56:2:21:G:H2'	56:2:22:G:C8	2.56	0.41
56:2:665:U:H3	56:2:701:G:H22	1.68	0.41
56:2:683:A:H2'	56:2:684:A:C8	2.56	0.41
56:2:767:C:H2'	56:2:768:G:O4'	2.20	0.41
56:2:1267:U:HO2'	56:2:1268:A:P	2.42	0.41
16:M:120:LEU:HD12	16:M:133:PHE:HE1	1.85	0.41
40:l:34:LYS:NZ	56:2:1271:G:OP1	2.54	0.41
52:x:3:ARG:HB3	52:x:3:ARG:NH1	2.36	0.41
52:x:5:LEU:HD12	52:x:5:LEU:HA	1.86	0.41
55:1:923:C:O2'	55:1:924:C:H5'	2.21	0.41
55:1:1592:G:H2'	55:1:1593:G:O4'	2.21	0.41
56:2:919:C:C2	56:2:920:A:C8	3.09	0.41
5:A:22:A:H61	5:A:47:A:H2'	1.86	0.40
9:E:67:LYS:HG3	9:E:68:ALA:N	2.36	0.40
17:N:24:MET:HE2	17:N:36:THR:HG21	2.02	0.40
32:c:45:LYS:NZ	55:1:2345:C:OP1	2.45	0.40
47:s:39:LEU:HD13	47:s:39:LEU:HA	1.93	0.40
51:w:53:LYS:HE2	51:w:53:LYS:HB3	1.66	0.40
7:C:54:ASP:OD1	7:C:76:LYS:NZ	2.40	0.40
9:E:7:LEU:HD13	9:E:103:PHE:CD2	2.57	0.40
11:G:38:LEU:HD23	11:G:38:LEU:HA	1.67	0.40
15:L:86:LEU:HD23	15:L:86:LEU:HA	1.88	0.40
24:U:15:ILE:HD11	24:U:81:THR:HG21	2.03	0.40
46:r:75:MET:O	46:r:75:MET:HE3	2.21	0.40
48:t:88:LYS:HZ2	55:1:742:U:P	2.34	0.40
55:1:27:A:O2'	55:1:28:A:O5'	2.35	0.40
55:1:1561:G:H1'	55:1:1574:A:H62	1.86	0.40
55:1:2111:A:C6	55:1:2112:A:C6	3.09	0.40
55:1:2696:U:H2'	55:1:2697:C:C6	2.56	0.40
56:2:488:G:H2'	56:2:489:G:H8	1.85	0.40
56:2:1106:U:H2'	56:2:1108:G:N2	2.35	0.40
56:2:1386:C:H2'	56:2:1387:G:C8	2.56	0.40
8:D:188:LEU:HD23	8:D:188:LEU:HA	1.88	0.40
9:E:109:ILE:HG21	9:E:142:PRO:HG3	2.03	0.40
11:G:129:ARG:HH21	11:G:132:ARG:HB2	1.87	0.40
30:a:47:LYS:HD2	30:a:47:LYS:HA	1.91	0.40
31:b:33:THR:HG21	31:b:45:HIS:CD2	2.54	0.40
39:k:10:LEU:HB2	39:k:59:PHE:HB2	2.04	0.40
40:l:62:GLU:O	40:l:66:ASP:OD1	2.38	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:o:66:VAL:HG22	47:s:84:VAL:HG22	2.03	0.40
46:r:95:LEU:C	46:r:109:ARG:HH11	2.29	0.40
55:1:2110:A:H2'	55:1:2111:A:C8	2.57	0.40
56:2:725:U:H2'	56:2:726:A:C8	2.57	0.40
56:2:960:A:C2	56:2:1205:C:H2'	2.57	0.40
6:B:19:ASN:OD1	6:B:20:GLY:N	2.55	0.40
6:B:207:LYS:HE3	55:1:757:G:C8	2.57	0.40
7:C:196:HIS:ND1	7:C:197:LYS:O	2.50	0.40
26:W:19:LYS:HD3	26:W:19:LYS:HA	1.95	0.40
34:e:63:ARG:HD3	34:e:63:ARG:HA	1.89	0.40
39:k:94:ASP:OD1	39:k:96:HIS:N	2.55	0.40
41:m:79:ARG:NH2	41:m:81:SER:O	2.53	0.40
55:1:570:C:O2'	55:1:571:G:O5'	2.27	0.40
55:1:894:G:H2'	55:1:895:C:H6	1.86	0.40
55:1:1096:U:H3	55:1:1104:A:N6	2.19	0.40
55:1:1570:G:O2'	55:1:1571:A:P	2.80	0.40
12:H:61:ILE:HD12	12:H:61:ILE:HA	1.87	0.40
12:H:224:GLU:OE2	12:H:224:GLU:N	2.49	0.40
14:K:19:VAL:HB	14:K:41:VAL:HB	2.03	0.40
14:K:113:LYS:O	14:K:117:LEU:HD23	2.21	0.40
36:h:41:TYR:HD2	36:h:41:TYR:O	2.05	0.40
44:p:114:MET:HE2	44:p:114:MET:HB2	1.77	0.40
50:v:63:ARG:HH21	50:v:82:LEU:HD21	1.87	0.40
55:1:255:A:OP2	55:1:283:G:N1	2.41	0.40
55:1:928:C:H2'	55:1:929:A:O4'	2.21	0.40
55:1:1128:A:H2'	55:1:1129:C:O4'	2.21	0.40
55:1:2866:A:H2'	55:1:2867:U:O4'	2.22	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

In the following table, the Percentiles column shows the percent Ramachandran outliers of the chain as a percentile score with respect to all PDB entries followed by that with respect to all EM entries.

The Analysed column shows the number of residues for which the backbone conformation was analysed, and the total number of residues.

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
2	4	34/50 (68%)	32 (94%)	2 (6%)	0	100	100
3	5	25/30 (83%)	25 (100%)	0	0	100	100
6	B	269/274 (98%)	251 (93%)	17 (6%)	1 (0%)	30	55
7	C	202/205 (98%)	185 (92%)	17 (8%)	0	100	100
8	D	204/209 (98%)	195 (96%)	9 (4%)	0	100	100
9	E	177/183 (97%)	167 (94%)	10 (6%)	0	100	100
10	F	175/180 (97%)	169 (97%)	6 (3%)	0	100	100
11	G	116/146 (80%)	110 (95%)	6 (5%)	0	100	100
12	H	217/254 (85%)	209 (96%)	8 (4%)	0	100	100
13	J	148/151 (98%)	129 (87%)	19 (13%)	0	100	100
14	K	119/122 (98%)	112 (94%)	7 (6%)	0	100	100
15	L	148/150 (99%)	134 (90%)	14 (10%)	0	100	100
16	M	137/141 (97%)	128 (93%)	9 (7%)	0	100	100
17	N	123/163 (76%)	118 (96%)	5 (4%)	0	100	100
18	O	113/116 (97%)	107 (95%)	6 (5%)	0	100	100
19	P	110/116 (95%)	102 (93%)	8 (7%)	0	100	100
20	Q	111/114 (97%)	106 (96%)	5 (4%)	0	100	100
21	R	102/147 (69%)	90 (88%)	12 (12%)	0	100	100
22	S	126/137 (92%)	123 (98%)	3 (2%)	0	100	100
23	T	81/96 (84%)	76 (94%)	5 (6%)	0	100	100
24	U	88/104 (85%)	81 (92%)	7 (8%)	0	100	100
25	V	120/203 (59%)	117 (98%)	3 (2%)	0	100	100
26	W	76/86 (88%)	73 (96%)	3 (4%)	0	100	100
27	X	74/78 (95%)	71 (96%)	3 (4%)	0	100	100
28	Y	57/63 (90%)	54 (95%)	3 (5%)	0	100	100
29	Z	54/60 (90%)	50 (93%)	4 (7%)	0	100	100
30	a	56/84 (67%)	52 (93%)	4 (7%)	0	100	100
31	b	57/64 (89%)	52 (91%)	5 (9%)	0	100	100
32	c	52/60 (87%)	50 (96%)	2 (4%)	0	100	100
33	d	49/53 (92%)	49 (100%)	0	0	100	100
34	e	62/65 (95%)	53 (86%)	9 (14%)	0	100	100
35	f	36/38 (95%)	35 (97%)	1 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
36	h	213/252 (84%)	200 (94%)	12 (6%)	1 (0%)	25	49
37	i	198/201 (98%)	192 (97%)	6 (3%)	0	100	100
38	j	170/173 (98%)	161 (95%)	9 (5%)	0	100	100
39	k	105/113 (93%)	102 (97%)	3 (3%)	0	100	100
40	l	151/158 (96%)	146 (97%)	5 (3%)	0	100	100
41	m	129/132 (98%)	125 (97%)	4 (3%)	0	100	100
42	n	123/128 (96%)	118 (96%)	5 (4%)	0	100	100
43	o	96/101 (95%)	91 (95%)	5 (5%)	0	100	100
44	p	115/127 (91%)	109 (95%)	6 (5%)	0	100	100
45	q	119/127 (94%)	111 (93%)	8 (7%)	0	100	100
46	r	115/124 (93%)	107 (93%)	8 (7%)	0	100	100
47	s	86/89 (97%)	79 (92%)	7 (8%)	0	100	100
48	t	86/88 (98%)	85 (99%)	1 (1%)	0	100	100
49	u	107/188 (57%)	103 (96%)	4 (4%)	0	100	100
50	v	78/86 (91%)	74 (95%)	4 (5%)	0	100	100
51	w	63/98 (64%)	62 (98%)	1 (2%)	0	100	100
52	x	81/92 (88%)	78 (96%)	3 (4%)	0	100	100
53	y	77/83 (93%)	75 (97%)	2 (3%)	0	100	100
54	z	62/64 (97%)	61 (98%)	1 (2%)	0	100	100
All	All	5692/6366 (89%)	5384 (95%)	306 (5%)	2 (0%)	100	100

