



Full wwPDB EM Validation Report ⓘ

Sep 24, 2025 – 06:01 pm BST

PDB ID : 7NRC / pdb_00007nrc
EMDB ID : EMD-12534
Title : Structure of the yeast Gcn1 bound to a leading stalled 80S ribosome with Rbg2, Gir2, A- and P-tRNA and eIF5A
Authors : Pochopien, A.A.; Beckert, B.; Wilson, D.N.
Deposited on : 2021-03-03
Resolution : 3.90 Å(reported)

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

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

A user guide is available at

<https://www.wwpdb.org/validation/2017/EMValidationReportHelp>
with specific help available everywhere you see the ⓘ symbol.

The types of validation reports are described at

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

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

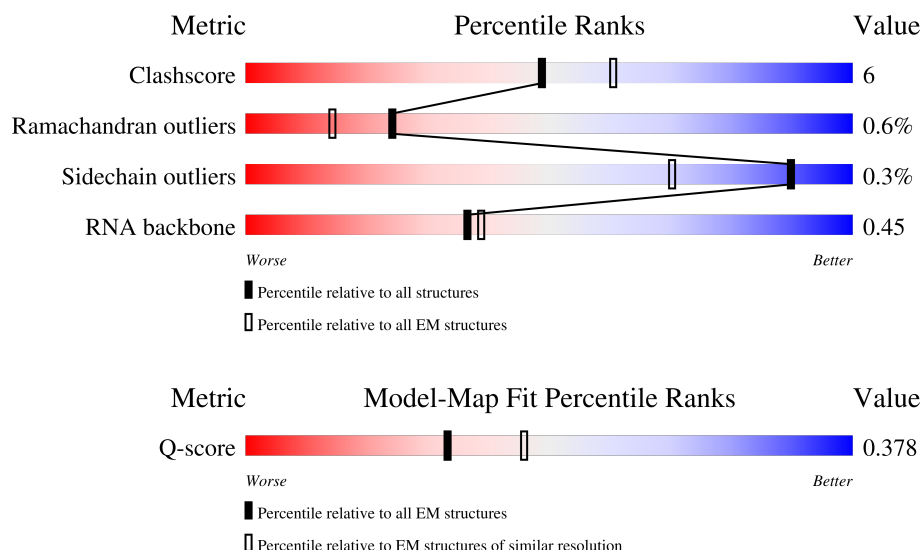
EMDB validation analysis : 0.0.1.dev129
Mogul : 1.8.4, CSD as541be (2020)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.46

1 Overall quality at a glance

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

The reported resolution of this entry is 3.90 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	8855 (3.40 - 4.40)

The table below summarises the geometric issues observed across the polymeric chains and their fit to the map. The red, orange, yellow and green segments of the bar indicate the fraction of residues that contain outliers for ≥ 3 , 2, 1 and 0 types of geometric quality criteria respectively. A grey segment represents the fraction of residues that are not modelled. The numeric value for each fraction is indicated below the corresponding segment, with a dot representing fractions $\leq 5\%$. The upper red bar (where present) indicates the fraction of residues that have poor fit to the EM map (all-atom inclusion $< 40\%$). The numeric value is given above the bar.

Mol	Chain	Length	Quality of chain
1	S2	1800	
2	Sl	6	
3	SP	206	

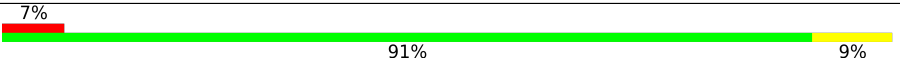
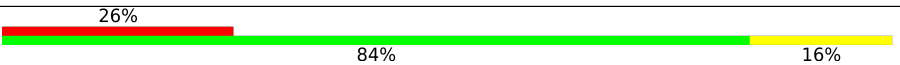
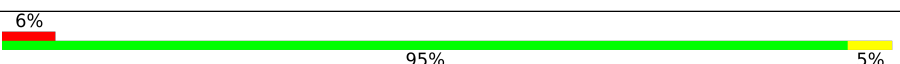
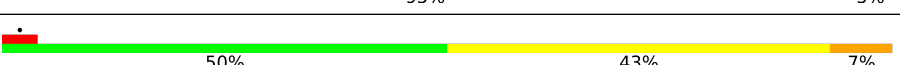
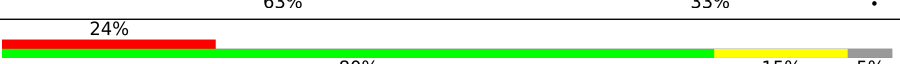
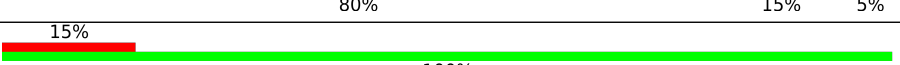
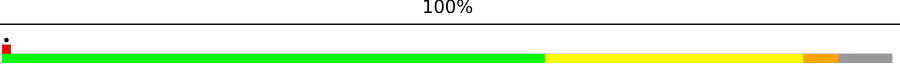
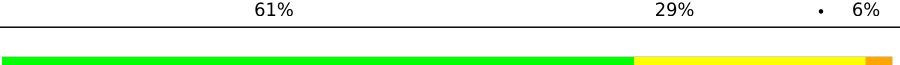
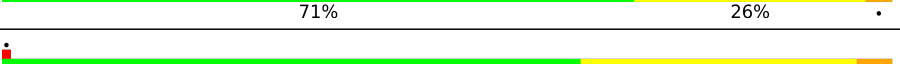
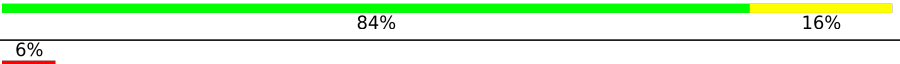
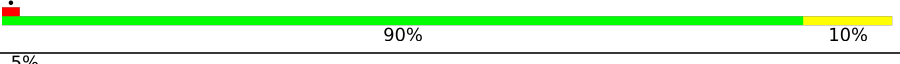
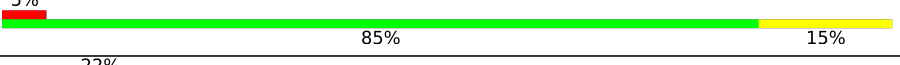
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Mol	Chain	Length	Quality of chain
4	SQ	232	
5	SE	117	
6	SR	216	
7	SA	222	
8	SS	258	
9	SB	206	
10	ST	228	
11	SU	184	
12	SV	198	
13	SW	184	
14	SC	92	
15	SX	142	
16	SD	121	
17	SY	150	
18	SZ	127	
19	SF	141	
20	SG	125	
21	SH	145	
22	SI	143	
23	SJ	100	
24	Sa	87	
25	Sb	129	
26	Sc	144	
27	Sd	134	
28	SK	82	

