



## Full wwPDB EM Validation Report ⓘ

Dec 10, 2025 – 08:25 pm GMT

PDB ID : 6SNT / pdb\_00006snt  
EMDB ID : EMD-10262  
Title : Yeast 80S ribosome stalled on SDD1 mRNA.  
Authors : Tesina, P.; Buschauer, R.; Cheng, J.; Becker, T.; Beckmann, R.  
Deposited on : 2019-08-27  
Resolution : 2.80 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](mailto: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:

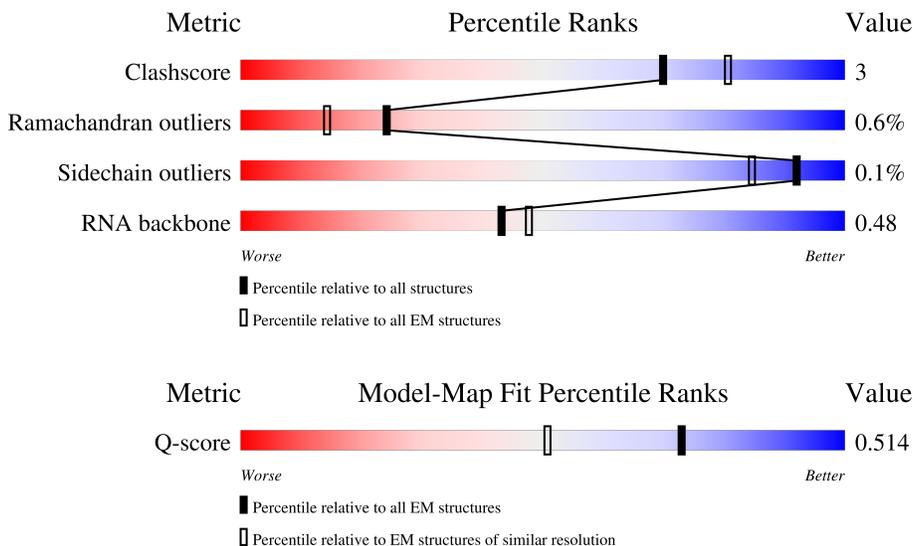
EMDB validation analysis : 0.0.1.dev129  
MolProbity : 4-5-2 with Phenix2.0  
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)  
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)  
MapQ : 1.9.13  
Ideal geometry (proteins) : Engh & Huber (2001)  
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)  
Validation Pipeline (wwPDB-VP) : 2.47

# 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 2.80 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	11806 ( 2.30 - 3.30 )

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  $\geq 3$ , 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	2	1800	 6% 63% 29% 7%
2	A	252	 75% 7% 18%
3	B	255	 75% 13% 11%

Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
4	P	142	17% 67% 15% 18%
5	C	254	74% 11% 15%
6	D	240	9% 86% 7% 8%
7	E	261	89% 10%
8	F	225	10% 79% 13% 8%
9	G	236	6% 81% 15%
10	H	190	83% 13% ..
11	I	200	81% 12% 6%
12	J	197	5% 81% 12% 7%
13	K	105	9% 79% 9% 12%
14	L	156	6% 85% 7% 8%
15	M	143	50% 62% 21% .. 15%
16	N	151	89% 9%
17	O	137	77% 16% 7%
18	Q	143	8% 80% 17% ..
19	R	136	81% 7% 11%
20	S	146	9% 85% 12% ..
21	T	144	11% 92% 8%
22	U	121	7% 68% 15% 17%
23	V	87	86% 14%
24	W	130	85% 14%
25	X	145	83% 14% ..
26	Y	135	8% 87% 13%
27	Z	105	17% 68% 10% 22%
28	a	119	61% 18% .. 18%

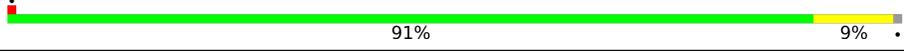
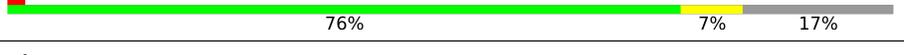
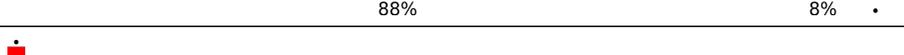
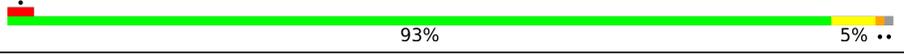
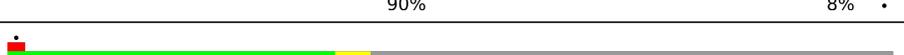
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
29	b	82	79% 17%
30	d	56	82% 12% 5%
31	e	63	84% 11% 5%
32	f	152	32% 16% 52%
33	g	319	82% 15%
34	c	67	78% 16% 6%
35	4	121	79% 17%
36	3	158	70% 27%
37	h	254	85% 13%
38	i	387	87% 12%
39	j	362	87% 12%
40	k	297	88% 11%
41	l	167	87% 13%
42	m	244	82% 9% 9%
43	n	256	83% 7% 9%
44	o	191	90% 10%
45	p	221	86% 12% 5%
46	q	174	86% 10% 5%
47	r	199	84% 13%
48	s	138	90% 9%
49	t	204	86% 14%
50	u	199	84% 14%
51	v	184	94% 5%
52	w	186	92% 7%
53	x	189	90% 8%

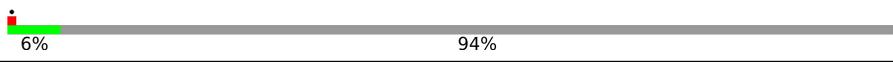
Continued on next page...

Continued from previous page...

Mol	Chain	Length	Quality of chain
54	y	172	 87% 13%
55	z	160	 91% 9%
56	au	121	 76% 7% 17%
57	AB	137	 87% 12%
58	at	155	 41% 79% 19%
59	as	142	 75% 10% 15%
60	ar	127	 89% 9%
61	aq	136	 83% 16%
62	ap	149	 86% 13%
63	ao	59	 5% 86% 7% 5%
64	an	105	 85% 7% 9%
65	am	113	 6% 88% 8%
66	al	130	 90% 8%
67	ak	107	 91% 8%
68	aj	121	 82% 11% 7%
69	ai	120	 86% 12%
70	ah	100	 93% 5%
71	ag	88	 83% 14%
72	af	78	 5% 86% 13%
73	ae	51	 90% 8%
74	ad	128	 37% 59%
75	ac	25	 92% 8%
76	ab	106	 90% 7%
77	aa	92	 87% 12%
78	1	3396	 68% 22% 6%

Continued on next page...

*Continued from previous page...*

Mol	Chain	Length	Quality of chain
79	5	21	 <p>71% 43% 38% 19%</p>
80	NC	233	 <p>6% 94%</p>
81	6	76	 <p>76% 22%</p>

## 2 Entry composition [i](#)

There are 83 unique types of molecules in this entry. The entry contains 201787 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 *Saccharomyces cerevisiae* S288C 18S ribosomal RNA (RDN18-1), rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
1	2	1771	37739	16872	6683	12413	1771	0	0

- Molecule 2 is a protein called 40S ribosomal protein S0-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
2	A	206	1603	1030	284	287	2	0	0

- Molecule 3 is a protein called 40S ribosomal protein S1-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
3	B	226	1798	1139	330	325	4	0	0

- Molecule 4 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
4	P	117	916	583	171	155	7	0	0

- Molecule 5 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
5	C	216	1626	1042	287	295	2	0	0

- Molecule 6 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
6	D	222	1729	1098	312	313	6	0	0

- Molecule 7 is a protein called 40S ribosomal protein S4-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
7	E	258	2056	1308	387	358	3	0	0

- Molecule 8 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
8	F	206	1605	1005	299	298	3	0	0

- Molecule 9 is a protein called 40S ribosomal protein S6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
9	G	228	1815	1138	351	323	3	0	0

- Molecule 10 is a protein called 40S ribosomal protein S7-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
10	H	184	1473	946	263	264	0	0

- Molecule 11 is a protein called 40S ribosomal protein S8-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
11	I	187	1476	916	295	263	2	0	0

- Molecule 12 is a protein called 40S ribosomal protein S9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
12	J	184	1479	935	285	258	1	0	0

- Molecule 13 is a protein called 40S ribosomal protein S10-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
13	K	92	752	487	122	141	2	0	0

- Molecule 14 is a protein called 40S ribosomal protein S11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	L	144	Total	C	N	O	S	0	0
			1159	742	219	195	3		

- Molecule 15 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	M	121	Total	C	N	O	S	0	0
			875	551	153	169	2		

- Molecule 16 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	N	150	Total	C	N	O	S	0	0
			1192	759	224	207	2		

- Molecule 17 is a protein called 40S ribosomal protein S14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	O	127	Total	C	N	O	S	0	0
			926	569	185	169	3		

- Molecule 18 is a protein called 40S ribosomal protein S16-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
18	Q	141	Total	C	N	O	0	0
			1105	708	203	194		

- Molecule 19 is a protein called 40S ribosomal protein S17-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	R	121	Total	C	N	O	S	0	0
			948	596	179	171	2		

- Molecule 20 is a protein called 40S ribosomal protein S18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	S	145	Total	C	N	O	S	0	0
			1192	743	237	210	2		

- Molecule 21 is a protein called 40S ribosomal protein S19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	T	143	Total	C	N	O	S	0	0
			1112	694	208	208	2		

- Molecule 22 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	U	100	Total	C	N	O	S	0	0
			797	506	144	146	1		

- Molecule 23 is a protein called 40S ribosomal protein S21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	V	87	Total	C	N	O	S	0	0
			673	415	125	131	2		

- Molecule 24 is a protein called 40S ribosomal protein S22-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	W	129	Total	C	N	O	S	0	0
			1021	650	188	180	3		

- Molecule 25 is a protein called 40S ribosomal protein S23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	X	144	Total	C	N	O	S	0	0
			1121	708	220	191	2		

- Molecule 26 is a protein called 40S ribosomal protein S24-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
26	Y	134	Total	C	N	O	0	0
			1073	676	208	189		

- Molecule 27 is a protein called 40S ribosomal protein S25-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
27	Z	82	Total	C	N	O	0	0
			651	416	123	112		

- Molecule 28 is a protein called 40S ribosomal protein S26-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	a	97	Total	C	N	O	S	0	0
			769	475	160	129	5		

- Molecule 29 is a protein called 40S ribosomal protein S27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	b	81	Total	C	N	O	S	0	0
			610	382	110	113	5		

- Molecule 30 is a protein called 40S ribosomal protein S29-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	d	53	Total	C	N	O	S	0	0
			442	274	92	72	4		

- Molecule 31 is a protein called 40S ribosomal protein S30-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	e	60	Total	C	N	O	S	0	0
			472	298	97	76	1		

- Molecule 32 is a protein called Ubiquitin-40S ribosomal protein S31.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	f	73	Total	C	N	O	S	0	0
			556	352	105	95	4		

- Molecule 33 is a protein called Guanine nucleotide-binding protein subunit beta-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	g	312	Total	C	N	O	S	0	0
			2383	1514	409	452	8		

- Molecule 34 is a protein called 40S ribosomal protein S28-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	c	63	Total	C	N	O	S	0	0
			491	303	96	91	1		

- Molecule 35 is a RNA chain called 5S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
35	4	121	2579	1152	461	845	121	0	0

- Molecule 36 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
36	3	158	3353	1500	586	1109	158	0	0

- Molecule 37 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
37	h	251	1899	1182	385	331	1	0	0

- Molecule 38 is a protein called 60S ribosomal protein L3.

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

- Molecule 39 is a protein called 60S ribosomal protein L4-A.

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

- Molecule 40 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
40	k	294	2351	1484	410	455	2	0	0

- Molecule 41 is a protein called 60S ribosomal protein L6-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
41	l	167	1305	841	234	229	1	0	0

There are 18 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
1	113	ALA	LYS	conflict	UNP P05739
1	114	ALA	LYS	conflict	UNP P05739
1	115	ALA	GLU	conflict	UNP P05739
1	116	ALA	LYS	conflict	UNP P05739
1	117	ALA	LYS	conflict	UNP P05739
1	118	ALA	GLU	conflict	UNP P05739
1	?	-	ASN	deletion	UNP P05739
1	?	-	LEU	deletion	UNP P05739
1	?	-	PHE	deletion	UNP P05739
1	?	-	PRO	deletion	UNP P05739
1	?	-	GLU	deletion	UNP P05739
1	?	-	GLN	deletion	UNP P05739
1	?	-	GLN	deletion	UNP P05739
1	?	-	THR	deletion	UNP P05739
1	120	ALA	LYS	conflict	UNP P05739
1	132	ALA	THR	conflict	UNP P05739
1	146	ILE	LEU	conflict	UNP P05739
1	173	MET	LEU	conflict	UNP P05739

- Molecule 42 is a protein called 60S ribosomal protein L7-A.

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

- Molecule 43 is a protein called 60S ribosomal protein L8-A.

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

- Molecule 44 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
44	o	191	1508	957	274	273	4	0	0

- Molecule 45 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
45	p	218	1764	1117	334	306	7	0	0

- Molecule 46 is a protein called 60S ribosomal protein L11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
46	q	169	1350	846	253	247	4	0	0

- Molecule 47 is a protein called 60S ribosomal protein L13-A.

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

- Molecule 48 is a protein called 60S ribosomal protein L14-A.

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

- Molecule 49 is a protein called 60S ribosomal protein L15-A.

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

- Molecule 50 is a protein called 60S ribosomal protein L16-A.

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

- Molecule 51 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
51	v	183	1416	879	284	253		0	0

- Molecule 52 is a protein called 60S ribosomal protein L18-A.

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

- Molecule 53 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
			Total	C	N	O		
53	x	188	1515	932	323	260	0	0

- Molecule 54 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
54	y	171	1437	925	266	243	3	0	0

- Molecule 55 is a protein called 60S ribosomal protein L21-A.

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

- Molecule 56 is a protein called 60S ribosomal protein L22-A.

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

- Molecule 57 is a protein called 60S ribosomal protein L23-A.

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

- Molecule 58 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
58	at	126	836	525	165	145	1	0	0

There are 4 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
at	104	GLN	ASN	conflict	UNP P04449
at	109	GLN	LEU	conflict	UNP P04449
at	112	ASP	ASN	conflict	UNP P04449
at	119	ALA	GLU	conflict	UNP P04449

- Molecule 59 is a protein called 60S ribosomal protein L25.

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

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

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
60	ar	125	984	620	191	173		0	0

- Molecule 61 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
61	aq	135	1092	710	202	180		0	0

- Molecule 62 is a protein called 60S ribosomal protein L28.

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

- Molecule 63 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
63	ao	58	462	289	100	73		0	0

- Molecule 64 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
64	an	96	737	476	123	137	1	0	0

- Molecule 65 is a protein called 60S ribosomal protein L31-A.

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

- Molecule 66 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
66	al	127	1017	644	205	167	1	0	0

- Molecule 67 is a protein called 60S ribosomal protein L33-A.

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

- Molecule 68 is a protein called 60S ribosomal protein L34-A.

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

- Molecule 69 is a protein called 60S ribosomal protein L35-A.

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

- Molecule 70 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
70	ah	99	766	478	154	132	2	0	0

- Molecule 71 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	S		
71	ag	85	670	408	146	111	5	0	0

- Molecule 72 is a protein called 60S ribosomal protein L38.

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

- Molecule 73 is a protein called 60S ribosomal protein L39.

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

- Molecule 74 is a protein called Ubiquitin-60S ribosomal protein L40.

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

- Molecule 75 is a protein called L41-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	ac	25	Total	C	N	O	S	0	0
			229	139	62	27	1		

- Molecule 76 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	ab	103	Total	C	N	O	S	0	0
			824	517	167	135	5		

- Molecule 77 is a protein called 60S ribosomal protein L43-A.

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

- Molecule 78 is a RNA chain called *Saccharomyces cerevisiae* S288C 25S ribosomal RNA (RDN25-1), rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	1	3184	Total	C	N	O	P	0	0
			68091	30415	12259	22233	3184		

- Molecule 79 is a RNA chain called mRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	5	21	Total	C	N	O	P	0	0
			454	203	88	142	21		

- Molecule 80 is a protein called Uncharacterized protein YEL057C.

Mol	Chain	Residues	Atoms				AltConf	Trace	
			Total	C	N	O			S
80	NC	14	129	85	21	22	1	0	0

- Molecule 81 is a RNA chain called tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
			Total	C	N	O	P		
81	6	76	1621	723	290	532	76	0	0

- Molecule 82 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
			Total	Mg	
82	2	82	82	82	0
82	E	1	1	1	0
82	F	1	1	1	0
82	T	1	1	1	0
82	1	1	1	1	0
82	6	1	1	1	0

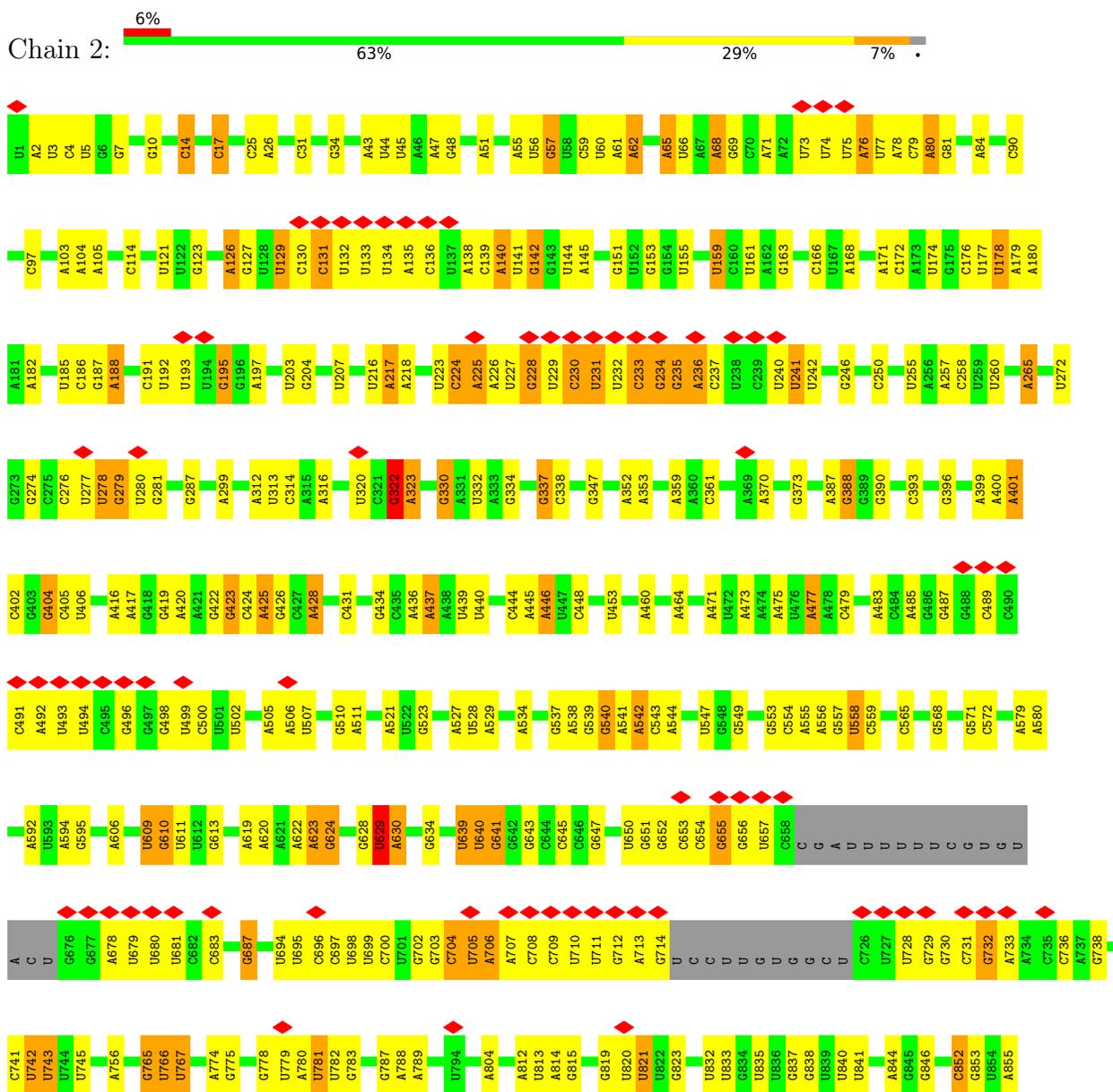
- Molecule 83 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
			Total	Zn	
83	d	1	1	1	0
83	f	1	1	1	0
83	aj	1	1	1	0
83	ag	1	1	1	0
83	ad	1	1	1	0
83	ab	1	1	1	0
83	aa	1	1	1	0

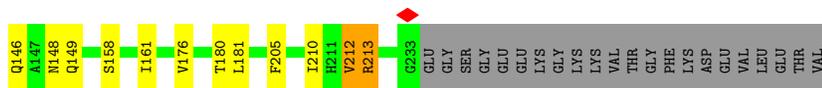
### 3 Residue-property plots

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

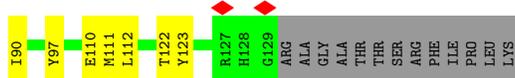
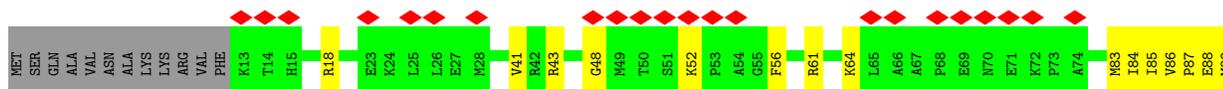
- Molecule 1: *Saccharomyces cerevisiae* S288C 18S ribosomal RNA (RDN18-1), rRNA







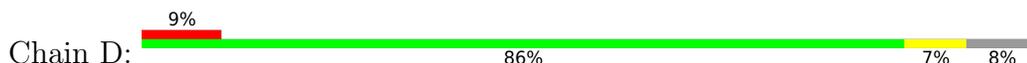
• Molecule 4: 40S ribosomal protein S15



• Molecule 5: 40S ribosomal protein S2



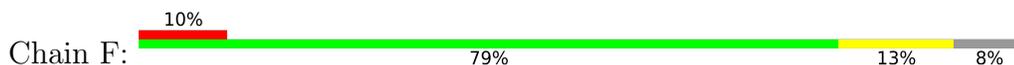
• Molecule 6: 40S ribosomal protein S3

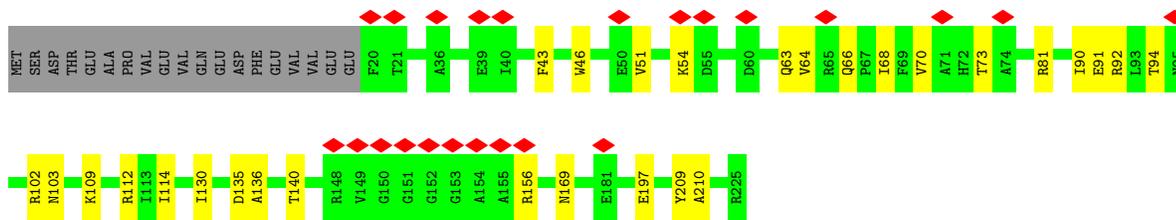


• Molecule 7: 40S ribosomal protein S4-A

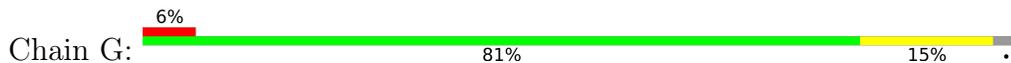


• Molecule 8: 40S ribosomal protein S5

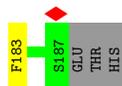
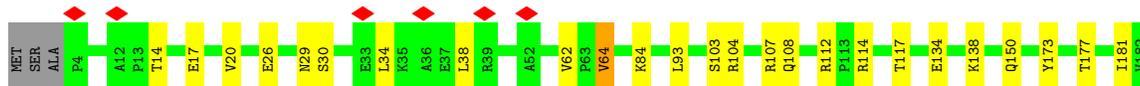
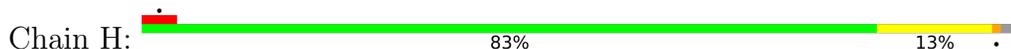




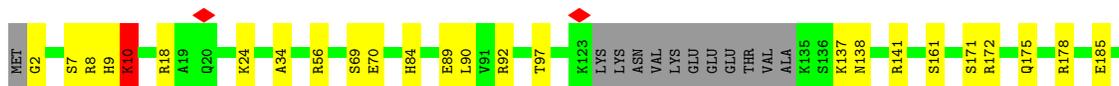
• Molecule 9: 40S ribosomal protein S6-A



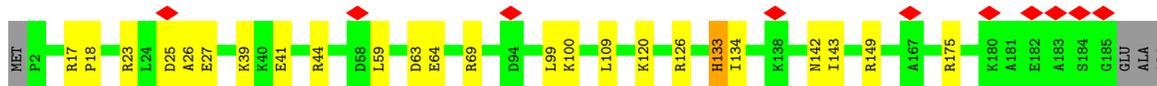
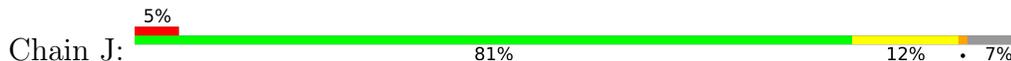
• Molecule 10: 40S ribosomal protein S7-A



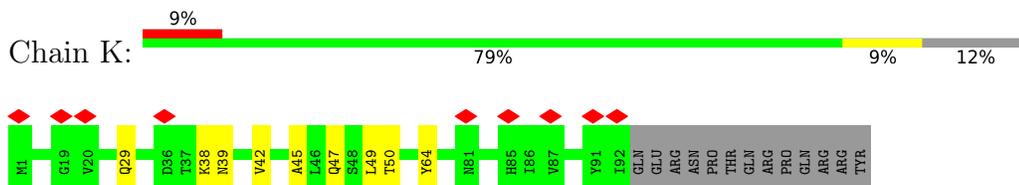
• Molecule 11: 40S ribosomal protein S8-A



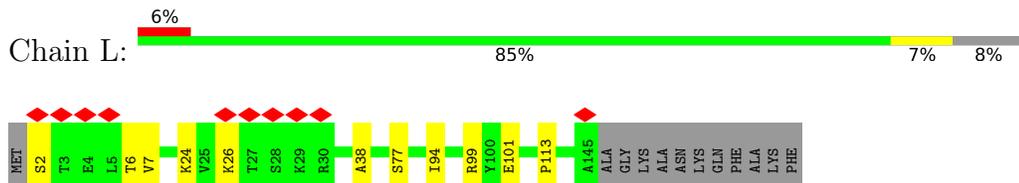
• Molecule 12: 40S ribosomal protein S9-A



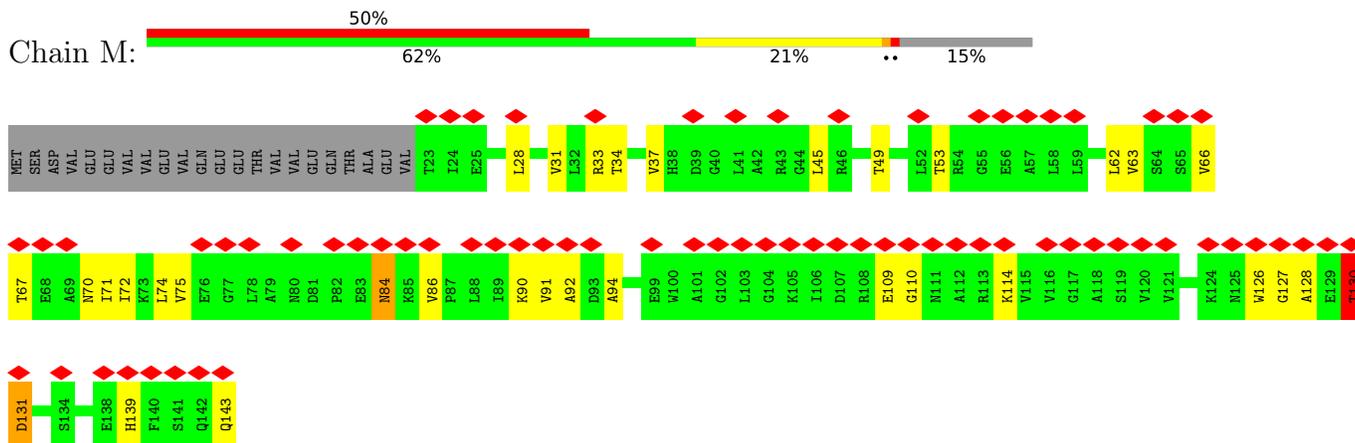
- Molecule 13: 40S ribosomal protein S10-A



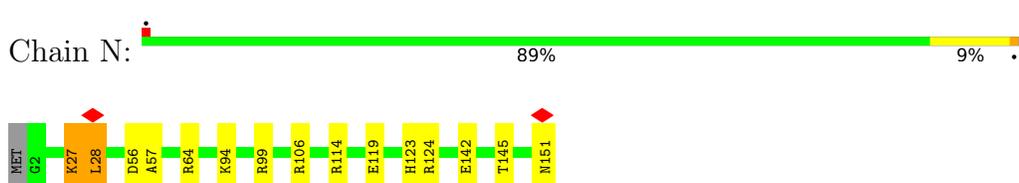
- Molecule 14: 40S ribosomal protein S11-A



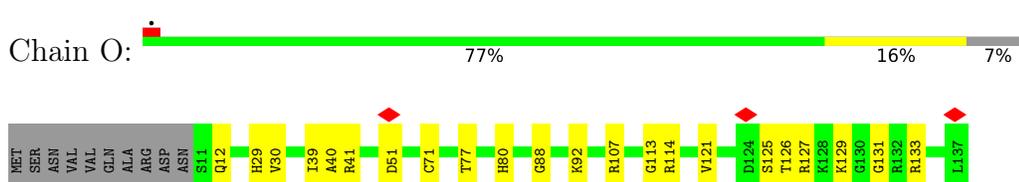
- Molecule 15: 40S ribosomal protein S12



- Molecule 16: 40S ribosomal protein S13



- Molecule 17: 40S ribosomal protein S14-A

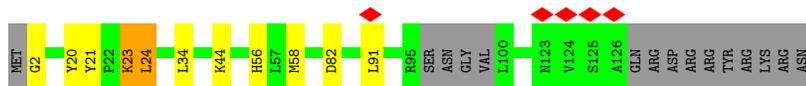
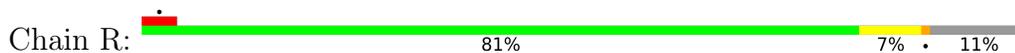


- Molecule 18: 40S ribosomal protein S16-A

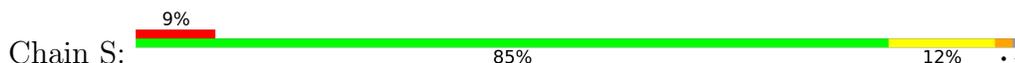




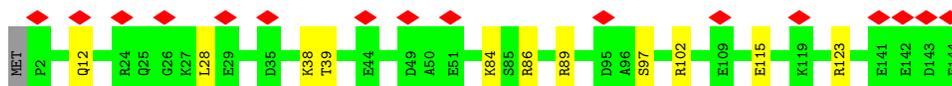
• Molecule 19: 40S ribosomal protein S17-B



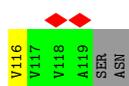
• Molecule 20: 40S ribosomal protein S18-A