All (2) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
36	h	72	PRO
6	B	136	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	
2	4	30/44 (68%)	30 (100%)	0	100	100
3	5	23/26 (88%)	23 (100%)	0	100	100
6	B	215/225 (96%)	214 (100%)	1 (0%)	86	95
7	C	156/162 (96%)	156 (100%)	0	100	100
8	D	150/181 (83%)	150 (100%)	0	100	100
9	E	121/156 (78%)	120 (99%)	1 (1%)	79	91
10	F	121/148 (82%)	121 (100%)	0	100	100
11	G	79/118 (67%)	78 (99%)	1 (1%)	65	85
12	H	173/207 (84%)	171 (99%)	2 (1%)	67	86
13	J	115/128 (90%)	115 (100%)	0	100	100
14	K	89/100 (89%)	89 (100%)	0	100	100
15	L	93/115 (81%)	93 (100%)	0	100	100
16	M	102/116 (88%)	102 (100%)	0	100	100
17	N	101/131 (77%)	101 (100%)	0	100	100
18	O	79/90 (88%)	79 (100%)	0	100	100
19	P	78/98 (80%)	78 (100%)	0	100	100
20	Q	89/94 (95%)	89 (100%)	0	100	100
21	R	72/112 (64%)	72 (100%)	0	100	100
22	S	93/116 (80%)	93 (100%)	0	100	100
23	T	70/85 (82%)	69 (99%)	1 (1%)	62	84
24	U	68/89 (76%)	68 (100%)	0	100	100
25	V	81/163 (50%)	80 (99%)	1 (1%)	67	86
26	W	60/69 (87%)	60 (100%)	0	100	100
27	X	62/69 (90%)	62 (100%)	0	100	100
28	Y	36/55 (66%)	36 (100%)	0	100	100
29	Z	41/52 (79%)	41 (100%)	0	100	100
30	a	40/75 (53%)	40 (100%)	0	100	100
31	b	44/53 (83%)	44 (100%)	0	100	100
32	c	45/56 (80%)	45 (100%)	0	100	100
33	d	42/46 (91%)	42 (100%)	0	100	100
34	e	55/59 (93%)	54 (98%)	1 (2%)	54	80
35	f	31/34 (91%)	31 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
36	h	153/201 (76%)	153 (100%)	0	100	100
37	i	163/173 (94%)	163 (100%)	0	100	100
38	j	111/138 (80%)	111 (100%)	0	100	100
39	k	74/101 (73%)	72 (97%)	2 (3%)	40	69
40	l	114/136 (84%)	113 (99%)	1 (1%)	75	90
41	m	93/111 (84%)	93 (100%)	0	100	100
42	n	99/107 (92%)	98 (99%)	1 (1%)	73	89
43	o	72/94 (77%)	72 (100%)	0	100	100
44	p	80/102 (78%)	80 (100%)	0	100	100
45	q	97/107 (91%)	97 (100%)	0	100	100
46	r	87/100 (87%)	87 (100%)	0	100	100
47	s	61/73 (84%)	61 (100%)	0	100	100
48	t	66/79 (84%)	66 (100%)	0	100	100
49	u	68/136 (50%)	68 (100%)	0	100	100
50	v	71/81 (88%)	71 (100%)	0	100	100
51	w	52/87 (60%)	52 (100%)	0	100	100
52	x	67/78 (86%)	67 (100%)	0	100	100
53	y	65/72 (90%)	65 (100%)	0	100	100
54	z	56/56 (100%)	56 (100%)	0	100	100
All	All	4303/5304 (81%)	4291 (100%)	12 (0%)	90	97

All (12) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
6	B	103	TYR
9	E	180	PHE
11	G	38	LEU
12	H	24	TRP
12	H	196	GLU
23	T	70	ILE
25	V	10	GLU
34	e	13	ARG
39	k	3	HIS
39	k	79	PHE
40	l	31	TRP

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Mol	Chain	Res	Type
42	n	47	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (37) such sidechains are listed below:

Mol	Chain	Res	Type
7	C	21	ASN
7	C	49	GLN
7	C	109	GLN
7	C	169	ASN
7	C	185	ASN
8	D	49	HIS
8	D	161	ASN
9	E	130	ASN
10	F	64	HIS
11	G	53	GLN
12	H	89	ASN
13	J	68	ASN
13	J	89	GLN
13	J	117	ASN
13	J	146	ASN
14	K	4	GLN
16	M	65	GLN
18	O	35	ASN
19	P	42	GLN
21	R	11	GLN
24	U	19	HIS
31	b	45	HIS
34	e	31	HIS
34	e	51	HIS
35	f	30	ASN
35	f	35	GLN
36	h	122	GLN
37	i	200	ASN
38	j	152	GLN
40	l	74	HIS
42	n	73	GLN
42	n	116	GLN
44	p	117	ASN
45	q	61	ASN
46	r	100	GLN
48	t	45	ASN
50	v	6	ASN

5.3.3 RNA [i](#)

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	3	109/111 (98%)	14 (12%)	0
4	6	5/6 (83%)	1 (20%)	0
5	A	71/77 (92%)	21 (29%)	0
55	1	2746/2862 (95%)	432 (15%)	24 (0%)
56	2	1476/1520 (97%)	271 (18%)	26 (1%)
All	All	4407/4576 (96%)	739 (16%)	50 (1%)

All (739) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	3	10	U
1	3	11	A
1	3	38	C
1	3	39	C
1	3	53	U
1	3	54	A
1	3	60	G
1	3	63	U
1	3	64	G
1	3	84	U
1	3	85	U
1	3	91	A
1	3	101	G
1	3	107	U
4	6	1	A
5	A	5	G
5	A	6	G
5	A	7	G
5	A	9	G
5	A	15	G
5	A	20	G
5	A	21	U
5	A	22	A
5	A	31	G
5	A	44	A
5	A	48	U
5	A	49	C
5	A	53	G
5	A	54	G
5	A	55	U
5	A	59	A

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Mol	Chain	Res	Type
5	A	64	G
5	A	65	G
5	A	67	C
5	A	71	G
5	A	77	A
55	1	13	A
55	1	28	A
55	1	34	A
55	1	46	G
55	1	51	G
55	1	55	G
55	1	61	A
55	1	71	A
55	1	74	A
55	1	75	G
55	1	91	C
55	1	92	A
55	1	94	A
55	1	101	G
55	1	117	A
55	1	118	A
55	1	119	U
55	1	134	U
55	1	137	U
55	1	139	A
55	1	140	A
55	1	154	G
55	1	155	A
55	1	156	U
55	1	157	A
55	1	158	G
55	1	181	A
55	1	184	A
55	1	201	A
55	1	207	A
55	1	214	A
55	1	215	G
55	1	218	A
55	1	230	G
55	1	233	G
55	1	237	G
55	1	240	A

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Mol	Chain	Res	Type
55	1	252	C
55	1	268	U
55	1	269	A
55	1	271	G
55	1	272	G
55	1	284	U
55	1	286	G
55	1	288	A
55	1	314	A
55	1	315	A
55	1	322	G
55	1	332	A
55	1	350	G
55	1	351	A
55	1	371	A
55	1	372	A
55	1	388	U
55	1	395	A
55	1	396	G
55	1	410	G
55	1	411	U
55	1	412	G
55	1	420	G
55	1	429	C
55	1	430	G
55	1	435	G
55	1	436	A
55	1	448	G
55	1	468	C
55	1	481	A
55	1	485	C
55	1	491	G
55	1	499	U
55	1	503	A
55	1	505	G
55	1	526	A
55	1	529	A
55	1	530	G
55	1	532	U
55	1	533	C
55	1	534	C
55	1	536	G

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Mol	Chain	Res	Type
55	1	555	C
55	1	556	G
55	1	562	A
55	1	569	U
55	1	570	C
55	1	571	G
55	1	572	U
55	1	586	G
55	1	596	U
55	1	598	A
55	1	618	U
55	1	626	A
55	1	640	A
55	1	654	A
55	1	661	G
55	1	664	A
55	1	672	U
55	1	673	A
55	1	681	U
55	1	682	U
55	1	699	C
55	1	714	U
55	1	745	C
55	1	758	A
55	1	773	G
55	1	775	U
55	1	776	G
55	1	792	A
55	1	793	C
55	1	803	G
55	1	804	G
55	1	810	A
55	1	812	G
55	1	813	G
55	1	820	A
55	1	833	G
55	1	840	C
55	1	847	A
55	1	855	U
55	1	866	G
55	1	873	A
55	1	874	U

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Mol	Chain	Res	Type
55	1	875	A
55	1	877	A
55	1	886	G
55	1	888	G
55	1	889	G
55	1	896	U
55	1	898	C
55	1	907	U
55	1	910	G
55	1	911	G
55	1	912	G
55	1	913	G
55	1	914	G
55	1	915	C
55	1	917	U
55	1	918	C
55	1	919	A
55	1	920	C
55	1	924	C
55	1	926	A
55	1	927	C
55	1	930	A
55	1	940	A
55	1	942	C
55	1	961	U
55	1	970	A
55	1	975	G
55	1	987	U
55	1	990	G
55	1	1003	G
55	1	1014	C
55	1	1019	A
55	1	1020	C
55	1	1021	C
55	1	1024	C
55	1	1025	A
55	1	1038	A
55	1	1041	U
55	1	1042	A
55	1	1046	G
55	1	1077	A
55	1	1078	G