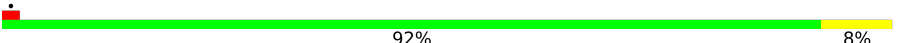
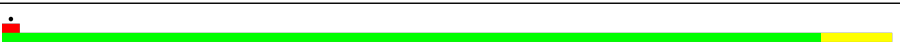
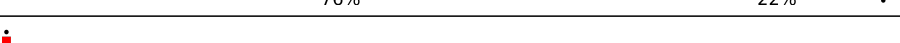
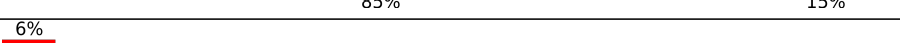
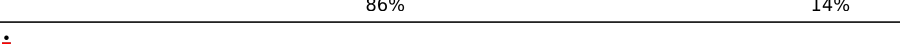
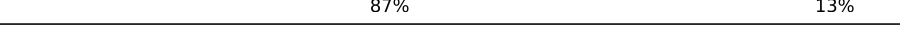
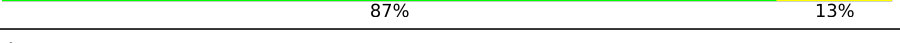
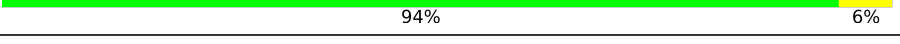
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Mol	Chain	Length	Quality of chain
29	Se	97	
30	Sf	81	
31	SM	53	
32	Sg	57	
33	SN	73	
34	SO	312	
35	SL	63	
36	Sm	76	
37	Sn	75	
38	So	366	
39	Sp	48	
40	LA	3394	
41	LB	121	
42	LC	158	
43	LD	251	
44	LE	386	
45	LF	361	
46	LG	294	
47	LH	175	
48	LI	222	
49	LJ	233	
50	LK	191	
51	LL	218	
52	LM	169	
53	LN	193	

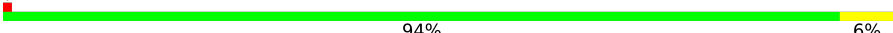
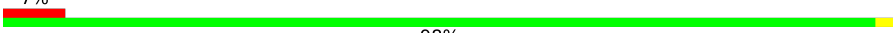
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Mol	Chain	Length	Quality of chain
54	LO	136	
55	LP	203	
56	LQ	197	
57	LR	183	
58	LS	185	
59	LT	188	
60	LU	171	
61	LV	159	
62	LW	100	
63	LX	136	
64	LY	65	
65	LZ	121	
66	La	125	
67	Lb	135	
68	Lc	148	
69	Ld	58	
70	Le	96	
71	Lf	109	
72	Lg	127	
73	Lh	106	
74	Li	112	
75	Lj	119	
76	Lk	99	
77	Ll	81	
78	Lm	77	

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Mol	Chain	Length	Quality of chain
79	Ln	50	 68%32%
80	Lo	52	 83%17%
81	Lp	25	 92%8%
82	Lq	103	 94%6%
83	Lr	91	 79%20%.
84	Ls	154	 13%65%32%. .
85	Lt	210	 7%98%. .
86	A	1209	 71%75%21%.. .

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

Mol	Type	Chain	Res	Chirality	Geometry	Clashes	Electron density
84	5CT	Ls	51	X	-	-	-

2 Entry composition [i](#)

There are 86 unique types of molecules in this entry. The entry contains 213576 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 18S rRNA (1771-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
1	S2	1771	Total	C	N	O	P	0	0
			37739	16872	6683	12413	1771		

- Molecule 2 is a RNA chain called RNA (5'-R(P*AP*UP*GP*AP*AP*A)-3').

Mol	Chain	Residues	Atoms					AltConf	Trace
2	SI	6	Total	C	N	O	P	0	0
			131	59	27	39	6		

- Molecule 3 is a protein called 40S ribosomal protein S0-A.

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

- Molecule 4 is a protein called 40S ribosomal protein S1-A.

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

- Molecule 5 is a protein called 40S ribosomal protein S15.

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

- Molecule 6 is a protein called 40S ribosomal protein S2.

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

- Molecule 7 is a protein called 40S ribosomal protein S3.

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

- Molecule 8 is a protein called 40S ribosomal protein S4-A.

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

- Molecule 9 is a protein called 40S ribosomal protein S5.

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

- Molecule 10 is a protein called 40S ribosomal protein S6-A.

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

- Molecule 11 is a protein called 40S ribosomal protein S7-A.

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

- Molecule 12 is a protein called 40S ribosomal protein S8-A.

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

- Molecule 13 is a protein called 40S ribosomal protein S9-A.

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

- Molecule 14 is a protein called 40S ribosomal protein S10-A.

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

- Molecule 15 is a protein called 40S ribosomal protein S11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	SX	142	Total	C	N	O	S	0	0
			1142	733	217	189	3		

- Molecule 16 is a protein called 40S ribosomal protein S12.

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

- Molecule 17 is a protein called 40S ribosomal protein S13.

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

- Molecule 18 is a protein called 40S ribosomal protein S14-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	SZ	127	Total	C	N	O	S	0	0
			923	568	185	167	3		

- Molecule 19 is a protein called 40S ribosomal protein S16-A.

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

- Molecule 20 is a protein called 40S ribosomal protein S17-B.

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

- Molecule 21 is a protein called 40S ribosomal protein S18-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	SH	145	Total	C	N	O	S	0	0
			1188	741	237	208	2		

- Molecule 22 is a protein called 40S ribosomal protein S19-A.

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

- Molecule 23 is a protein called 40S ribosomal protein S20.

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

- Molecule 24 is a protein called 40S ribosomal protein S21-A.

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

- Molecule 25 is a protein called 40S ribosomal protein S22-A.

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

- Molecule 26 is a protein called 40S ribosomal protein S23-A.

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

- Molecule 27 is a protein called 40S ribosomal protein S24-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
27	Sd	134	Total	C	N	O	0	0
			1032	651	195	186		

- Molecule 28 is a protein called 40S ribosomal protein S25-A.