• Molecule 21: 40S ribosomal protein S19-A



• Molecule 22: 40S ribosomal protein S20



• Molecule 23: 40S ribosomal protein S21-A

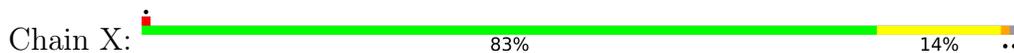


• Molecule 24: 40S ribosomal protein S22-A

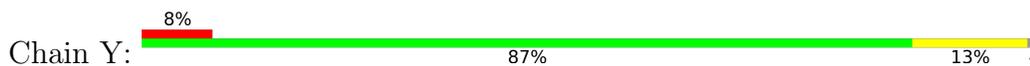




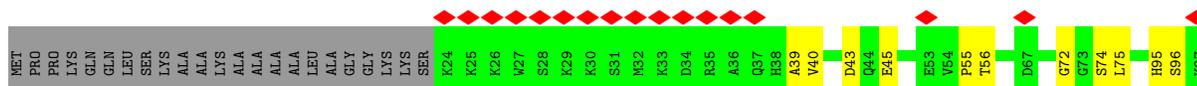
- Molecule 25: 40S ribosomal protein S23-A



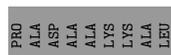
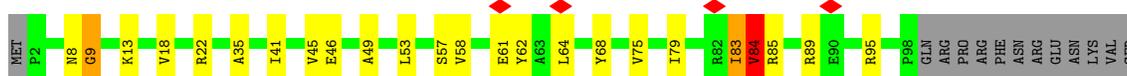
- Molecule 26: 40S ribosomal protein S24-A



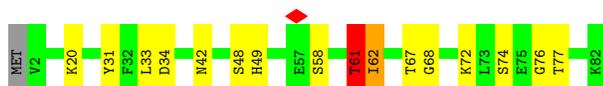
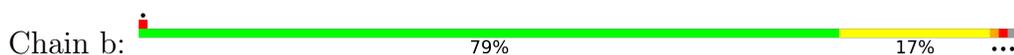
- Molecule 27: 40S ribosomal protein S25-A



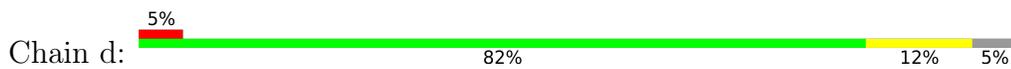
- Molecule 28: 40S ribosomal protein S26-A



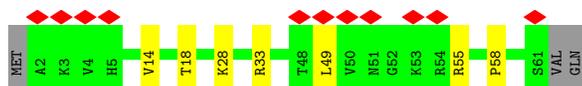
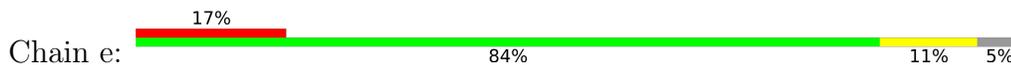
- Molecule 29: 40S ribosomal protein S27-A



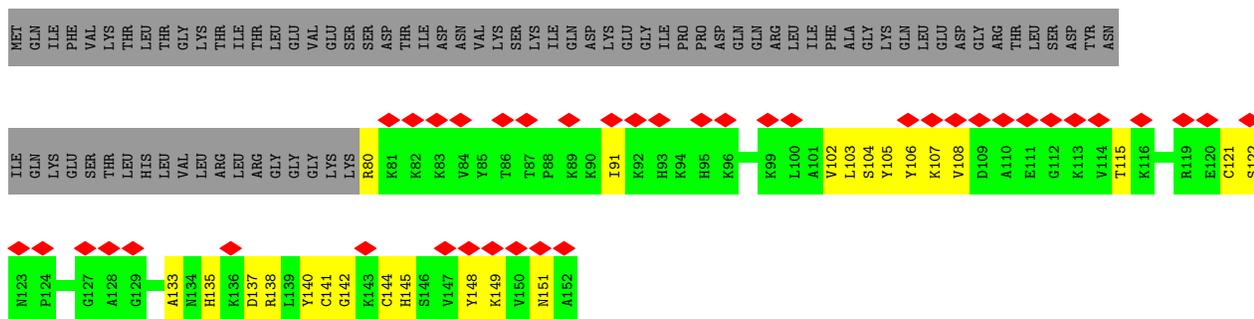
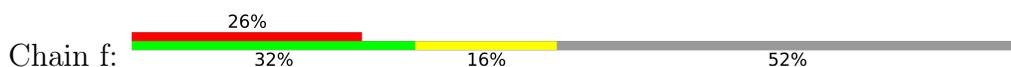
- Molecule 30: 40S ribosomal protein S29-A



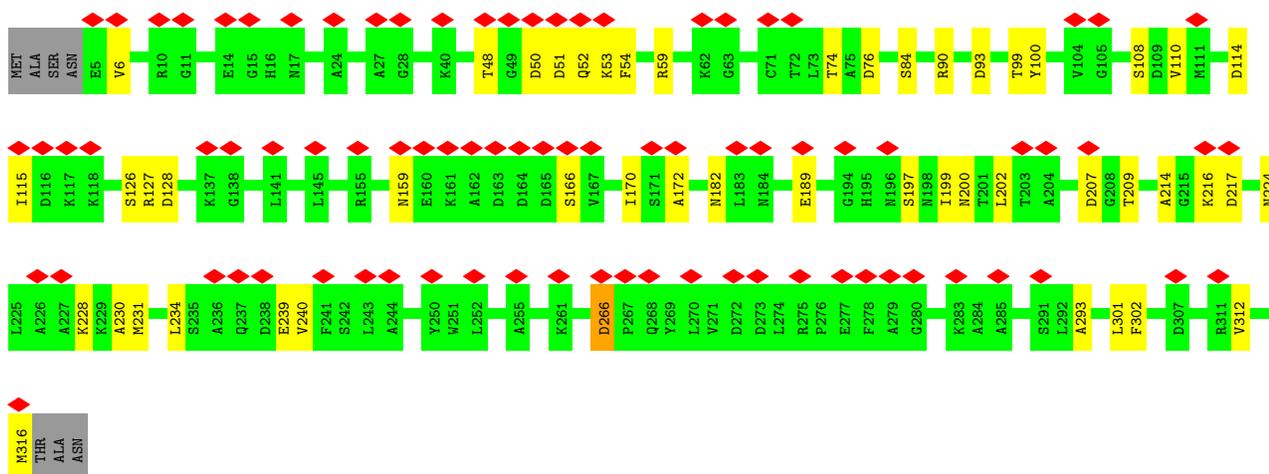
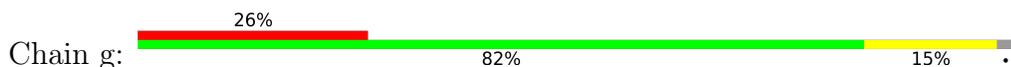
• Molecule 31: 40S ribosomal protein S30-A



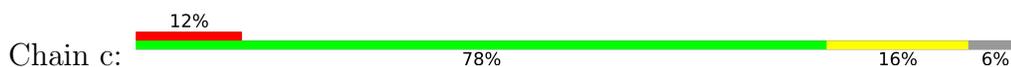
• Molecule 32: Ubiquitin-40S ribosomal protein S31

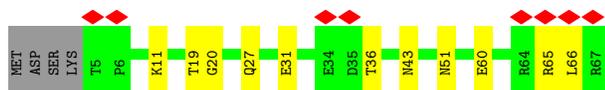


• Molecule 33: Guanine nucleotide-binding protein subunit beta-like protein

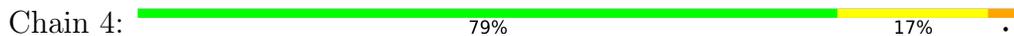


• Molecule 34: 40S ribosomal protein S28-B

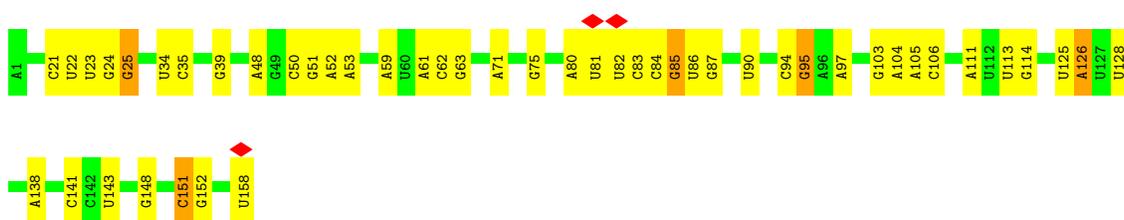




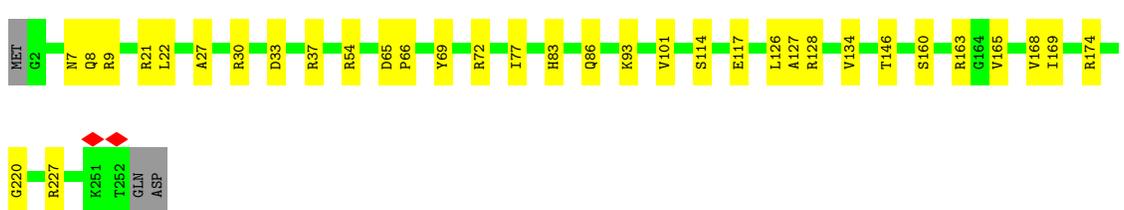
• Molecule 35: 5S rRNA



• Molecule 36: 5.8S rRNA



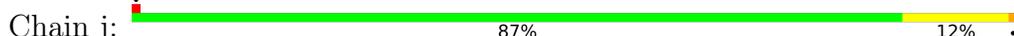
• Molecule 37: 60S ribosomal protein L2-A



• Molecule 38: 60S ribosomal protein L3

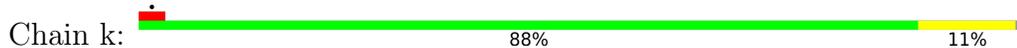


• Molecule 39: 60S ribosomal protein L4-A





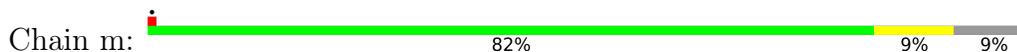
- Molecule 40: 60S ribosomal protein L5



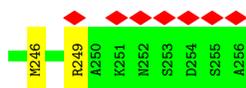
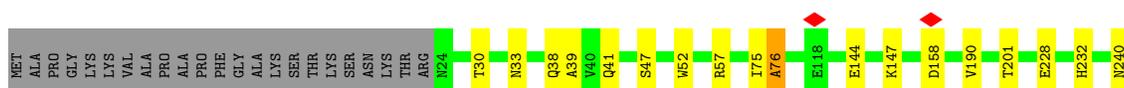
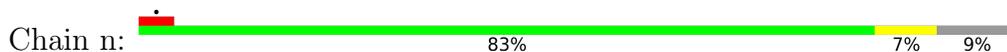
- Molecule 41: 60S ribosomal protein L6-B



- Molecule 42: 60S ribosomal protein L7-A



- Molecule 43: 60S ribosomal protein L8-A

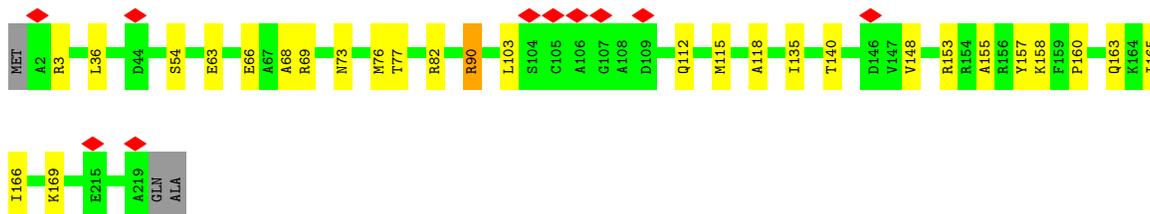
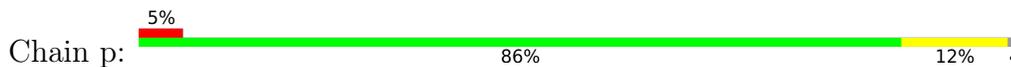


- Molecule 44: 60S ribosomal protein L9-A

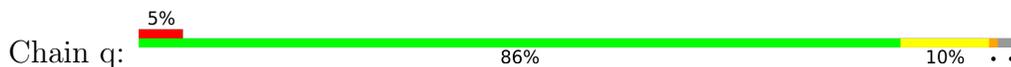




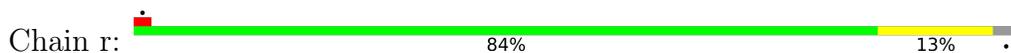
- Molecule 45: 60S ribosomal protein L10



- Molecule 46: 60S ribosomal protein L11-A



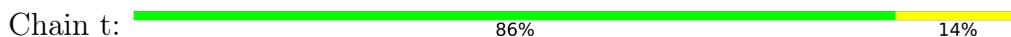
- Molecule 47: 60S ribosomal protein L13-A



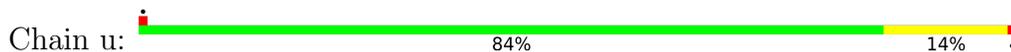
- Molecule 48: 60S ribosomal protein L14-A



- Molecule 49: 60S ribosomal protein L15-A



- Molecule 50: 60S ribosomal protein L16-A





- Molecule 51: 60S ribosomal protein L17-A



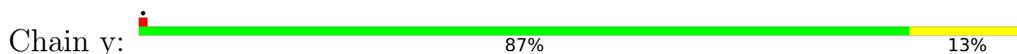
- Molecule 52: 60S ribosomal protein L18-A



- Molecule 53: 60S ribosomal protein L19-A



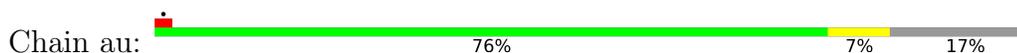
- Molecule 54: 60S ribosomal protein L20-A



- Molecule 55: 60S ribosomal protein L21-A



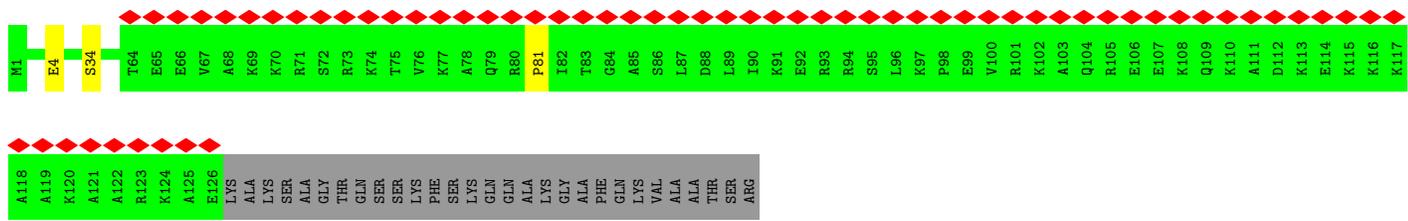
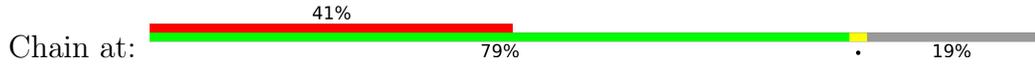
- Molecule 56: 60S ribosomal protein L22-A



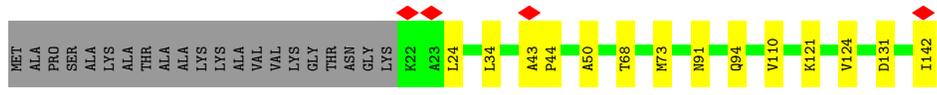
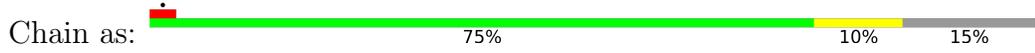
- Molecule 57: 60S ribosomal protein L23-A



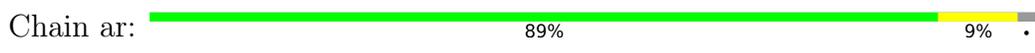
• Molecule 58: 60S ribosomal protein L24-A



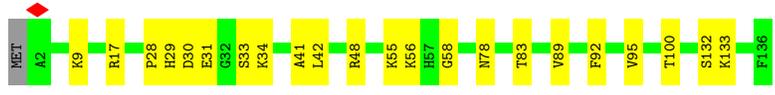
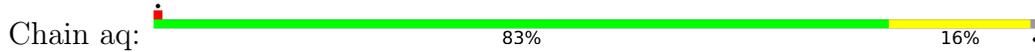
• Molecule 59: 60S ribosomal protein L25



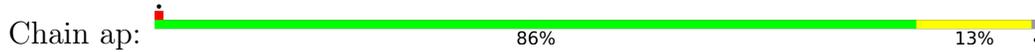
• Molecule 60: 60S ribosomal protein L26-A



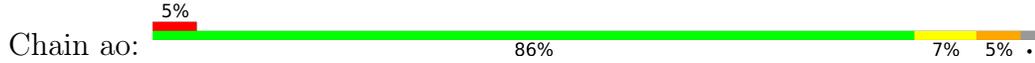
• Molecule 61: 60S ribosomal protein L27-A

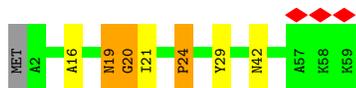


• Molecule 62: 60S ribosomal protein L28



• Molecule 63: 60S ribosomal protein L29

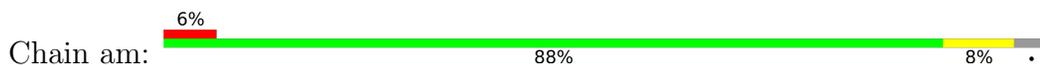




- Molecule 64: 60S ribosomal protein L30



- Molecule 65: 60S ribosomal protein L31-A



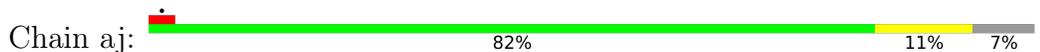
- Molecule 66: 60S ribosomal protein L32



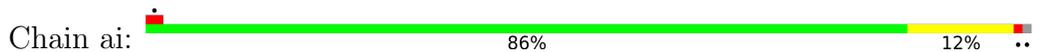
- Molecule 67: 60S ribosomal protein L33-A



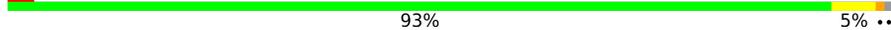
- Molecule 68: 60S ribosomal protein L34-A

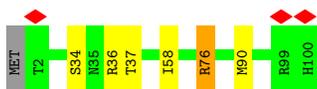


- Molecule 69: 60S ribosomal protein L35-A



- Molecule 70: 60S ribosomal protein L36-A

Chain ah:  93% 5% ..



- Molecule 71: 60S ribosomal protein L37-A

Chain ag:  83% 14% .



- Molecule 72: 60S ribosomal protein L38

Chain af:  5% 86% 13% .



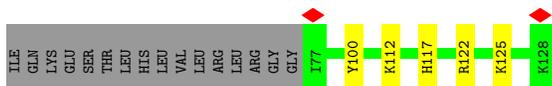
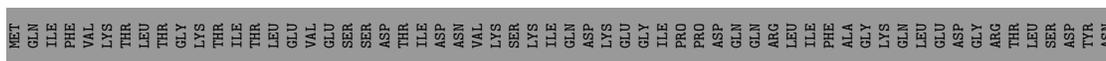
- Molecule 73: 60S ribosomal protein L39

Chain ae:  90% 8% .

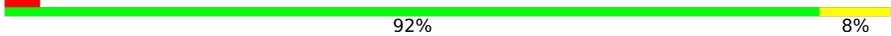


- Molecule 74: Ubiquitin-60S ribosomal protein L40

Chain ad:  37% 59% .



- Molecule 75: L41-A

Chain ac:  92% 8% .



- Molecule 76: 60S ribosomal protein L42-A

Chain ab:  90% 7% ..



U2875	C2737	G2589	A2500	A2439	G2288	A2131	A1864	A1729	A1580	G1429	C1260
A2887	G2745	A2593	U2501	G2442	G2307	A2139	A1865	G1730	C1581	G1434	G1285
C2889	C2594	C2594	A2502	C2443	U2310	A2142	A1867	A1731	C1582	G1437	A1286
C2894	A2448	A2445	U2506	A2444	A2312	A2143	C1872	U1737	A1583	U1305	A1287
G2895	U2446	U2446	C2507	U2444	A2314	A2144	U1880	G1748	G1306	G1443	U1305
A2896	G2447	A2447	U2510	G2447	G2315	C2155	A1886	A1749	A1307	A1446	G1307
G2898	U2448	U2448	G2450	A2448	U2318	A2158	G1889	A1751	A1308	G1450	A1308
C2899	G2451	G2451	G2452	G2451	G2323	G2169	A1893	C1756	U1309	U1605	U1309
A2900	U	U	U	U	A2324	U2170	A1900	U1607	C1312	A1477	C1312
G2901	U	U	U	U	G2325	U2176	G1899	C1608	G1313	A1481	G1313
A2911	U	U	U	U	U2177	U2177	A1900	A1613	U1322	A1482	U1322
U2923	U	U	U	U	U2178	C2179	G1906	U1620	U1325	A1483	U1325
U2935	U	U	U	U	U2184	U2184	U1925	U1629	U1330	G1488	U1330
A2936	U	U	U	U	U2185	U2185	G1926	U1630	U1348	G1489	U1348
G2937	U	U	U	U	U2186	A2188	G1927	C1631	G1349	C1505	G1349
G2938	U	U	U	U	U2187	A2188	G1927	G1634	A1350	C1508	A1350
G2939	U	U	U	U	U2188	A2188	G1927	U1639	U1351	U1522	U1351
A2940	U	U	U	U	U2189	A2188	G1927	A1642	A1352	U1523	A1352
U2941	U	U	U	U	U2190	A2188	G1927	A1643	U1353	G1354	U1353
U2947	U	U	U	U	U2191	A2188	G1927	C1644	A1355	U1533	A1355
C2948	U	U	U	U	U2192	A2188	G1927	U1645	U1356	U1357	U1356
A2949	U	U	U	U	U2193	A2188	G1927	U1651	U1357	U1357	U1357
U2951	U	U	U	U	U2194	A2188	G1927	A1656	U1361	U1542	U1361
A2971	U	U	U	U	U2195	A2188	G1927	G1657	C1364	C1364	C1364
G2947	U	U	U	U	U2196	A2188	G1927	U1658	G1380	G1380	G1380
C2948	U	U	U	U	U2197	A2188	G1927	G1677	U1554	U1554	U1554
G2951	U	U	U	U	U2198	A2188	G1927	G1678	U1555	U1555	U1555
A2971	U	U	U	U	U2199	A2188	G1927	U1678	C1556	C1556	C1556
U2982	U	U	U	U	U2200	A2188	G1927	U1682	U1557	U1557	U1557
A2982	U	U	U	U	U2201	A2188	G1927	U1683	A1558	A1558	A1558
C2983	U	U	U	U	U2202	A2188	G1927	U1684	U1559	U1559	U1559
U2982	U	U	U	U	U2203	A2188	G1927	C1562	U1560	U1560	U1560
U2996	U	U	U	U	U2204	A2188	G1927	C1563	G1561	G1561	G1561
G2997	U	U	U	U	U2205	A2188	G1927	G1713	U1562	U1562	U1562
G3003	U	U	U	U	U2206	A2188	G1927	U1716	C1563	C1563	C1563
A3012	U	U	U	U	U2207	A2188	G1927	U1717	U1564	U1564	U1564
A3024	U	U	U	U	U2208	A2188	G1927	G1718	U1565	U1565	U1565
C3039	U	U	U	U	U2209	A2188	G1927	U1721	U1566	U1566	U1566
U3041	U	U	U	U	U2210	A2188	G1927	U1722	U1567	U1567	U1567
U3042	U	U	U	U	U2211	A2188	G1927	U1723	U1568	U1568	U1568
C3043	U	U	U	U	U2212	A2188	G1927	U1724	U1569	U1569	U1569
G3044	U	U	U	U	U2213	A2188	G1927	U1725	U1570	U1570	U1570
G3045	U	U	U	U	U2214	A2188	G1927	C1725	A1418	A1418	A1418
A3046	U	U	U	U	U2215	A2188	G1927	C1725	A1419	A1419	A1419
U3056	U	U	U	U	U2216	A2188	G1927	C1725	A1420	A1420	A1420
U3057	U	U	U	U	U2217	A2188	G1927	C1725	A1421	A1421	A1421
U3058	U	U	U	U	U2218	A2188	G1927	C1725	A1422	A1422	A1422
	U	U	U	U	U2219	A2188	G1927	C1725	A1423	A1423	A1423
	U	U	U	U	U2220	A2188	G1927	C1725	A1424	A1424	A1424
	U	U	U	U	U2221	A2188	G1927	C1725	A1425	A1425	A1425
	U	U	U	U	U2222	A2188	G1927	C1725	A1426	A1426	A1426
	U	U	U	U	U2223	A2188	G1927	C1725	A1427	A1427	A1427
	U	U	U	U	U2224	A2188	G1927	C1725	A1428	A1428	A1428
	U	U	U	U	U2225	A2188	G1927	C1725	A1429	A1429	A1429
	U	U	U	U	U2226	A2188	G1927	C1725	A1430	A1430	A1430
	U	U	U	U	U2227	A2188	G1927	C1725	A1431	A1431	A1431
	U	U	U	U	U2228	A2188	G1927	C1725	A1432	A1432	A1432
	U	U	U	U	U2229	A2188	G1927	C1725	A1433	A1433	A1433
	U	U	U	U	U2230	A2188	G1927	C1725	A1434	A1434	A1434
	U	U	U	U	U2231	A2188	G1927	C1725	A1435	A1435	A1435
	U	U	U	U	U2232	A2188	G1927	C1725	A1436	A1436	A1436
	U	U	U	U	U2233	A2188	G1927	C1725	A1437	A1437	A1437
	U	U	U	U	U2234	A2188	G1927	C1725	A1438	A1438	A1438
	U	U	U	U	U2235	A2188	G1927	C1725	A1439	A1439	A1439
	U	U	U	U	U2236	A2188	G1927	C1725	A1440	A1440	A1440
	U	U	U	U	U2237	A2188	G1927	C1725	A1441	A1441	A1441
	U	U	U	U	U2238	A2188	G1927	C1725	A1442	A1442	A1442
	U	U	U	U	U2239	A2188	G1927	C1725	A1443	A1443	A1443
	U	U	U	U	U2240	A2188	G1927	C1725	A1444	A1444	A1444
	U	U	U	U	U2241	A2188	G1927	C1725	A1445	A1445	A1445
	U	U	U	U	U2242	A2188	G1927	C1725	A1446	A1446	A1446
	U	U	U	U	U2243	A2188	G1927	C1725	A1447	A1447	A1447
	U	U	U	U	U2244	A2188	G1927	C1725	A1448	A1448	A1448
	U	U	U	U	U2245	A2188	G1927	C1725	A1449	A1449	A1449
	U	U	U	U	U2246	A2188	G1927	C1725	A1450	A1450	A1450
	U	U	U	U	U2247	A2188	G1927	C1725	A1451	A1451	A1451
	U	U	U	U	U2248	A2188	G1927	C1725	A1452	A1452	A1452
	U	U	U	U	U2249	A2188	G1927	C1725	A1453	A1453	A1453
	U	U	U	U	U2250	A2188	G1927	C1725	A1454	A1454	A1454
	U	U	U	U	U2251	A2188	G1927	C1725	A1455	A1455	A1455
	U	U	U	U	U2252	A2188	G1927	C1725	A1456	A1456	A1456
	U	U	U	U	U2253	A2188	G1927	C1725	A1457	A1457	A1457
	U	U	U	U	U2254	A2188	G1927	C1725	A1458	A1458	A1458
	U	U	U	U	U2255	A2188	G1927	C1725	A1459	A1459	A1459
	U	U	U	U	U2256	A2188	G1927	C1725	A1460	A1460	A1460
	U	U	U	U	U2257	A2188	G1927	C1725	A1461	A1461	A1461
	U	U	U	U	U2258	A2188	G1927	C1725	A1462	A1462	A1462
	U	U	U	U	U2259	A2188	G1927	C1725	A1463	A1463	A1463
	U	U	U	U	U2260	A2188	G1927	C1725	A1464	A1464	A1464
	U	U	U	U	U2261	A2188	G1927	C1725	A1465	A1465	A1465
	U	U	U	U	U2262	A2188	G1927	C1725	A1466	A1466	A1466
	U	U	U	U	U2263	A2188	G1927	C1725	A1467	A1467	A1467
	U	U	U	U	U2264	A2188	G1927	C1725	A1468	A1468	A1468
	U	U	U	U	U2265	A2188	G1927	C1725	A1469	A1469	A1469
	U	U	U	U	U2266	A2188	G1927	C1725	A1470	A1470	A1470
	U	U	U	U	U2267	A2188	G1927	C1725	A1471	A1471	A1471
	U	U	U	U	U2268	A2188	G1927	C1725	A1472	A1472	A1472
	U	U	U	U	U2269	A2188	G1927	C1725	A1473	A1473	A1473
	U	U	U	U	U2270	A2188	G1927	C1725	A1474	A1474	A1474
	U	U	U	U	U2271	A2188	G1927	C1725	A1475	A1475	A1475
	U	U	U	U	U2272	A2188	G1927	C1725	A1476	A1476	A1476
	U	U	U	U	U2273	A2188	G1927	C1725	A1477	A1477	A1477
	U	U	U	U	U2274	A2188	G1927	C1725	A1478	A1478	A1478
	U	U	U	U	U2275	A2188	G1927	C1725	A1479	A1479	A1479
	U	U	U	U	U2276	A2188	G1927	C1725	A1480	A1480	A1480
	U	U	U	U	U2277	A2188	G1927	C1725	A1481	A1481	A1481
	U	U	U	U	U2278	A2188	G1927	C1725	A1482	A1482	A1482
	U	U	U	U	U2279	A2188	G1927	C1725	A1483	A1483	A1483
	U	U	U	U	U2280	A2188	G1927	C1725	A1484	A1484	A1484
	U	U	U	U	U2281	A2188	G1927	C1725	A1485	A1485	A1485
	U	U	U	U	U2282	A2188	G1927	C1725	A1486	A1486	A1486
	U	U	U	U	U2283	A2188	G1927	C1725	A1487	A1487	A1487
	U	U	U	U	U2284	A2188	G1927	C1725	A1488	A1488	A1488
	U	U	U	U	U2285	A2188	G1927	C1725	A1489	A1489	A1489
	U	U	U	U	U2286	A2188	G1927	C1725	A1490	A1490	A1490
	U	U	U	U	U2287	A2188	G1927	C1725	A1491	A1491	A1491
	U	U	U	U	U2288	A2188	G1927	C1725	A1492	A1492	A1492
	U	U	U	U	U2289	A2188	G1927	C1725	A1493	A1493	A1493
	U	U	U	U	U2290	A2188	G1927	C1725	A1494	A1494	A1494
	U	U	U	U	U2291	A2188	G1927	C1725	A1495	A1495	A1495
	U	U	U	U	U2292	A2188	G1927	C1725	A1496	A1496	A1496
	U	U	U	U	U2293	A2188</					



## 4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	214383	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ( $e^-/\text{\AA}^2$ )	2.5	Depositor
Minimum defocus (nm)	Not provided	
Maximum defocus (nm)	Not provided	
Magnification	Not provided	
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.604	Depositor
Minimum map value	-0.255	Depositor
Average map value	0.001	Depositor
Map value standard deviation	0.021	Depositor
Recommended contour level	0.0587	Depositor
Map size ( $\text{\AA}$ )	433.6, 433.6, 433.6	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles ( $^\circ$ )	90.0, 90.0, 90.0	wwPDB
Pixel spacing ( $\text{\AA}$ )	1.084, 1.084, 1.084	Depositor