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Mol	Chain	Res	Type
55	1	1088	A
55	1	1092	U
55	1	1093	G
55	1	1098	G
55	1	1100	A
55	1	1101	A
55	1	1102	G
55	1	1103	C
55	1	1112	A
55	1	1113	U
55	1	1115	U
55	1	1119	G
55	1	1120	A
55	1	1126	U
55	1	1129	C
55	1	1130	A
55	1	1133	U
55	1	1141	C
55	1	1143	A
55	1	1144	G
55	1	1150	G
55	1	1159	U
55	1	1162	U
55	1	1164	A
55	1	1166	C
55	1	1170	C
55	1	1173	A
55	1	1202	A
55	1	1203	G
55	1	1213	G
55	1	1232	A
55	1	1240	G
55	1	1265	A
55	1	1266	C
55	1	1275	A
55	1	1281	A
55	1	1284	G
55	1	1294	G
55	1	1299	G
55	1	1300	A
55	1	1304	U
55	1	1328	A

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Mol	Chain	Res	Type
55	1	1334	U
55	1	1340	U
55	1	1353	C
55	1	1364	U
55	1	1380	U
55	1	1393	A
55	1	1396	G
55	1	1407	U
55	1	1412	A
55	1	1423	A
55	1	1424	U
55	1	1441	A
55	1	1442	C
55	1	1443	U
55	1	1444	G
55	1	1445	U
55	1	1446	G
55	1	1447	A
55	1	1454	G
55	1	1455	A
55	1	1456	C
55	1	1463	A
55	1	1466	A
55	1	1468	A
55	1	1482	A
55	1	1483	C
55	1	1489	A
55	1	1499	A
55	1	1505	U
55	1	1506	A
55	1	1511	U
55	1	1512	A
55	1	1514	G
55	1	1521	A
55	1	1524	A
55	1	1528	U
55	1	1535	G
55	1	1540	G
55	1	1553	A
55	1	1561	G
55	1	1562	A
55	1	1568	C

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Mol	Chain	Res	Type
55	1	1569	G
55	1	1570	G
55	1	1571	A
55	1	1574	A
55	1	1578	G
55	1	1579	A
55	1	1581	A
55	1	1582	G
55	1	1583	U
55	1	1584	G
55	1	1590	A
55	1	1591	A
55	1	1592	G
55	1	1593	G
55	1	1600	A
55	1	1603	A
55	1	1612	U
55	1	1613	A
55	1	1615	A
55	1	1616	C
55	1	1617	U
55	1	1618	U
55	1	1641	U
55	1	1642	A
55	1	1644	A
55	1	1668	A
55	1	1674	A
55	1	1680	C
55	1	1681	U
55	1	1682	C
55	1	1708	G
55	1	1709	C
55	1	1711	A
55	1	1748	G
55	1	1750	A
55	1	1756	G
55	1	1763	G
55	1	1765	G
55	1	1770	G
55	1	1771	G
55	1	1780	A
55	1	1807	C

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Mol	Chain	Res	Type
55	1	1808	A
55	1	1818	G
55	1	1823	A
55	1	1836	A
55	1	1840	C
55	1	1855	A
55	1	1875	C
55	1	1877	U
55	1	1879	G
55	1	1880	G
55	1	1912	C
55	1	1913	G
55	1	1920	A
55	1	1921	C
55	1	1934	A
55	1	1936	G
55	1	1937	G
55	1	1938	U
55	1	1944	A
55	1	1945	A
55	1	1946	U
55	1	1947	U
55	1	1962	U
55	1	1974	C
55	1	1977	A
55	1	1978	U
55	1	1979	G
55	1	1998	U
55	1	2000	U
55	1	2004	A
55	1	2029	U
55	1	2030	A
55	1	2038	A
55	1	2039	G
55	1	2040	A
55	1	2043	C
55	1	2046	U
55	1	2050	C
55	1	2062	C
55	1	2063	G
55	1	2067	A
55	1	2068	G

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Mol	Chain	Res	Type
55	1	2069	A
55	1	2076	G
55	1	2084	A
55	1	2100	G
55	1	2112	A
55	1	2195	U
55	1	2197	U
55	1	2198	G
55	1	2205	A
55	1	2206	A
55	1	2212	C
55	1	2213	U
55	1	2218	G
55	1	2221	G
55	1	2223	A
55	1	2236	G
55	1	2237	G
55	1	2251	G
55	1	2281	U
55	1	2285	A
55	1	2286	A
55	1	2292	C
55	1	2303	U
55	1	2306	G
55	1	2307	U
55	1	2308	A
55	1	2309	A
55	1	2310	C
55	1	2317	U
55	1	2318	A
55	1	2320	A
55	1	2325	A
55	1	2333	A
55	1	2343	G
55	1	2345	C
55	1	2359	G
55	1	2376	A
55	1	2377	G
55	1	2381	A
55	1	2383	C
55	1	2385	U
55	1	2400	U

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Mol	Chain	Res	Type
55	1	2401	C
55	1	2404	C
55	1	2417	U
55	1	2421	U
55	1	2423	A
55	1	2424	A
55	1	2427	G
55	1	2428	A
55	1	2439	G
55	1	2446	A
55	1	2472	U
55	1	2473	C
55	1	2474	A
55	1	2489	U
55	1	2496	C
55	1	2498	U
55	1	2500	G
55	1	2503	G
55	1	2516	A
55	1	2527	G
55	1	2552	U
55	1	2564	A
55	1	2565	G
55	1	2567	G
55	1	2571	C
55	1	2580	G
55	1	2600	A
55	1	2607	U
55	1	2608	C
55	1	2611	U
55	1	2613	U
55	1	2626	U
55	1	2627	U
55	1	2644	C
55	1	2659	G
55	1	2687	U
55	1	2712	G
55	1	2724	C
55	1	2731	A
55	1	2746	A
55	1	2763	A
55	1	2776	A

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Mol	Chain	Res	Type
55	1	2787	U
55	1	2788	U
55	1	2789	U
55	1	2790	A
55	1	2792	G
55	1	2794	A
55	1	2801	A
55	1	2802	A
55	1	2816	A
55	1	2846	A
55	1	2847	U
55	1	2849	G
55	1	2853	A
55	1	2860	C
55	1	2864	U
55	1	2866	A
55	1	2867	U
56	2	0	U
56	2	3	G
56	2	4	A
56	2	9	G
56	2	29	A
56	2	32	A
56	2	39	G
56	2	47	C
56	2	48	U
56	2	51	A
56	2	61	G
56	2	64	G
56	2	69	G
56	2	72	G
56	2	110	A
56	2	111	C
56	2	126	C
56	2	128	U
56	2	136	A
56	2	148	G
56	2	149	A
56	2	154	U
56	2	158	G
56	2	164	U
56	2	170	A

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Mol	Chain	Res	Type
56	2	175	A
56	2	182	A
56	2	187	C
56	2	188	A
56	2	190	C
56	2	191	A
56	2	192	C
56	2	193	U
56	2	194	U
56	2	198	A
56	2	204	A
56	2	207	C
56	2	211	A
56	2	237	U
56	2	238	U
56	2	240	G
56	2	243	A
56	2	244	G
56	2	251	A
56	2	259	G
56	2	260	C
56	2	273	C
56	2	282	G
56	2	299	A
56	2	314	A
56	2	320	A
56	2	321	C
56	2	322	A
56	2	325	G
56	2	332	C
56	2	340	G
56	2	344	G
56	2	345	C
56	2	347	G
56	2	360	U
56	2	361	U
56	2	362	G
56	2	365	C
56	2	377	G
56	2	390	A
56	2	399	G
56	2	403	G

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Mol	Chain	Res	Type
56	2	404	A
56	2	405	U
56	2	406	G
56	2	407	A
56	2	423	U
56	2	432	U
56	2	450	C
56	2	455	A
56	2	457	A
56	2	458	U
56	2	461	A
56	2	462	G
56	2	464	A
56	2	465	G
56	2	467	U
56	2	469	G
56	2	470	A
56	2	472	G
56	2	481	A
56	2	483	A
56	2	484	A
56	2	487	A
56	2	497	A
56	2	499	C
56	2	506	C
56	2	515	G
56	2	519	U
56	2	520	A
56	2	535	A
56	2	547	A
56	2	550	C
56	2	552	C
56	2	560	A
56	2	561	A
56	2	563	G
56	2	564	G
56	2	565	G
56	2	576	G
56	2	580	A
56	2	584	A
56	2	618	A
56	2	621	G

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Mol	Chain	Res	Type
56	2	638	A
56	2	641	U
56	2	651	G
56	2	653	A
56	2	654	A
56	2	655	G
56	2	675	A
56	2	682	A
56	2	691	G
56	2	709	A
56	2	710	A
56	2	711	U
56	2	719	G
56	2	735	U
56	2	736	U
56	2	743	G
56	2	765	A
56	2	769	A
56	2	775	A
56	2	781	U
56	2	782	A
56	2	797	G
56	2	803	A
56	2	805	C
56	2	807	A
56	2	816	A
56	2	827	G
56	2	829	A
56	2	830	A
56	2	831	G
56	2	855	A
56	2	856	A
56	2	890	A
56	2	897	A
56	2	898	A
56	2	909	G
56	2	910	G
56	2	917	C
56	2	918	A
56	2	943	U
56	2	944	U
56	2	949	G