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

- Molecule 29 is a protein called 40S ribosomal protein S26-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	Se	97	Total	C	N	O	S		
			765	473	160	127	5	0	0

- Molecule 30 is a protein called 40S ribosomal protein S27-A.

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

- Molecule 31 is a protein called 40S ribosomal protein S29-A.

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

- Molecule 32 is a protein called 40S ribosomal protein S30-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	Sg	57	Total	C	N	O	S		
			451	284	93	73	1	0	0

- Molecule 33 is a protein called 40S ribosomal protein S31.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
SN	97	ALA	LYS	variant	UNP P05759

- Molecule 34 is a protein called Guanine nucleotide-binding protein subunit beta-like protein.

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

- Molecule 35 is a protein called 40S ribosomal protein S28-A.

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

- Molecule 36 is a RNA chain called tRNA (76-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Sm	76	Total	C	N	O	P	0	0
			1611	721	281	534	75		

- Molecule 37 is a RNA chain called tRNA (75-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Sn	75	Total	C	N	O	P	0	0
			1606	716	297	518	75		

- Molecule 38 is a protein called Ribosome-interacting GTPase 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	So	347	Total	C	N	O	S	0	0
			2729	1723	478	518	10		

There are 10 discrepancies between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
So	62	ALA	LYS	variant	UNP P53295
So	92	ALA	ILE	variant	UNP P53295
So	94	GLU	HIS	variant	UNP P53295
So	96	GLU	ALA	variant	UNP P53295
So	134	LYS	ARG	variant	UNP P53295
So	271	ALA	THR	variant	UNP P53295
So	299	ALA	TYR	variant	UNP P53295
So	303	ALA	ARG	variant	UNP P53295
So	318	ASP	ASN	variant	UNP P53295
So	361	GLU	ASP	variant	UNP P53295

- Molecule 39 is a protein called GIR2.

Mol	Chain	Residues	Atoms				AltConf	Trace
39	Sp	48	Total	C	N	O	0	0
			240	144	48	48		

- Molecule 40 is a RNA chain called 25S rRNA (3184-MER).

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

- Molecule 41 is a RNA chain called 5S rRNA (121-MER).

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

- Molecule 42 is a RNA chain called 5.8S rRNA (158-MER).

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

- Molecule 43 is a protein called 60S ribosomal protein L2-A.

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

- Molecule 44 is a protein called 60S ribosomal protein L3.

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

- Molecule 45 is a protein called 60S ribosomal protein L4-A.

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

- Molecule 46 is a protein called 60S ribosomal protein L5.

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

- Molecule 47 is a protein called 60S ribosomal protein L6-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	LH	167	Total	C	N	O		0	0
			1307	843	234	230			

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
LH	120	LYS	ASN	variant	UNP P05739

- Molecule 48 is a protein called 60S ribosomal protein L7-A.

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

- Molecule 49 is a protein called 60S ribosomal protein L8-A.

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

- Molecule 50 is a protein called 60S ribosomal protein L9-A.

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

- Molecule 51 is a protein called 60S ribosomal protein L10.

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

- Molecule 52 is a protein called 60S ribosomal protein L11-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	LM	169	Total	C	N	O	S	0	0
			1346	843	252	247	4		

- Molecule 53 is a protein called 60S ribosomal protein L13-A.

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

- Molecule 54 is a protein called 60S ribosomal protein L14-A.

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

- Molecule 55 is a protein called 60S ribosomal protein L15-A.

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

- Molecule 56 is a protein called 60S ribosomal protein L16-A.

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

- Molecule 57 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	LR	183	Total	C	N	O		0	0
			1416	879	284	253			

- Molecule 58 is a protein called 60S ribosomal protein L18-A.

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

- Molecule 59 is a protein called 60S ribosomal protein L19-A.

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

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

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

- Molecule 61 is a protein called 60S ribosomal protein L21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	LV	159	Total	C	N	O	S		
			1272	802	245	221	4	0	0

- Molecule 62 is a protein called 60S ribosomal protein L22-A.

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

- Molecule 63 is a protein called 60S ribosomal protein L23-A.

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

- Molecule 64 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	LY	65	Total	C	N	O	S		
			528	339	104	84	1	0	0

- Molecule 65 is a protein called 60S ribosomal protein L25.

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

- Molecule 66 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
66	La	125	Total	C	N	O	0	0
			984	620	191	173		

- Molecule 67 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
67	Lb	135	Total	C	N	O	0	0
			1080	701	199	180		

- Molecule 68 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	Lc	148	Total	C	N	O	S	0	0
			1169	747	231	188	3		

- Molecule 69 is a protein called 60S ribosomal protein L29.

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

- Molecule 70 is a protein called 60S ribosomal protein L30.

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

- Molecule 71 is a protein called 60S ribosomal protein L31-A.

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

- Molecule 72 is a protein called 60S ribosomal protein L32.

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

- Molecule 73 is a protein called 60S ribosomal protein L33-A.

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

- Molecule 74 is a protein called 60S ribosomal protein L34-A.

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

- Molecule 75 is a protein called 60S ribosomal protein L35-A.

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

- Molecule 76 is a protein called 60S ribosomal protein L36-A.

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

- Molecule 77 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	Ll	81	Total	C	N	O	S	0	0
			645	393	141	106	5		

- Molecule 78 is a protein called 60S ribosomal protein L38.

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

- Molecule 79 is a protein called 60S ribosomal protein L39.

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

- Molecule 80 is a protein called 60S ribosomal protein L40-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	Lo	52	Total	C	N	O	S	0	0
			410	254	86	65	5		

- Molecule 81 is a protein called 60S ribosomal protein L41-A.

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

- Molecule 82 is a protein called 60S ribosomal protein L42-A.

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

- Molecule 83 is a protein called 60S ribosomal protein L43-A.

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

- Molecule 84 is a protein called eiF5A.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	Ls	154	Total	C	N	O	S	0	0
			1143	709	195	230	9		

- Molecule 85 is a protein called L1 60S ribosomal protein.

Mol	Chain	Residues	Atoms				AltConf	Trace
85	Lt	210	Total	C	N	O	0	0
			1050	630	210	210		

- Molecule 86 is a protein called GCN1.