## 5 Model quality i

### 5.1 Standard geometry i

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

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

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
1	2	0.60	1/42211 (0.0%)	0.45	4/65773 (0.0%)
2	A	0.42	0/1644	0.52	0/2249
3	B	0.46	0/1823	0.62	0/2447
4	P	0.28	0/936	0.53	0/1259
5	C	0.55	0/1656	0.57	0/2251
6	D	0.35	0/1754	0.51	0/2361
7	E	0.52	0/2097	0.59	1/2823 (0.0%)
8	F	0.36	0/1625	0.56	0/2197
9	G	0.37	0/1839	0.60	0/2460
10	H	0.38	0/1498	0.56	0/2019
11	I	0.58	0/1501	0.65	1/2006 (0.0%)
12	J	0.45	0/1504	0.64	0/2016
13	K	0.28	0/769	0.51	0/1039
14	L	0.64	0/1185	0.64	0/1598
15	M	0.29	0/883	0.75	0/1199
16	N	0.56	0/1215	0.65	0/1638
17	O	0.51	0/937	0.64	0/1261
18	Q	0.37	0/1125	0.56	0/1510
19	R	0.34	0/957	0.56	0/1283
20	S	0.31	0/1211	0.55	0/1628
21	T	0.34	0/1130	0.51	0/1517
22	U	0.35	0/807	0.54	0/1091
23	V	0.51	0/682	0.63	0/921
24	W	0.66	0/1038	0.61	1/1395 (0.1%)
25	X	0.57	0/1139	0.63	0/1518
26	Y	0.39	0/1087	0.52	0/1449
27	Z	0.27	0/661	0.58	0/888
28	a	0.60	0/782	0.80	0/1047
29	b	0.49	0/620	0.67	2/838 (0.2%)
30	d	0.40	0/452	0.48	0/600
31	e	0.36	0/480	0.54	0/639
32	f	0.25	0/567	0.67	0/764

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
33	g	0.26	0/2436	0.50	0/3318
34	c	0.38	0/493	0.54	0/663
35	4	0.39	0/2883	0.37	0/4491
36	3	0.61	0/3746	0.45	0/5832
37	h	0.78	0/1933	0.68	0/2598
38	i	0.68	0/3146	0.61	0/4228
39	j	0.67	0/2800	0.61	0/3790
40	k	0.41	0/2400	0.53	0/3239
41	l	0.46	0/1327	0.52	0/1790
42	m	0.63	1/1821 (0.1%)	0.58	0/2451
43	n	0.54	0/1836	0.58	0/2481
44	o	0.46	0/1529	0.50	0/2060
45	p	0.52	0/1801	0.52	0/2416
46	q	0.37	0/1371	0.54	0/1838
47	r	0.64	0/1568	0.71	0/2106
48	s	0.50	0/1068	0.55	0/1438
49	t	0.77	0/1757	0.67	1/2354 (0.0%)
50	u	0.66	0/1585	0.59	0/2128
51	v	0.73	0/1439	0.65	0/1938
52	w	0.64	0/1465	0.58	0/1965
53	x	0.65	0/1532	0.66	0/2043
54	y	0.56	0/1473	0.55	0/1980
55	z	0.54	0/1300	0.53	0/1743
56	au	0.46	0/812	0.54	0/1099
57	AB	0.68	0/1018	0.56	0/1369
58	at	0.53	0/850	0.53	0/1152
59	as	0.63	0/979	0.62	0/1321
60	ar	0.62	0/995	0.55	0/1329
61	aq	0.57	0/1118	0.58	0/1497
62	ap	0.68	0/1204	0.65	0/1612
63	ao	0.50	0/473	0.60	0/629
64	an	0.61	0/745	0.54	0/1001
65	am	0.69	0/890	0.64	0/1196
66	al	0.68	0/1038	0.57	0/1390
67	ak	0.70	0/868	0.59	0/1168
68	aj	0.70	0/890	0.63	0/1189
69	ai	0.57	0/978	0.65	1/1301 (0.1%)
70	ah	0.50	0/772	0.57	0/1026
71	ag	0.77	0/685	0.73	0/908
72	af	0.51	0/618	0.52	0/826
73	ae	0.81	0/443	0.65	0/588
74	ad	0.55	0/423	0.53	0/562
75	ac	0.57	0/230	0.83	0/296

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z  >5	RMSZ	# Z  >5
76	ab	0.54	0/836	0.53	0/1104
77	aa	0.70	0/701	0.66	0/934
78	1	0.62	5/76214 (0.0%)	0.47	7/118821 (0.0%)
79	5	0.19	0/509	0.32	0/792
80	NC	0.45	0/132	0.72	0/175
81	6	0.41	2/1810 (0.1%)	0.40	0/2817
All	All	0.58	9/216755 (0.0%)	0.51	18/318676 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
3	B	0	1
5	C	0	1
7	E	0	1
10	H	0	1
12	J	0	1
14	L	0	2
15	M	0	3
16	N	0	1
17	O	0	1
18	Q	0	3
20	S	0	4
24	W	0	1
25	X	0	2
28	a	0	5
29	b	0	1
32	f	0	2
38	i	0	4
39	j	0	1
43	n	0	2
44	o	0	1
46	q	0	3
47	r	0	1
48	s	0	1
49	t	0	1
50	u	0	1
53	x	0	1
59	as	0	1
60	ar	0	1

*Continued on next page...*

Continued from previous page...

Mol	Chain	#Chirality outliers	#Planarity outliers
61	aq	0	1
62	ap	0	1
63	ao	0	3
65	am	0	1
69	ai	0	1
76	ab	0	1
All	All	0	56

All (9) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
1	2	629	U	C5'-C4'	83.80	3.18	1.51
78	1	846	A	C4'-O4'	34.48	2.14	1.45
78	1	846	A	O4'-C1'	33.95	2.09	1.41
78	1	846	A	C3'-C2'	23.21	1.99	1.53
78	1	846	A	C2'-C1'	20.88	1.95	1.53
78	1	846	A	C4'-C3'	20.75	1.94	1.52
81	6	34	I	N3-C4	6.37	1.48	1.35
42	m	151	ARG	CA-CB	-6.24	1.43	1.53
81	6	34	I	C5-C6	6.18	1.51	1.39

All (18) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
24	W	28	ARG	C-N-CD	-7.65	103.76	120.60
78	1	846	A	N9-C1'-C2'	6.64	125.67	112.40
78	1	846	A	C5'-C4'-O4'	5.96	121.42	109.50
78	1	846	A	C4'-C3'-C2'	5.54	113.39	102.30
78	1	1307	G	P-O3'-C3'	5.47	128.40	120.20
1	2	1791	A	C2'-C3'-O3'	5.43	117.64	109.50
1	2	322	G	C2'-C3'-O3'	5.42	117.63	109.50
11	I	10	LYS	N-CA-C	5.40	122.29	110.80
49	t	177	GLY	N-CA-C	5.31	117.74	111.63
1	2	1023	A	C4'-C3'-O3'	5.24	117.26	109.40
78	1	1716	U	C2'-C3'-O3'	5.21	117.31	109.50
78	1	1307	G	C2'-C3'-O3'	5.19	117.28	109.50
7	E	193	GLY	N-CA-C	5.15	125.38	113.18
78	1	846	A	C3'-C2'-C1'	5.06	111.43	101.30
1	2	629	U	N3-C4-O4	5.04	134.53	119.40
29	b	61	THR	CA-C-N	5.03	131.02	121.97
29	b	61	THR	C-N-CA	5.03	131.02	121.97
69	ai	81	ARG	CA-CB-CG	5.03	124.16	114.10

There are no chirality outliers.

All (56) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
3	B	81	PHE	Peptide
5	C	247	ALA	Peptide
7	E	42	LEU	Peptide
10	H	64	VAL	Peptide
12	J	133	HIS	Peptide
14	L	26	LYS	Peptide
14	L	6	THR	Peptide
15	M	110	GLY	Peptide
15	M	130	THR	Peptide
15	M	84	ASN	Peptide
16	N	27	LYS	Peptide
17	O	125	SER	Peptide
18	Q	32	ASN	Peptide
18	Q	33	GLY	Peptide
18	Q	40	GLU	Peptide
20	S	101	LEU	Peptide
20	S	6	GLN	Peptide
20	S	90	ASN	Peptide
20	S	91	ASP	Peptide
24	W	54	ASP	Peptide
25	X	41	SER	Peptide
25	X	88	PRO	Peptide
28	a	35	ALA	Peptide
28	a	61	GLU	Peptide
28	a	8	ASN	Peptide
28	a	84	VAL	Peptide
28	a	9	GLY	Peptide
76	ab	34	SER	Peptide
69	ai	83	LYS	Peptide
65	am	83	GLU	Peptide
63	ao	19	ASN	Peptide
63	ao	20	GLY	Peptide
63	ao	24	PRO	Peptide
62	ap	116	GLY	Peptide
61	aq	58	GLY	Peptide
60	ar	51	ARG	Peptide
59	as	43	ALA	Peptide
29	b	61	THR	Peptide
32	f	106	TYR	Peptide
32	f	144	CYS	Peptide

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type	Group
38	i	127	LYS	Peptide
38	i	139	GLN	Peptide
38	i	2	SER	Peptide
38	i	3	HIS	Peptide
39	j	13	GLY	Peptide
43	n	30	THR	Peptide
43	n	76	ALA	Peptide
44	o	21	LYS	Peptide
46	q	114	ILE	Peptide
46	q	115	LYS	Peptide
46	q	172	LEU	Peptide
47	r	75	PHE	Peptide
48	s	12	TRP	Peptide
49	t	92	LEU	Peptide
50	u	110[A]	PRO	Peptide
53	x	52	LYS	Peptide

## 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	2	37739	0	18988	255	0
2	A	1603	0	1610	13	0
3	B	1798	0	1890	23	0
4	P	916	0	941	17	0
5	C	1626	0	1715	18	0
6	D	1729	0	1812	10	0
7	E	2056	0	2140	14	0
8	F	1605	0	1669	20	0
9	G	1815	0	1894	26	0
10	H	1473	0	1555	17	0
11	I	1476	0	1501	19	0
12	J	1479	0	1556	17	0
13	K	752	0	719	5	0
14	L	1159	0	1225	8	0
15	M	875	0	878	19	0
16	N	1192	0	1255	12	0
17	O	926	0	950	18	0

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
18	Q	1105	0	1166	18	0
19	R	948	0	990	10	0
20	S	1192	0	1222	16	0
21	T	1112	0	1124	10	0
22	U	797	0	863	13	0
23	V	673	0	662	9	0
24	W	1021	0	1060	11	0
25	X	1121	0	1196	16	0
26	Y	1073	0	1132	13	0
27	Z	651	0	682	8	0
28	a	769	0	818	13	0
29	b	610	0	633	11	0
30	d	442	0	428	8	0
31	e	472	0	521	6	0
32	f	556	0	545	15	0
33	g	2383	0	2332	28	0
34	c	491	0	524	7	0
35	4	2579	0	1304	12	0
36	3	3353	0	1695	20	0
37	h	1899	0	1957	25	0
38	i	3075	0	3142	31	0
39	j	2748	0	2859	35	0
40	k	2351	0	2294	24	0
41	l	1305	0	1394	14	0
42	m	1784	0	1862	19	0
43	n	1804	0	1877	12	0
44	o	1508	0	1572	12	0
45	p	1764	0	1804	17	0
46	q	1350	0	1381	12	0
47	r	1543	0	1608	19	0
48	s	1053	0	1149	9	0
49	t	1720	0	1779	22	0
50	u	1555	0	1659	17	0
51	v	1416	0	1433	6	0
52	w	1441	0	1543	10	0
53	x	1515	0	1606	15	0
54	y	1437	0	1475	18	0
55	z	1276	0	1323	10	0
56	au	796	0	812	7	0
57	AB	1003	0	1048	12	0
58	at	836	0	709	3	0
59	as	964	0	1025	10	0

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
60	ar	984	0	1075	9	0
61	aq	1092	0	1155	14	0
62	ap	1173	0	1215	15	0
63	ao	462	0	491	6	0
64	an	737	0	792	6	0
65	am	876	0	912	6	0
66	al	1017	0	1081	9	0
67	ak	850	0	880	7	0
68	aj	880	0	942	10	0
69	ai	969	0	1078	12	0
70	ah	766	0	844	6	0
71	ag	670	0	673	10	0
72	af	612	0	682	6	0
73	ae	436	0	475	5	0
74	ad	417	0	456	4	0
75	ac	229	0	273	2	0
76	ab	824	0	890	6	0
77	aa	694	0	735	10	0
78	1	68091	0	34217	311	0
79	5	454	0	229	4	0
80	NC	129	0	120	0	0
81	6	1621	0	820	2	0
82	1	1	0	0	0	0
82	2	82	0	0	0	0
82	6	1	0	0	0	0
82	E	1	0	0	0	0
82	F	1	0	0	0	0
82	T	1	0	0	0	0
83	aa	1	0	0	0	0
83	ab	1	0	0	0	0
83	ad	1	0	0	0	0
83	ag	1	0	0	0	0
83	aj	1	0	0	0	0
83	d	1	0	0	0	0
83	f	1	0	0	0	0
All	All	201787	0	148541	1164	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 3.

All (1164) 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)
78:1:846:A:C4'	78:1:846:A:C3'	1.94	1.45
78:1:846:A:C1'	78:1:846:A:C2'	1.95	1.44
78:1:846:A:C3'	78:1:846:A:C2'	1.99	1.39
1:2:629:U:H4'	78:1:846:A:C4'	1.51	1.37
1:2:629:U:C5'	78:1:846:A:O4'	2.00	1.09
1:2:629:U:C4'	78:1:846:A:C1'	2.33	1.07
1:2:629:U:C4'	78:1:846:A:O4'	2.02	1.07
1:2:629:U:C5'	78:1:846:A:C4'	2.37	1.03
1:2:629:U:C5'	78:1:846:A:C1'	2.35	1.03
1:2:629:U:C4'	78:1:846:A:C4'	2.37	1.01
78:1:846:A:C1'	78:1:846:A:O4'	2.09	1.00
78:1:846:A:C4'	78:1:846:A:O4'	2.14	0.95
23:V:74:GLN:NE2	23:V:80:LYS:O	2.07	0.87
1:2:629:U:C5'	78:1:846:A:C2'	2.55	0.85
1:2:521:A:N3	26:Y:34:ASN:ND2	2.25	0.85
1:2:992:A:O2'	1:2:1785:U:O2	1.94	0.84
36:3:21:C:OP1	39:j:193:LYS:NZ	2.10	0.84
61:aq:17:ARG:NH1	78:1:1634:G:N7	2.26	0.83
53:x:62:ARG:NH2	78:1:3070:A:OP1	2.12	0.83
34:c:27:GLN:OE1	34:c:43:ASN:ND2	2.12	0.82
66:al:98:HIS:O	66:al:125:ARG:NH2	2.11	0.82
78:1:3092:C:O2'	78:1:3094:A:OP2	1.97	0.82
1:2:629:U:C5'	78:1:846:A:C3'	2.57	0.82
1:2:629:U:H4'	78:1:846:A:C3'	2.10	0.82
1:2:629:U:C4'	78:1:846:A:C3'	2.58	0.81
51:v:126:ARG:NH2	51:v:140:GLU:OE2	2.13	0.81
1:2:629:U:H4'	78:1:846:A:C5'	2.10	0.81
16:N:99:ARG:NH2	16:N:119:GLU:OE2	2.13	0.81
11:I:161:SER:O	78:1:3352:U:O2'	1.98	0.80
68:aj:74:ARG:NH2	78:1:1639:C:OP2	2.14	0.80
1:2:629:U:H5''	78:1:846:A:C4'	2.10	0.80
53:x:62:ARG:NH1	78:1:3068:U:OP2	2.14	0.80
76:ab:30:ALA:O	78:1:2767:U:O2'	1.99	0.79
78:1:1307:G:O2'	78:1:1308:A:OP2	1.99	0.79
63:ao:16:ALA:O	63:ao:20:GLY:CA	2.31	0.78
1:2:629:U:H3	1:2:970:A:H62	1.29	0.78
38:i:244:ARG:NH2	78:1:2948:C:OP1	2.16	0.78
78:1:1348:U:O2	78:1:1349:G:N2	2.17	0.78
1:2:1081:A:O2'	1:2:1083:G:N7	2.15	0.78
1:2:1594:G:OP2	1:2:1596:C:N4	2.16	0.78
47:r:36:ARG:NH2	78:1:687:U:OP2	2.16	0.78
1:2:330:G:OP2	11:I:172:ARG:NH1	2.17	0.78

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1339:C:O2'	1:2:1341:A:N7	2.15	0.78
54:y:12:ARG:NH1	54:y:57:GLU:OE2	2.17	0.77
1:2:159:U:O2'	9:G:87:ARG:NH1	2.17	0.77
1:2:629:U:C4'	78:1:846:A:C2'	2.61	0.77
49:t:5:LYS:NZ	78:1:265:A:O2'	2.18	0.77
68:aj:8:ARG:NH2	68:aj:32:ALA:O	2.17	0.77
36:3:97:A:OP1	69:ai:67:ARG:NH2	2.18	0.77
1:2:1172:G:HO2'	1:2:1543:A:HO2'	1.30	0.77
3:B:5:LYS:NZ	17:O:51:ASP:OD2	2.17	0.77
41:l:46:ARG:NH1	78:1:3268:A:OP1	2.18	0.77
78:1:439:C:O2'	78:1:494:G:N2	2.18	0.77
1:2:142:G:N7	9:G:177:ARG:NH2	2.33	0.77
78:1:2101:C:O2'	78:1:2102:U:O5'	2.00	0.77
78:1:2185:G:O2'	78:1:2314:U:OP2	2.03	0.77
57:AB:81:GLN:O	57:AB:98:ASN:ND2	2.18	0.77
38:i:62:ARG:NH1	78:1:3039:C:OP2	2.19	0.76
1:2:1558:U:OP2	1:2:1559:A:O2'	2.03	0.76
78:1:2568:C:O2'	78:1:2569:A:O4'	2.03	0.76
37:h:220:GLY:O	78:1:2245:C:O2'	2.02	0.76
77:aa:4:ARG:NH2	78:1:838:G:O6	2.19	0.75
37:h:27:ALA:O	37:h:128:ARG:NH2	2.19	0.75
78:1:221:A:O2'	78:1:223:U:OP2	2.04	0.75
38:i:274:SER:OG	78:1:3139:A:OP1	2.04	0.75
57:AB:14:SER:O	57:AB:81:GLN:NE2	2.19	0.75
1:2:1009:U:OP2	17:O:129:LYS:NZ	2.19	0.75
43:n:240:ASN:OD1	78:1:2584:G:O2'	2.03	0.75
1:2:332:U:OP2	11:I:175:GLN:NE2	2.20	0.74
17:O:12:GLN:OE1	17:O:77:THR:OG1	2.03	0.74
77:aa:17:ARG:NH1	78:1:860:G:OP1	2.20	0.74
17:O:88:GLY:O	17:O:92:LYS:NZ	2.20	0.74
1:2:1496:U:HO2'	1:2:1519:U:HO2'	1.33	0.74
38:i:28:ARG:NH2	78:1:3140:G:N7	2.36	0.74
1:2:347:G:OP1	14:L:77:SER:OG	2.05	0.74
1:2:1459:C:OP2	20:S:138:THR:OG1	2.05	0.74
11:I:89:GLU:OE2	11:I:92:ARG:NH2	2.20	0.74
78:1:2307:G:O2'	78:1:2310:U:OP2	2.05	0.74
44:o:62:ARG:NH2	78:1:3115:C:OP1	2.21	0.73
58:at:34:SER:OG	78:1:3085:G:OP1	2.05	0.73
9:G:163:THR:HG22	9:G:168:THR:HG22	1.70	0.73
18:Q:50:GLU:OE2	18:Q:112:TYR:OH	2.05	0.73
35:4:72:A:O2'	35:4:74:C:OP1	2.06	0.73

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:428:A:N3	1:2:440:U:O2'	2.20	0.73
12:J:41:GLU:OE1	12:J:44:ARG:NH2	2.21	0.73
1:2:1227:A:OP1	1:2:1229:G:O2'	2.05	0.73
1:2:388:G:OP1	1:2:423:G:O2'	2.05	0.72
1:2:1435:G:O6	13:K:64:TYR:OH	2.03	0.72
49:t:104:GLU:OE1	49:t:108:ARG:NH1	2.22	0.72
38:i:30:LYS:NZ	78:1:3139:A:OP2	2.21	0.72
39:j:46:LYS:NZ	78:1:691:A:OP1	2.22	0.72
36:3:95:G:OP2	71:ag:72:ARG:NH1	2.23	0.72
7:E:100:ARG:NH2	7:E:121:TYR:O	2.23	0.72
62:ap:117:ARG:NH2	78:1:718:G:OP1	2.22	0.72
35:4:76:A:O2'	54:y:50:LYS:NZ	2.17	0.72
44:o:120:ASP:OD2	44:o:124:ARG:NH2	2.22	0.72
78:1:2206:G:O2'	78:1:2208:A:N6	2.22	0.72
41:l:78:ARG:NH1	78:1:3272:C:OP2	2.22	0.71
78:1:69:C:HO2'	78:1:101:G:HO2'	1.34	0.71
16:N:151:ASN:ND2	64:an:80:ALA:O	2.22	0.71
78:1:239:G:O2'	78:1:240:U:OP1	2.07	0.71
40:k:68:THR:OG1	40:k:71:GLY:O	2.07	0.71
1:2:161:U:OP2	9:G:87:ARG:NH2	2.23	0.71
1:2:1387:G:N7	19:R:44:LYS:NZ	2.38	0.71
53:x:128:LYS:NZ	78:1:1724:U:OP2	2.21	0.71
78:1:2635:A:N6	78:1:2642:A:OP2	2.22	0.71
1:2:322:G:O2'	1:2:323:A:OP2	2.07	0.71
3:B:33:LYS:NZ	3:B:42:ASN:OD1	2.23	0.71
45:p:90:ARG:NH1	78:1:1043:C:O3'	2.23	0.71
17:O:131:GLY:O	28:a:22:ARG:NH2	2.22	0.71
25:X:109:ARG:NH2	25:X:114:LYS:O	2.23	0.71
36:3:103:G:OP2	36:3:105:A:O2'	2.09	0.71
77:aa:5:THR:OG1	78:1:837:A:OP1	2.06	0.71
76:ab:2:VAL:N	76:ab:90:HIS:O	2.24	0.71
1:2:853:G:OP2	53:x:173:ARG:NE	2.24	0.71
1:2:939:A:OP1	16:N:114:ARG:NH2	2.24	0.71
38:i:19:ARG:NH2	78:1:3045:G:OP1	2.23	0.71
78:1:1244:A:O2'	78:1:1247:U:OP1	2.09	0.71
41:l:39:VAL:O	41:l:87:THR:OG1	2.07	0.70
66:al:23:ASP:OD2	78:1:424:G:O2'	2.08	0.70
1:2:477:A:OP2	31:e:28:LYS:NZ	2.19	0.70
40:k:126:GLU:N	40:k:126:GLU:OE1	2.24	0.70
10:H:138:LYS:NZ	10:H:150:GLN:OE1	2.23	0.70
25:X:142:LYS:O	25:X:144:ARG:NH1	2.24	0.70

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:y:161:LYS:NZ	78:1:3209:A:OP2	2.21	0.70
78:1:2501:U:O2'	78:1:2502:A:OP1	2.09	0.70
78:1:2514:U:OP2	78:1:2586:G:N2	2.25	0.70
1:2:1172:G:O2'	1:2:1543:A:O2'	2.05	0.70
1:2:1791:A:O2'	1:2:1792:G:OP2	2.06	0.70
37:h:69:TYR:OH	78:1:2557:A:OP1	2.10	0.70
24:W:81:VAL:O	24:W:122:SER:OG	2.09	0.70
54:y:83:SER:OG	54:y:86:GLY:O	2.09	0.70
78:1:1015:U:O2'	78:1:1017:C:OP2	2.07	0.70
78:1:2899:C:O2'	78:1:2901:G:OP2	2.10	0.70
26:Y:78:SER:OG	26:Y:81:GLU:OE1	2.08	0.70
39:j:59:GLN:OE1	71:ag:55:ARG:NH2	2.24	0.70
41:l:2:THR:OG1	66:al:81:ASP:OD2	2.09	0.70
78:1:1268:G:O2'	78:1:1269:U:O2	2.09	0.70
28:a:83:ILE:O	28:a:85:ARG:N	2.23	0.70
1:2:129:U:O2'	1:2:131:C:N4	2.23	0.69
1:2:231:U:O2	1:2:235:G:N2	2.25	0.69
11:I:138:ASN:OD1	11:I:141:ARG:NH2	2.25	0.69
62:ap:58:MET:SD	78:1:2786:G:N2	2.64	0.69
78:1:86:G:O2'	78:1:98:G:O6	2.11	0.69
1:2:861:U:OP1	16:N:64:ARG:NH2	2.24	0.69
39:j:203:ARG:NH2	78:1:1383:G:O3'	2.26	0.69
78:1:117:U:O2'	78:1:119:U:OP2	2.09	0.69
1:2:229:U:OP2	1:2:230:C:N4	2.23	0.69
1:2:1615:C:O2'	1:2:1616:G:OP2	2.10	0.69
9:G:47:GLY:O	9:G:115:LYS:NZ	2.22	0.69
18:Q:32:ASN:O	18:Q:68:ARG:NH1	2.25	0.69
22:U:70:THR:OG1	22:U:72:ASN:OD1	2.09	0.69
65:am:65:LYS:NZ	78:1:3058:U:O4	2.21	0.69
7:E:103:TYR:O	7:E:182:TYR:OH	2.10	0.69
49:t:147:ARG:NE	78:1:113:C:OP1	2.25	0.69
77:aa:2:ALA:N	78:1:853:G:O6	2.25	0.69
38:i:35:ASP:OD2	38:i:37:ARG:NH1	2.26	0.68
49:t:18:VAL:HG13	49:t:19:LEU:HD12	1.74	0.68
69:ai:63:ARG:NH2	69:ai:79:ASP:O	2.26	0.68
1:2:241:U:O2'	1:2:242:U:O4'	2.10	0.68
38:i:266:ARG:NH2	78:1:2392:C:O2'	2.26	0.68
43:n:147:LYS:O	43:n:201:THR:OG1	2.05	0.68
62:ap:21:ARG:NH2	78:1:640:U:OP1	2.27	0.68
78:1:2495:C:O2'	78:1:2496:C:OP1	2.09	0.68
1:2:1534:G:OP2	27:Z:74:SER:OG	2.11	0.68

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:M:139:HIS:O	15:M:143:GLN:NE2	2.27	0.68
1:2:1797:A:N6	28:a:84:VAL:O	2.27	0.68
54:y:158:LYS:NZ	78:1:1182:A:OP1	2.23	0.68
4:P:48:GLY:O	4:P:52:LYS:NZ	2.26	0.68
63:ao:16:ALA:O	63:ao:20:GLY:HA2	1.94	0.68
1:2:788:A:OP1	7:E:106:LYS:NZ	2.28	0.67
38:i:110:LEU:O	38:i:115:LYS:NZ	2.27	0.67
67:ak:20:LYS:NZ	78:1:1149:G:OP1	2.27	0.67
78:1:449:U:O2'	78:1:450:G:N2	2.27	0.67
1:2:629:U:H5'	78:1:846:A:C2'	2.23	0.67
6:D:74:GLN:NE2	6:D:79:TYR:O	2.27	0.67
38:i:187:SER:O	38:i:190:GLU:N	2.27	0.67
78:1:1562:C:HO2'	78:1:1563:C:P	2.17	0.67
49:t:54:LYS:NZ	78:1:114:A:OP1	2.27	0.67
61:aq:95:VAL:O	61:aq:100:THR:OG1	2.12	0.67
24:W:31:SER:H	24:W:34:ILE:HD12	1.59	0.67
74:ad:100:TYR:O	78:1:2895:G:O2'	2.13	0.67
47:r:100:ARG:NH2	78:1:66:A:OP2	2.26	0.67
1:2:1563:C:OP1	21:T:84:LYS:NZ	2.16	0.67
39:j:314:LYS:NZ	42:m:150:LYS:O	2.23	0.67
52:w:2:GLY:N	78:1:1159:A:OP1	2.27	0.67
63:ao:16:ALA:O	63:ao:20:GLY:HA3	1.94	0.66
1:2:862:A:O2'	1:2:963:A:N6	2.28	0.66
1:2:479:C:O3'	12:J:120:LYS:NZ	2.29	0.66
65:am:44:MET:O	65:am:77:ARG:NH1	2.28	0.66
1:2:623:A:N6	1:2:970:A:OP1	2.29	0.66
1:2:1537:C:O5'	1:2:1572:G:N2	2.27	0.66
1:2:1562:G:OP1	21:T:89:ARG:NH2	2.29	0.66
38:i:66:LYS:O	38:i:70:ARG:NH2	2.28	0.66
39:j:126:ILE:O	39:j:129:THR:OG1	2.08	0.66
46:q:133:ARG:NH2	46:q:158:ASP:OD2	2.28	0.66
61:aq:55:LYS:NZ	78:1:2564:G:OP2	2.19	0.66
1:2:1502:G:N7	21:T:102:ARG:NH2	2.43	0.66
48:s:84:LYS:NZ	78:1:559:A:O2'	2.28	0.66
48:s:128:ARG:NH1	78:1:3214:U:OP2	2.29	0.66
1:2:126:A:OP2	9:G:197:ASN:ND2	2.29	0.66
79:5:48:A:O2'	79:5:49:C:OP1	2.14	0.66
1:2:59:C:O2'	1:2:60:U:O4'	2.14	0.66
5:C:149:GLY:O	5:C:174:ARG:NH2	2.29	0.66
28:a:45:VAL:HG23	28:a:46:GLU:H	1.61	0.66
35:4:119:U:OP2	40:k:258:LYS:NZ	2.28	0.66