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Mol	Chain	Res	Type
56	2	952	A
56	2	954	G
56	2	958	G
56	2	959	G
56	2	960	A
56	2	964	U
56	2	966	A
56	2	974	U
56	2	975	U
56	2	976	A
56	2	985	C
56	2	986	U
56	2	987	G
56	2	988	A
56	2	989	C
56	2	990	C
56	2	992	A
56	2	993	U
56	2	1003	G
56	2	1007	U
56	2	1019	A
56	2	1020	G
56	2	1021	U
56	2	1023	U
56	2	1024	A
56	2	1027	A
56	2	1032	C
56	2	1034	G
56	2	1040	U
56	2	1047	C
56	2	1073	A
56	2	1075	G
56	2	1076	U
56	2	1082	A
56	2	1089	G
56	2	1094	C
56	2	1105	G
56	2	1106	U
56	2	1108	G
56	2	1110	C
56	2	1115	A
56	2	1134	A

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Mol	Chain	Res	Type
56	2	1139	A
56	2	1140	C
56	2	1141	U
56	2	1146	G
56	2	1157	G
56	2	1163	G
56	2	1166	G
56	2	1178	A
56	2	1179	A
56	2	1180	A
56	2	1182	C
56	2	1183	A
56	2	1194	U
56	2	1195	A
56	2	1207	A
56	2	1208	C
56	2	1209	A
56	2	1210	C
56	2	1212	C
56	2	1215	G
56	2	1218	A
56	2	1220	A
56	2	1225	C
56	2	1226	C
56	2	1228	G
56	2	1239	A
56	2	1240	G
56	2	1242	C
56	2	1252	C
56	2	1254	A
56	2	1255	G
56	2	1262	A
56	2	1263	U
56	2	1267	U
56	2	1268	A
56	2	1279	C
56	2	1280	A
56	2	1281	G
56	2	1283	U
56	2	1284	C
56	2	1286	G
56	2	1301	C

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Mol	Chain	Res	Type
56	2	1312	G
56	2	1320	A
56	2	1327	A
56	2	1328	G
56	2	1329	U
56	2	1334	G
56	2	1339	U
56	2	1344	C
56	2	1345	A
56	2	1346	U
56	2	1352	G
56	2	1380	A
56	2	1388	U
56	2	1406	G
56	2	1424	A
56	2	1441	A
56	2	1452	G
56	2	1460	G
56	2	1466	A
56	2	1467	G
56	2	1470	G
56	2	1479	U
56	2	1490	G
56	2	1492	A
56	2	1493	G
56	2	1502	G
56	2	1503	G
56	2	1504	A
56	2	1506	C
56	2	1508	C
56	2	1510	U
56	2	1512	C
56	2	1513	U
56	2	1514	U
56	2	1515	U
56	2	1516	C

All (50) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
55	1	155	A
55	1	502	A

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Mol	Chain	Res	Type
55	1	535	U
55	1	568	U
55	1	570	C
55	1	698	A
55	1	812	G
55	1	876	A
55	1	895	C
55	1	897	A
55	1	1091	U
55	1	1158	A
55	1	1441	A
55	1	1488	U
55	1	1505	U
55	1	1561	G
55	1	1570	G
55	1	1582	G
55	1	1592	G
55	1	1615	A
55	1	1937	G
55	1	2217	C
55	1	2423	A
55	1	2472	U
56	2	2	C
56	2	3	G
56	2	110	A
56	2	236	A
56	2	243	A
56	2	321	C
56	2	404	A
56	2	989	C
56	2	1023	U
56	2	1031	G
56	2	1039	G
56	2	1109	C
56	2	1139	A
56	2	1165	U
56	2	1179	A
56	2	1211	A
56	2	1217	U
56	2	1224	G
56	2	1225	C
56	2	1227	G

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Mol	Chain	Res	Type
56	2	1238	C
56	2	1280	A
56	2	1285	G
56	2	1328	G
56	2	1351	C
56	2	1379	C

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

There are no chain breaks in this entry.

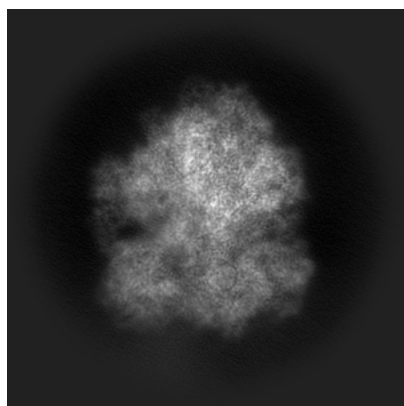
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-71060. These allow visual inspection of the internal detail of the map and identification of artifacts.

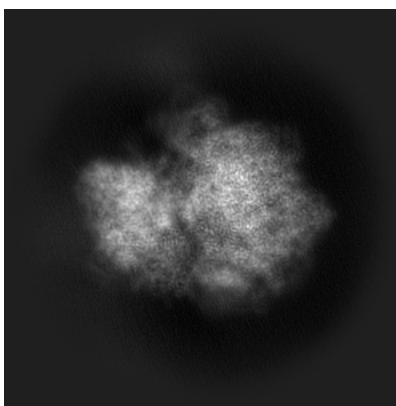
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

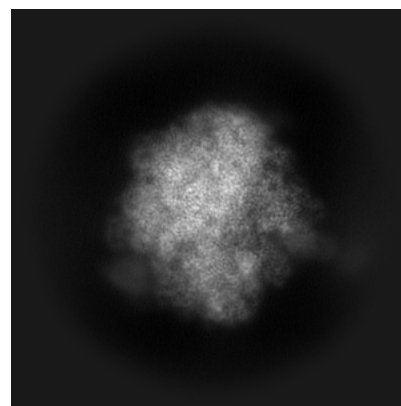
6.1.1 Primary map



X

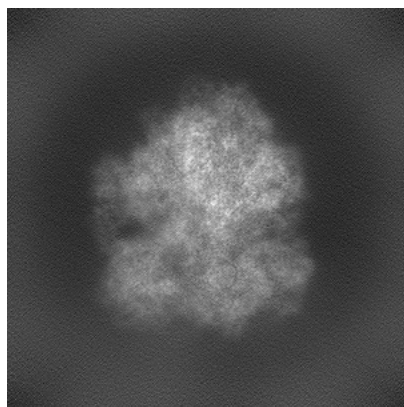


Y

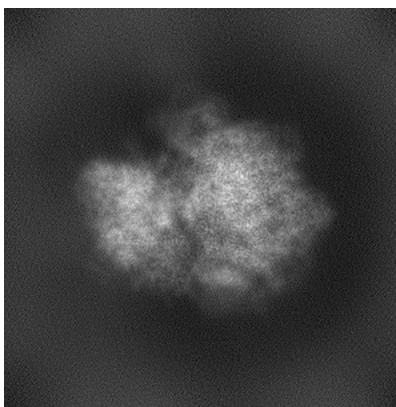


Z

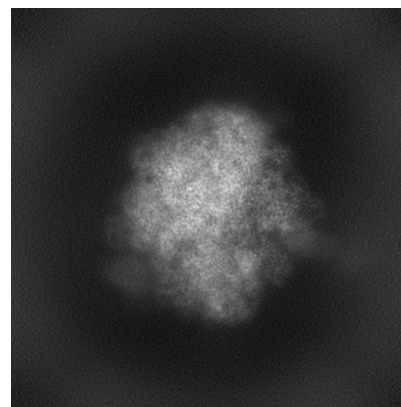
6.1.2 Raw map



X



Y

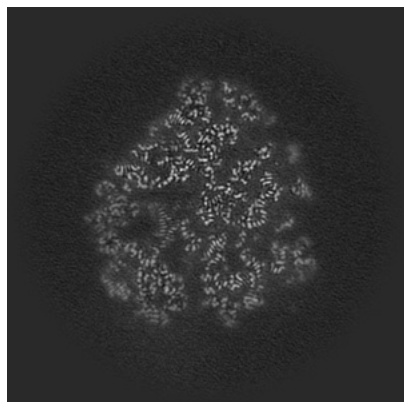


Z

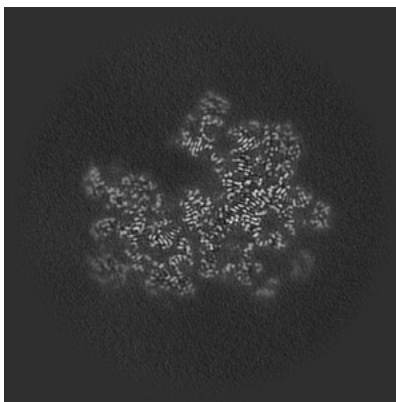
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