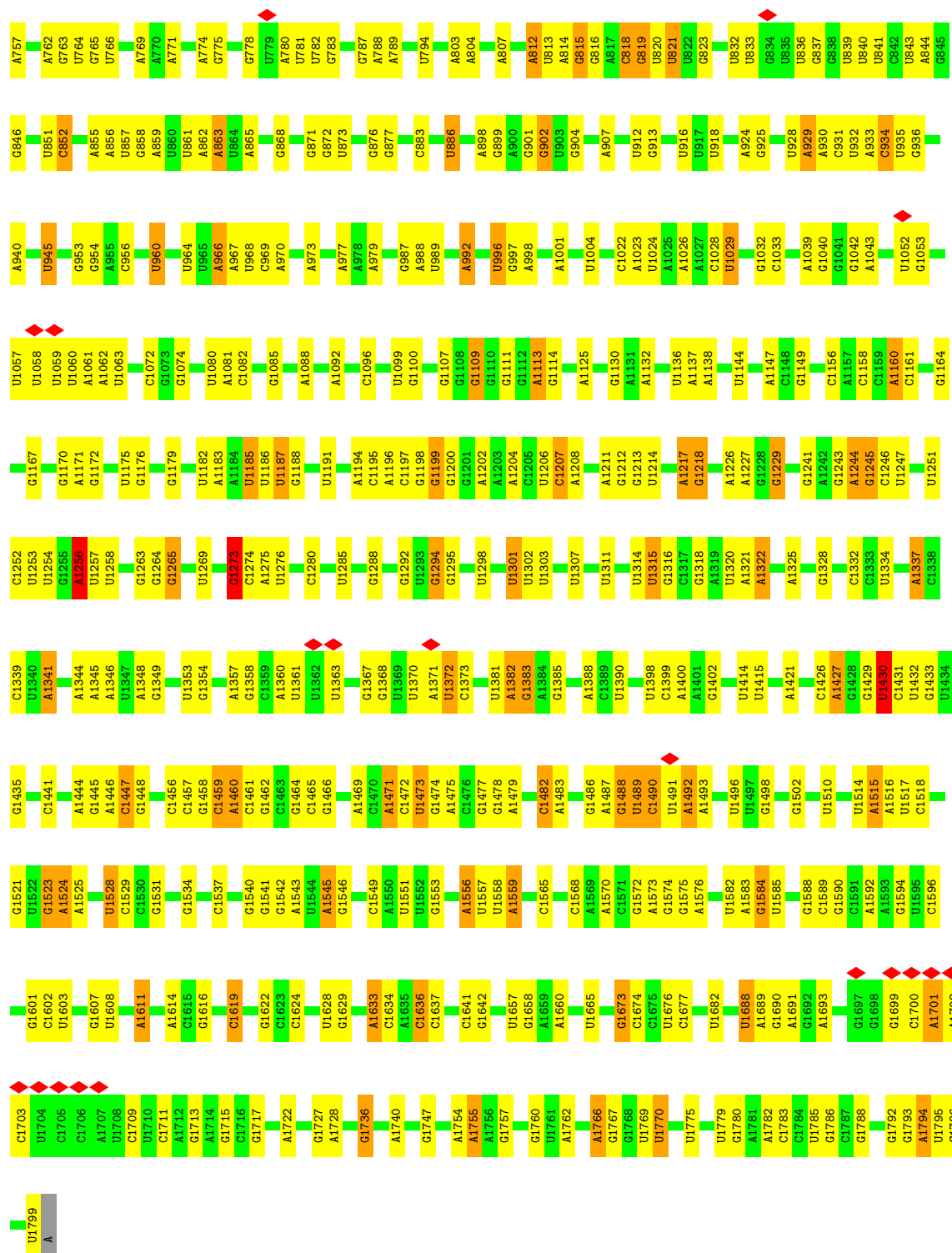
Mol	Chain	Residues	Atoms				AltConf	Trace
86	A	1209	Total	C	N	O	1	0
			6029	3609	1210	1210		

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: 18S rRNA (1771-MER)





• Molecule 2: RNA (5'-R(P*AP*UP*GP*AP*AP*A)-3')

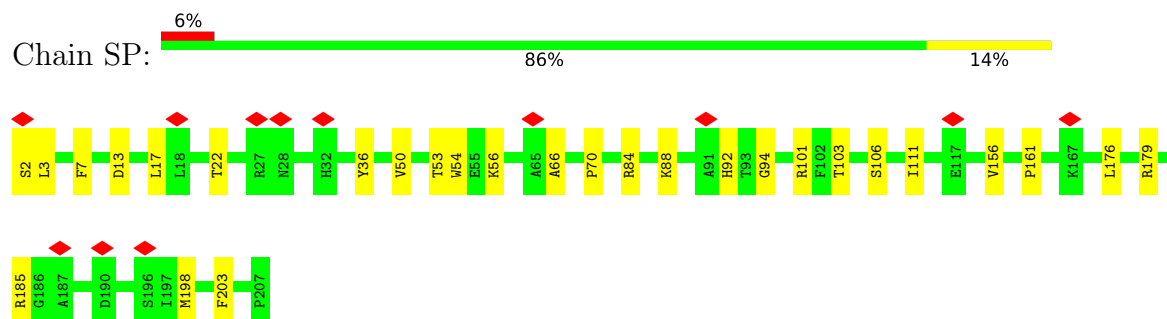
Chain S1:

83%

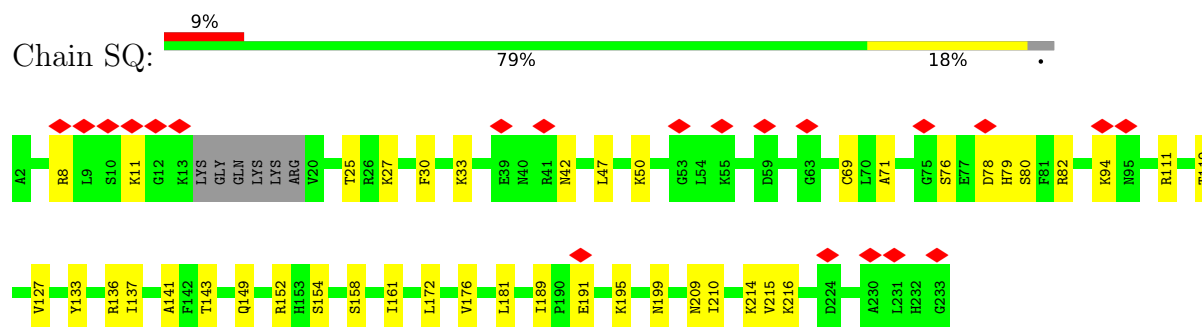
17%



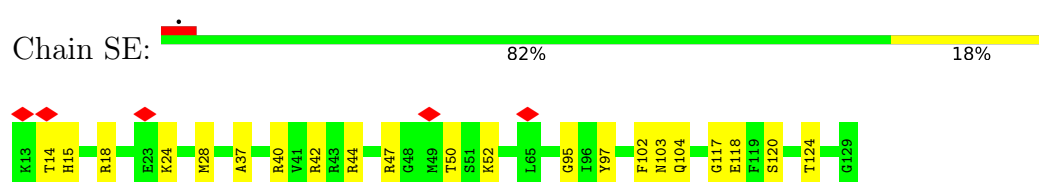
- Molecule 3: 40S ribosomal protein S0-A