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:821:U:O4	1:2:852:C:N3	2.29	0.66
20:S:87:ASN:ND2	20:S:100:THR:OG1	2.28	0.66
65:am:102:LYS:NZ	78:1:3373:U:OP2	2.18	0.65
1:2:1063:U:OP1	29:b:72:LYS:NZ	2.29	0.65
1:2:1075:C:O2'	28:a:13:LYS:O	2.13	0.65
66:al:99:ASN:O	78:1:1388:U:O2'	2.15	0.65
48:s:94:TRP:O	48:s:97:SER:OG	2.12	0.65
53:x:105:LEU:HD23	53:x:138:LEU:HD22	1.78	0.65
1:2:765:G:O6	12:J:149:ARG:NH2	2.30	0.65
37:h:66:PRO:O	43:n:41:GLN:NE2	2.30	0.65
70:ah:76:ARG:NH1	78:1:293:C:O3'	2.29	0.65
1:2:217:A:N1	1:2:844:A:O2'	2.28	0.65
1:2:1198:G:OP1	1:2:1199:G:O2'	2.09	0.65
2:A:156:VAL:HG12	2:A:157:ASP:O	1.97	0.65
78:1:93:C:OP2	78:1:2764:C:O2'	2.14	0.65
17:O:80:HIS:ND1	17:O:113:GLY:O	2.30	0.65
35:4:121:U:OP2	40:k:265:TYR:OH	2.11	0.65
67:ak:49:ILE:HD11	67:ak:71:VAL:HG22	1.79	0.65
37:h:227:ARG:NH2	78:1:2155:G:O2'	2.30	0.64
22:U:44:ASN:OD1	22:U:103:ILE:HD11	1.97	0.64
78:1:2525:G:O2'	78:1:2526:C:OP2	2.14	0.64
12:J:27:GLU:OE2	12:J:39:LYS:NZ	2.25	0.64
1:2:628:G:O3'	78:1:846:A:O2'	2.10	0.64
1:2:1229:G:H21	1:2:1256:A:N6	1.95	0.64
37:h:117:GLU:OE2	37:h:163:ARG:NH2	2.30	0.64
38:i:215:ILE:HD12	38:i:338:LEU:HD12	1.77	0.64
72:af:26:LYS:NZ	72:af:28:ASN:OD1	2.25	0.64
8:F:43:PHE:N	8:F:46:TRP:O	2.29	0.64
1:2:1116:A:OP1	75:ac:17:ARG:NH2	2.31	0.64
41:l:56:LYS:NZ	41:l:101:PHE:O	2.30	0.64
5:C:58:LEU:O	23:V:15:ARG:NE	2.31	0.64
71:ag:43:LYS:NZ	78:1:55:G:OP1	2.29	0.64
35:4:28:C:OP1	46:q:137:ARG:NH1	2.30	0.63
36:3:71:A:O2'	60:ar:52:ARG:NH2	2.31	0.63
50:u:113[A]:ASP:O	50:u:117[A]:ARG:NH1	2.31	0.63
79:5:34:U:O2'	79:5:35:C:OP1	2.14	0.63
4:P:18:ARG:NH1	20:S:90:ASN:OD1	2.31	0.63
1:2:705:U:O2'	1:2:706:A:O5'	2.08	0.63
38:i:77:THR:HG21	38:i:328:ILE:HG12	1.80	0.63
1:2:278:U:OP1	1:2:279:G:N2	2.31	0.63
53:x:88:ARG:O	78:1:1779:C:N4	2.30	0.63

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:au:90:ARG:NH1	78:1:1682:U:O4	2.32	0.63
5:C:140:ARG:NH2	5:C:228:ASN:OD1	2.31	0.63
36:3:51:G:OP2	73:ae:21:ARG:NH1	2.32	0.63
52:w:178:ARG:NH2	78:1:780:A:OP1	2.31	0.63
78:1:69:C:O2'	78:1:101:G:O2'	2.10	0.63
8:F:92:ARG:NH2	8:F:169:ASN:OD1	2.32	0.63
1:2:61:A:O2'	1:2:62:A:O4'	2.16	0.63
12:J:133:HIS:O	12:J:134:ILE:HG23	1.98	0.63
1:2:1229:G:H21	1:2:1256:A:H62	1.46	0.62
4:P:56:PHE:CD2	4:P:83:MET:HE1	2.34	0.62
39:j:14:GLU:OE1	39:j:14:GLU:N	2.32	0.62
52:w:36:LEU:O	52:w:40:THR:OG1	2.16	0.62
71:ag:45:ARG:NH2	78:1:361:A:O3'	2.31	0.62
10:H:26:GLU:OE2	10:H:84:LYS:NZ	2.20	0.62
1:2:537:G:OP2	12:J:175:ARG:NH1	2.33	0.62
54:y:77:VAL:HG11	54:y:106:LEU:HD13	1.81	0.62
1:2:629:U:H5'	78:1:846:A:C3'	2.28	0.62
1:2:1229:G:N2	1:2:1256:A:H62	1.98	0.62
1:2:1584:G:N2	1:2:1611:A:OP2	2.31	0.62
78:1:1236:G:N1	78:1:1244:A:OP1	2.32	0.62
29:b:74:SER:O	29:b:77:THR:OG1	2.16	0.62
76:ab:63:LYS:NZ	78:1:2796:G:N7	2.45	0.61
47:r:4:SER:O	62:ap:44:ASN:ND2	2.33	0.61
1:2:1135:U:OP2	25:X:121:ARG:NH2	2.34	0.61
33:g:6:VAL:O	33:g:316:MET:N	2.33	0.61
17:O:107:ARG:NH1	34:c:60:GLU:OE2	2.33	0.61
47:r:164:GLU:OE1	47:r:169:THR:OG1	2.19	0.61
59:as:68:THR:HG21	69:ai:36:LEU:HD13	1.81	0.61
1:2:68:A:N6	9:G:132:ARG:O	2.33	0.61
1:2:896:U:O2	17:O:41:ARG:NH1	2.34	0.61
5:C:53:ILE:HD13	5:C:73:LEU:HD11	1.81	0.61
8:F:90:ILE:O	8:F:94:THR:HG23	2.01	0.61
57:AB:12:ARG:NH1	78:1:3041:U:OP1	2.33	0.61
66:al:118:LYS:NZ	78:1:438:A:OP1	2.21	0.61
50:u:171[A]:LYS:NZ	78:1:3181:C:OP2	2.20	0.61
81:6:58:A:O2'	81:6:60:U:OP2	2.13	0.61
2:A:188:LEU:HD21	2:A:195:TRP:CD1	2.35	0.61
57:AB:104:ASN:OD1	57:AB:108:GLU:N	2.33	0.61
7:E:19:LEU:HD11	7:E:108:ARG:HD2	1.81	0.61
77:aa:46:THR:OG1	77:aa:57:CYS:SG	2.57	0.61
24:W:15:ASN:ND2	24:W:72:CYS:O	2.34	0.61

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:q:15:GLU:OE2	46:q:132:ASN:ND2	2.33	0.61
1:2:781:U:OP2	26:Y:9:THR:OG1	2.14	0.61
39:j:342:LYS:O	78:1:515:C:O2'	2.18	0.61
66:al:45:ARG:O	78:1:1145:G:O2'	2.12	0.60
1:2:1534:G:O2'	1:2:1535:U:O2	2.15	0.60
18:Q:50:GLU:OE1	18:Q:82:ARG:NH2	2.34	0.60
78:1:544:C:O2	78:1:548:G:N1	2.34	0.60
25:X:69:ARG:NH2	25:X:116:ASP:OD2	2.34	0.60
61:aq:48:ARG:NH2	78:1:1631:C:OP2	2.34	0.60
78:1:3375:A:O2'	78:1:3378:C:OP2	2.18	0.60
8:F:112:ARG:NH2	18:Q:42:GLU:OE2	2.32	0.60
11:I:34:ALA:HB2	11:I:56:ARG:HD3	1.82	0.60
33:g:48:THR:OG1	33:g:50:ASP:OD1	2.09	0.60
1:2:142:G:OP2	9:G:139:ASN:ND2	2.35	0.60
35:4:44:C:OP2	46:q:137:ARG:NH2	2.34	0.60
40:k:278:SER:OG	40:k:280:GLU:OE1	2.18	0.60
50:u:110[A]:PRO:O	50:u:112[A]:TYR:N	2.35	0.60
25:X:41:SER:O	25:X:41:SER:OG	2.18	0.60
54:y:90:MET:HE1	54:y:114:HIS:NE2	2.17	0.60
1:2:337:G:O2'	11:I:10:LYS:NZ	2.25	0.59
61:aq:78:ASN:OD1	64:an:35:ARG:NH2	2.35	0.59
26:Y:38:ASP:OD1	26:Y:52:LYS:NZ	2.35	0.59
34:c:11:LYS:NZ	34:c:51:ASN:OD1	2.35	0.59
69:ai:77:PRO:O	69:ai:81:ARG:NH1	2.35	0.59
1:2:144:U:O4	9:G:137:ARG:NH1	2.35	0.59
39:j:325:LEU:O	42:m:41:ARG:NH2	2.36	0.59
57:AB:29:SER:O	57:AB:66:LYS:NZ	2.34	0.59
78:1:2356:A:H61	78:1:2983:C:H5	1.49	0.59
16:N:142:GLU:HG2	16:N:145:THR:HG22	1.84	0.59
78:1:2568:C:O2'	78:1:2569:A:O5'	2.21	0.59
1:2:969:C:O2	78:1:846:A:N6	2.36	0.59
33:g:200:ASN:ND2	33:g:239:GLU:OE2	2.36	0.59
39:j:283:THR:OG1	39:j:285:ASP:OD1	2.14	0.59
77:aa:75:ALA:O	77:aa:79:VAL:HG23	2.03	0.59
78:1:2794:G:O2'	78:1:2795:U:OP2	2.18	0.59
5:C:219:GLY:O	23:V:25:LYS:NZ	2.36	0.59
1:2:1597:A:OP1	30:d:19:ARG:NH1	2.34	0.59
38:i:246:LEU:N	78:1:1889:G:OP1	2.33	0.59
53:x:135:LYS:NZ	78:1:1949:G:OP2	2.34	0.59
1:2:195:G:N7	11:I:137:LYS:NZ	2.44	0.59
1:2:1365:C:OP1	18:Q:66:ARG:NH1	2.36	0.59

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:629:U:H5'	78:1:846:A:H4'	1.84	0.59
33:g:197:SER:OG	33:g:217:ASP:N	2.36	0.59
7:E:129:VAL:HG12	7:E:139:VAL:HG12	1.83	0.58
9:G:32:ILE:HD11	9:G:63:MET:HE3	1.85	0.58
37:h:93:LYS:NZ	78:1:2547:A:O3'	2.35	0.58
1:2:852:C:OP1	53:x:176:ARG:NH2	2.36	0.58
25:X:42:PRO:O	25:X:79:ASN:ND2	2.36	0.58
37:h:21:ARG:NH2	78:1:825:U:OP1	2.36	0.58
78:1:1243:G:HO2'	78:1:1271:A:HO2'	1.51	0.58
78:1:1778:G:O2'	78:1:1780:G:OP2	2.20	0.58
50:u:56[A]:ASP:OD1	50:u:59[A]:ARG:NH2	2.35	0.58
57:AB:108:GLU:N	57:AB:108:GLU:OE2	2.37	0.58
63:ao:19:ASN:ND2	78:1:970:A:OP2	2.36	0.58
78:1:2549:G:N2	78:1:2549:G:OP2	2.36	0.58
1:2:224:C:O2'	1:2:225:A:OP1	2.21	0.58
3:B:111:ARG:HH22	17:O:121:VAL:HG11	1.68	0.58
15:M:62:LEU:HD21	15:M:72:ILE:HG12	1.86	0.58
54:y:22:PRO:O	55:z:146:ASN:ND2	2.35	0.58
1:2:1334:U:O2'	22:U:85:ARG:NH2	2.37	0.58
3:B:32:ILE:HD11	3:B:46:THR:CG2	2.33	0.58
36:3:126:A:O2'	36:3:128:U:OP2	2.19	0.58
38:i:334:ARG:NH2	78:1:3304:U:O2'	2.37	0.58
54:y:68:HIS:O	54:y:73:LYS:NZ	2.37	0.58
1:2:1459:C:OP1	20:S:126:ARG:NH2	2.36	0.58
46:q:78:GLU:OE2	46:q:82:ARG:NE	2.37	0.58
78:1:2704:A:O2'	78:1:2705:A:O5'	2.21	0.58
1:2:31:C:O2'	1:2:547:U:OP1	2.20	0.58
6:D:209:ILE:O	19:R:20:TYR:OH	2.13	0.58
50:u:43[A]:ILE:HD11	50:u:138[A]:LEU:HD13	1.86	0.58
1:2:704:C:N4	1:2:732:G:O2'	2.37	0.58
3:B:69:CYS:SG	17:O:114:ARG:NH1	2.77	0.57
15:M:84:ASN:O	15:M:86:VAL:HG22	2.04	0.57
36:3:52:A:OP1	73:ae:21:ARG:NH1	2.36	0.57
52:w:95:GLU:N	52:w:95:GLU:OE1	2.36	0.57
1:2:1231:U:O2'	1:2:1258:U:O2'	2.19	0.57
2:A:88:LYS:NZ	19:R:82:ASP:OD2	2.37	0.57
39:j:266:THR:HG23	39:j:267:VAL:HG13	1.86	0.57
78:1:2618:G:N2	78:1:2645:G:OP1	2.35	0.57
1:2:226:A:O2'	1:2:228:G:OP1	2.22	0.57
40:k:33:ARG:O	40:k:37:VAL:HG22	2.05	0.57
35:4:85:G:O3'	42:m:218:ARG:NH2	2.38	0.57

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
37:h:174:ARG:NH2	78:1:2179:C:O2'	2.38	0.57
40:k:75:LEU:O	40:k:112:LYS:NZ	2.37	0.57
5:C:38:VAL:O	5:C:39:THR:HG23	2.04	0.57
25:X:41:SER:O	25:X:43:PHE:N	2.37	0.57
11:I:7:SER:O	11:I:18:ARG:NH2	2.37	0.57
23:V:80:LYS:O	23:V:82:VAL:N	2.37	0.57
33:g:126:SER:OG	33:g:127:ARG:N	2.36	0.57
36:3:39:G:O2'	36:3:105:A:N1	2.35	0.57
13:K:29:GLN:OE1	13:K:39:ASN:ND2	2.38	0.57
26:Y:39:GLU:N	26:Y:39:GLU:OE1	2.38	0.57
44:o:113:GLU:OE2	44:o:115:ARG:NE	2.34	0.57
47:r:155:GLU:N	47:r:155:GLU:OE1	2.37	0.57
67:ak:49:ILE:HD11	67:ak:71:VAL:CG2	2.34	0.57
68:aj:95:ILE:HG22	78:1:2553:U:C5	2.40	0.57
69:ai:10:ARG:NH1	69:ai:60:GLU:OE2	2.38	0.57
1:2:163:G:OP2	1:2:163:G:N2	2.34	0.57
3:B:212:VAL:HG13	3:B:213:ARG:H	1.70	0.56
10:H:181:ILE:HD12	10:H:183:PHE:CE1	2.40	0.56
78:1:1196:C:OP1	78:1:1309:U:O2'	2.19	0.56
55:z:91:LEU:HD12	55:z:96:ILE:HD11	1.87	0.56
1:2:477:A:O3'	31:e:33:ARG:NH2	2.38	0.56
40:k:281:GLU:OE1	40:k:281:GLU:N	2.39	0.56
42:m:34:LYS:NZ	78:1:596:C:OP2	2.21	0.56
29:b:48:SER:OG	29:b:49:HIS:ND1	2.39	0.56
44:o:43:VAL:O	78:1:3186:A:O2'	2.16	0.56
78:1:1390:A:N6	78:1:1418:A:O2'	2.37	0.56
1:2:1787:C:OP1	17:O:127:ARG:NH2	2.38	0.56
2:A:134:LYS:O	2:A:137:SER:OG	2.23	0.56
15:M:130:THR:OG1	15:M:131:ASP:N	2.39	0.56
57:AB:68:GLU:N	57:AB:68:GLU:OE2	2.38	0.56
62:ap:85:ASP:O	62:ap:89:GLN:NE2	2.38	0.56
1:2:1411:A:OP1	18:Q:114:ARG:NH2	2.39	0.56
1:2:1474:G:OP2	8:F:109:LYS:NZ	2.30	0.56
1:2:1601:G:OP1	21:T:86:ARG:NH1	2.36	0.56
27:Z:95:HIS:ND1	27:Z:96:SER:O	2.39	0.56
1:2:629:U:H4'	78:1:846:A:O4'	2.02	0.56
19:R:24:LEU:HB3	19:R:34:LEU:HD21	1.88	0.56
78:1:1134:G:O2'	78:1:2642:A:N3	2.39	0.56
10:H:29:ASN:OD1	10:H:30:SER:N	2.39	0.55
36:3:141:C:O3'	49:t:62:TYR:OH	2.23	0.55
37:h:9:ARG:NH1	78:1:912:G:OP2	2.38	0.55

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:p:3:ARG:NH1	45:p:63:GLU:OE2	2.40	0.55
48:s:108:ARG:HH11	50:u:197[A]:LEU:HD23	1.71	0.55
78:1:2273:G:O2'	78:1:2311:G:O6	2.20	0.55
1:2:1312:A:OP1	19:R:2:GLY:N	2.39	0.55
4:P:86:VAL:HG22	4:P:87:PRO:HD2	1.86	0.55
5:C:236:PRO:O	23:V:33:GLN:NE2	2.39	0.55
6:D:134:CYS:SG	6:D:135:GLU:N	2.79	0.55
11:I:84:HIS:NE2	11:I:97:THR:OG1	2.35	0.55
42:m:185:ILE:O	42:m:189:ILE:HG22	2.06	0.55
63:ao:42:ASN:ND2	78:1:1074:U:O2'	2.39	0.55
2:A:188:LEU:HD21	2:A:195:TRP:CG	2.41	0.55
72:af:32:ASN:OD1	72:af:33:LYS:N	2.40	0.55
1:2:861:U:O2'	24:W:56:HIS:O	2.25	0.55
38:i:250:ALA:HB1	78:1:2947:G:N3	2.22	0.55
49:t:120:TRP:NE1	49:t:123:GLN:OE1	2.35	0.55
42:m:211:SER:OG	78:1:508:U:OP1	2.24	0.55
59:as:91:ASN:N	59:as:94:GLN:OE1	2.37	0.55
61:aq:56:LYS:NZ	78:1:2574:G:OP2	2.32	0.55
1:2:639:U:OP1	10:H:117:THR:OG1	2.25	0.55
20:S:17:LEU:O	20:S:20:THR:OG1	2.24	0.55
37:h:127:ALA:HB2	37:h:134:VAL:HG23	1.89	0.55
38:i:3:HIS:ND1	38:i:3:HIS:O	2.40	0.55
49:t:50:ARG:NH1	78:1:115:A:O4'	2.38	0.55
9:G:14:LYS:HB3	9:G:124:LEU:HD21	1.88	0.55
14:L:2:SER:OG	14:L:113:PRO:O	2.22	0.55
46:q:110:ILE:HG23	46:q:115:LYS:O	2.07	0.55
1:2:1429:G:N3	22:U:72:ASN:ND2	2.54	0.54
48:s:77:ARG:NH2	78:1:524:U:OP1	2.41	0.54
61:aq:41:ALA:C	61:aq:42:LEU:HD12	2.32	0.54
1:2:1501:C:OP2	21:T:102:ARG:NH1	2.40	0.54
78:1:1899:G:O2'	78:1:2334:U:O4	2.18	0.54
1:2:406:U:O2'	9:G:94:ARG:NH2	2.41	0.54
63:ao:29:TYR:OH	78:1:723:U:O2'	2.20	0.54
78:1:831:G:O2'	78:1:1864:A:N3	2.35	0.54
67:ak:43:PHE:O	67:ak:47:LYS:NZ	2.39	0.54
1:2:1096:C:OP2	24:W:71:LYS:NZ	2.41	0.54
1:2:743:U:OP2	10:H:108:GLN:N	2.38	0.54
8:F:63:GLN:NE2	8:F:64:VAL:O	2.41	0.54
17:O:30:VAL:HG11	17:O:71:CYS:SG	2.48	0.54
37:h:30:ARG:NH1	37:h:33:ASP:OD2	2.40	0.54
1:2:265:A:N7	9:G:190:GLN:NE2	2.56	0.54

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:C:180:ALA:HB2	5:C:198:THR:HG21	1.89	0.54
9:G:64:LYS:NZ	9:G:82:SER:O	2.41	0.54
11:I:34:ALA:HB2	11:I:56:ARG:CD	2.38	0.54
34:c:31:GLU:OE2	34:c:36:THR:OG1	2.22	0.54
44:o:155:SER:OG	78:1:3110:C:O3'	2.25	0.54
45:p:153:ARG:NH1	45:p:157:TYR:OH	2.40	0.54
52:w:38:ARG:NH2	78:1:1348:U:OP2	2.41	0.54
78:1:2897:A:OP2	78:1:2899:C:N4	2.41	0.54
1:2:1483:A:N3	1:2:1607:G:O2'	2.36	0.53
1:2:1681:A:H2	1:2:1720:G:H21	1.55	0.53
9:G:5:ILE:HD12	9:G:16:PHE:HD2	1.74	0.53
21:T:115:GLU:OE2	21:T:123:ARG:NH1	2.41	0.53
33:g:159:ASN:ND2	33:g:166:SER:O	2.41	0.53
78:1:339:C:OP1	78:1:1380:G:O2'	2.26	0.53
1:2:1235:C:N3	32:f:138:ARG:NH1	2.57	0.53
33:g:224:ASN:O	33:g:228:LYS:N	2.42	0.53
36:3:85:G:N1	60:ar:112:ASP:OD2	2.41	0.53
49:t:2:GLY:O	70:ah:36:ARG:NH2	2.37	0.53
32:f:137:ASP:O	32:f:151:ASN:ND2	2.42	0.53
81:6:22:C:OP2	81:6:46:A:N6	2.41	0.53
1:2:629:U:C3'	78:1:846:A:O4'	2.57	0.53
78:1:1716:U:O2'	78:1:1717:U:O5'	2.26	0.53
47:r:3:ILE:HD12	62:ap:41:HIS:CB	2.39	0.53
42:m:196:LYS:NZ	78:1:1101:G:OP2	2.39	0.53
1:2:235:G:O2'	1:2:236:A:O5'	2.24	0.53
3:B:26:ARG:NH1	3:B:49:ASN:OD1	2.42	0.53
26:Y:81:GLU:OE1	26:Y:81:GLU:N	2.42	0.53
35:4:101:G:N7	54:y:52:LYS:NZ	2.56	0.53
36:3:24:G:OP1	60:ar:17:LYS:NZ	2.31	0.53
78:1:938:C:HO2'	78:1:2814:G:HO2'	1.55	0.53
78:1:1245:A:N6	78:1:1272:C:O2'	2.41	0.53
78:1:2842:U:OP1	78:1:2844:C:N4	2.41	0.53
12:J:18:PRO:O	12:J:23:ARG:NH2	2.41	0.53
68:aj:95:ILE:HD11	78:1:2555:G:N7	2.24	0.53
1:2:821:U:N3	1:2:852:C:O2	2.40	0.53
40:k:128:GLU:O	40:k:164:LYS:NZ	2.41	0.53
46:q:53:THR:HG22	46:q:60:ARG:HA	1.90	0.53
78:1:649:A:OP2	78:1:2868:U:O2'	2.26	0.53
1:2:804:A:N3	24:W:105:THR:HG22	2.23	0.52
37:h:83:HIS:ND1	37:h:86:GLN:OE1	2.42	0.52
78:1:1253:U:N3	78:1:1264:G:OP1	2.41	0.52

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1227:A:N6	1:2:1256:A:O2'	2.41	0.52
1:2:1251:U:O2	32:f:135:HIS:NE2	2.43	0.52
29:b:31:TYR:HE1	29:b:33:LEU:HD21	1.73	0.52
38:i:54:THR:OG1	38:i:360:ASP:O	2.26	0.52
41:l:49:GLY:O	41:l:162:SER:OG	2.14	0.52
45:p:66:GLU:OE1	45:p:69:ARG:NH2	2.42	0.52
47:r:2:ALA:HB1	62:ap:33:GLY:O	2.10	0.52
53:x:160:GLU:OE1	53:x:163:ARG:NH1	2.40	0.52
60:ar:112:ASP:OD1	60:ar:113:LYS:N	2.42	0.52
61:aq:9:LYS:NZ	61:aq:83:THR:O	2.32	0.52
1:2:953:G:OP2	16:N:94:LYS:NZ	2.42	0.52
18:Q:31:VAL:N	18:Q:34:SER:O	2.37	0.52
23:V:53:TYR:OH	23:V:76:ASP:OD2	2.16	0.52
29:b:67:THR:HG22	29:b:68:GLY:H	1.74	0.52
78:1:348:A:N3	78:1:352:A:O2'	2.42	0.52
57:AB:15:LEU:HD13	57:AB:51:ALA:HB3	1.91	0.52
3:B:180:THR:OG1	3:B:181:LEU:N	2.43	0.52
57:AB:128:ARG:O	57:AB:132:ASN:ND2	2.42	0.52
1:2:610:G:HO2'	1:2:613:G:HO2'	1.57	0.52
15:M:71:ILE:O	15:M:75:VAL:HG23	2.10	0.52
32:f:142:GLY:O	32:f:145:HIS:ND1	2.38	0.52
73:ae:13:MET:SD	78:1:1493:G:O2'	2.67	0.52
12:J:142:ASN:OD1	12:J:142:ASN:N	2.42	0.52
32:f:121:CYS:SG	32:f:122:SER:N	2.82	0.52
47:r:145:PHE:CE2	69:ai:118:ILE:HD11	2.45	0.52
49:t:56:LYS:NZ	78:1:150:A:OP1	2.39	0.52
67:ak:6:ARG:NH1	67:ak:8:TYR:O	2.42	0.52
3:B:146:GLN:N	3:B:149:GLN:OE1	2.40	0.52
28:a:41:ILE:HG23	28:a:68:TYR:CE1	2.44	0.52
38:i:256:HIS:O	78:1:2940:A:O2'	2.16	0.52
49:t:93:LYS:O	78:1:289:A:O2'	2.27	0.52
78:1:2537:U:O2'	78:1:2538:U:O5'	2.26	0.52
1:2:401:A:O2'	1:2:404:G:N7	2.38	0.52
1:2:1205:C:O2	30:d:17:GLY:N	2.43	0.52
1:2:1553:G:O6	4:P:43:ARG:NE	2.39	0.52
1:2:1796:C:O2'	28:a:95:ARG:NH1	2.43	0.52
10:H:103:SER:OG	10:H:104:ARG:N	2.42	0.52
24:W:2:THR:OG1	24:W:3:ARG:N	2.42	0.52
78:1:2314:U:O2'	78:1:2315:G:OP1	2.27	0.52
1:2:1430:U:O2'	1:2:1431:C:OP1	2.21	0.52
15:M:62:LEU:HD21	15:M:72:ILE:HG23	1.92	0.52

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
18:Q:129:PHE:O	18:Q:137:ARG:NH1	2.43	0.52
78:1:1277:C:O2'	78:1:1278:A:O5'	2.20	0.52
1:2:656:G:O6	1:2:679:U:C2	2.62	0.51
25:X:59:ILE:HD12	25:X:71:CYS:SG	2.51	0.51
54:y:109:ASP:OD2	54:y:113:ARG:NH1	2.43	0.51
1:2:1553:G:N1	1:2:1556:A:OP2	2.43	0.51
10:H:114:ARG:O	10:H:117:THR:HG22	2.10	0.51
51:v:62:ARG:NH1	78:1:412:G:OP1	2.42	0.51
62:ap:59:ARG:NH1	78:1:90:C:OP1	2.44	0.51
1:2:1226:A:H61	15:M:114:LYS:CB	2.23	0.51
2:A:40:ALA:HB2	2:A:46:HIS:CE1	2.45	0.51
73:ae:37:TYR:O	78:1:351:A:N6	2.40	0.51
78:1:2393:G:O2'	78:1:2982:A:N6	2.40	0.51
1:2:1529:C:O2	21:T:12:GLN:NE2	2.44	0.51
5:C:146:THR:O	5:C:148:LEU:N	2.43	0.51
5:C:241:ASP:OD2	23:V:35:ASN:ND2	2.44	0.51
45:p:36:LEU:HD21	45:p:69:ARG:HD3	1.91	0.51
64:an:9:SER:OG	64:an:10:ILE:N	2.43	0.51
1:2:7:G:N7	5:C:205:ARG:NH2	2.57	0.51
8:F:94:THR:HG22	8:F:114:ILE:HG13	1.91	0.51
21:T:38:LYS:O	21:T:39:THR:OG1	2.23	0.51
27:Z:39:ALA:O	27:Z:72:GLY:N	2.43	0.51
1:2:14:C:OP2	5:C:206:THR:HG21	2.09	0.51
1:2:1183:A:N6	4:P:122:THR:O	2.43	0.51
1:2:1615:C:HO2'	1:2:1616:G:P	2.30	0.51
4:P:83:MET:HE3	4:P:89:MET:HE1	1.90	0.51
59:as:73:MET:CE	59:as:142:ILE:HD12	2.40	0.51
1:2:5:U:O2'	1:2:553:G:O3'	2.28	0.51
8:F:68:ILE:HD12	8:F:70:VAL:O	2.11	0.51
8:F:136:ALA:O	8:F:140:THR:HG22	2.10	0.51
41:l:157:GLN:OE1	41:l:157:GLN:N	2.41	0.51
46:q:173:ASP:OD1	46:q:173:ASP:N	2.44	0.51
55:z:17:ARG:NH2	55:z:23:GLY:O	2.43	0.51
1:2:592:A:OP1	12:J:39:LYS:NZ	2.29	0.51
1:2:765:G:O2'	1:2:766:U:O5'	2.24	0.51
61:aq:28:PRO:O	61:aq:29:HIS:ND1	2.43	0.51
31:e:49:LEU:HD13	31:e:58:PRO:HD3	1.91	0.51
40:k:59:ASP:OD1	40:k:80:SER:OG	2.28	0.51
44:o:41:ILE:HD11	44:o:67:ALA:CB	2.41	0.51
53:x:114:LYS:NZ	78:1:2093:A:N1	2.59	0.51
1:2:420:A:OP1	9:G:96:SER:OG	2.22	0.51

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:639:U:OP1	10:H:112:ARG:NH2	2.44	0.51
36:3:94:C:OP1	71:ag:75:LYS:NZ	2.44	0.51
37:h:146:THR:HG1	37:h:160:SER:HG	1.59	0.51
40:k:236:LEU:HD12	40:k:239:ILE:HD11	1.92	0.51
47:r:73:ARG:NH2	78:1:77:A:OP2	2.44	0.51
1:2:1382:A:O2'	1:2:1383:G:OP1	2.23	0.50
1:2:55:A:OP1	26:Y:112:LYS:NZ	2.44	0.50
1:2:1529:C:P	27:Z:95:HIS:HE2	2.33	0.50
1:2:1585:U:OP1	18:Q:125:GLU:N	2.44	0.50
33:g:170:ILE:HD12	33:g:202:LEU:HD12	1.92	0.50
40:k:123:GLU:N	40:k:123:GLU:OE1	2.44	0.50
43:n:246:MET:SD	43:n:249:ARG:NH2	2.81	0.50
4:P:110:GLU:HG2	20:S:119:ILE:HD11	1.93	0.50
9:G:23:ARG:NH2	9:G:41:VAL:O	2.43	0.50
37:h:33:ASP:O	37:h:37:ARG:NH1	2.43	0.50
49:t:93:LYS:NZ	78:1:2600:C:OP1	2.45	0.50
1:2:10:G:O2'	5:C:87:GLN:OE1	2.27	0.50
1:2:1204:A:N3	30:d:10:HIS:NE2	2.59	0.50
33:g:108:SER:OG	33:g:128:ASP:N	2.44	0.50
37:h:128:ARG:NH1	78:1:2177:G:OP2	2.43	0.50
40:k:127:GLY:O	40:k:195:LEU:HD23	2.12	0.50
6:D:67:ASN:O	6:D:70:THR:OG1	2.29	0.50
20:S:42:TYR:O	20:S:46:VAL:HG13	2.12	0.50
78:1:1015:U:O2	78:1:1017:C:O2'	2.29	0.50
78:1:3319:U:O2'	78:1:3320:A:OP1	2.28	0.50
1:2:540:G:N2	1:2:542:A:N7	2.57	0.50
33:g:214:ALA:HB1	33:g:240:VAL:HG11	1.92	0.50
39:j:160:GLN:NE2	39:j:213:ASN:O	2.45	0.50
1:2:647:G:N2	1:2:687:G:H22	2.10	0.50
1:2:912:U:OP1	1:2:913:G:O2'	2.20	0.50
40:k:41:LYS:NZ	55:z:30:TYR:O	2.41	0.50
78:1:2901:G:O2'	78:1:3024:A:N1	2.44	0.50
1:2:629:U:O4'	78:1:846:A:C2'	2.60	0.50
1:2:629:U:O5'	78:1:846:A:C1'	2.59	0.50
1:2:1020:A:OP2	16:N:106:ARG:NH2	2.44	0.50
49:t:186:GLY:O	49:t:190:THR:HG23	2.11	0.50
50:u:126[A]:VAL:O	54:y:154:HIS:NE2	2.40	0.50
1:2:1173:C:OP1	20:S:132:ARG:NH2	2.45	0.49
28:a:45:VAL:HG22	28:a:64:LEU:HD11	1.94	0.49
39:j:326:ARG:NE	78:1:596:C:O2	2.45	0.49
78:1:1639:C:HO2'	78:1:1737:U:HO2'	1.60	0.49