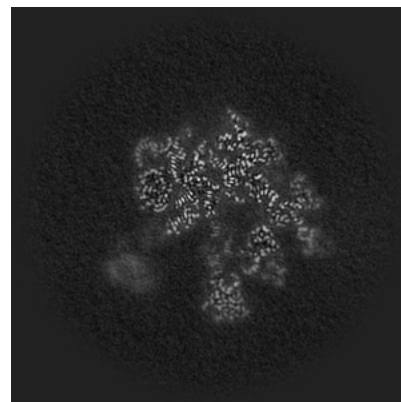
6.2.1 Primary map



X Index: 240

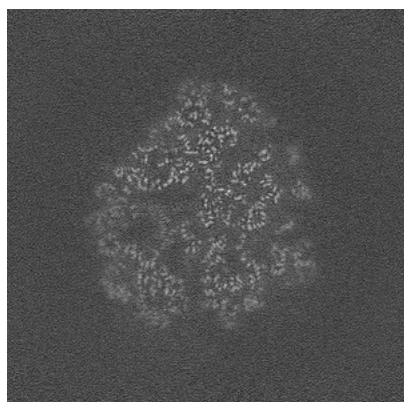


Y Index: 240

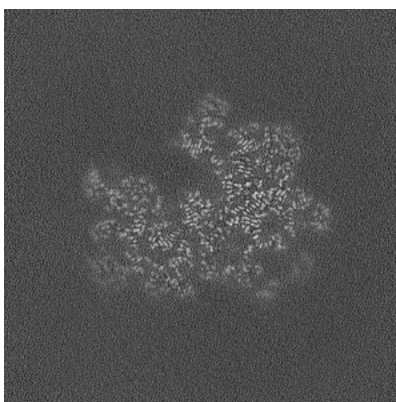


Z Index: 240

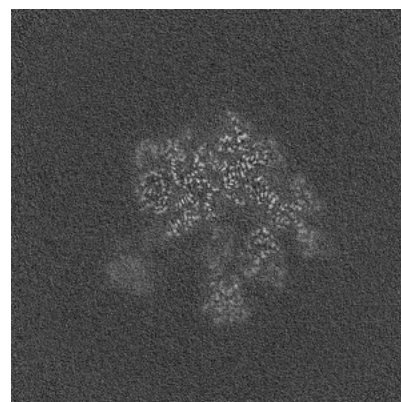
6.2.2 Raw map



X Index: 240



Y Index: 240

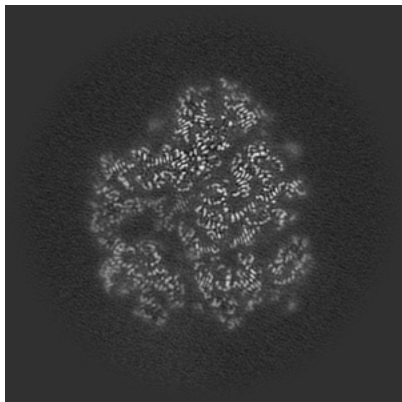


Z Index: 240

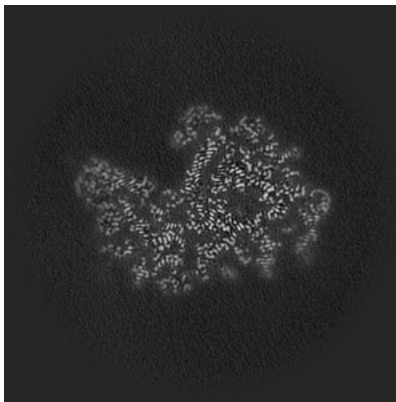
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

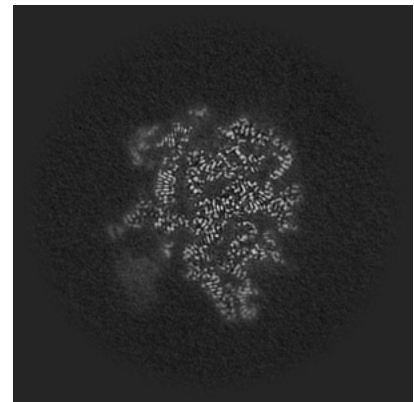
6.3.1 Primary map



X Index: 246

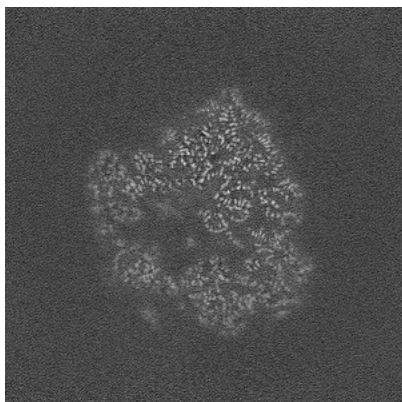


Y Index: 261

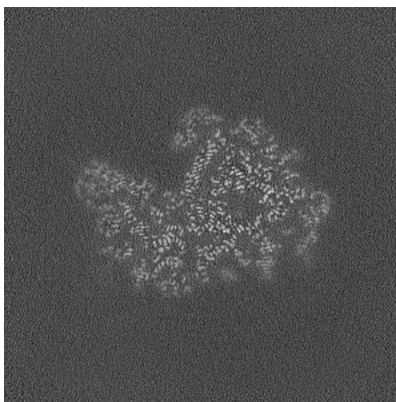


Z Index: 285

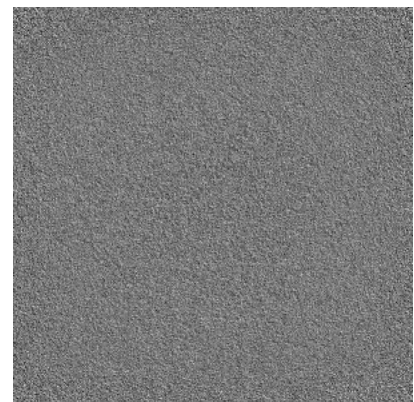
6.3.2 Raw map



X Index: 258



Y Index: 261

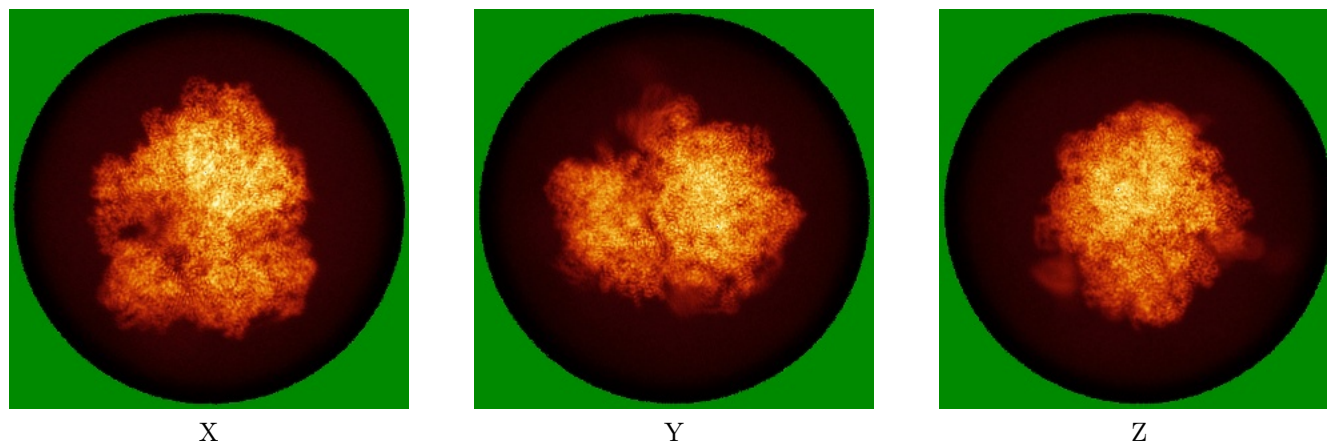


Z Index: 0

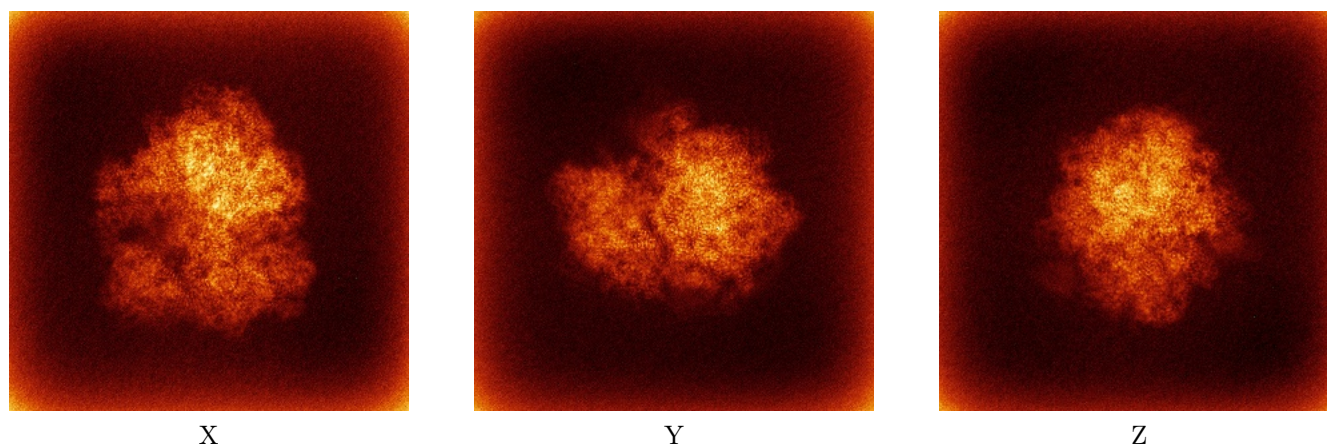
The images above show the largest variance slices of the map in three orthogonal directions.