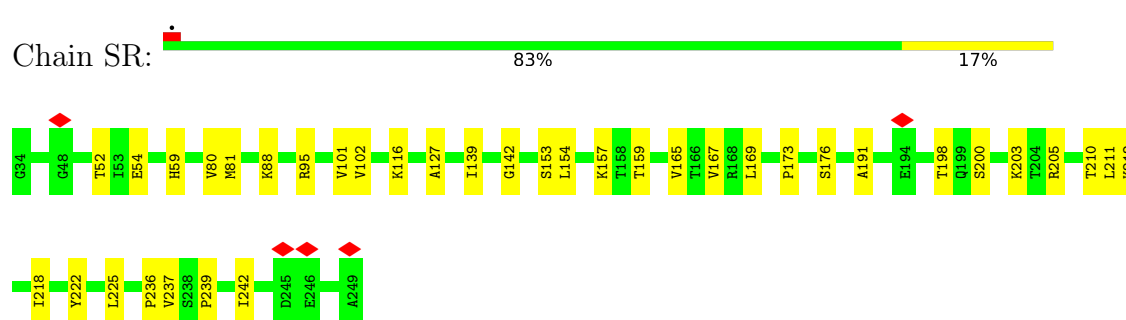
- Molecule 4: 40S ribosomal protein S1-A



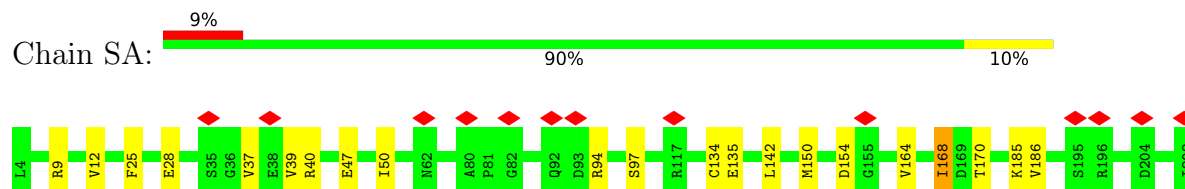
- Molecule 5: 40S ribosomal protein S15

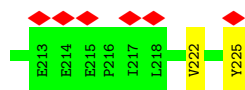


- Molecule 6: 40S ribosomal protein S2



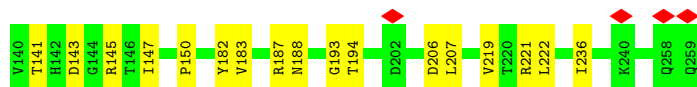
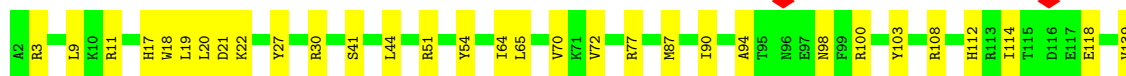
- Molecule 7: 40S ribosomal protein S3





• Molecule 8: 40S ribosomal protein S4-A

Chain SS: 81% 19%



• Molecule 9: 40S ribosomal protein S5

Chain SB: 9% 84% 16%



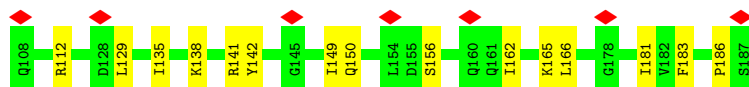
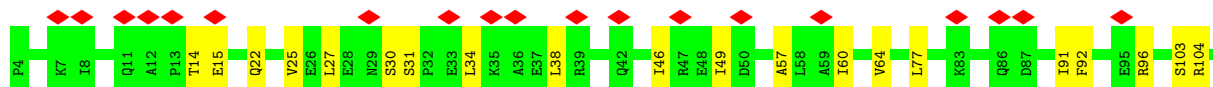
• Molecule 10: 40S ribosomal protein S6-A

Chain ST: 86% 14%



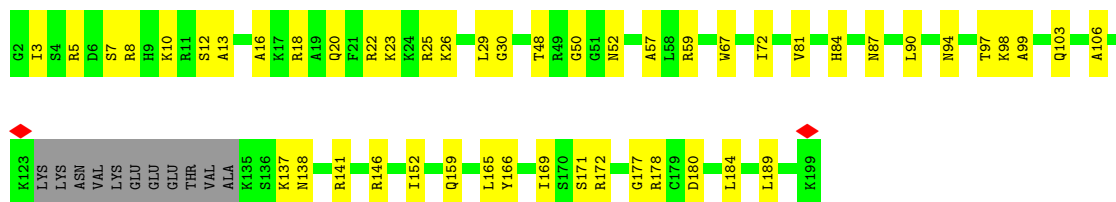
• Molecule 11: 40S ribosomal protein S7-A

Chain SU: 14% 81% 19%



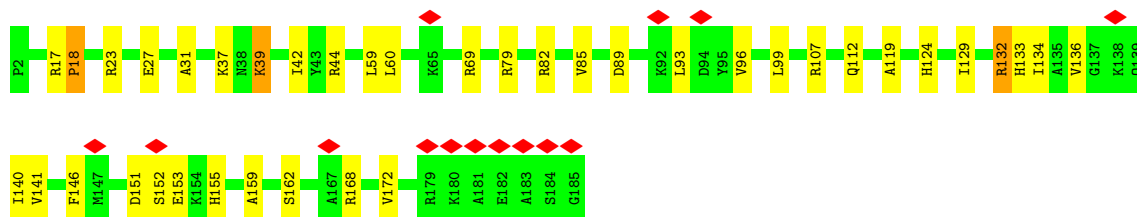
• Molecule 12: 40S ribosomal protein S8-A