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:F:54:LYS:NZ	8:F:135:ASP:OD1	2.45	0.49
43:n:144:GLU:OE2	70:ah:36:ARG:NH1	2.45	0.49
52:w:123:THR:OG1	52:w:125:ASP:OD1	2.25	0.49
1:2:1534:G:O2'	1:2:1535:U:O5'	2.30	0.49
32:f:133:ALA:N	32:f:140:TYR:O	2.39	0.49
54:y:108:GLN:NE2	78:1:1322:U:O2	2.42	0.49
10:H:150:GLN:HB2	10:H:181:ILE:HG22	1.95	0.49
16:N:56:ASP:OD1	16:N:57:ALA:N	2.46	0.49
36:3:61:A:OP2	69:ai:48:ARG:NH2	2.45	0.49
38:i:94:GLU:N	38:i:94:GLU:OE1	2.46	0.49
39:j:62:ALA:HB3	39:j:90:PHE:CE2	2.47	0.49
62:ap:89:GLN:N	62:ap:89:GLN:OE1	2.44	0.49
1:2:57:G:OP2	26:Y:116:LYS:NZ	2.28	0.49
4:P:64:LYS:NZ	4:P:90:ILE:O	2.46	0.49
15:M:28:LEU:HA	15:M:31:VAL:HG22	1.93	0.49
20:S:57:ARG:HE	27:Z:40:VAL:HG21	1.76	0.49
49:t:62:TYR:HD2	49:t:106:VAL:HG13	1.78	0.49
7:E:212:ASP:OD1	7:E:216:ASN:N	2.45	0.49
26:Y:27:VAL:HG11	26:Y:35:VAL:HG21	1.95	0.49
1:2:1366:U:OP2	18:Q:66:ARG:NH2	2.46	0.49
48:s:125:LYS:NZ	78:1:3215:A:OP2	2.45	0.49
53:x:124:TYR:OH	78:1:1721:U:OP2	2.17	0.49
68:aj:46:ASP:OD2	68:aj:88:ARG:NH2	2.44	0.49
4:P:18:ARG:NH1	20:S:90:ASN:O	2.45	0.49
9:G:43:ASP:O	9:G:119:GLN:NE2	2.46	0.49
22:U:104:THR:HG22	22:U:116:VAL:HG21	1.95	0.49
29:b:31:TYR:CE1	29:b:33:LEU:HD21	2.47	0.49
42:m:110:ARG:NH2	78:1:1364:C:OP1	2.46	0.49
78:1:1716:U:HO2'	78:1:1717:U:P	2.36	0.49
78:1:3275:U:N3	78:1:3277:U:O4'	2.46	0.49
37:h:65:ASP:OD2	37:h:72:ARG:NH1	2.45	0.49
54:y:81:TYR:CE1	54:y:90:MET:HE3	2.48	0.49
70:ah:34:SER:OG	70:ah:37:THR:OG1	2.13	0.49
73:ae:2:ALA:N	78:1:1493:G:O6	2.45	0.49
78:1:2206:G:H21	78:1:2207:A:H61	1.60	0.49
78:1:2323:G:O2'	78:1:2325:G:OP2	2.28	0.49
1:2:446:A:OP1	7:E:59:ARG:NE	2.26	0.48
2:A:114:SER:O	2:A:114:SER:OG	2.28	0.48
7:E:21:ASP:N	7:E:21:ASP:OD1	2.45	0.48
8:F:43:PHE:HZ	8:F:90:ILE:HG21	1.77	0.48
35:4:11:A:N6	40:k:13:SER:O	2.44	0.48

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:l:111:LEU:HD11	41:l:115:ALA:HB3	1.95	0.48
42:m:29:GLU:OE1	42:m:29:GLU:N	2.44	0.48
1:2:558:U:OP2	31:e:55:ARG:NH1	2.45	0.48
2:A:79:ARG:NH2	2:A:164:ASN:O	2.46	0.48
5:C:41:LEU:HD12	5:C:61:LEU:HD13	1.95	0.48
10:H:62:VAL:HG22	10:H:93:LEU:O	2.14	0.48
47:r:76:THR:OG1	47:r:101:ARG:NH1	2.45	0.48
59:as:121:LYS:NZ	78:1:1522:U:OP2	2.37	0.48
1:2:68:A:OP1	9:G:160:ARG:NH2	2.46	0.48
6:D:215:GLU:OE1	6:D:215:GLU:N	2.45	0.48
31:e:14:VAL:O	31:e:18:THR:HG23	2.13	0.48
45:p:160:PRO:O	45:p:163:GLN:NE2	2.47	0.48
78:1:1229:G:H1	78:1:1280:C:H42	1.59	0.48
4:P:61:ARG:NH2	4:P:88:GLU:OE2	2.46	0.48
10:H:34:LEU:HB2	10:H:38:LEU:HD23	1.94	0.48
45:p:103:LEU:O	45:p:112:GLN:NE2	2.47	0.48
78:1:1246:G:O2'	78:1:1247:U:O5'	2.29	0.48
12:J:109:LEU:HD21	12:J:134:ILE:CD1	2.44	0.48
1:2:1218:G:O4'	1:2:1444:A:N6	2.47	0.48
4:P:110:GLU:CG	20:S:119:ILE:HD11	2.44	0.48
33:g:74:THR:OG1	33:g:76:ASP:OD1	2.25	0.48
39:j:138:ARG:HH22	39:j:203:ARG:HH21	1.62	0.48
74:ad:122:ARG:NH2	78:1:2896:A:O2'	2.43	0.48
3:B:108:ASP:OD1	3:B:109:LYS:N	2.47	0.48
3:B:111:ARG:NH2	17:O:121:VAL:HG11	2.28	0.48
7:E:11:ARG:NH2	7:E:21:ASP:OD1	2.45	0.48
9:G:49:VAL:HG12	9:G:115:LYS:HB3	1.95	0.48
29:b:76:GLY:O	29:b:77:THR:HG23	2.13	0.48
49:t:119:TYR:OH	49:t:131:GLU:OE1	2.26	0.48
55:z:88:ARG:O	78:1:2722:U:O2'	2.30	0.48
1:2:623:A:O2'	1:2:624:G:OP1	2.19	0.48
1:2:966:A:OP2	16:N:124:ARG:NE	2.43	0.48
27:Z:43:ASP:OD1	27:Z:45:GLU:N	2.44	0.48
38:i:10:ARG:NH2	38:i:11:HIS:O	2.46	0.48
68:aj:95:ILE:HG22	78:1:2553:U:C4	2.49	0.48
78:1:1813:A:O2'	78:1:1816:A:N3	2.35	0.48
55:z:104:GLU:OE2	78:1:989:A:O2'	2.31	0.48
1:2:1583:A:N6	1:2:1612:U:OP2	2.47	0.48
3:B:61:LEU:HD21	3:B:96:LEU:CD1	2.44	0.48
39:j:164:GLU:N	39:j:164:GLU:OE1	2.45	0.48
44:o:50:ASN:ND2	48:s:4:ASP:OD2	2.46	0.48

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:u:182[A]:ASN:OD1	50:u:183[A]:ALA:N	2.47	0.48
64:an:13:LYS:HB3	64:an:100:ILE:HG23	1.96	0.48
1:2:629:U:H3'	78:1:846:A:C8	2.49	0.47
1:2:1211:A:N3	4:P:97:TYR:OH	2.43	0.47
9:G:131:LYS:N	58:at:81:PRO:O	2.47	0.47
11:I:84:HIS:CD2	11:I:90:LEU:HD12	2.49	0.47
28:a:57:SER:OG	28:a:58:VAL:O	2.28	0.47
33:g:84:SER:O	33:g:110:VAL:HG12	2.14	0.47
56:au:80:THR:HG21	56:au:95:PHE:HD2	1.79	0.47
76:ab:63:LYS:NZ	78:1:2760:C:N3	2.61	0.47
78:1:1713:G:N2	78:1:1731:A:OP2	2.46	0.47
78:1:3042:U:OP2	78:1:3092:C:N4	2.38	0.47
32:f:141:CYS:SG	32:f:142:GLY:N	2.87	0.47
1:2:140:A:OP1	9:G:187:LYS:NZ	2.26	0.47
34:c:65:ARG:NH2	34:c:66:LEU:O	2.47	0.47
45:p:54:SER:HB3	45:p:135:ILE:HD11	1.95	0.47
45:p:169:LYS:NZ	55:z:158:THR:OG1	2.25	0.47
78:1:826:G:OP1	78:1:1590:G:O2'	2.33	0.47
78:1:1136:A:O4'	78:1:2636:A:N6	2.47	0.47
13:K:47:GLN:O	13:K:50:THR:OG1	2.29	0.47
19:R:21:TYR:O	19:R:23:LYS:N	2.47	0.47
1:2:61:A:O2'	1:2:62:A:O5'	2.32	0.47
1:2:628:G:O2'	78:1:846:A:O2'	2.08	0.47
4:P:85:ILE:HG22	4:P:112:LEU:HD23	1.97	0.47
7:E:18:TRP:NE1	7:E:41:SER:O	2.47	0.47
8:F:63:GLN:NE2	8:F:66:GLN:OE1	2.47	0.47
15:M:45:LEU:O	15:M:49:THR:HG23	2.14	0.47
15:M:70:ASN:O	15:M:74:LEU:HD23	2.15	0.47
39:j:11:LEU:HD21	39:j:156:LEU:HB2	1.96	0.47
1:2:917:U:O2'	17:O:29:HIS:NE2	2.48	0.47
1:2:1401:A:OP1	19:R:56:HIS:NE2	2.45	0.47
7:E:112:HIS:NE2	7:E:237:SER:O	2.48	0.47
18:Q:95:LYS:O	33:g:59:ARG:NH2	2.44	0.47
22:U:65:ILE:HD12	30:d:52:PHE:CZ	2.50	0.47
41:l:31:ARG:NH2	67:ak:105:SER:O	2.47	0.47
41:l:60:ASP:O	41:l:62:THR:HG23	2.14	0.47
76:ab:47:GLN:NE2	76:ab:53:GLN:OE1	2.46	0.47
77:aa:50:GLY:O	78:1:1795:U:N3	2.47	0.47
78:1:679:U:O2'	78:1:788:C:O2	2.32	0.47
78:1:2540:A:N3	78:1:2541:U:N3	2.63	0.47
24:W:114:GLU:OE1	24:W:118:ARG:NH2	2.47	0.47

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:n:33:ASN:ND2	43:n:38:GLN:OE1	2.48	0.47
49:t:148:TYR:O	49:t:151:ILE:HG22	2.15	0.47
1:2:76:A:N3	1:2:80:A:N6	2.62	0.47
1:2:1371:A:O2'	1:2:1373:C:OP1	2.32	0.47
78:1:2446:U:O2'	78:1:2447:A:OP1	2.28	0.47
1:2:655:G:N3	1:2:678:A:N6	2.62	0.47
18:Q:13:LYS:HG3	18:Q:14:LYS:H	1.80	0.47
69:ai:90:ARG:HE	78:1:20:A:P	2.38	0.47
1:2:105:A:O2'	11:I:8:ARG:NH1	2.49	0.46
11:I:69:SER:OG	11:I:185:GLU:OE2	2.25	0.46
39:j:197:ARG:NH2	78:1:339:C:OP2	2.43	0.46
40:k:196:ARG:HA	40:k:199:ILE:HD12	1.96	0.46
78:1:1562:C:O2'	78:1:1563:C:O5'	2.16	0.46
78:1:2360:C:O2'	78:1:2362:C:OP2	2.19	0.46
35:4:53:U:O2'	35:4:55:A:N7	2.46	0.46
68:aj:29:ILE:HD11	68:aj:31:ARG:NH2	2.30	0.46
1:2:65:A:H2	1:2:84:A:H62	1.62	0.46
1:2:396:G:N1	1:2:399:A:OP2	2.49	0.46
22:U:24:ILE:HG12	22:U:116:VAL:HG22	1.97	0.46
37:h:54:ARG:NH2	78:1:2176:U:OP1	2.44	0.46
39:j:202:ARG:NE	78:1:1384:U:OP2	2.47	0.46
42:m:233:GLU:CD	54:y:35:VAL:HG22	2.41	0.46
50:u:34[A]:VAL:HG22	50:u:103[A]:LYS:HB2	1.97	0.46
51:v:172:GLN:OE1	78:1:3276:G:N2	2.48	0.46
59:as:131:ASP:OD1	59:as:131:ASP:N	2.48	0.46
66:al:33:ARG:NH2	78:1:1407:A:O3'	2.49	0.46
15:M:62:LEU:CD2	15:M:72:ILE:HG23	2.46	0.46
24:W:75:ILE:HD11	24:W:93:LEU:CD1	2.45	0.46
33:g:93:ASP:OD2	33:g:100:TYR:OH	2.29	0.46
56:au:54:VAL:HG12	56:au:67:SER:OG	2.15	0.46
8:F:197:GLU:OE1	8:F:209:TYR:N	2.47	0.46
11:I:70:GLU:OE2	14:L:24:LYS:NZ	2.43	0.46
45:p:158:LYS:NZ	78:1:2852:C:N3	2.56	0.46
57:AB:54:LEU:HD21	57:AB:119:GLY:HA3	1.98	0.46
61:aq:30:ASP:OD1	61:aq:31:GLU:N	2.48	0.46
65:am:19:ARG:NH1	78:1:3324:C:OP1	2.43	0.46
75:ac:17:ARG:HA	75:ac:20:VAL:HG12	1.98	0.46
1:2:1472:C:OP1	8:F:102:ARG:NH1	2.47	0.46
32:f:107:LYS:N	32:f:115:THR:O	2.48	0.46
25:X:130:VAL:HG12	25:X:130:VAL:O	2.16	0.46
33:g:293:ALA:O	33:g:301:LEU:HD12	2.15	0.46

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:w:147:ARG:NH2	78:1:670:C:OP1	2.49	0.46
78:1:439:C:HO2'	78:1:494:G:N2	2.14	0.46
1:2:1175:U:OP2	20:S:137:HIS:ND1	2.48	0.46
32:f:133:ALA:HB3	32:f:140:TYR:HB3	1.97	0.46
45:p:165:ILE:O	45:p:166:ILE:HD13	2.16	0.46
1:2:17:C:O2'	1:2:1137:A:N1	2.41	0.46
1:2:1066:C:O2'	3:B:148:ASN:OD1	2.24	0.46
22:U:26:LEU:HD23	22:U:114:VAL:HG13	1.97	0.46
48:s:96:ALA:O	48:s:101:LYS:NZ	2.30	0.46
60:ar:56:VAL:HG21	60:ar:104:LEU:HD13	1.97	0.46
78:1:1815:U:O2'	78:1:1816:A:OP2	2.30	0.46
1:2:1496:U:O2'	1:2:1519:U:O2'	2.12	0.46
10:H:173:TYR:O	10:H:177:THR:OG1	2.31	0.46
19:R:23:LYS:O	33:g:216:LYS:NZ	2.42	0.46
32:f:148:TYR:O	32:f:149:LYS:NZ	2.48	0.46
55:z:101:CYS:SG	55:z:102:ARG:N	2.89	0.46
68:aj:37:LYS:NZ	78:1:1656:A:OP2	2.47	0.46
71:ag:66:TYR:OH	71:ag:73:ARG:NH2	2.49	0.46
72:af:42:LYS:NZ	78:1:1748:G:OP2	2.46	0.46
78:1:1001:G:O2'	78:1:1041:U:OP2	2.31	0.46
78:1:1243:G:N2	78:1:1271:A:OP1	2.45	0.46
1:2:695:U:O2'	1:2:697:C:OP1	2.27	0.45
1:2:1537:C:C5'	1:2:1572:G:H22	2.28	0.45
8:F:43:PHE:CZ	8:F:90:ILE:HG21	2.50	0.45
39:j:299:ILE:HG23	52:w:39:ARG:HE	1.81	0.45
45:p:76:MET:SD	45:p:148:VAL:HG12	2.55	0.45
56:au:80:THR:HG21	56:au:95:PHE:CD2	2.51	0.45
62:ap:35:ALA:O	62:ap:41:HIS:ND1	2.48	0.45
66:al:104:ASN:ND2	78:1:1389:G:OP1	2.49	0.45
1:2:929:A:OP1	1:2:931:C:N4	2.48	0.45
1:2:994:G:OP1	1:2:1778:G:O2'	2.32	0.45
77:aa:4:ARG:NH1	78:1:837:A:OP2	2.49	0.45
1:2:979:A:N3	1:2:1775:U:O2'	2.50	0.45
12:J:59:LEU:HD22	12:J:69:ARG:HA	1.98	0.45
18:Q:64:ASP:OD1	18:Q:64:ASP:N	2.44	0.45
36:3:25:G:N7	60:ar:13:ARG:NH1	2.58	0.45
1:2:473:A:OP1	12:J:44:ARG:NH1	2.42	0.45
1:2:767:U:C5	12:J:143:ILE:HD11	2.52	0.45
1:2:1447:C:O4'	32:f:80:ARG:NH2	2.49	0.45
26:Y:35:VAL:O	26:Y:36:SER:OG	2.33	0.45
38:i:36:ASP:OD2	38:i:39:LYS:NZ	2.43	0.45

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:1:26:A:N3	78:1:328:U:O2'	2.43	0.45
78:1:1017:C:N4	78:1:2671:A:OP1	2.49	0.45
78:1:1240:A:H61	78:1:1244:A:C5'	2.30	0.45
1:2:258:C:O2	11:I:178:ARG:NH2	2.47	0.45
1:2:1473:U:O2'	8:F:103:ASN:ND2	2.45	0.45
1:2:1489:U:OP2	1:2:1515:A:N6	2.48	0.45
1:2:1610:G:N7	18:Q:14:LYS:NZ	2.63	0.45
59:as:73:MET:HE1	59:as:142:ILE:HD12	1.99	0.45
2:A:157:ASP:OD2	23:V:60:ARG:NH2	2.50	0.45
43:n:228:GLU:O	43:n:232:HIS:ND1	2.49	0.45
78:1:1063:G:O2'	78:1:1097:G:N2	2.50	0.45
78:1:2208:A:H2	78:1:2236:G:H22	1.63	0.45
25:X:92:CYS:HG	25:X:136:TRP:CD1	2.35	0.45
33:g:51:ASP:O	33:g:53:LYS:N	2.50	0.45
42:m:47:ARG:NH1	42:m:183:ASP:OD2	2.49	0.45
46:q:22:SER:O	78:1:2676:A:N6	2.49	0.45
78:1:2745:G:N2	78:1:2748:A:OP2	2.42	0.45
1:2:1344:A:O2'	1:2:1345:A:OP1	2.30	0.45
10:H:64:VAL:HG22	10:H:64:VAL:O	2.17	0.45
15:M:63:VAL:HG11	15:M:94:ALA:HA	1.99	0.45
26:Y:7:ILE:HD11	26:Y:40:LEU:HD23	1.99	0.45
38:i:127:LYS:O	38:i:129:ALA:N	2.50	0.45
51:v:56:ARG:NH1	51:v:75:GLU:OE2	2.47	0.45
59:as:50:ALA:O	69:ai:66:VAL:HG21	2.17	0.45
78:1:1306:G:O6	78:1:2366:C:O2'	2.30	0.45
1:2:1786:G:OP2	17:O:133:ARG:NH2	2.48	0.45
14:L:94:ILE:HD13	25:X:12:ALA:CB	2.47	0.45
25:X:131:SER:O	25:X:134:ALA:N	2.50	0.45
29:b:34:ASP:OD1	29:b:34:ASP:N	2.50	0.45
47:r:46:ILE:O	47:r:49:ARG:N	2.43	0.45
78:1:1721:U:O2'	78:1:1723:A:N7	2.47	0.45
78:1:1925:U:O2'	78:1:1927:G:N7	2.46	0.45
1:2:640:U:O2'	1:2:641:G:OP1	2.26	0.45
1:2:1320:U:O2'	1:2:1322:A:OP1	2.33	0.45
3:B:61:LEU:HD21	3:B:96:LEU:HD13	1.98	0.45
33:g:230:ALA:C	33:g:231:MET:HE2	2.42	0.45
37:h:33:ASP:OD1	37:h:33:ASP:N	2.42	0.45
39:j:188:ARG:NE	39:j:197:ARG:O	2.46	0.45
51:v:74:LYS:NZ	78:1:3310:A:OP1	2.47	0.45
59:as:34:LEU:HD13	78:1:1558:A:O2'	2.16	0.45
78:1:1477:A:OP1	78:1:3075:G:O2'	2.34	0.45

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1584:G:HO2'	1:2:1585:U:H6	1.65	0.44
15:M:34:THR:HG21	15:M:128:ALA:HB2	1.99	0.44
15:M:49:THR:O	15:M:53:THR:HG23	2.17	0.44
15:M:70:ASN:OD1	15:M:71:ILE:N	2.50	0.44
38:i:87:VAL:HG23	38:i:87:VAL:O	2.17	0.44
78:1:2333:C:H2'	78:1:2334:U:O4'	2.17	0.44
1:2:1756:A:P	78:1:2256:A:H61	2.40	0.44
8:F:51:VAL:HG11	8:F:130:ILE:HG22	2.00	0.44
33:g:90:ARG:NH1	33:g:99:THR:OG1	2.50	0.44
35:4:76:A:O3'	54:y:50:LYS:NZ	2.49	0.44
36:3:75:G:OP2	60:ar:74:TYR:OH	2.34	0.44
39:j:165:ALA:HB1	39:j:219:LEU:HD21	1.99	0.44
40:k:163:LEU:HD21	40:k:175:HIS:CG	2.52	0.44
40:k:232:ASP:OD1	40:k:232:ASP:N	2.50	0.44
41:l:97:ASN:O	41:l:97:ASN:ND2	2.51	0.44
78:1:1238:C:N4	78:1:1245:A:OP2	2.49	0.44
43:n:47:SER:OG	78:1:2585:G:N7	2.34	0.44
47:r:138:VAL:CG2	69:ai:118:ILE:HG23	2.48	0.44
1:2:554:C:N4	1:2:571:G:O6	2.50	0.44
1:2:629:U:O4'	78:1:846:A:H2'	2.17	0.44
1:2:897:C:O2	17:O:41:ARG:NH2	2.50	0.44
36:3:143:U:OP1	49:t:38:ARG:NH2	2.49	0.44
37:h:101:VAL:HG12	37:h:101:VAL:O	2.18	0.44
41:l:59:GLU:OE1	41:l:59:GLU:N	2.50	0.44
45:p:115:MET:O	45:p:118:ALA:HB2	2.18	0.44
47:r:76:THR:O	47:r:78:ALA:N	2.51	0.44
49:t:188:ARG:NH1	78:1:31:C:OP2	2.45	0.44
5:C:116:LYS:HG2	5:C:127:ALA:HB3	1.98	0.44
9:G:2:LYS:O	9:G:3:LEU:HD23	2.17	0.44
22:U:96:PRO:O	22:U:100:VAL:HG23	2.16	0.44
32:f:102:VAL:O	32:f:105:TYR:OH	2.16	0.44
38:i:222:LYS:NZ	78:1:3089:C:OP1	2.47	0.44
39:j:292:SER:OG	39:j:293:SER:N	2.50	0.44
64:an:10:ILE:HD12	64:an:10:ILE:H	1.83	0.44
1:2:609:U:N3	25:X:22:ASN:O	2.42	0.44
13:K:45:ALA:O	13:K:49:LEU:HD23	2.17	0.44
27:Z:55:PRO:O	27:Z:56:THR:OG1	2.26	0.44
33:g:182:ASN:N	33:g:189:GLU:OE1	2.50	0.44
1:2:1202:A:N6	1:2:1457:C:O5'	2.51	0.44
5:C:38:VAL:O	5:C:38:VAL:HG13	2.18	0.44
15:M:91:VAL:HG22	15:M:92:ALA:H	1.82	0.44

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:l:30:LEU:HD22	41:l:34:LEU:HD12	2.00	0.44
47:r:62:THR:O	47:r:64:LYS:N	2.51	0.44
1:2:1088:A:O3'	28:a:89:ARG:NH1	2.51	0.44
2:A:92:HIS:CE1	2:A:202:TYR:HH	2.34	0.44
36:3:114:G:OP1	78:1:1831:U:O2'	2.33	0.44
47:r:19:GLN:NE2	78:1:800:G:OP1	2.51	0.44
71:ag:56:ARG:NH2	78:1:363:G:OP2	2.47	0.44
1:2:705:U:HO2'	1:2:706:A:P	2.37	0.44
1:2:912:U:OP2	3:B:8:ARG:NH1	2.51	0.44
1:2:1060:U:H3'	1:2:1061:A:H5''	2.00	0.44
1:2:1420:C:OP1	30:d:54:LYS:NZ	2.46	0.44
39:j:203:ARG:CZ	39:j:203:ARG:HB2	2.46	0.44
62:ap:104:THR:HG21	62:ap:112:ILE:HD11	2.00	0.44
78:1:1724:U:O2'	78:1:1725:C:OP2	2.27	0.44
1:2:1445:G:C5	32:f:91:ILE:HD11	2.52	0.43
12:J:63:ASP:OD1	12:J:64:GLU:N	2.51	0.43
28:a:75:VAL:HG12	28:a:79:ILE:HD12	2.00	0.43
45:p:140:THR:HG21	45:p:148:VAL:HG11	1.99	0.43
55:z:124:VAL:HG12	55:z:124:VAL:O	2.18	0.43
56:au:86:LYS:NZ	78:1:1684:U:OP1	2.43	0.43
78:1:952:A:N3	78:1:1114:U:O2'	2.43	0.43
1:2:1603:U:OP2	18:Q:132:LYS:NZ	2.52	0.43
1:2:1615:C:OP1	8:F:81:ARG:NH2	2.48	0.43
5:C:56:ILE:HA	5:C:61:LEU:HD12	2.00	0.43
6:D:9:ARG:HA	6:D:12:VAL:HG22	2.00	0.43
33:g:207:ASP:HB2	33:g:209:THR:HG22	2.00	0.43
37:h:168:VAL:CG2	77:aa:79:VAL:HG21	2.48	0.43
42:m:159:GLN:NE2	78:1:1361:U:O2	2.51	0.43
68:aj:44:CYS:SG	68:aj:47:CYS:N	2.83	0.43
16:N:28:LEU:H	16:N:28:LEU:HD12	1.83	0.43
56:au:74:LYS:NZ	78:1:1678:G:O6	2.51	0.43
1:2:523:G:N1	1:2:528:U:OP2	2.49	0.43
1:2:1604:U:OP2	18:Q:127:LYS:NZ	2.50	0.43
1:2:1674:C:OP1	9:G:92:ARG:NH2	2.46	0.43
14:L:94:ILE:HD13	25:X:12:ALA:HB1	2.00	0.43
37:h:77:ILE:HG21	37:h:169:ILE:HD12	2.00	0.43
49:t:50:ARG:HH12	78:1:115:A:C1'	2.31	0.43
57:AB:45:ARG:NE	78:1:3043:C:OP1	2.51	0.43
33:g:234:LEU:HD23	33:g:234:LEU:H	1.83	0.43
35:4:87:G:OP1	42:m:218:ARG:NE	2.52	0.43
50:u:151[A]:ASP:OD1	50:u:152[A]:VAL:N	2.51	0.43

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:w:21:SER:OG	78:1:673:U:OP1	2.28	0.43
61:aq:33:SER:OG	61:aq:34:LYS:N	2.52	0.43
78:1:1264:G:N2	78:1:1265:U:O4	2.51	0.43
78:1:1900:A:O2'	78:1:1906:G:N7	2.47	0.43
1:2:475:A:OP1	12:J:126:ARG:NH1	2.52	0.43
6:D:213:GLU:N	6:D:213:GLU:OE1	2.51	0.43
39:j:3:ARG:NH1	39:j:27:SER:OG	2.48	0.43
39:j:328:ASN:OD1	42:m:48:ASN:ND2	2.45	0.43
39:j:360:LYS:NZ	78:1:519:A:N7	2.62	0.43
50:u:35[A]:VAL:HG21	50:u:80[A]:PHE:HE2	1.84	0.43
62:ap:6:THR:HG22	62:ap:8:THR:H	1.84	0.43
76:ab:34:SER:OG	76:ab:35:LEU:O	2.21	0.43
78:1:2888:U:O4'	78:1:2911:A:N6	2.51	0.43
22:U:44:ASN:CG	22:U:103:ILE:HD11	2.43	0.43
54:y:19:VAL:HG13	54:y:19:VAL:O	2.18	0.43
78:1:3332:U:H2'	78:1:3333:G:O4'	2.19	0.43
1:2:630:A:H62	78:1:846:A:N6	2.17	0.43
1:2:1452:U:OP1	30:d:10:HIS:ND1	2.45	0.43
15:M:33:ARG:O	15:M:37:VAL:HG23	2.18	0.43
38:i:35:ASP:OD1	38:i:36:ASP:N	2.52	0.43
39:j:203:ARG:NH1	78:1:1384:U:OP1	2.46	0.43
44:o:45:PHE:CE1	44:o:55:VAL:HG22	2.53	0.43
1:2:393:C:N4	1:2:401:A:OP2	2.51	0.43
9:G:68:LEU:HD23	9:G:68:LEU:HA	1.95	0.43
37:h:114:SER:N	37:h:165:VAL:O	2.52	0.43
44:o:165:CYS:SG	44:o:179:ILE:HD12	2.59	0.43
53:x:105:LEU:HD23	53:x:138:LEU:CD2	2.46	0.43
61:aq:89:VAL:HG12	61:aq:92:PHE:CZ	2.54	0.43
1:2:188:A:H62	1:2:197:A:H8	1.67	0.43
19:R:24:LEU:O	19:R:58:MET:HE2	2.19	0.43
58:at:4:GLU:OE1	58:at:4:GLU:N	2.48	0.43
69:ai:62:GLN:O	69:ai:66:VAL:HG23	2.19	0.43
3:B:29:TRP:CH2	3:B:47:LEU:HD11	2.54	0.42
60:ar:42:GLN:NE2	60:ar:126:LEU:O	2.51	0.42
1:2:97:C:O2	1:2:425:A:O2'	2.32	0.42
1:2:765:G:HO2'	1:2:766:U:P	2.42	0.42
1:2:1274:C:O2'	1:2:1275:A:OP2	2.28	0.42
1:2:1504:G:OP1	21:T:97:SER:OG	2.34	0.42
38:i:73:VAL:HG11	57:AB:90:GLY:HA3	2.01	0.42
54:y:90:MET:HE1	54:y:114:HIS:CE1	2.53	0.42
71:ag:3:LYS:NZ	78:1:2139:A:O2'	2.52	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:1:1393:A:N3	78:1:1419:A:O2'	2.45	0.42
1:2:742:U:O2	10:H:107:ARG:NH2	2.49	0.42
18:Q:44:LEU:HB3	18:Q:78:VAL:HG11	2.01	0.42
20:S:14:ILE:HD12	46:q:116:TYR:CZ	2.55	0.42
72:af:14:LEU:HD21	72:af:52:TYR:CD2	2.54	0.42
78:1:2335:G:N2	78:1:2339:C:O2'	2.52	0.42
1:2:629:U:O5'	78:1:846:A:H1'	2.19	0.42
1:2:1023:A:OP1	1:2:1126:G:N2	2.49	0.42
3:B:72:ASP:OD1	17:O:114:ARG:NH2	2.52	0.42
6:D:116:ARG:NE	6:D:150:MET:HE1	2.35	0.42
39:j:107:ARG:NH2	78:1:1429:G:OP2	2.49	0.42
66:al:78:ASN:N	66:al:78:ASN:OD1	2.48	0.42
78:1:1240:A:H61	78:1:1244:A:H5'	1.84	0.42
1:2:1273:G:H4'	1:2:1274:C:H3'	2.02	0.42
2:A:16:LEU:HD22	19:R:91:LEU:HD23	2.02	0.42
7:E:88:ASP:OD1	7:E:122:LYS:NZ	2.42	0.42
10:H:14:THR:HG22	10:H:17:GLU:OE2	2.20	0.42
20:S:29:VAL:O	20:S:33:THR:HG23	2.20	0.42
22:U:106:ILE:HD12	22:U:107:THR:HG23	2.01	0.42
50:u:177[A]:LYS:O	50:u:180[A]:SER:OG	2.27	0.42
53:x:72:GLU:O	53:x:74:ARG:NH2	2.52	0.42
71:ag:13:ASN:ND2	78:1:901:G:OP1	2.53	0.42
11:I:2:GLY:O	11:I:24:LYS:NZ	2.40	0.42
33:g:266:ASP:OD1	33:g:266:ASP:N	2.42	0.42
43:n:75:ILE:O	43:n:76:ALA:HB3	2.19	0.42
51:v:23:ARG:NH1	78:1:1505:C:OP2	2.45	0.42
37:h:7:ASN:OD1	37:h:8:GLN:N	2.52	0.42
38:i:186:GLY:C	38:i:187:SER:HG	2.25	0.42
41:l:76:LEU:N	41:l:138:GLN:OE1	2.49	0.42
62:ap:130:VAL:HG11	62:ap:145:VAL:HG11	2.01	0.42
78:1:3108:G:OP2	78:1:3120:C:N4	2.52	0.42
7:E:160:VAL:HG13	7:E:169:ILE:HG23	2.02	0.42
14:L:94:ILE:HD11	14:L:101:GLU:OE2	2.20	0.42
15:M:74:LEU:HD22	32:f:108:VAL:HG21	2.01	0.42
29:b:42:ASN:ND2	29:b:58:SER:OG	2.48	0.42
33:g:54:PHE:CZ	33:g:312:VAL:HG21	2.55	0.42
42:m:148:VAL:HG12	42:m:181:ILE:HD11	2.01	0.42
61:aq:132:SER:OG	61:aq:133:LYS:N	2.53	0.42
65:am:29:ALA:HB3	65:am:30:PRO:HD3	2.01	0.42
68:aj:71:THR:HG22	68:aj:72:VAL:O	2.20	0.42
74:ad:112:LYS:O	74:ad:117:HIS:ND1	2.48	0.42