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

6.4.1 Primary map



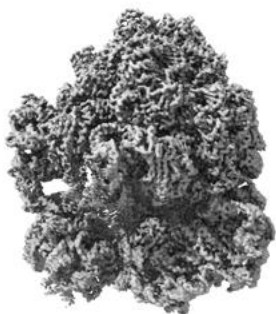
6.4.2 Raw map



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

6.5 Orthogonal surface views [i](#)

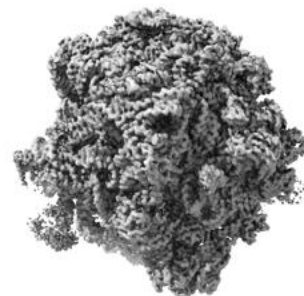
6.5.1 Primary map



X



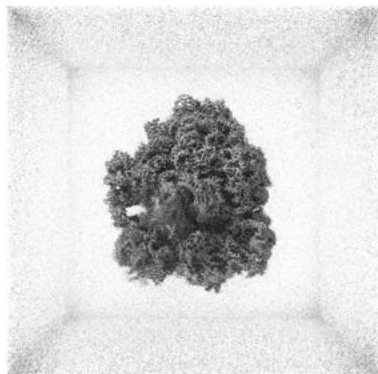
Y



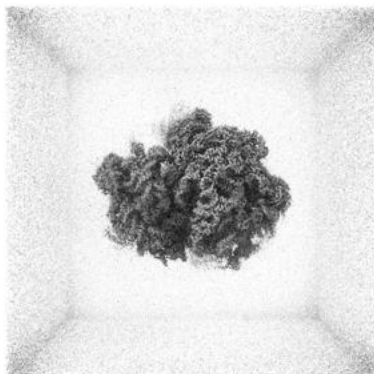
Z

The images above show the 3D surface view of the map at the recommended contour level 0.07. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

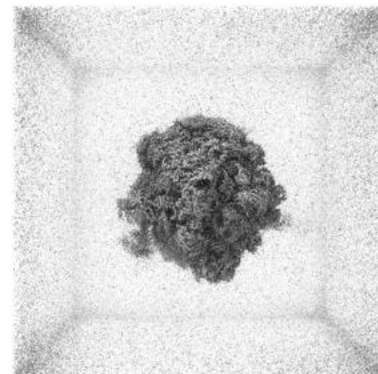
6.5.2 Raw map



X



Y



Z

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

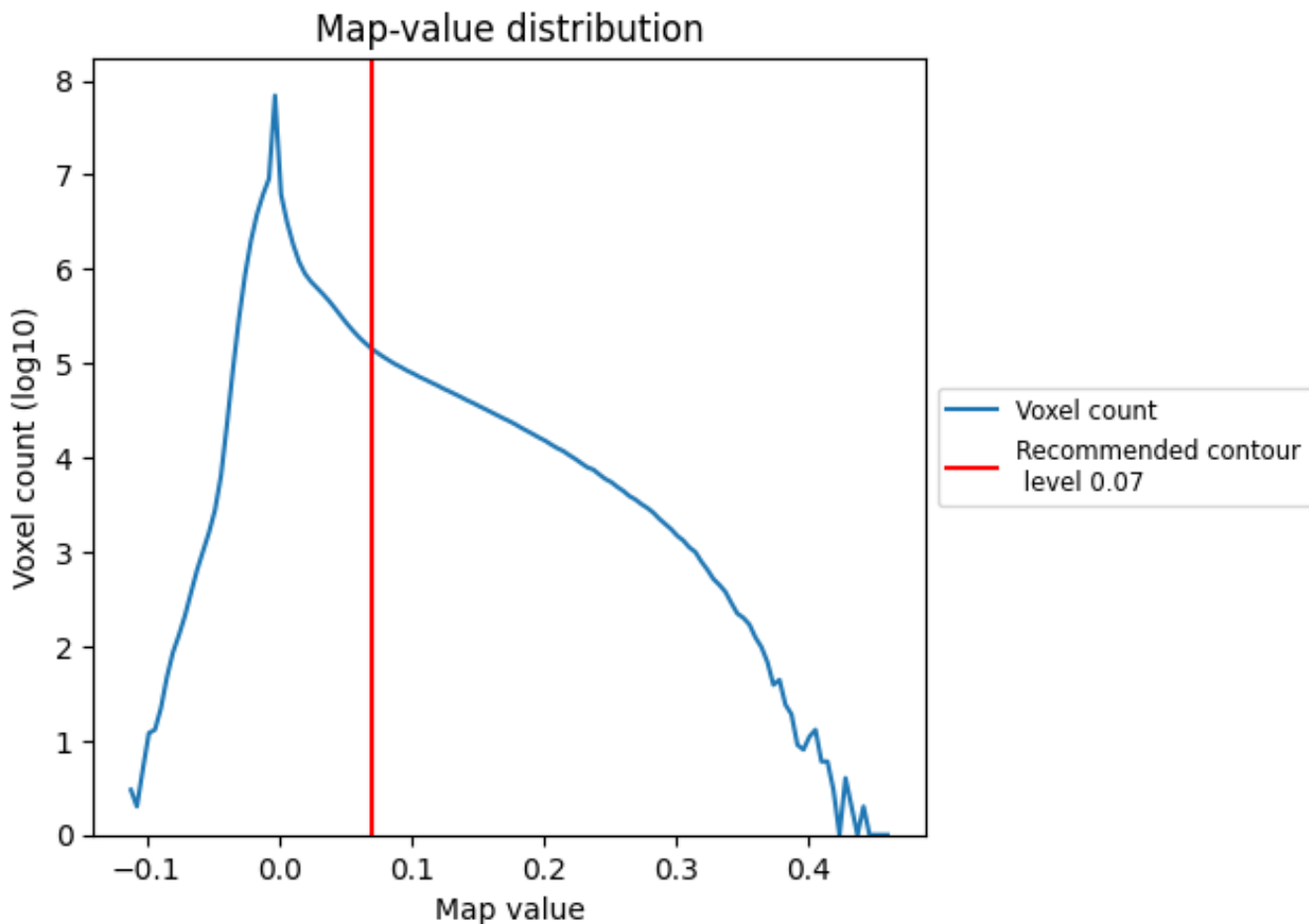
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

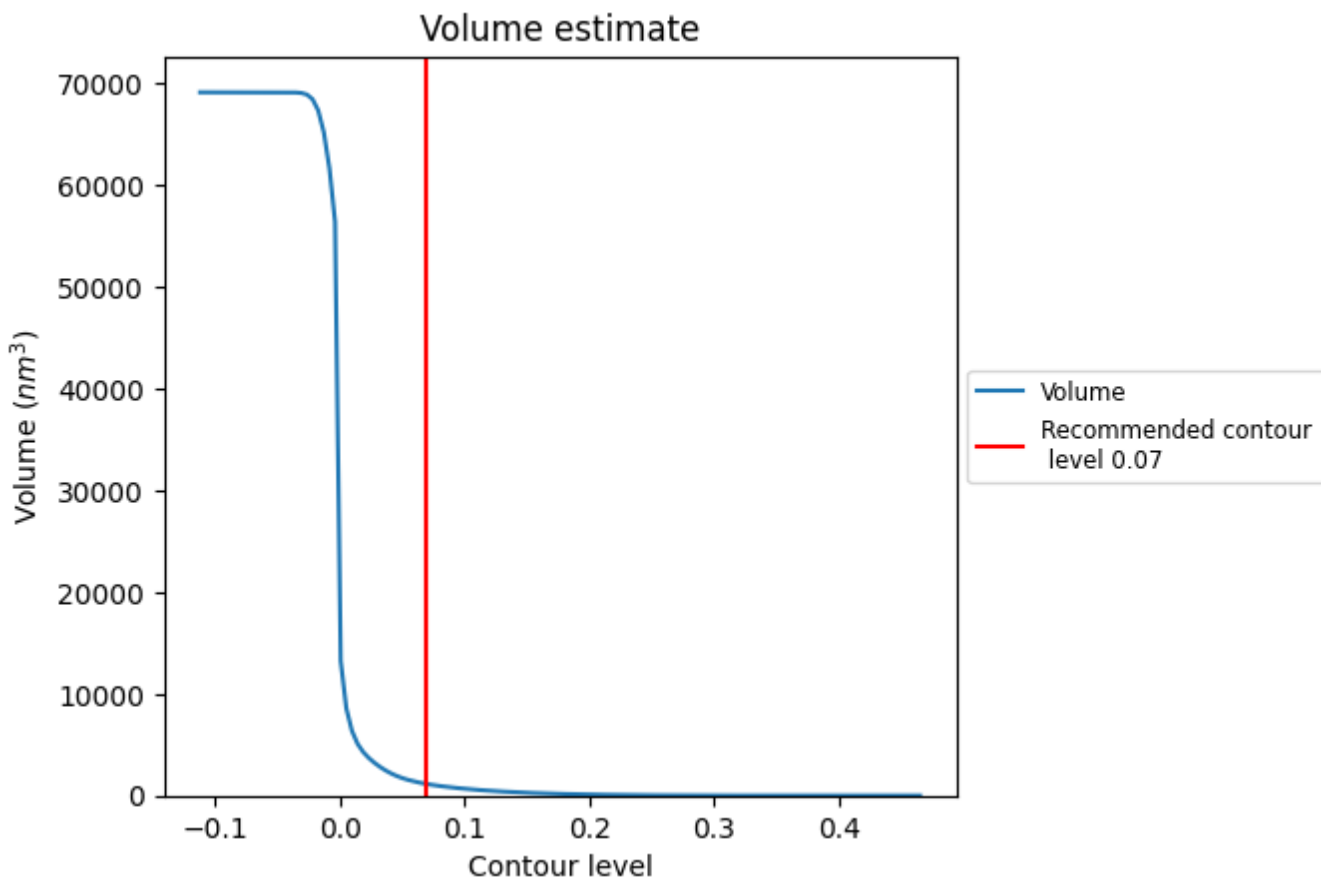
This section contains the results of statistical analysis of the map.

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.