Chain SV:  70% 25% 6%



- Molecule 13: 40S ribosomal protein S9-A

Chain SW:  8% 79% 20%



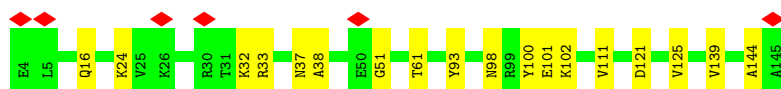
- Molecule 14: 40S ribosomal protein S10-A

Chain SC:  10% 85% 14%



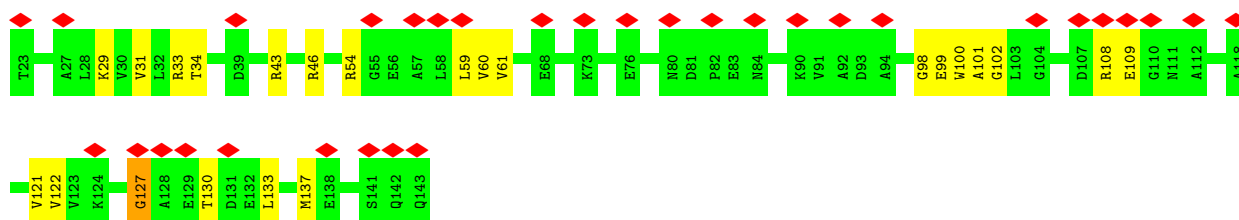
- Molecule 15: 40S ribosomal protein S11-A

Chain SX:  87% 13%



- Molecule 16: 40S ribosomal protein S12

Chain SD:  26% 81% 18%

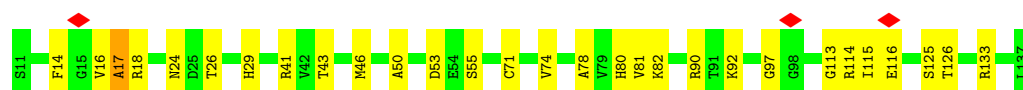
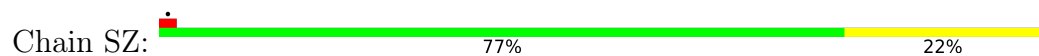


- Molecule 17: 40S ribosomal protein S13

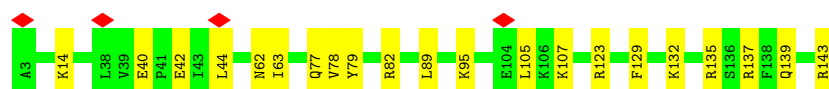
Chain SY:  5% 87% 13%



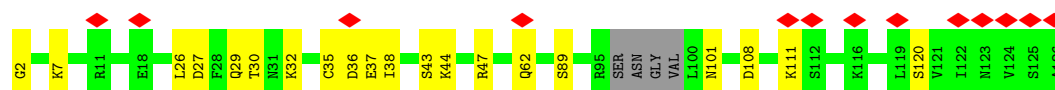
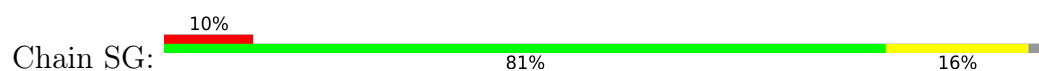
- Molecule 18: 40S ribosomal protein S14-B



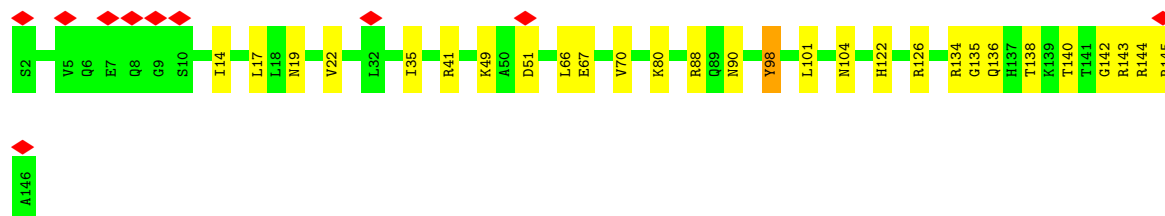
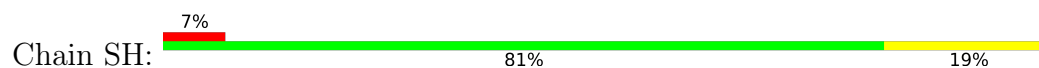
- Molecule 19: 40S ribosomal protein S16-A



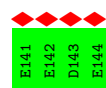
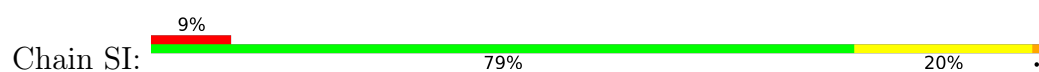
- Molecule 20: 40S ribosomal protein S17-B



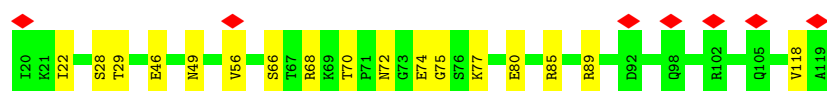
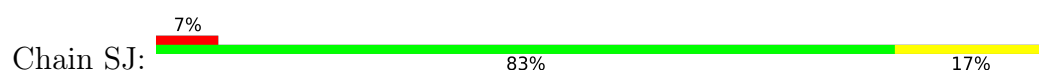
- Molecule 21: 40S ribosomal protein S18-A



- Molecule 22: 40S ribosomal protein S19-A



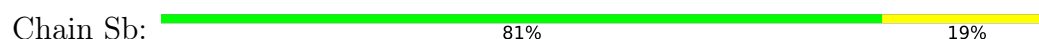
- Molecule 23: 40S ribosomal protein S20



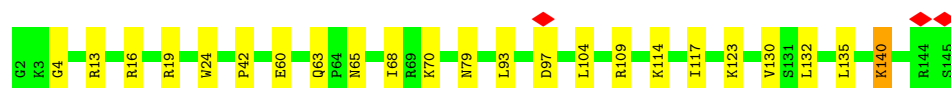
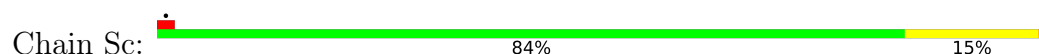
- Molecule 24: 40S ribosomal protein S21-A