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:1:821:U:O2'	78:1:912:G:OP1	2.33	0.42
24:W:112:ASP:OD1	24:W:112:ASP:N	2.49	0.42
26:Y:47:VAL:O	26:Y:49:LYS:NZ	2.46	0.42
33:g:172:ALA:HB1	33:g:199:ILE:HG21	2.01	0.42
50:u:49[A]:ARG:NH1	78:1:1190:A:N3	2.67	0.42
52:w:22:ASP:OD1	52:w:27:LYS:NZ	2.53	0.42
78:1:2704:A:HO2'	78:1:2705:A:P	2.42	0.42
1:2:230:C:O2'	1:2:231:U:O5'	2.29	0.42
1:2:1484:G:H21	1:2:1606:C:H1'	1.84	0.42
5:C:222:TYR:O	23:V:23:ILE:HG21	2.20	0.42
31:e:49:LEU:HD13	31:e:58:PRO:CD	2.49	0.42
37:h:21:ARG:HG3	37:h:22:LEU:HG	2.01	0.42
38:i:221:THR:OG1	78:1:3046:A:O3'	2.38	0.42
43:n:33:ASN:O	43:n:39:ALA:HB3	2.20	0.42
49:t:44:ARG:NH2	78:1:269:G:OP2	2.50	0.42
67:ak:73:ARG:NH1	78:1:1167:U:OP2	2.49	0.42
72:af:51:LEU:N	78:1:1613:A:OP1	2.51	0.42
1:2:3:U:O2	12:J:17:ARG:NH1	2.45	0.41
3:B:76:SER:OG	3:B:78:ASP:OD2	2.37	0.41
4:P:111:MET:HB3	20:S:119:ILE:HD12	2.02	0.41
6:D:42:THR:HG22	6:D:43:PRO:O	2.19	0.41
16:N:119:GLU:O	16:N:123:HIS:ND1	2.53	0.41
44:o:156:GLN:HE22	78:1:3109:G:H21	1.67	0.41
45:p:36:LEU:HD23	45:p:73:ASN:ND2	2.35	0.41
1:2:123:G:OP1	7:E:77:ARG:NH2	2.46	0.41
1:2:182:A:H61	1:2:203:U:H3	1.67	0.41
1:2:1418:G:N2	30:d:55:PHE:O	2.47	0.41
1:2:1451:C:OP1	30:d:12:ARG:NH2	2.47	0.41
3:B:127:VAL:HG13	3:B:176:VAL:HG11	2.01	0.41
3:B:210:ILE:O	3:B:210:ILE:HG22	2.20	0.41
1:2:207:U:O2	11:I:178:ARG:NH1	2.44	0.41
1:2:1515:A:O2'	1:2:1517:U:OP2	2.36	0.41
3:B:46:THR:C	3:B:47:LEU:HD12	2.45	0.41
38:i:194:TRP:O	38:i:198:HIS:ND1	2.50	0.41
49:t:143:ARG:HE	69:ai:92:LEU:HD23	1.85	0.41
50:u:121[A]:PRO:HA	50:u:124[A]:LEU:HD12	2.02	0.41
55:z:65:TYR:HB3	55:z:75:ILE:HD12	2.03	0.41
78:1:1273:A:O2'	78:1:1274:A:OP1	2.38	0.41
1:2:246:G:N2	14:L:38:ALA:O	2.48	0.41
3:B:158:SER:HA	3:B:161:ILE:HD12	2.01	0.41
17:O:39:ILE:HG22	17:O:40:ALA:CB	2.50	0.41

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:g:114:ASP:OD1	33:g:115:ILE:N	2.52	0.41
40:k:163:LEU:HD21	40:k:175:HIS:CD2	2.56	0.41
47:r:43:ALA:O	47:r:47:ALA:HA	2.20	0.41
50:u:189[A]:ASP:OD1	50:u:189[A]:ASP:N	2.50	0.41
53:x:25:ASP:OD1	53:x:25:ASP:N	2.54	0.41
71:ag:58:THR:OG1	71:ag:59:THR:N	2.53	0.41
78:1:2815:G:N2	78:1:2818:U:O2	2.49	0.41
4:P:41:VAL:HG22	4:P:84:ILE:HD13	2.03	0.41
36:3:22:U:O4	78:1:341:G:O2'	2.29	0.41
39:j:60:THR:OG1	78:1:364:G:OP1	2.28	0.41
40:k:232:ASP:OD1	40:k:235:SER:OG	2.34	0.41
47:r:3:ILE:HD12	62:ap:41:HIS:HB2	2.03	0.41
47:r:166:ALA:HB3	62:ap:135:GLU:OE2	2.20	0.41
59:as:110:VAL:HG22	59:as:124:VAL:HG22	2.02	0.41
1:2:233:C:O2'	1:2:234:G:N2	2.27	0.41
2:A:141:ILE:HG22	2:A:142:PRO:O	2.21	0.41
4:P:123:TYR:OH	20:S:126:ARG:NH1	2.54	0.41
12:J:25:ASP:OD1	12:J:26:ALA:N	2.54	0.41
28:a:49:ALA:O	28:a:53:LEU:HD23	2.20	0.41
34:c:19:THR:HG22	34:c:20:GLY:H	1.84	0.41
42:m:70:LYS:NZ	78:1:520:U:OP2	2.54	0.41
1:2:151:G:N3	9:G:13:GLN:NE2	2.68	0.41
1:2:628:G:O2'	78:1:846:A:N3	2.54	0.41
1:2:958:U:OP2	29:b:20:LYS:NZ	2.48	0.41
1:2:1552:U:H3	1:2:1556:A:H62	1.68	0.41
32:f:103:LEU:O	32:f:104:SER:OG	2.32	0.41
38:i:323:MET:HE1	38:i:359:ILE:HD13	2.03	0.41
78:1:2500:A:O2'	78:1:2501:U:OP1	2.33	0.41
79:5:41:U:O4	79:5:42:G:N2	2.53	0.41
1:2:821:U:C4	1:2:852:C:N3	2.89	0.41
6:D:7:LYS:HD2	22:U:27:THR:HG21	2.02	0.41
40:k:17:GLN:O	78:1:2688:U:N3	2.45	0.41
40:k:28:THR:O	78:1:2703:A:N6	2.47	0.41
40:k:153:THR:O	40:k:153:THR:HG23	2.20	0.41
42:m:98:LYS:O	42:m:102:VAL:HG23	2.20	0.41
43:n:52:TRP:O	43:n:57:ARG:NH1	2.51	0.41
50:u:15[A]:LEU:HD11	50:u:129[A]:LEU:CD1	2.51	0.41
78:1:340:C:H2'	78:1:341:G:O4'	2.20	0.41
78:1:1693:C:O2'	78:1:1772:U:O2'	2.03	0.41
1:2:127:G:N2	1:2:178:U:O2'	2.54	0.41
1:2:322:G:HO2'	1:2:323:A:P	2.36	0.41

*Continued on next page...*

*Continued from previous page...*

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:2:1019:A:OP1	16:N:106:ARG:NH1	2.53	0.41
3:B:143:THR:HG22	3:B:205:PHE:CE1	2.56	0.41
10:H:17:GLU:HA	10:H:20:VAL:HG12	2.03	0.41
11:I:171:SER:OG	11:I:172:ARG:N	2.53	0.41
13:K:38:LYS:O	13:K:42:VAL:HG23	2.20	0.41
14:L:99:ARG:NH1	25:X:7:ARG:O	2.53	0.41
28:a:18:VAL:O	28:a:18:VAL:HG12	2.21	0.41
34:c:65:ARG:HD2	79:5:38:G:H22	1.86	0.41
39:j:39:PHE:HA	39:j:42:VAL:HG12	2.02	0.41
42:m:94:LYS:NZ	78:1:1156:C:OP2	2.43	0.41
44:o:184:LYS:NZ	78:1:3111:U:OP1	2.42	0.41
47:r:73:ARG:NH1	78:1:110:G:OP2	2.45	0.41
48:s:124:ARG:NH1	78:1:3214:U:O4	2.54	0.41
49:t:70:ASN:OD1	78:1:290:G:O2'	2.35	0.41
53:x:105:LEU:HD22	53:x:135:LYS:HG3	2.03	0.41
56:au:103:TYR:OH	78:1:1677:G:OP2	2.29	0.41
61:aq:41:ALA:O	61:aq:42:LEU:HD12	2.21	0.41
64:an:52:ARG:NH1	78:1:1729:A:O4'	2.50	0.41
8:F:140:THR:OG1	8:F:210:ALA:HB1	2.20	0.41
22:U:28:SER:OG	22:U:34:LEU:HD12	2.20	0.41
24:W:75:ILE:HD11	24:W:93:LEU:HD11	2.01	0.41
26:Y:35:VAL:O	26:Y:35:VAL:HG12	2.21	0.41
42:m:241:LYS:NZ	78:1:576:C:OP1	2.42	0.41
65:am:17:HIS:NE2	78:1:3059:G:OP1	2.54	0.41
70:ah:34:SER:HG	70:ah:37:THR:HG1	1.54	0.41
72:af:30:LYS:C	72:af:31:LEU:HD22	2.45	0.41
1:2:656:G:C6	1:2:679:U:O2	2.74	0.40
39:j:6:VAL:N	39:j:20:LEU:O	2.54	0.40
39:j:138:ARG:HH12	39:j:203:ARG:HH21	1.68	0.40
43:n:190:VAL:O	43:n:190:VAL:HG12	2.20	0.40
46:q:12:LEU:HD11	46:q:133:ARG:NH2	2.35	0.40
77:aa:8:VAL:O	77:aa:11:THR:OG1	2.39	0.40
1:2:628:G:H2'	78:1:846:A:N3	2.37	0.40
1:2:1478:G:OP1	21:T:39:THR:OG1	2.38	0.40
2:A:92:HIS:ND1	2:A:202:TYR:OH	2.30	0.40
18:Q:103:ASN:OD1	18:Q:104:GLU:N	2.55	0.40
29:b:61:THR:O	29:b:62:ILE:HG12	2.21	0.40
1:2:44:U:OP2	1:2:437:A:N6	2.51	0.40
45:p:68:ALA:HB1	45:p:155:ALA:HB1	2.04	0.40
45:p:77:THR:HG23	45:p:82:ARG:HA	2.03	0.40
46:q:26:SER:OG	46:q:27:GLY:N	2.54	0.40

*Continued on next page...*

Continued from previous page...

Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
50:u:12[A]:LYS:NZ	78:1:3184:A:OP2	2.41	0.40
8:F:73:THR:N	8:F:91:GLU:OE2	2.55	0.40
25:X:59:ILE:HD11	25:X:84:THR:HG21	2.03	0.40
27:Z:40:VAL:C	27:Z:75:LEU:HD11	2.47	0.40
36:3:151:C:C5	59:as:24:LEU:HD11	2.56	0.40
39:j:99:MET:HE2	39:j:102:PRO:HA	2.03	0.40
39:j:195:ARG:NH1	78:1:340:C:OP2	2.49	0.40
70:ah:58:ILE:HD11	70:ah:90:MET:SD	2.61	0.40
15:M:66:VAL:HG23	15:M:67:THR:N	2.37	0.40
33:g:54:PHE:CE1	33:g:312:VAL:HG21	2.57	0.40
33:g:302:PHE:HD1	33:g:312:VAL:HG12	1.86	0.40
40:k:59:ASP:OD1	40:k:60:ILE:N	2.54	0.40
44:o:22:SER:OG	44:o:23:ARG:N	2.55	0.40
60:ar:56:VAL:HG22	60:ar:57:LEU:H	1.86	0.40
74:ad:125:LYS:NZ	78:1:2898:G:O6	2.53	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	A	204/252 (81%)	179 (88%)	23 (11%)	2 (1%)	13 39
3	B	222/255 (87%)	188 (85%)	31 (14%)	3 (1%)	9 30
4	P	115/142 (81%)	103 (90%)	12 (10%)	0	100 100
5	C	214/254 (84%)	197 (92%)	16 (8%)	1 (0%)	25 56
6	D	220/240 (92%)	210 (96%)	10 (4%)	0	100 100
7	E	256/261 (98%)	229 (90%)	26 (10%)	1 (0%)	30 61
8	F	204/225 (91%)	188 (92%)	16 (8%)	0	100 100
9	G	226/236 (96%)	206 (91%)	16 (7%)	4 (2%)	7 24

Continued on next page...

Continued from previous page...

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
10	H	182/190 (96%)	162 (89%)	19 (10%)	1 (0%)	25	56
11	I	183/200 (92%)	165 (90%)	16 (9%)	2 (1%)	12	37
12	J	182/197 (92%)	163 (90%)	17 (9%)	2 (1%)	12	37
13	K	90/105 (86%)	77 (86%)	13 (14%)	0	100	100
14	L	142/156 (91%)	128 (90%)	13 (9%)	1 (1%)	19	48
15	M	119/143 (83%)	79 (66%)	34 (29%)	6 (5%)	1	5
16	N	148/151 (98%)	133 (90%)	13 (9%)	2 (1%)	9	30
17	O	125/137 (91%)	108 (86%)	16 (13%)	1 (1%)	16	44
18	Q	139/143 (97%)	126 (91%)	11 (8%)	2 (1%)	9	30
19	R	117/136 (86%)	107 (92%)	8 (7%)	2 (2%)	7	26
20	S	143/146 (98%)	129 (90%)	10 (7%)	4 (3%)	4	14
21	T	141/144 (98%)	127 (90%)	13 (9%)	1 (1%)	19	48
22	U	98/121 (81%)	89 (91%)	9 (9%)	0	100	100
23	V	85/87 (98%)	73 (86%)	11 (13%)	1 (1%)	11	34
24	W	127/130 (98%)	116 (91%)	11 (9%)	0	100	100
25	X	142/145 (98%)	122 (86%)	19 (13%)	1 (1%)	19	48
26	Y	132/135 (98%)	120 (91%)	11 (8%)	1 (1%)	16	44
27	Z	80/105 (76%)	63 (79%)	17 (21%)	0	100	100
28	a	95/119 (80%)	74 (78%)	17 (18%)	4 (4%)	2	8
29	b	79/82 (96%)	71 (90%)	7 (9%)	1 (1%)	10	32
30	d	51/56 (91%)	49 (96%)	2 (4%)	0	100	100
31	e	58/63 (92%)	50 (86%)	8 (14%)	0	100	100
32	f	71/152 (47%)	43 (61%)	28 (39%)	0	100	100
33	g	310/319 (97%)	282 (91%)	27 (9%)	1 (0%)	37	67
34	c	61/67 (91%)	56 (92%)	5 (8%)	0	100	100
37	h	249/254 (98%)	232 (93%)	16 (6%)	1 (0%)	30	61
38	i	384/387 (99%)	345 (90%)	37 (10%)	2 (0%)	25	56
39	j	359/362 (99%)	333 (93%)	24 (7%)	2 (1%)	22	51
40	k	292/297 (98%)	275 (94%)	16 (6%)	1 (0%)	37	67
41	l	163/167 (98%)	147 (90%)	16 (10%)	0	100	100
42	m	220/244 (90%)	205 (93%)	15 (7%)	0	100	100

Continued on next page...

*Continued from previous page...*

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
43	n	231/256 (90%)	216 (94%)	15 (6%)	0	100	100
44	o	189/191 (99%)	174 (92%)	15 (8%)	0	100	100
45	p	216/221 (98%)	208 (96%)	8 (4%)	0	100	100
46	q	167/174 (96%)	147 (88%)	20 (12%)	0	100	100
47	r	191/199 (96%)	162 (85%)	26 (14%)	3 (2%)	8	27
48	s	134/138 (97%)	126 (94%)	8 (6%)	0	100	100
49	t	201/204 (98%)	185 (92%)	16 (8%)	0	100	100
50	u	195/199 (98%)	187 (96%)	6 (3%)	2 (1%)	13	39
51	v	181/184 (98%)	167 (92%)	14 (8%)	0	100	100
52	w	183/186 (98%)	174 (95%)	9 (5%)	0	100	100
53	x	186/189 (98%)	178 (96%)	6 (3%)	2 (1%)	12	37
54	y	169/172 (98%)	163 (96%)	6 (4%)	0	100	100
55	z	157/160 (98%)	143 (91%)	14 (9%)	0	100	100
56	au	98/121 (81%)	96 (98%)	2 (2%)	0	100	100
57	AB	134/137 (98%)	132 (98%)	2 (2%)	0	100	100
58	at	124/155 (80%)	113 (91%)	11 (9%)	0	100	100
59	as	119/142 (84%)	110 (92%)	8 (7%)	1 (1%)	16	44
60	ar	123/127 (97%)	115 (94%)	8 (6%)	0	100	100
61	aq	133/136 (98%)	119 (90%)	14 (10%)	0	100	100
62	ap	146/149 (98%)	124 (85%)	20 (14%)	2 (1%)	9	30
63	ao	56/59 (95%)	48 (86%)	6 (11%)	2 (4%)	3	10
64	an	94/105 (90%)	93 (99%)	1 (1%)	0	100	100
65	am	107/113 (95%)	96 (90%)	11 (10%)	0	100	100
66	al	125/130 (96%)	119 (95%)	6 (5%)	0	100	100
67	ak	104/107 (97%)	100 (96%)	4 (4%)	0	100	100
68	aj	110/121 (91%)	106 (96%)	4 (4%)	0	100	100
69	ai	117/120 (98%)	110 (94%)	7 (6%)	0	100	100
70	ah	97/100 (97%)	90 (93%)	7 (7%)	0	100	100
71	ag	83/88 (94%)	76 (92%)	7 (8%)	0	100	100
72	af	75/78 (96%)	74 (99%)	1 (1%)	0	100	100
73	ae	48/51 (94%)	47 (98%)	1 (2%)	0	100	100

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
74	ad	50/128 (39%)	47 (94%)	3 (6%)	0	100	100
75	ac	23/25 (92%)	23 (100%)	0	0	100	100
76	ab	101/106 (95%)	95 (94%)	6 (6%)	0	100	100
77	aa	89/92 (97%)	85 (96%)	4 (4%)	0	100	100
80	NC	12/233 (5%)	9 (75%)	3 (25%)	0	100	100
All	All	10996/12101 (91%)	10006 (91%)	928 (8%)	62 (1%)	24	51

All (62) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
7	E	43	PRO
9	G	68	LEU
11	I	10	LYS
28	a	84	VAL
37	h	126	LEU
50	u	111[A]	PRO
59	as	44	PRO
62	ap	78	LEU
2	A	196	SER
12	J	99	LEU
12	J	100	LYS
15	M	130	THR
15	M	131	ASP
16	N	28	LEU
19	R	24	LEU
20	S	91	ASP
23	V	81	ASN
38	i	4	ARG
38	i	128	LYS
40	k	20	PHE
47	r	63	VAL
47	r	77	LEU
3	B	212	VAL
5	C	147	ASN
9	G	173	PRO
10	H	134	GLU
26	Y	37	LYS
28	a	62	TYR
33	g	52	GLN
39	j	4	PRO

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
39	j	292	SER
50	u	110[A]	PRO
53	x	53	LYS
2	A	157	ASP
3	B	82	ARG
3	B	213	ARG
11	I	9	HIS
15	M	90	LYS
16	N	27	LYS
47	r	5	LYS
62	ap	40	HIS
63	ao	24	PRO
15	M	109	GLU
15	M	126	TRP
17	O	126	THR
19	R	23	LYS
20	S	6	GLN
28	a	9	GLY
53	x	52	LYS
9	G	67	VAL
20	S	7	GLU
21	T	28	LEU
15	M	127	GLY
29	b	62	ILE
18	Q	41	PRO
25	X	42	PRO
28	a	83	ILE
63	ao	21	ILE
9	G	70	PRO
14	L	7	VAL
18	Q	33	GLY
20	S	92	ILE

### 5.3.2 Protein sidechains [i](#)

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
2	A	170/210 (81%)	170 (100%)	0	100	100
3	B	200/224 (89%)	200 (100%)	0	100	100
4	P	95/118 (80%)	95 (100%)	0	100	100
5	C	175/205 (85%)	175 (100%)	0	100	100
6	D	182/195 (93%)	182 (100%)	0	100	100
7	E	220/222 (99%)	220 (100%)	0	100	100
8	F	172/191 (90%)	171 (99%)	1 (1%)	84	95
9	G	189/201 (94%)	189 (100%)	0	100	100
10	H	163/170 (96%)	163 (100%)	0	100	100
11	I	148/161 (92%)	148 (100%)	0	100	100
12	J	156/166 (94%)	156 (100%)	0	100	100
13	K	77/98 (79%)	77 (100%)	0	100	100
14	L	129/137 (94%)	129 (100%)	0	100	100
15	M	88/119 (74%)	88 (100%)	0	100	100
16	N	127/128 (99%)	127 (100%)	0	100	100
17	O	91/105 (87%)	91 (100%)	0	100	100
18	Q	117/119 (98%)	117 (100%)	0	100	100
19	R	101/124 (82%)	101 (100%)	0	100	100
20	S	128/129 (99%)	128 (100%)	0	100	100
21	T	115/116 (99%)	115 (100%)	0	100	100
22	U	93/114 (82%)	93 (100%)	0	100	100
23	V	71/74 (96%)	71 (100%)	0	100	100
24	W	110/111 (99%)	110 (100%)	0	100	100
25	X	119/120 (99%)	119 (100%)	0	100	100
26	Y	112/113 (99%)	112 (100%)	0	100	100
27	Z	67/87 (77%)	67 (100%)	0	100	100
28	a	83/101 (82%)	83 (100%)	0	100	100
29	b	70/71 (99%)	70 (100%)	0	100	100
30	d	47/49 (96%)	47 (100%)	0	100	100
31	e	50/54 (93%)	50 (100%)	0	100	100
32	f	56/135 (42%)	56 (100%)	0	100	100
33	g	250/262 (95%)	249 (100%)	1 (0%)	89	96

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
34	c	55/60 (92%)	55 (100%)	0	100	100
37	h	190/196 (97%)	190 (100%)	0	100	100
38	i	321/323 (99%)	318 (99%)	3 (1%)	75	92
39	j	288/289 (100%)	287 (100%)	1 (0%)	91	97
40	k	241/245 (98%)	241 (100%)	0	100	100
41	l	138/138 (100%)	138 (100%)	0	100	100
42	m	186/205 (91%)	186 (100%)	0	100	100
43	n	187/208 (90%)	186 (100%)	1 (0%)	86	95
44	o	168/171 (98%)	168 (100%)	0	100	100
45	p	185/187 (99%)	184 (100%)	1 (0%)	86	95
46	q	146/150 (97%)	146 (100%)	0	100	100
47	r	154/159 (97%)	154 (100%)	0	100	100
48	s	107/109 (98%)	107 (100%)	0	100	100
49	t	175/176 (99%)	175 (100%)	0	100	100
50	u	160/162 (99%)	160 (100%)	0	100	100
51	v	138/146 (94%)	136 (99%)	2 (1%)	62	87
52	w	150/151 (99%)	150 (100%)	0	100	100
53	x	152/154 (99%)	152 (100%)	0	100	100
54	y	155/156 (99%)	155 (100%)	0	100	100
55	z	136/137 (99%)	136 (100%)	0	100	100
56	au	87/107 (81%)	87 (100%)	0	100	100
57	AB	104/105 (99%)	104 (100%)	0	100	100
58	at	56/128 (44%)	56 (100%)	0	100	100
59	as	104/118 (88%)	104 (100%)	0	100	100
60	ar	108/110 (98%)	108 (100%)	0	100	100
61	aq	115/116 (99%)	115 (100%)	0	100	100
62	ap	118/119 (99%)	118 (100%)	0	100	100
63	ao	46/47 (98%)	46 (100%)	0	100	100
64	an	81/88 (92%)	81 (100%)	0	100	100
65	am	92/97 (95%)	92 (100%)	0	100	100
66	al	108/111 (97%)	108 (100%)	0	100	100

*Continued on next page...*

Continued from previous page...

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
67	ak	90/91 (99%)	90 (100%)	0	100	100
68	aj	95/103 (92%)	95 (100%)	0	100	100
69	ai	104/105 (99%)	102 (98%)	2 (2%)	52	82
70	ah	80/82 (98%)	79 (99%)	1 (1%)	65	88
71	ag	69/71 (97%)	69 (100%)	0	100	100
72	af	68/69 (99%)	68 (100%)	0	100	100
73	ae	45/46 (98%)	45 (100%)	0	100	100
74	ad	47/116 (40%)	47 (100%)	0	100	100
75	ac	22/23 (96%)	22 (100%)	0	100	100
76	ab	87/91 (96%)	87 (100%)	0	100	100
77	aa	71/72 (99%)	71 (100%)	0	100	100
80	NC	13/215 (6%)	13 (100%)	0	100	100
All	All	9213/10181 (90%)	9200 (100%)	13 (0%)	92	98

All (13) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
8	F	156	ARG
33	g	266	ASP
38	i	89	VAL
38	i	104	THR
38	i	221	THR
39	j	203	ARG
43	n	158	ASP
45	p	90	ARG
51	v	29	THR
51	v	129	THR
69	ai	81	ARG
69	ai	94	LYS
70	ah	76	ARG

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (80) such sidechains are listed below:

Mol	Chain	Res	Type
2	A	30	GLN
2	A	168	HIS
3	B	146	GLN

Continued on next page...