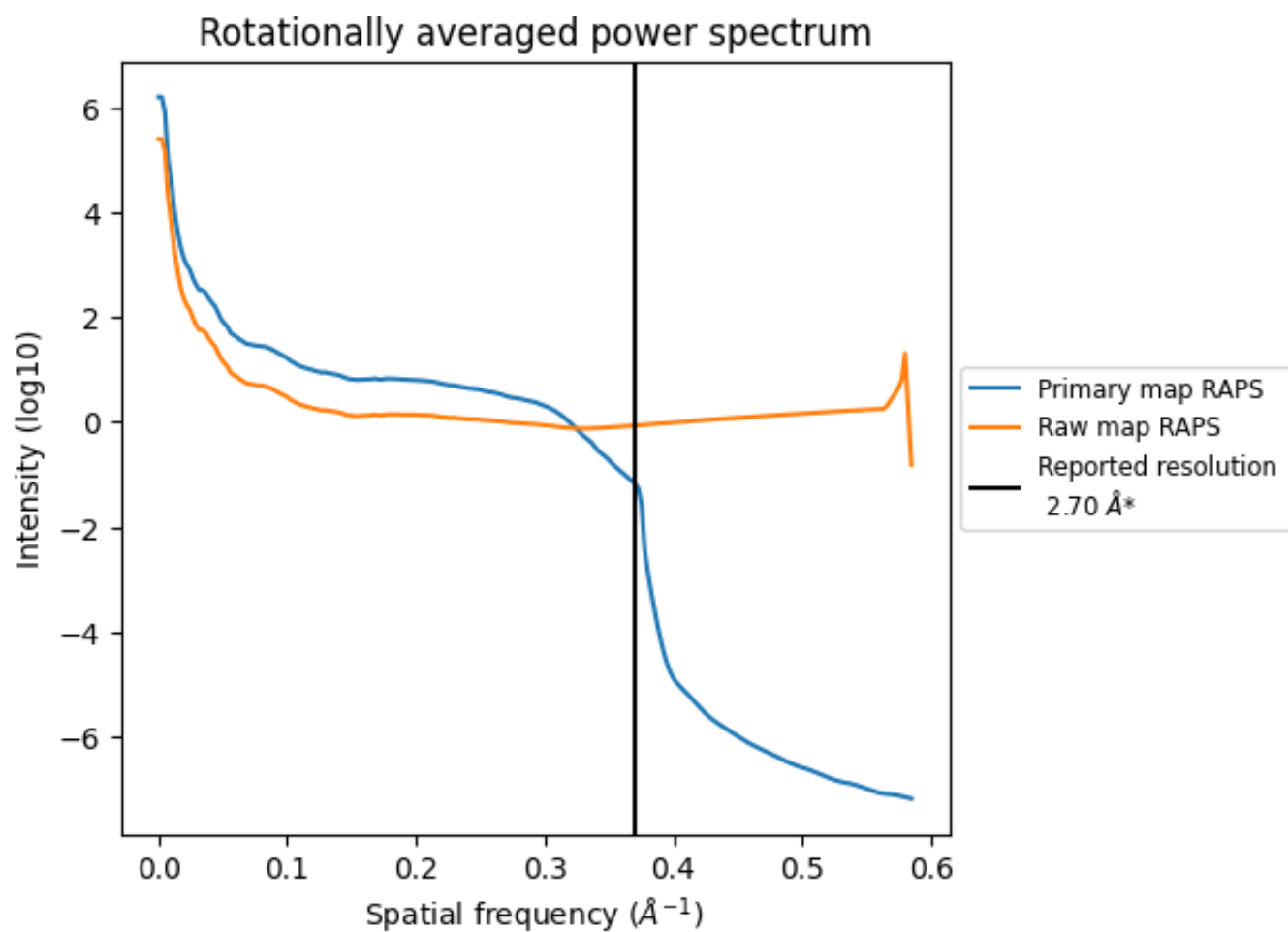
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1132 nm³; this corresponds to an approximate mass of 1023 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

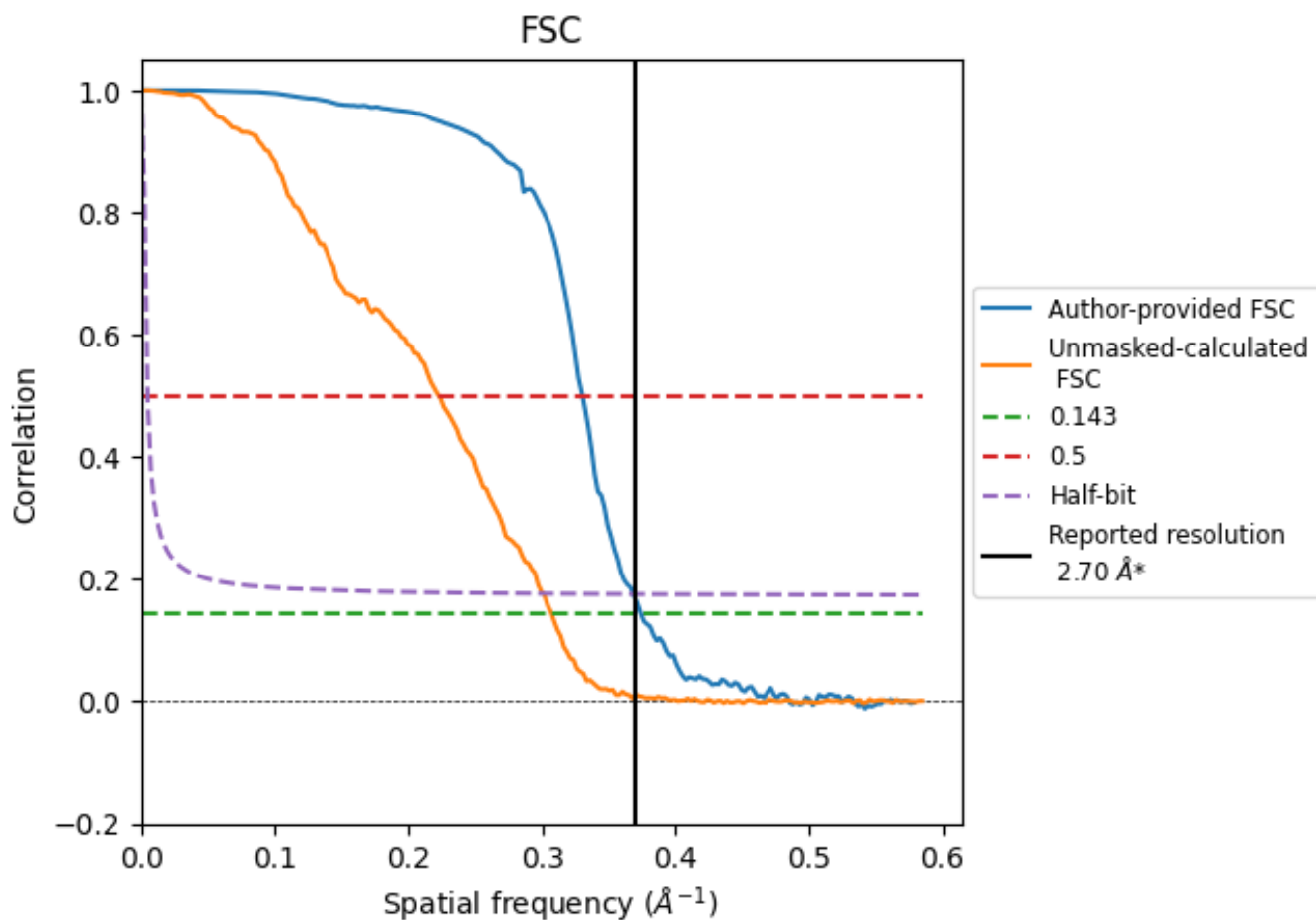


*Reported resolution corresponds to spatial frequency of 0.370 Å⁻¹

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 0.370 Å⁻¹

8.2 Resolution estimates [i](#)

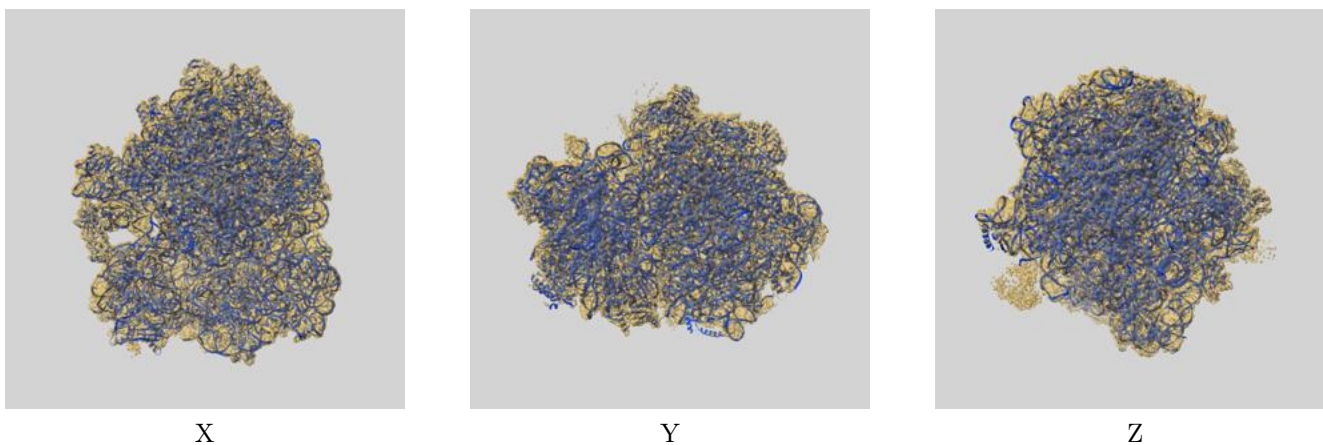
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.70	-	-
Author-provided FSC curve	2.67	3.02	2.71
Unmasked-calculated*	3.25	4.49	3.32

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.25 differs from the reported value 2.7 by more than 10 %