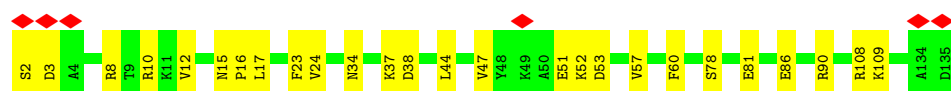
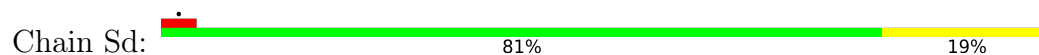
- Molecule 25: 40S ribosomal protein S22-A



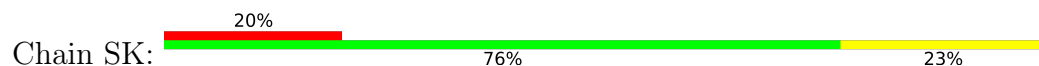
- Molecule 26: 40S ribosomal protein S23-A



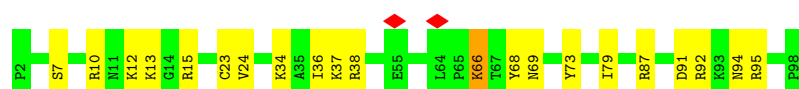
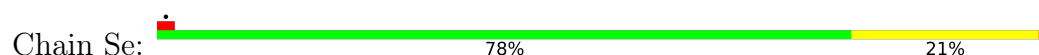
- Molecule 27: 40S ribosomal protein S24-A



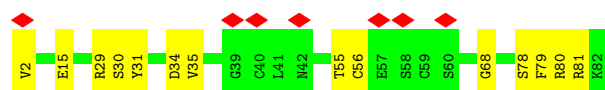
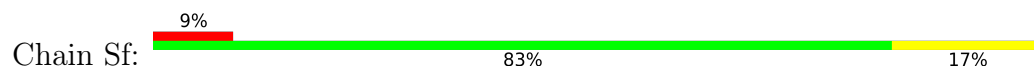
- Molecule 28: 40S ribosomal protein S25-A



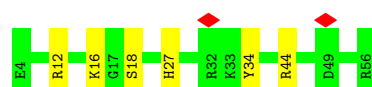
- Molecule 29: 40S ribosomal protein S26-B



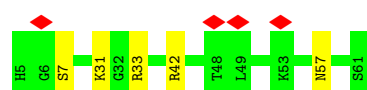
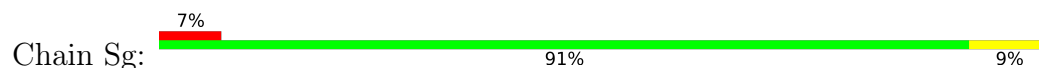
- Molecule 30: 40S ribosomal protein S27-A



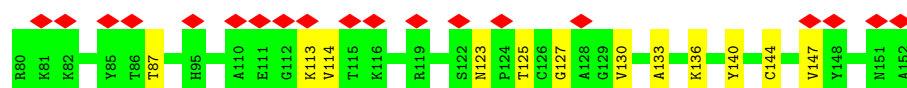
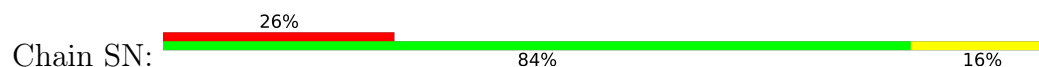
- Molecule 31: 40S ribosomal protein S29-A



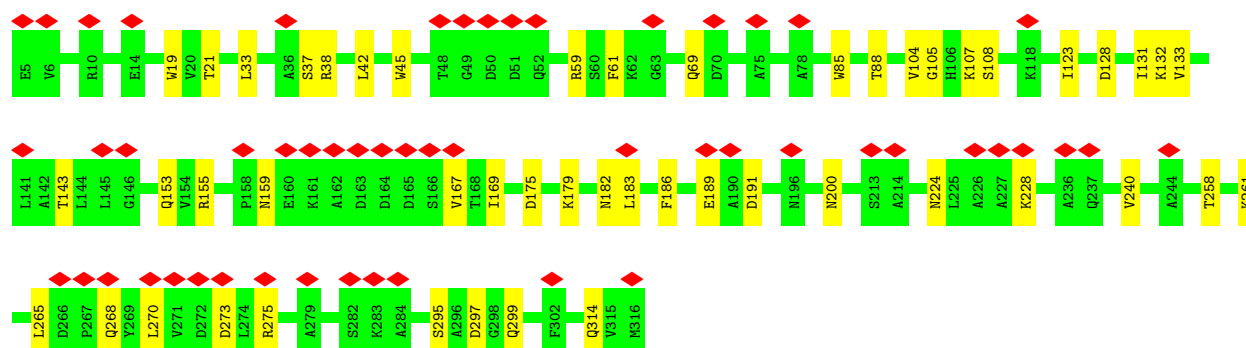
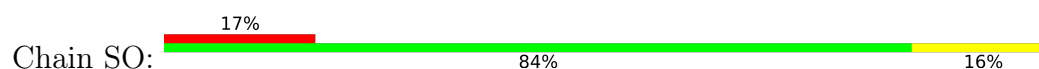
- Molecule 32: 40S ribosomal protein S30-A