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
3	B	220	GLN
5	C	59	HIS
7	E	69	HIS
8	F	63	GLN
8	F	66	GLN
8	F	86	GLN
8	F	103	ASN
9	G	80	ASN
9	G	176	GLN
9	G	190	GLN
13	K	12	HIS
13	K	62	GLN
14	L	106	ASN
15	M	80	ASN
15	M	142	GLN
16	N	151	ASN
18	Q	62	ASN
20	S	71	GLN
20	S	127	HIS
21	T	101	ASN
23	V	74	GLN
24	W	92	ASN
25	X	27	ASN
26	Y	113	ASN
27	Z	37	GLN
29	b	19	HIS
30	d	48	ASN
33	g	147	HIS
37	h	38	HIS
37	h	205	ASN
37	h	211	HIS
38	i	177	HIS
39	j	237	GLN
40	k	45	ASN
41	l	97	ASN
43	n	41	GLN
43	n	192	GLN
44	o	96	HIS
44	o	125	ASN
44	o	156	GLN
44	o	183	HIS
45	p	51	HIS

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
46	q	20	ASN
47	r	99	HIS
49	t	182	ASN
50	u	42[A]	ASN
51	v	54	HIS
51	v	55	GLN
52	w	126	GLN
52	w	158	HIS
54	y	74	ASN
54	y	89	ASN
55	z	127	GLN
56	au	101	ASN
57	AB	98	ASN
59	as	85	GLN
60	ar	26	GLN
60	ar	42	GLN
61	aq	103	GLN
61	aq	122	HIS
61	aq	128	GLN
62	ap	49	HIS
63	ao	12	GLN
63	ao	42	ASN
63	ao	43	HIS
63	ao	48	HIS
64	an	11	ASN
65	am	21	HIS
65	am	56	ASN
66	al	26	HIS
66	al	49	ASN
66	al	104	ASN
67	ak	75	HIS
68	aj	52	GLN
69	ai	99	GLN
76	ab	82	GLN
77	aa	25	GLN

### 5.3.3 RNA

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	2	1768/1800 (98%)	486 (27%)	47 (2%)
35	4	120/121 (99%)	16 (13%)	1 (0%)

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
36	3	157/158 (99%)	31 (19%)	1 (0%)
78	1	3180/3396 (93%)	629 (19%)	45 (1%)
79	5	20/21 (95%)	8 (40%)	1 (5%)
81	6	73/76 (96%)	14 (19%)	0
All	All	5318/5572 (95%)	1184 (22%)	95 (1%)

All (1184) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	2	2	A
1	2	4	C
1	2	14	C
1	2	17	C
1	2	25	C
1	2	26	A
1	2	34	G
1	2	43	A
1	2	45	U
1	2	47	A
1	2	48	G
1	2	51	A
1	2	56	U
1	2	57	G
1	2	62	A
1	2	65	A
1	2	66	U
1	2	68	A
1	2	69	G
1	2	71	A
1	2	73	U
1	2	74	U
1	2	75	U
1	2	76	A
1	2	78	A
1	2	79	C
1	2	80	A
1	2	81	G
1	2	90	C
1	2	103	A
1	2	104	A
1	2	114	C
1	2	121	U

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	126	A
1	2	129	U
1	2	130	C
1	2	131	C
1	2	132	U
1	2	133	U
1	2	134	U
1	2	135	A
1	2	136	C
1	2	138	A
1	2	140	A
1	2	141	U
1	2	142	G
1	2	145	A
1	2	153	G
1	2	155	U
1	2	159	U
1	2	166	C
1	2	168	A
1	2	171	A
1	2	172	C
1	2	174	U
1	2	176	C
1	2	178	U
1	2	179	A
1	2	180	A
1	2	185	U
1	2	186	C
1	2	187	G
1	2	188	A
1	2	191	C
1	2	192	U
1	2	193	U
1	2	195	G
1	2	204	G
1	2	216	U
1	2	217	A
1	2	218	A
1	2	223	U
1	2	224	C
1	2	225	A
1	2	227	U

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	228	G
1	2	230	C
1	2	231	U
1	2	232	U
1	2	233	C
1	2	234	G
1	2	235	G
1	2	236	A
1	2	237	C
1	2	240	U
1	2	241	U
1	2	250	C
1	2	255	U
1	2	257	A
1	2	260	U
1	2	265	A
1	2	272	U
1	2	274	G
1	2	276	C
1	2	277	U
1	2	278	U
1	2	279	G
1	2	280	U
1	2	281	G
1	2	287	G
1	2	299	A
1	2	312	A
1	2	314	C
1	2	316	A
1	2	320	U
1	2	322	G
1	2	323	A
1	2	330	G
1	2	334	G
1	2	337	G
1	2	338	C
1	2	352	A
1	2	353	A
1	2	359	A
1	2	361	C
1	2	370	A
1	2	373	G

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	387	A
1	2	388	G
1	2	390	G
1	2	400	A
1	2	401	A
1	2	402	C
1	2	404	G
1	2	405	C
1	2	416	A
1	2	417	A
1	2	419	G
1	2	422	G
1	2	423	G
1	2	424	C
1	2	425	A
1	2	426	G
1	2	428	A
1	2	431	C
1	2	434	G
1	2	436	A
1	2	437	A
1	2	439	U
1	2	444	C
1	2	445	A
1	2	446	A
1	2	448	C
1	2	453	U
1	2	460	A
1	2	464	A
1	2	471	A
1	2	477	A
1	2	483	A
1	2	485	A
1	2	487	G
1	2	489	C
1	2	491	C
1	2	492	A
1	2	493	U
1	2	494	U
1	2	496	G
1	2	498	G
1	2	499	U

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	500	C
1	2	502	U
1	2	505	A
1	2	506	A
1	2	507	U
1	2	510	G
1	2	511	A
1	2	527	A
1	2	529	A
1	2	534	A
1	2	538	A
1	2	540	G
1	2	541	A
1	2	542	A
1	2	543	C
1	2	544	A
1	2	549	G
1	2	555	A
1	2	556	A
1	2	557	G
1	2	558	U
1	2	559	C
1	2	565	C
1	2	568	G
1	2	572	C
1	2	579	A
1	2	580	A
1	2	594	A
1	2	595	G
1	2	606	A
1	2	609	U
1	2	610	G
1	2	611	U
1	2	619	A
1	2	620	A
1	2	622	A
1	2	623	A
1	2	624	G
1	2	629	U
1	2	630	A
1	2	634	G
1	2	639	U

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	640	U
1	2	641	G
1	2	643	G
1	2	645	C
1	2	650	U
1	2	651	G
1	2	652	G
1	2	653	C
1	2	654	C
1	2	655	G
1	2	657	U
1	2	680	U
1	2	681	U
1	2	683	C
1	2	687	G
1	2	694	U
1	2	696	C
1	2	698	U
1	2	699	U
1	2	700	C
1	2	702	G
1	2	703	G
1	2	704	C
1	2	705	U
1	2	706	A
1	2	707	A
1	2	708	C
1	2	709	C
1	2	710	U
1	2	711	U
1	2	712	G
1	2	713	A
1	2	714	G
1	2	728	U
1	2	729	G
1	2	730	G
1	2	731	C
1	2	732	G
1	2	733	A
1	2	736	C
1	2	738	G
1	2	741	C

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	742	U
1	2	743	U
1	2	745	U
1	2	756	A
1	2	765	G
1	2	766	U
1	2	767	U
1	2	774	A
1	2	775	G
1	2	778	G
1	2	779	U
1	2	780	A
1	2	781	U
1	2	782	U
1	2	783	G
1	2	787	G
1	2	789	A
1	2	812	A
1	2	813	U
1	2	814	A
1	2	815	G
1	2	819	G
1	2	820	U
1	2	821	U
1	2	823	G
1	2	832	U
1	2	833	U
1	2	835	U
1	2	837	G
1	2	838	G
1	2	840	U
1	2	841	U
1	2	846	G
1	2	852	C
1	2	855	A
1	2	856	A
1	2	857	U
1	2	863	A
1	2	886	U
1	2	899	G
1	2	902	G
1	2	911	U

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	913	G
1	2	915	A
1	2	928	U
1	2	929	A
1	2	932	U
1	2	933	A
1	2	934	C
1	2	935	U
1	2	940	A
1	2	942	G
1	2	960	U
1	2	963	A
1	2	964	U
1	2	966	A
1	2	970	A
1	2	984	G
1	2	987	G
1	2	988	A
1	2	989	U
1	2	992	A
1	2	998	A
1	2	1004	U
1	2	1012	U
1	2	1023	A
1	2	1024	U
1	2	1028	C
1	2	1039	A
1	2	1053	G
1	2	1058	U
1	2	1059	U
1	2	1060	U
1	2	1061	A
1	2	1074	G
1	2	1076	A
1	2	1080	U
1	2	1082	C
1	2	1092	A
1	2	1093	A
1	2	1096	C
1	2	1100	G
1	2	1113	A
1	2	1138	A

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	1150	G
1	2	1158	C
1	2	1160	A
1	2	1164	G
1	2	1167	G
1	2	1170	G
1	2	1172	G
1	2	1185	U
1	2	1191	U
1	2	1194	A
1	2	1196	A
1	2	1199	G
1	2	1200	G
1	2	1202	A
1	2	1212	G
1	2	1217	A
1	2	1218	G
1	2	1227	A
1	2	1229	G
1	2	1241	G
1	2	1243	G
1	2	1244	A
1	2	1245	G
1	2	1246	C
1	2	1251	U
1	2	1252	C
1	2	1256	A
1	2	1257	U
1	2	1273	G
1	2	1274	C
1	2	1275	A
1	2	1276	U
1	2	1285	U
1	2	1286	U
1	2	1291	G
1	2	1301	U
1	2	1314	U
1	2	1315	U
1	2	1316	G
1	2	1318	G
1	2	1321	A
1	2	1322	A

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	1325	A
1	2	1337	A
1	2	1344	A
1	2	1345	A
1	2	1346	A
1	2	1348	A
1	2	1349	G
1	2	1360	A
1	2	1361	U
1	2	1363	U
1	2	1364	G
1	2	1367	G
1	2	1370	U
1	2	1371	A
1	2	1373	C
1	2	1381	U
1	2	1382	A
1	2	1383	G
1	2	1389	C
1	2	1390	U
1	2	1398	U
1	2	1399	C
1	2	1400	A
1	2	1402	G
1	2	1410	A
1	2	1414	U
1	2	1425	A
1	2	1427	A
1	2	1431	C
1	2	1432	U
1	2	1433	G
1	2	1444	A
1	2	1445	G
1	2	1446	A
1	2	1447	C
1	2	1459	C
1	2	1466	G
1	2	1469	A
1	2	1471	A
1	2	1472	C
1	2	1479	A
1	2	1486	G

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	1491	U
1	2	1492	A
1	2	1493	A
1	2	1496	U
1	2	1503	A
1	2	1514	U
1	2	1516	A
1	2	1517	U
1	2	1518	C
1	2	1520	U
1	2	1521	G
1	2	1523	G
1	2	1524	A
1	2	1528	U
1	2	1531	G
1	2	1535	U
1	2	1537	C
1	2	1540	G
1	2	1542	G
1	2	1543	A
1	2	1554	U
1	2	1557	U
1	2	1558	U
1	2	1559	A
1	2	1573	A
1	2	1574	G
1	2	1575	G
1	2	1576	A
1	2	1577	A
1	2	1583	A
1	2	1584	G
1	2	1585	U
1	2	1590	G
1	2	1601	G
1	2	1602	C
1	2	1611	A
1	2	1616	G
1	2	1622	G
1	2	1631	A
1	2	1634	C
1	2	1635	A
1	2	1636	C

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	1637	C
1	2	1643	U
1	2	1657	U
1	2	1658	G
1	2	1682	U
1	2	1688	U
1	2	1689	A
1	2	1697	G
1	2	1701	A
1	2	1709	C
1	2	1711	C
1	2	1715	G
1	2	1716	C
1	2	1717	G
1	2	1742	U
1	2	1743	U
1	2	1753	A
1	2	1756	A
1	2	1757	G
1	2	1760	G
1	2	1762	A
1	2	1766	A
1	2	1767	G
1	2	1769	U
1	2	1770	U
1	2	1780	G
1	2	1783	C
1	2	1791	A
1	2	1792	G
1	2	1793	G
1	2	1794	A
1	2	1796	C
1	2	1799	U
35	4	7	G
35	4	10	C
35	4	11	A
35	4	38	U
35	4	53	U
35	4	54	U
35	4	55	A
35	4	65	G
35	4	76	A

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
35	4	77	G
35	4	91	G
35	4	95	A
35	4	102	A
35	4	112	G
35	4	120	C
35	4	121	U
36	3	23	U
36	3	25	G
36	3	34	U
36	3	35	C
36	3	48	A
36	3	50	C
36	3	53	A
36	3	59	A
36	3	62	C
36	3	63	G
36	3	80	A
36	3	81	U
36	3	82	U
36	3	83	C
36	3	84	C
36	3	85	G
36	3	86	U
36	3	87	G
36	3	90	U
36	3	95	G
36	3	104	A
36	3	106	C
36	3	111	A
36	3	113	U
36	3	125	U
36	3	126	A
36	3	138	A
36	3	148	G
36	3	151	C
36	3	152	G
36	3	158	U
78	1	13	A
78	1	14	U
78	1	15	C
78	1	17	G

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	18	G
78	1	22	G
78	1	25	U
78	1	26	A
78	1	40	A
78	1	43	A
78	1	49	A
78	1	59	G
78	1	60	A
78	1	65	A
78	1	66	A
78	1	75	G
78	1	92	G
78	1	105	C
78	1	109	A
78	1	110	G
78	1	113	C
78	1	121	A
78	1	122	A
78	1	133	U
78	1	135	C
78	1	136	G
78	1	150	A
78	1	155	G
78	1	156	G
78	1	157	A
78	1	165	A
78	1	166	C
78	1	172	G
78	1	173	G
78	1	187	A
78	1	190	U
78	1	191	U
78	1	192	C
78	1	200	C
78	1	206	G
78	1	210	U
78	1	211	A
78	1	213	A
78	1	218	G
78	1	219	A
78	1	220	G

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	221	A
78	1	234	G
78	1	237	G
78	1	240	U
78	1	241	G
78	1	243	G
78	1	245	U
78	1	248	U
78	1	249	U
78	1	252	U
78	1	269	G
78	1	283	G
78	1	286	U
78	1	291	C
78	1	295	A
78	1	298	U
78	1	305	U
78	1	311	C
78	1	323	A
78	1	329	U
78	1	338	A
78	1	339	C
78	1	350	C
78	1	351	A
78	1	376	G
78	1	390	G
78	1	398	A
78	1	399	A
78	1	401	U
78	1	402	A
78	1	403	C
78	1	421	G
78	1	422	A
78	1	429	U
78	1	439	C
78	1	440	A
78	1	441	U
78	1	442	G
78	1	443	G
78	1	444	U
78	1	445	G
78	1	446	U

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	447	U
78	1	448	U
78	1	450	G
78	1	451	U
78	1	487	U
78	1	488	U
78	1	489	U
78	1	490	C
78	1	491	A
78	1	494	G
78	1	510	G
78	1	515	C
78	1	517	G
78	1	520	U
78	1	521	A
78	1	523	A
78	1	535	G
78	1	544	C
78	1	546	C
78	1	547	G
78	1	548	G
78	1	549	U
78	1	552	G
78	1	555	U
78	1	557	A
78	1	559	A
78	1	569	A
78	1	578	A
78	1	579	G
78	1	597	G
78	1	600	G
78	1	604	G
78	1	609	G
78	1	610	G
78	1	611	A
78	1	620	U
78	1	621	A
78	1	622	A
78	1	637	C
78	1	638	C
78	1	649	A
78	1	660	A

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	667	C
78	1	677	A
78	1	681	U
78	1	683	U
78	1	691	A
78	1	705	A
78	1	708	G
78	1	712	G
78	1	715	A
78	1	716	A
78	1	720	A
78	1	726	G
78	1	763	G
78	1	764	U
78	1	765	C
78	1	766	U
78	1	767	U
78	1	774	G
78	1	776	U
78	1	777	U
78	1	780	A
78	1	781	G
78	1	785	G
78	1	786	A
78	1	801	A
78	1	806	A
78	1	808	A
78	1	817	A
78	1	824	C
78	1	830	A
78	1	832	G
78	1	846	A
78	1	847	A
78	1	849	C
78	1	850	U
78	1	861	C
78	1	869	G
78	1	874	U
78	1	879	U
78	1	890	C
78	1	896	A
78	1	897	U

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	907	G
78	1	908	G
78	1	914	A
78	1	916	G
78	1	917	A
78	1	923	C
78	1	937	G
78	1	944	C
78	1	959	C
78	1	960	U
78	1	974	G
78	1	981	U
78	1	982	C
78	1	984	G
78	1	991	G
78	1	1001	G
78	1	1002	A
78	1	1010	G
78	1	1013	G
78	1	1017	C
78	1	1018	G
78	1	1020	G
78	1	1024	G
78	1	1036	A
78	1	1037	C
78	1	1047	A
78	1	1049	C
78	1	1064	A
78	1	1065	A
78	1	1072	G
78	1	1081	U
78	1	1087	G
78	1	1093	A
78	1	1094	U
78	1	1095	U
78	1	1097	G
78	1	1098	A
78	1	1102	A
78	1	1103	A
78	1	1114	U
78	1	1117	G
78	1	1131	G

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	1153	A
78	1	1155	C
78	1	1159	A
78	1	1180	A
78	1	1181	U
78	1	1182	A
78	1	1186	G
78	1	1192	C
78	1	1193	A
78	1	1196	C
78	1	1200	A
78	1	1201	C
78	1	1202	A
78	1	1208	U
78	1	1217	A
78	1	1222	G
78	1	1227	C
78	1	1230	G
78	1	1232	C
78	1	1233	G
78	1	1236	G
78	1	1238	C
78	1	1239	C
78	1	1240	A
78	1	1242	G
78	1	1243	G
78	1	1245	A
78	1	1246	G
78	1	1248	C
78	1	1251	A
78	1	1253	U
78	1	1254	C
78	1	1258	U
78	1	1262	G
78	1	1263	A
78	1	1264	G
78	1	1265	U
78	1	1266	G
78	1	1270	A
78	1	1271	A
78	1	1272	C
78	1	1274	A

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	1278	A
78	1	1279	C
78	1	1285	G
78	1	1286	A
78	1	1287	A
78	1	1305	U
78	1	1307	G
78	1	1308	A
78	1	1309	U
78	1	1312	C
78	1	1313	G
78	1	1325	U
78	1	1330	A
78	1	1348	U
78	1	1349	G
78	1	1351	U
78	1	1352	A
78	1	1353	U
78	1	1354	G
78	1	1356	U
78	1	1357	G
78	1	1380	G
78	1	1386	A
78	1	1391	C
78	1	1399	A
78	1	1400	G
78	1	1418	A
78	1	1419	A
78	1	1421	G
78	1	1434	G
78	1	1437	C
78	1	1443	G
78	1	1446	A
78	1	1450	G
78	1	1481	A
78	1	1482	A
78	1	1483	G
78	1	1488	G
78	1	1508	C
78	1	1523	U
78	1	1533	U
78	1	1536	G

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	1542	G
78	1	1549	U
78	1	1555	U
78	1	1556	C
78	1	1557	A
78	1	1559	A
78	1	1560	G
78	1	1562	C
78	1	1563	C
78	1	1566	A
78	1	1568	U
78	1	1569	U
78	1	1572	U
78	1	1575	A
78	1	1576	G
78	1	1580	A
78	1	1581	C
78	1	1582	C
78	1	1583	A
78	1	1587	A
78	1	1588	A
78	1	1589	A
78	1	1605	A
78	1	1607	U
78	1	1608	C
78	1	1620	U
78	1	1629	U
78	1	1639	C
78	1	1642	A
78	1	1643	A
78	1	1645	U
78	1	1651	U
78	1	1658	G
78	1	1677	G
78	1	1683	A
78	1	1716	U
78	1	1717	U
78	1	1718	G
78	1	1724	U
78	1	1725	C
78	1	1736	G
78	1	1750	A

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	1751	G
78	1	1756	C
78	1	1760	A
78	1	1762	C
78	1	1765	U
78	1	1766	G
78	1	1770	G
78	1	1775	G
78	1	1780	G
78	1	1796	G
78	1	1797	A
78	1	1814	A
78	1	1815	U
78	1	1816	A
78	1	1817	G
78	1	1819	U
78	1	1820	U
78	1	1821	U
78	1	1835	A
78	1	1839	A
78	1	1840	U
78	1	1841	A
78	1	1842	A
78	1	1846	C
78	1	1849	C
78	1	1850	A
78	1	1866	C
78	1	1867	A
78	1	1872	C
78	1	1880	U
78	1	1886	A
78	1	1893	A
78	1	1906	G
78	1	1952	G
78	1	1953	G
78	1	1954	G
78	1	2101	C
78	1	2102	U
78	1	2111	G
78	1	2112	U
78	1	2113	A
78	1	2121	G

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	2122	G
78	1	2126	A
78	1	2131	A
78	1	2142	A
78	1	2144	A
78	1	2158	A
78	1	2169	G
78	1	2170	U
78	1	2184	U
78	1	2188	A
78	1	2192	C
78	1	2204	C
78	1	2205	U
78	1	2206	G
78	1	2207	A
78	1	2209	U
78	1	2210	G
78	1	2223	A
78	1	2225	U
78	1	2228	A
78	1	2244	A
78	1	2249	G
78	1	2250	G
78	1	2256	A
78	1	2257	C
78	1	2272	G
78	1	2273	G
78	1	2280	A
78	1	2281	A
78	1	2282	U
78	1	2288	G
78	1	2307	G
78	1	2310	U
78	1	2313	A
78	1	2314	U
78	1	2315	G
78	1	2318	U
78	1	2334	U
78	1	2336	U
78	1	2372	A
78	1	2373	A
78	1	2374	C

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	2375	G
78	1	2385	G
78	1	2388	U
78	1	2393	G
78	1	2397	A
78	1	2402	A
78	1	2403	G
78	1	2404	A
78	1	2411	U
78	1	2412	G
78	1	2418	G
78	1	2419	A
78	1	2435	G
78	1	2437	G
78	1	2439	A
78	1	2445	A
78	1	2446	U
78	1	2447	A
78	1	2452	G
78	1	2496	C
78	1	2497	U
78	1	2498	U
78	1	2499	U
78	1	2501	U
78	1	2502	A
78	1	2506	U
78	1	2507	C
78	1	2508	U
78	1	2514	U
78	1	2515	A
78	1	2522	G
78	1	2524	A
78	1	2525	G
78	1	2526	C
78	1	2531	C
78	1	2533	G
78	1	2537	U
78	1	2538	U
78	1	2539	C
78	1	2540	A
78	1	2541	U
78	1	2542	U

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	2543	U
78	1	2544	U
78	1	2547	A
78	1	2548	C
78	1	2549	G
78	1	2552	C
78	1	2554	A
78	1	2560	C
78	1	2561	A
78	1	2569	A
78	1	2570	U
78	1	2571	U
78	1	2572	C
78	1	2573	G
78	1	2582	C
78	1	2585	G
78	1	2589	G
78	1	2593	A
78	1	2594	C
78	1	2595	A
78	1	2606	G
78	1	2607	G
78	1	2614	G
78	1	2636	A
78	1	2652	U
78	1	2656	A
78	1	2674	A
78	1	2677	G
78	1	2680	A
78	1	2689	A
78	1	2691	A
78	1	2694	A
78	1	2696	A
78	1	2699	G
78	1	2703	A
78	1	2704	A
78	1	2714	G
78	1	2719	U
78	1	2727	A
78	1	2728	G
78	1	2729	U
78	1	2737	C

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	2752	U
78	1	2753	G
78	1	2777	G
78	1	2778	G
78	1	2787	G
78	1	2796	G
78	1	2800	G
78	1	2801	A
78	1	2802	A
78	1	2803	A
78	1	2810	C
78	1	2814	G
78	1	2817	A
78	1	2818	U
78	1	2821	C
78	1	2842	U
78	1	2845	A
78	1	2849	C
78	1	2856	G
78	1	2860	U
78	1	2867	C
78	1	2871	G
78	1	2872	A
78	1	2875	U
78	1	2887	A
78	1	2889	C
78	1	2894	C
78	1	2898	G
78	1	2899	C
78	1	2923	U
78	1	2935	U
78	1	2936	A
78	1	2938	G
78	1	2941	A
78	1	2947	G
78	1	2951	G
78	1	2971	A
78	1	2983	C
78	1	2992	U
78	1	2996	U
78	1	2997	G
78	1	3003	G

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	3012	A
78	1	3056	U
78	1	3058	U
78	1	3078	U
78	1	3080	G
78	1	3086	A
78	1	3092	C
78	1	3101	G
78	1	3104	U
78	1	3128	G
78	1	3130	A
78	1	3131	U
78	1	3142	A
78	1	3143	C
78	1	3144	G
78	1	3151	U
78	1	3154	C
78	1	3155	U
78	1	3156	U
78	1	3157	U
78	1	3158	G
78	1	3165	A
78	1	3170	A
78	1	3172	A
78	1	3173	G
78	1	3174	A
78	1	3175	U
78	1	3176	G
78	1	3179	U
78	1	3181	C
78	1	3187	A
78	1	3196	U
78	1	3197	G
78	1	3199	G
78	1	3207	U
78	1	3217	C
78	1	3218	A
78	1	3219	G
78	1	3229	G
78	1	3243	A
78	1	3245	A
78	1	3246	G

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
78	1	3247	G
78	1	3259	U
78	1	3263	G
78	1	3270	U
78	1	3276	G
78	1	3281	U
78	1	3287	U
78	1	3289	G
78	1	3294	A
78	1	3295	A
78	1	3304	U
78	1	3313	U
78	1	3316	A
78	1	3318	G
78	1	3319	U
78	1	3320	A
78	1	3330	A
78	1	3334	U
78	1	3341	U
78	1	3345	G
78	1	3351	U
78	1	3352	U
78	1	3353	G
78	1	3354	U
78	1	3355	U
78	1	3356	G
78	1	3357	U
78	1	3368	U
78	1	3369	G
78	1	3375	A
78	1	3378	C
78	1	3381	U
78	1	3382	U
78	1	3386	G
78	1	3389	U
78	1	3390	G
78	1	3396	U
79	5	35	C
79	5	37	U
79	5	38	G
79	5	39	G
79	5	40	A

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
79	5	42	G
79	5	45	A
79	5	46	C
81	6	16	U
81	6	17	G
81	6	18	G
81	6	19	U
81	6	21	A
81	6	24	G
81	6	32	C
81	6	41	A
81	6	42	G
81	6	47	U
81	6	48	U
81	6	58	A
81	6	73	G
81	6	76	A

All (95) RNA pucker outliers are listed below:

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	68	A
1	2	77	U
1	2	139	C
1	2	141	U
1	2	177	U
1	2	224	C
1	2	278	U
1	2	280	U
1	2	313	U
1	2	322	G
1	2	352	A
1	2	387	A
1	2	400	A
1	2	539	G
1	2	541	A
1	2	555	A
1	2	609	U
1	2	629	U
1	2	639	U
1	2	640	U
1	2	705	U

*Continued on next page...*

*Continued from previous page...*

<b>Mol</b>	<b>Chain</b>	<b>Res</b>	<b>Type</b>
1	2	711	U
1	2	765	G
1	2	819	G
1	2	863	A
1	2	912	U
1	2	928	U
1	2	1023	A
1	2	1226	A
1	2	1245	G
1	2	1251	U
1	2	1256	A
1	2	1273	G
1	2	1274	C
1	2	1344	A
1	2	1382	A
1	2	1430	U
1	2	1471	A
1	2	1534	G
1	2	1556	A
1	2	1573	A
1	2	1584	G
1	2	1601	G
1	2	1615	C
1	2	1633	A
1	2	1636	C
1	2	1791	A
35	4	52	G
36	3	85	G
78	1	13	A
78	1	65	A
78	1	239	G
78	1	282	G
78	1	439	C
78	1	637	C
78	1	715	A
78	1	763	G
78	1	846	A
78	1	848	A
78	1	916	G
78	1	993	G
78	1	1064	A
78	1	1097	G

*Continued on next page...*

*Continued from previous page...*

Mol	Chain	Res	Type
78	1	1196	C
78	1	1273	A
78	1	1307	G
78	1	1352	A
78	1	1355	A
78	1	1554	U
78	1	1562	C
78	1	1582	C
78	1	1607	U
78	1	1716	U
78	1	1815	U
78	1	1820	U
78	1	2101	C
78	1	2112	U
78	1	2249	G
78	1	2446	U
78	1	2495	C
78	1	2500	A
78	1	2501	U
78	1	2525	G
78	1	2537	U
78	1	2541	U
78	1	2547	A
78	1	3056	U
78	1	3218	A
78	1	3228	C
78	1	3269	U
78	1	3275	U
78	1	3319	U
78	1	3350	C
78	1	3351	U
79	5	34	U

#### 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](#)

Of 94 ligands modelled in this entry, 94 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

## 5.7 Other polymers [i](#)

There are no such residues in this entry.

## 5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
41	1	1

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	1	120:ALA	C	129:GLU	N	12.16

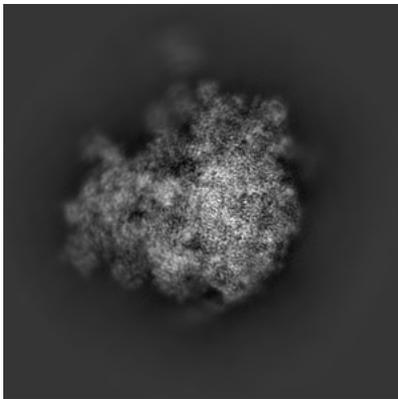
## 6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-10262. These allow visual inspection of the internal detail of the map and identification of artifacts.

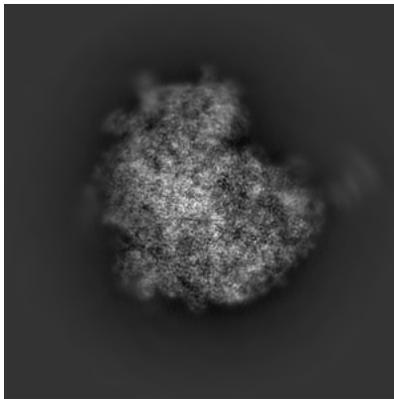
No raw map or half-maps were deposited for this entry and therefore no images, graphs, etc. pertaining to the raw map can be shown.

### 6.1 Orthogonal projections [i](#)

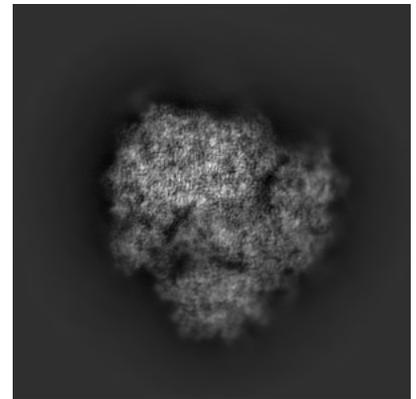
#### 6.1.1 Primary map



X



Y

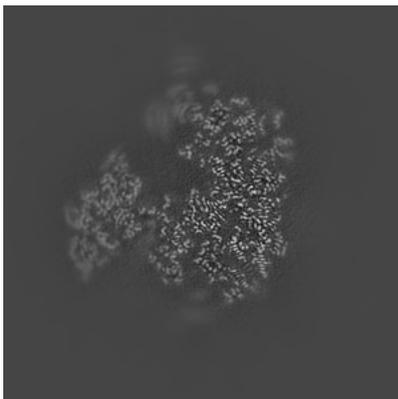


Z

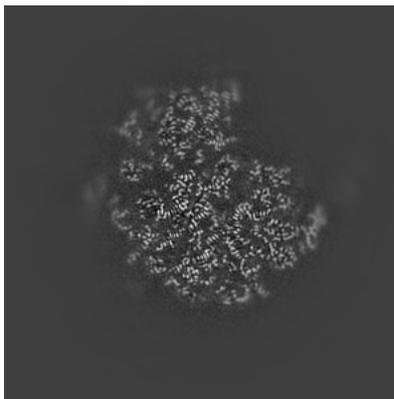
The images above show the map projected in three orthogonal directions.

### 6.2 Central slices [i](#)

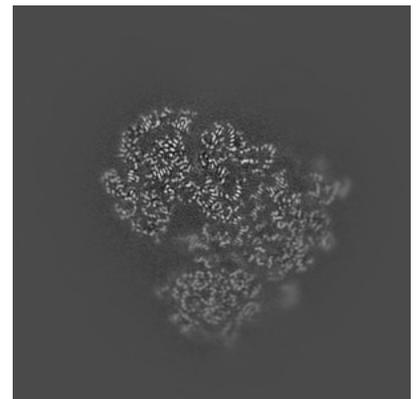
#### 6.2.1 Primary map



X Index: 200



Y Index: 200

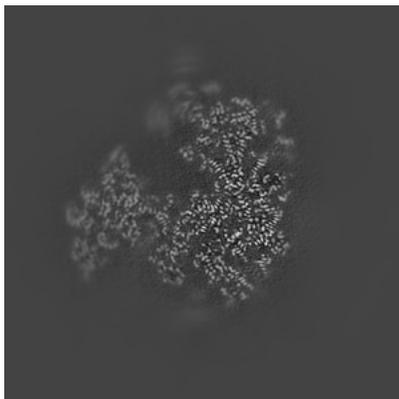


Z Index: 200

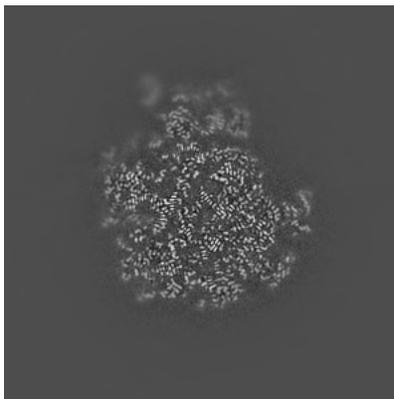
The images above show central slices of the map in three orthogonal directions.