9 Map-model fit [i](#)

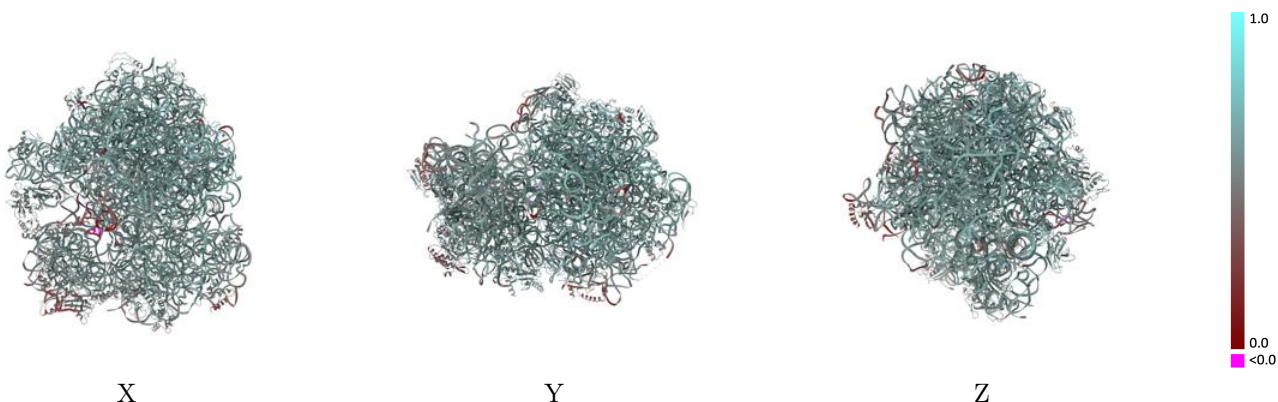
This section contains information regarding the fit between EMDB map EMD-71060 and PDB model 9OZN. Per-residue inclusion information can be found in section 3 on page 17.

9.1 Map-model overlay [i](#)



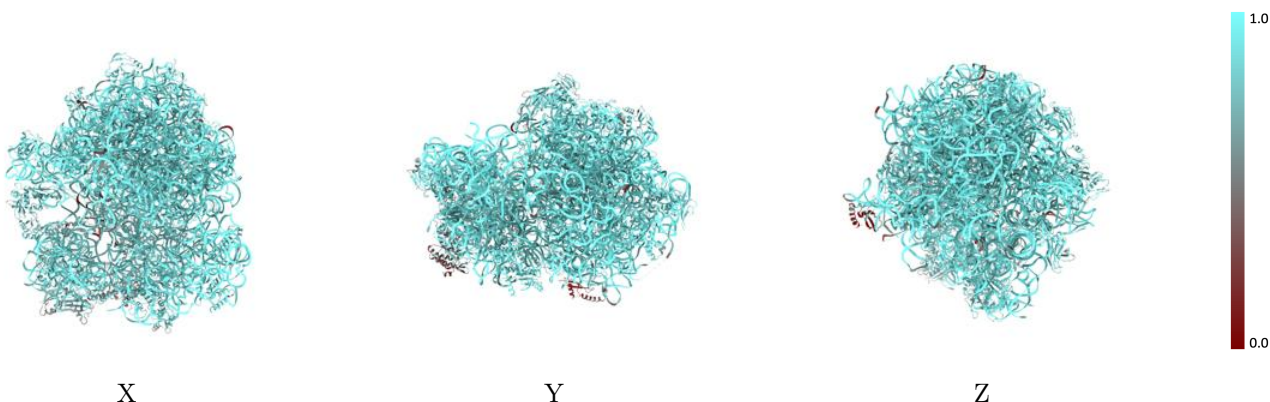
The images above show the 3D surface view of the map at the recommended contour level 0.07 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



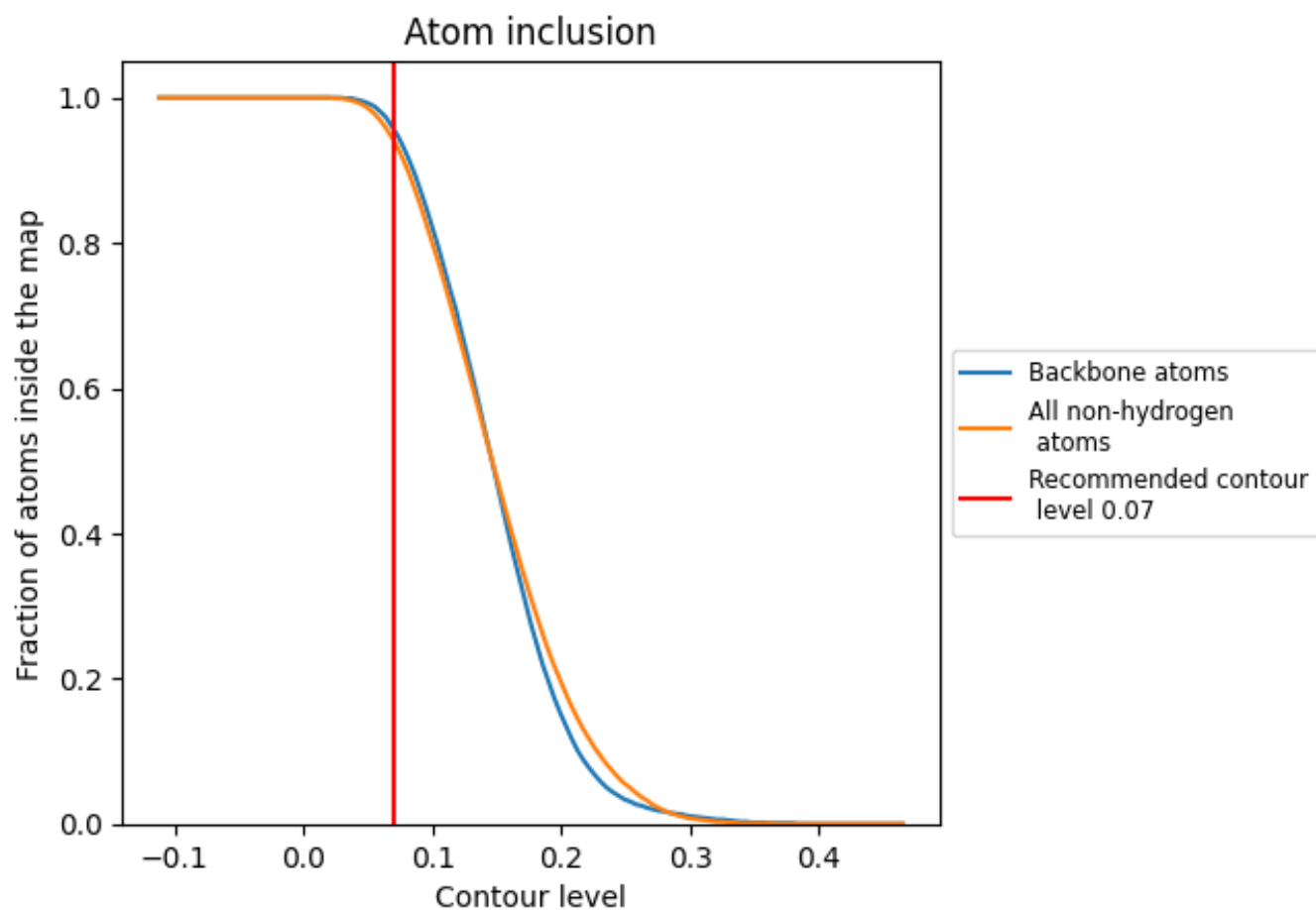
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.07).







































































9.4 Atom inclusion [i](#)



At the recommended contour level, 96% of all backbone atoms, 94% 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 (0.07) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9410	 0.5810
1	 0.9730	 0.5980
2	 0.9740	 0.5710
3	 0.9720	 0.5740
4	 0.8110	 0.5330
5	 0.9590	 0.6130
6	 0.6140	 0.5280
A	 0.7050	 0.5380
B	 0.9680	 0.6200
C	 0.9470	 0.6130
D	 0.9450	 0.5940
E	 0.8480	 0.5390
F	 0.8580	 0.5490
G	 0.4960	 0.4210
H	 0.4670	 0.4320
J	 0.9480	 0.5960
K	 0.9480	 0.6090
L	 0.9450	 0.6030
M	 0.9540	 0.6100
N	 0.9760	 0.6190
O	 0.9010	 0.5650
P	 0.9580	 0.6080
Q	 0.9650	 0.6120
R	 0.9470	 0.6010
S	 0.9570	 0.6020
T	 0.9230	 0.5760
U	 0.8900	 0.5660
V	 0.8850	 0.5590
W	 0.9530	 0.6180
X	 0.9510	 0.6020
Y	 0.8770	 0.5370
Z	 0.9750	 0.5930
a	 0.8100	 0.5330
b	 0.9800	 0.6270
c	 0.9330	 0.5950



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Chain	Atom inclusion	Q-score
d	 0.9920	 0.6410
e	 0.9700	 0.6130
f	 0.9690	 0.6130
h	 0.7850	 0.5180
i	 0.8340	 0.5320
j	 0.9040	 0.5690
k	 0.9450	 0.5820
l	 0.7720	 0.5160
m	 0.9540	 0.5890
n	 0.8240	 0.5280
o	 0.7290	 0.4870
p	 0.9190	 0.5600
q	 0.9310	 0.6010
r	 0.7780	 0.5150
s	 0.9090	 0.5450
t	 0.9400	 0.5790
u	 0.9300	 0.5390
v	 0.9130	 0.5820
w	 0.9620	 0.5940
x	 0.8400	 0.5320
y	 0.9070	 0.5580
z	 0.7330	 0.5410