## 6.3 Largest variance slices [i](#)

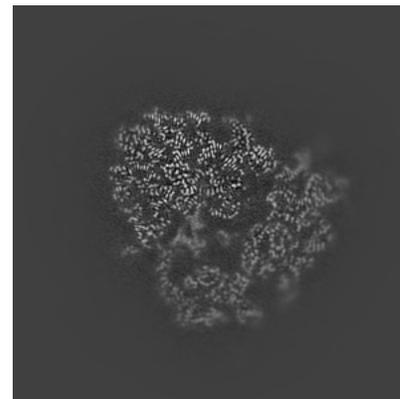
### 6.3.1 Primary map



X Index: 198



Y Index: 233

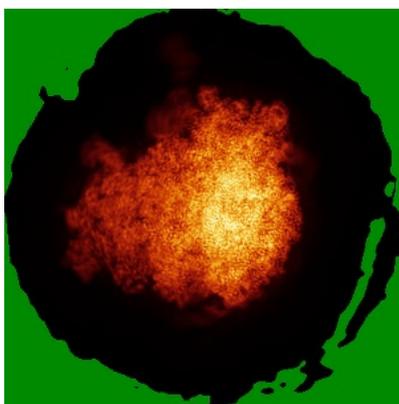


Z Index: 211

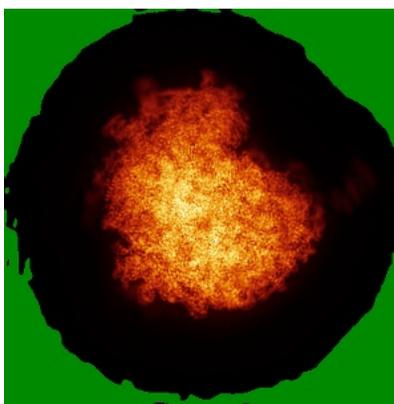
The images above show the largest variance slices of the map in three orthogonal directions.

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

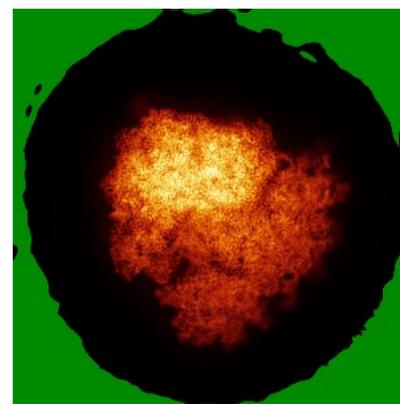
### 6.4.1 Primary map



X



Y

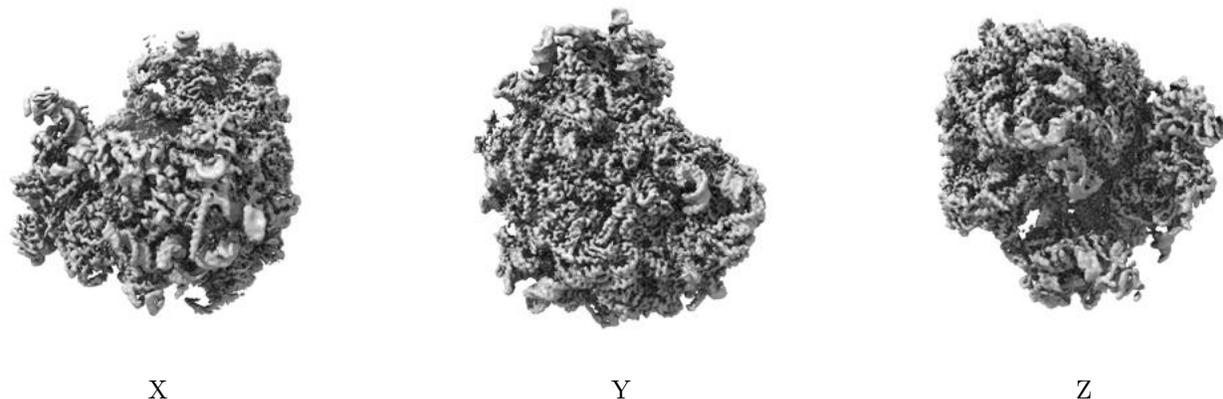


Z

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

## 6.5 Orthogonal surface views [i](#)

### 6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.0587. These images, in conjunction with the slice images, may facilitate assessment of whether an appropriate contour level has been provided.

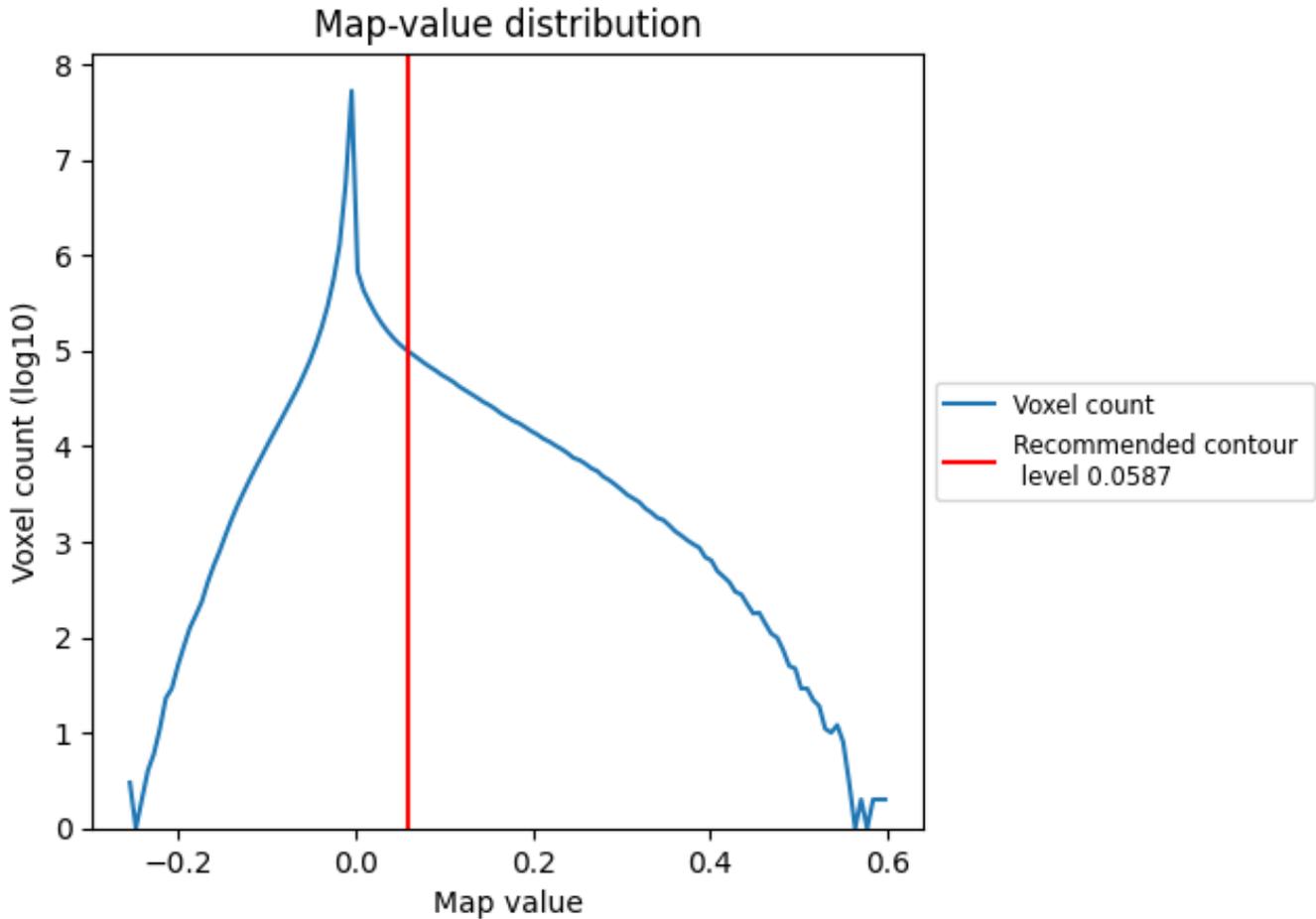
## 6.6 Mask visualisation [i](#)

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

## 7 Map analysis [i](#)

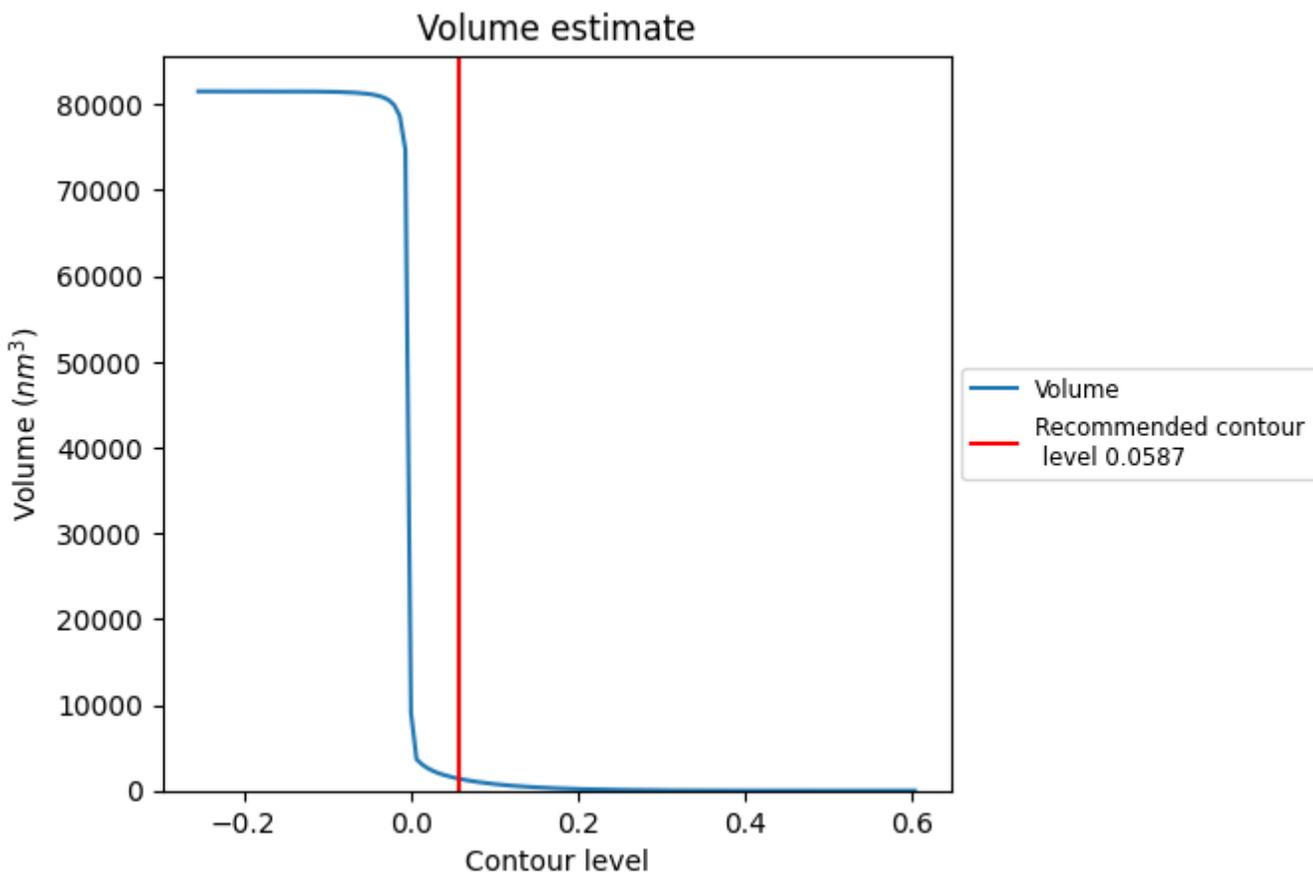
This section contains the results of statistical analysis of the map.

### 7.1 Map-value distribution [i](#)



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

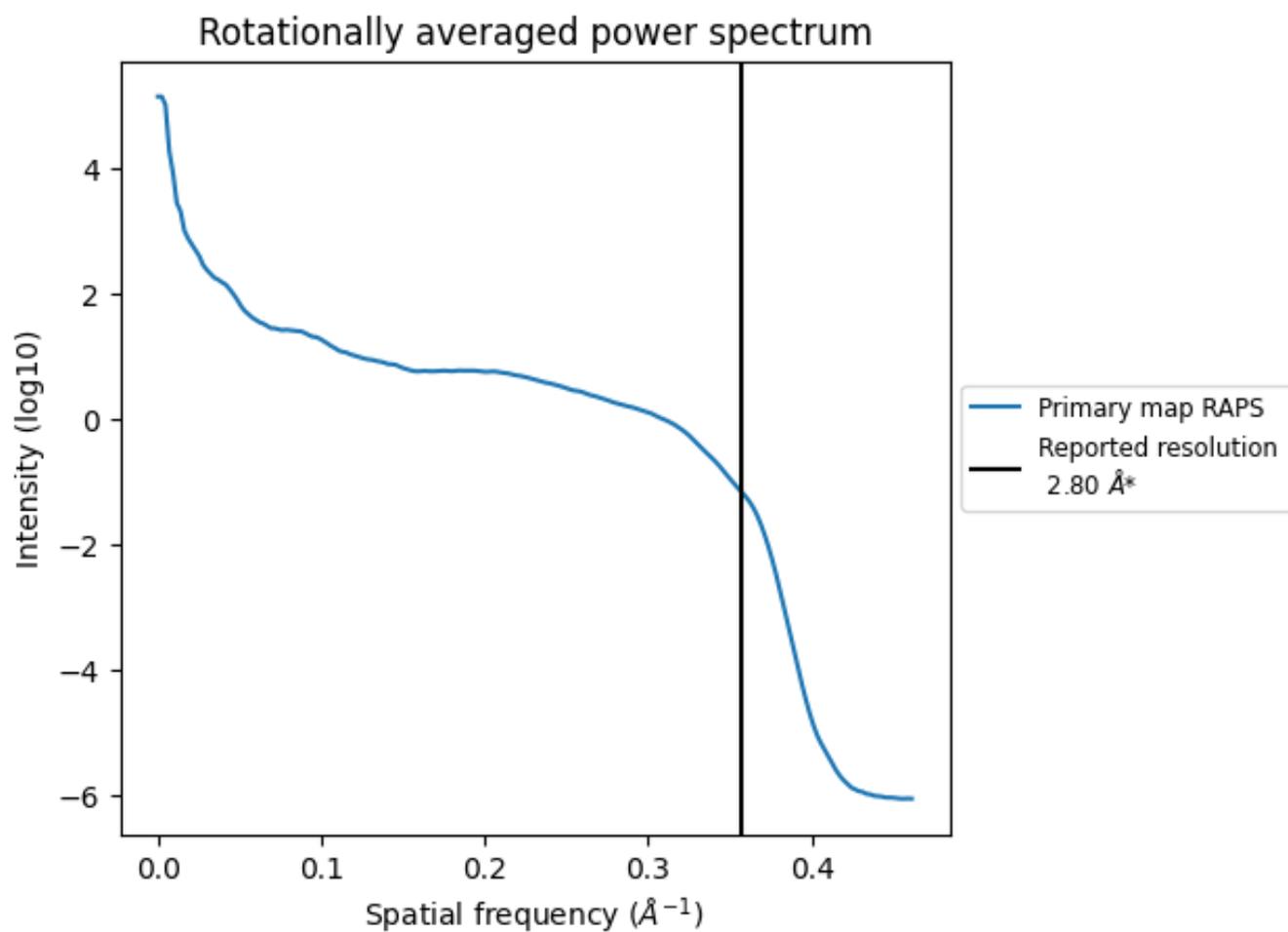
## 7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1374 nm<sup>3</sup>; this corresponds to an approximate mass of 1241 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](#)

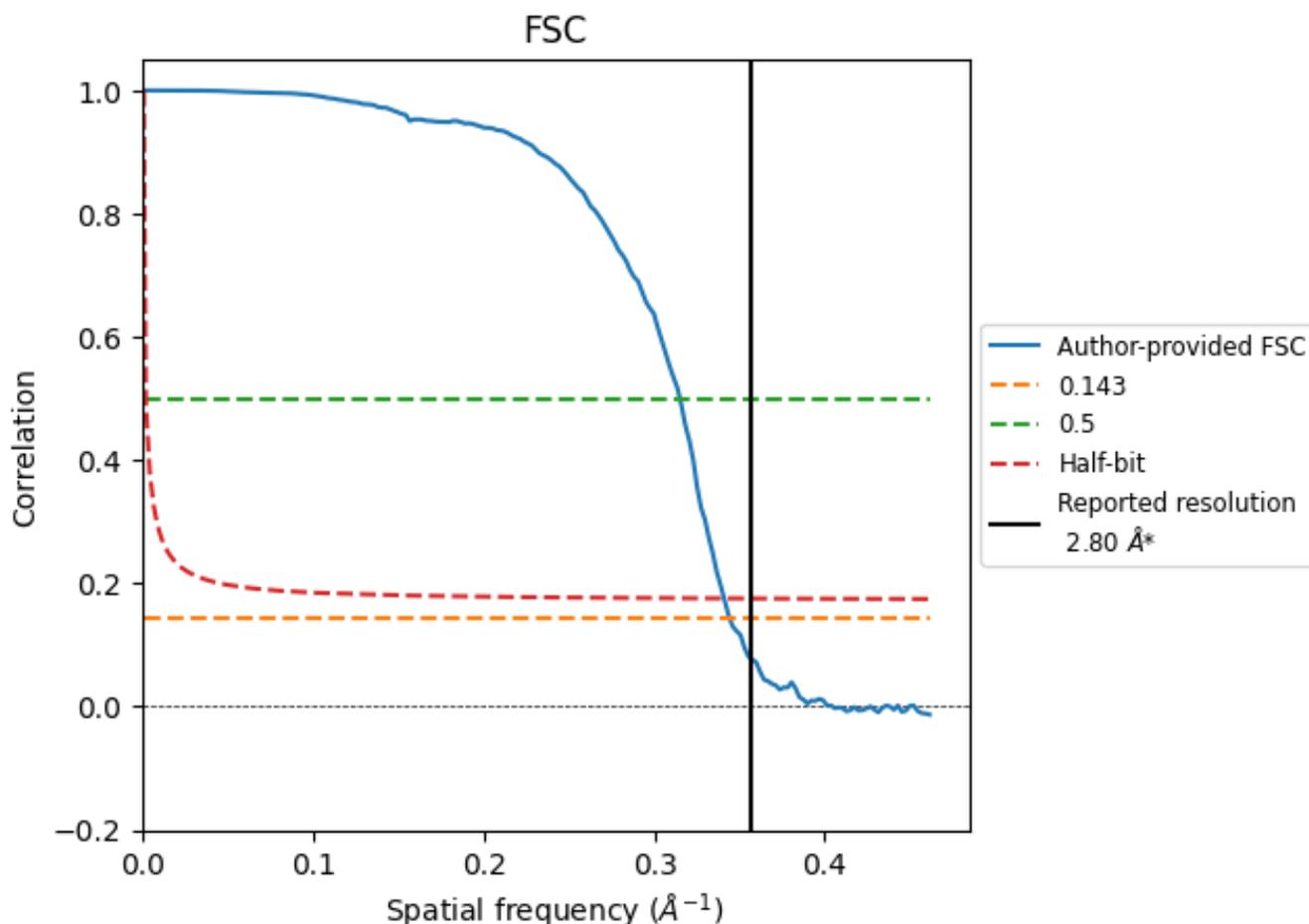


\*Reported resolution corresponds to spatial frequency of 0.357 Å<sup>-1</sup>

## 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 0.357 Å<sup>-1</sup>

## 8.2 Resolution estimates [i](#)

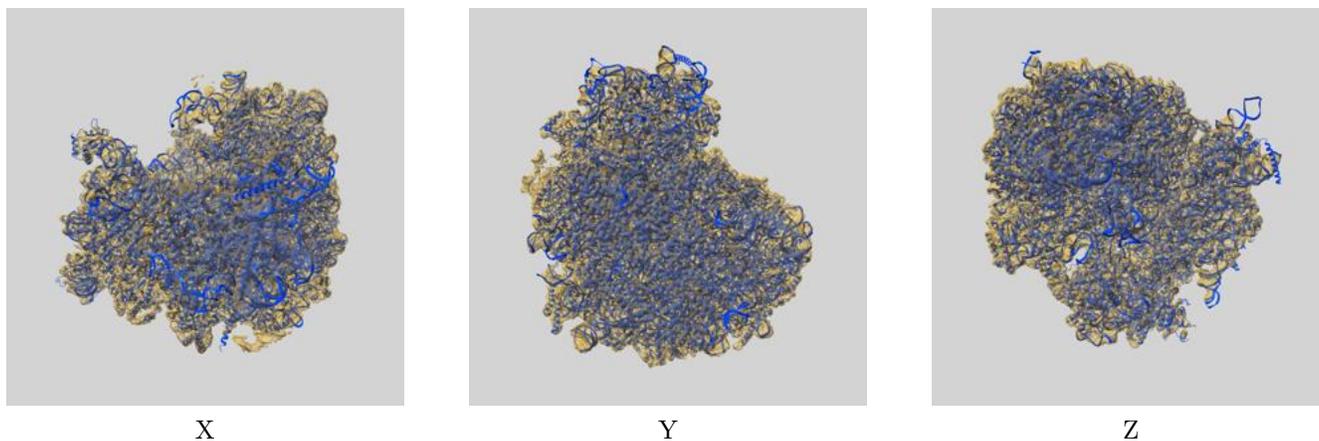
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.80	-	-
Author-provided FSC curve	2.90	3.17	2.93
Unmasked-calculated*	-	-	-

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

## 9 Map-model fit [i](#)

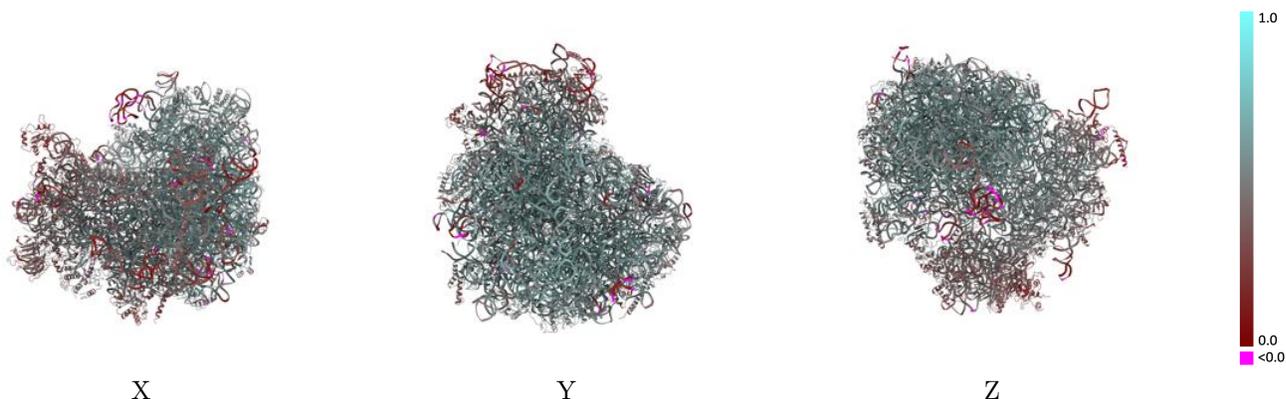
This section contains information regarding the fit between EMDB map EMD-10262 and PDB model 6SNT. Per-residue inclusion information can be found in section 3 on page 20.

### 9.1 Map-model overlay [i](#)



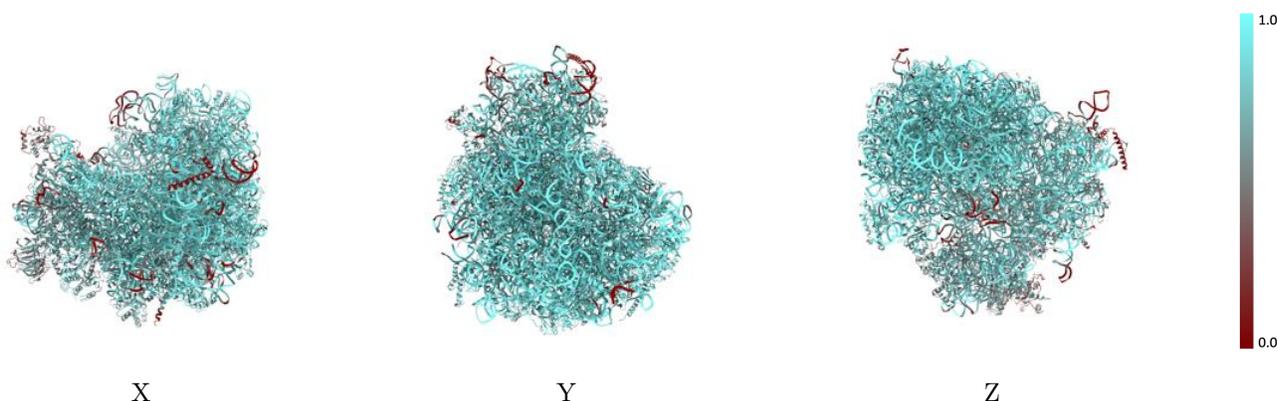
The images above show the 3D surface view of the map at the recommended contour level 0.0587 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



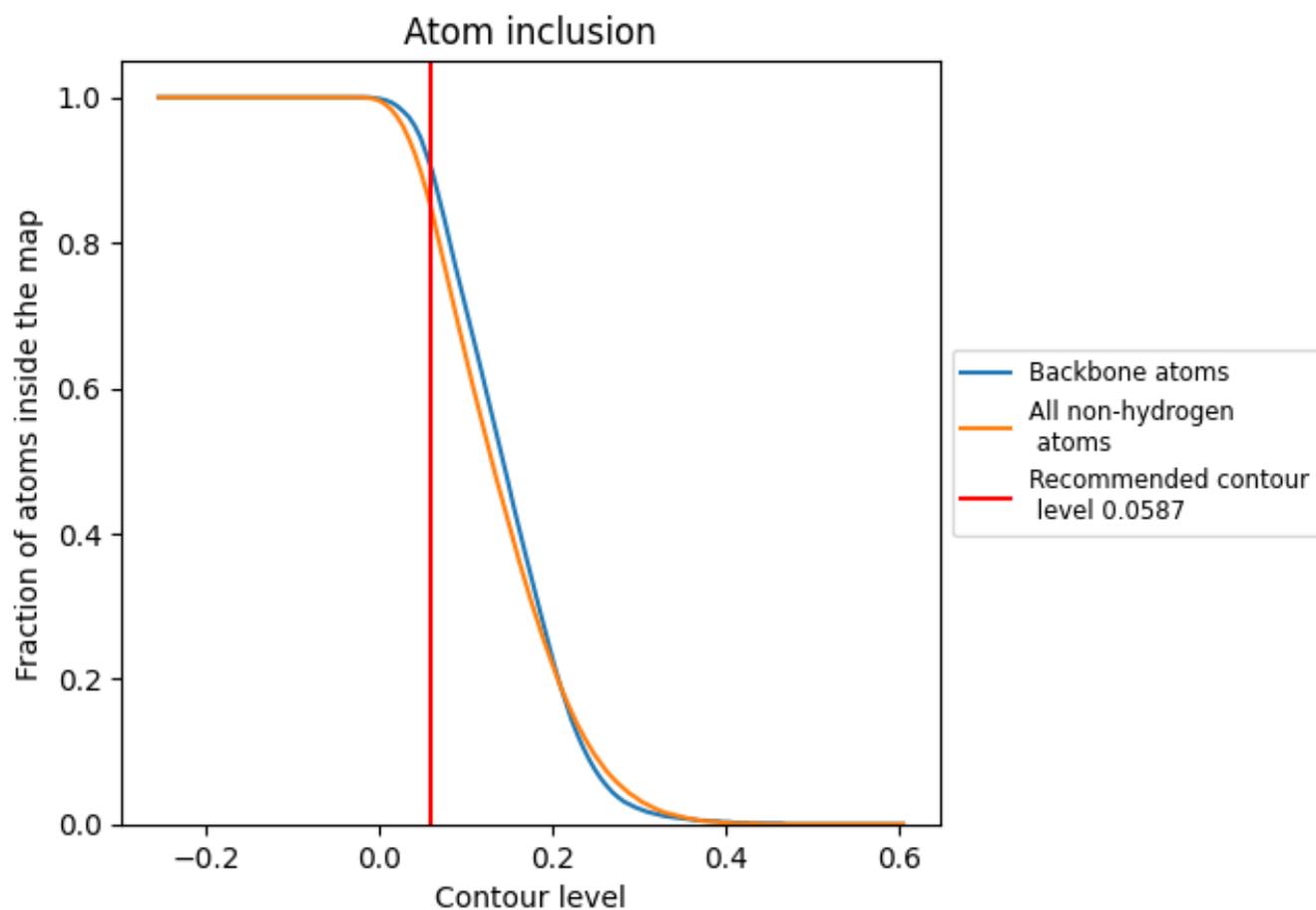
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.0587).

## 9.4 Atom inclusion [i](#)



At the recommended contour level, 91% of all backbone atoms, 85% 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 (0.0587) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8520	 0.5140
1	 0.9380	 0.5620
2	 0.8770	 0.4690
3	 0.9610	 0.5880
4	 0.9760	 0.5400
5	 0.2420	 0.2200
6	 0.8850	 0.4480
A	 0.7190	 0.4390
AB	 0.8530	 0.5790
B	 0.7410	 0.4840
C	 0.7410	 0.4840
D	 0.6030	 0.3990
E	 0.7350	 0.4780
F	 0.6210	 0.4040
G	 0.7190	 0.4160
H	 0.6820	 0.4130
I	 0.8000	 0.5230
J	 0.7040	 0.4360
K	 0.6020	 0.3420
L	 0.7860	 0.5390
M	 0.3310	 0.2330
N	 0.7830	 0.5040
NC	 0.6670	 0.5250
O	 0.7810	 0.5030
P	 0.5890	 0.3720
Q	 0.6360	 0.4150
R	 0.6730	 0.4010
S	 0.6470	 0.3850
T	 0.6380	 0.3820
U	 0.6270	 0.3900
V	 0.7350	 0.4680
W	 0.7640	 0.5170
X	 0.7470	 0.5190
Y	 0.7030	 0.4180
Z	 0.5270	 0.3520



*Continued on next page...*

*Continued from previous page...*

Chain	Atom inclusion	Q-score
a	 0.7790	 0.5070
aa	 0.8190	 0.5770
ab	 0.8150	 0.5490
ac	 0.6970	 0.5440
ad	 0.8140	 0.5480
ae	 0.8940	 0.6030
af	 0.7530	 0.4860
ag	 0.9130	 0.6110
ah	 0.8000	 0.5100
ai	 0.8090	 0.5260
aj	 0.8350	 0.5600
ak	 0.8920	 0.5880
al	 0.8720	 0.5860
am	 0.8400	 0.5570
an	 0.8280	 0.5350
ao	 0.7880	 0.5260
ap	 0.8870	 0.5780
aq	 0.8340	 0.5240
ar	 0.8750	 0.5630
as	 0.8430	 0.5590
at	 0.5330	 0.4270
au	 0.8080	 0.4910
b	 0.7540	 0.4860
c	 0.6200	 0.4420
d	 0.7410	 0.4520
e	 0.6140	 0.4390
f	 0.3810	 0.2200
g	 0.5330	 0.3460
h	 0.8860	 0.6020
i	 0.8850	 0.5680
j	 0.8700	 0.5600
k	 0.7880	 0.4740
l	 0.8210	 0.5110
m	 0.8560	 0.5450
n	 0.8050	 0.5010
o	 0.8270	 0.5270
p	 0.7950	 0.5290
q	 0.7450	 0.4630
r	 0.8510	 0.5380
s	 0.8610	 0.5250
t	 0.9040	 0.5970
u	 0.8630	 0.5610

*Continued on next page...*

*Continued from previous page...*

Chain	Atom inclusion	Q-score
v	 0.8530	 0.5720
w	 0.8630	 0.5610
x	 0.7900	 0.5230
y	 0.8440	 0.5500
z	 0.8480	 0.5540