- Molecule 33: 40S ribosomal protein S31

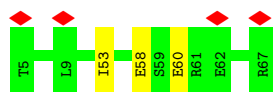


- Molecule 34: Guanine nucleotide-binding protein subunit beta-like protein

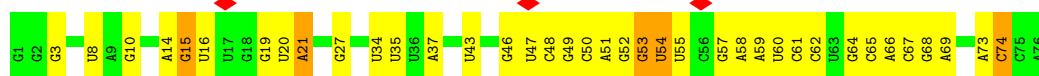


- Molecule 35: 40S ribosomal protein S28-A

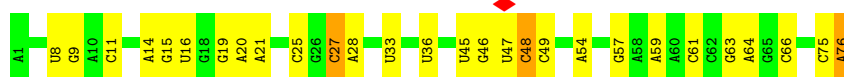




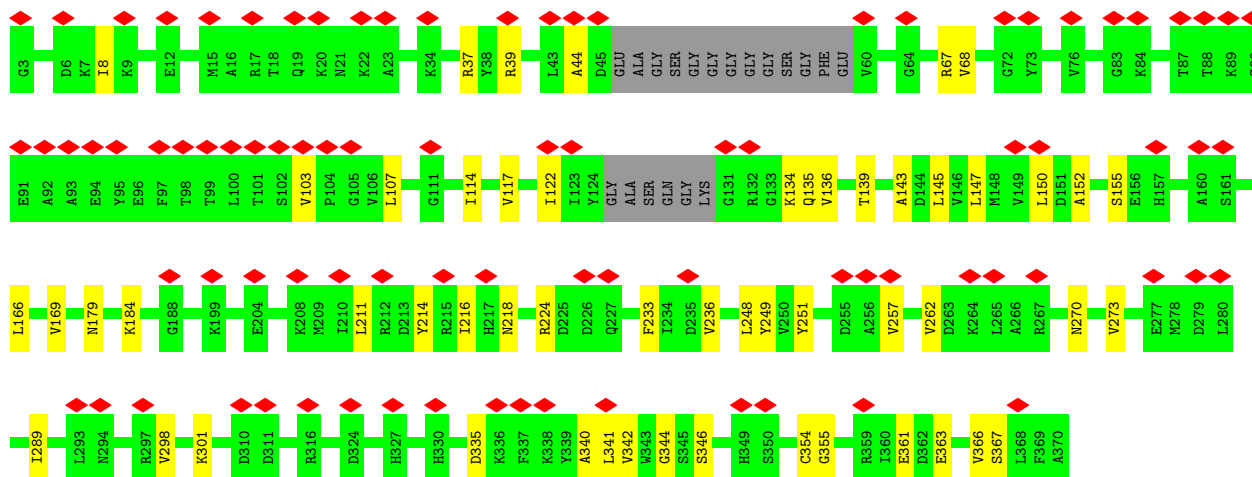
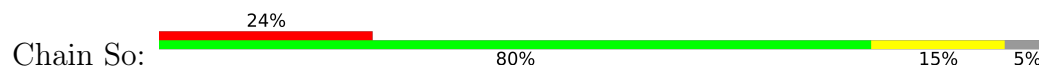
- Molecule 36: tRNA (76-MER)



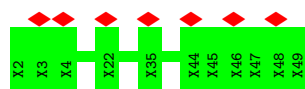
- Molecule 37: tRNA (75-MER)



- Molecule 38: Ribosome-interacting GTPase 2



- Molecule 39: GIR2

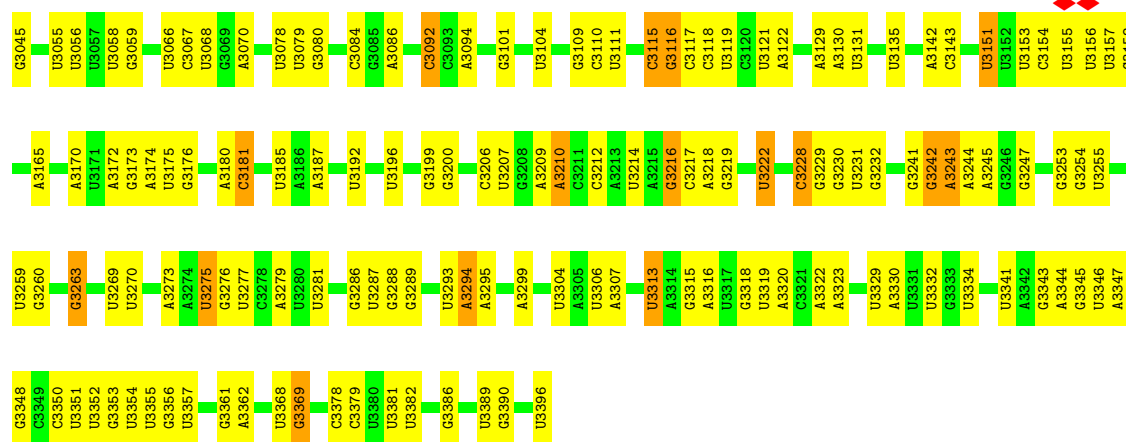


- Molecule 40: 25S rRNA (3184-MER)





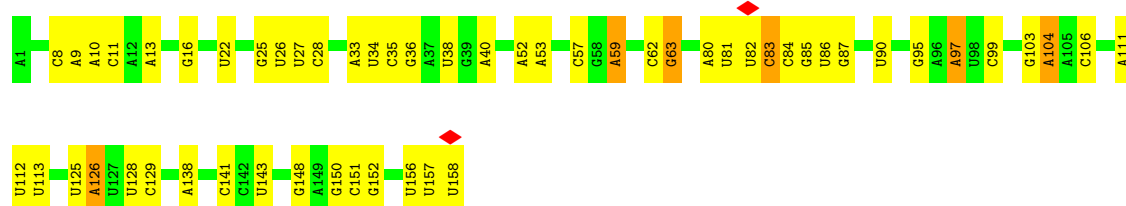




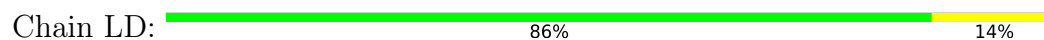
• Molecule 41: 5S rRNA (121-MER)



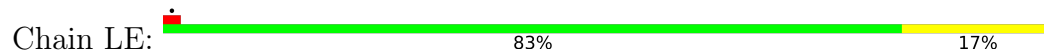
• Molecule 42: 5.8S rRNA (158-MER)

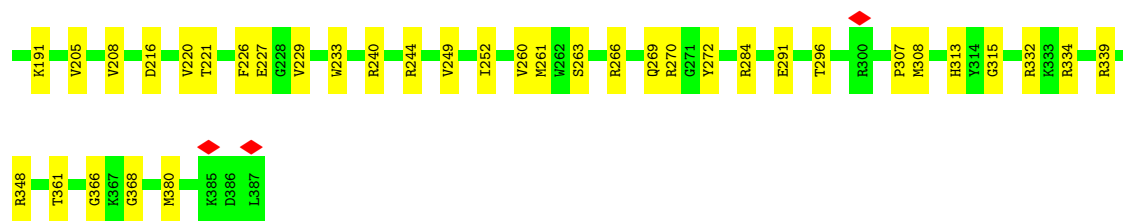


• Molecule 43: 60S ribosomal protein L2-A



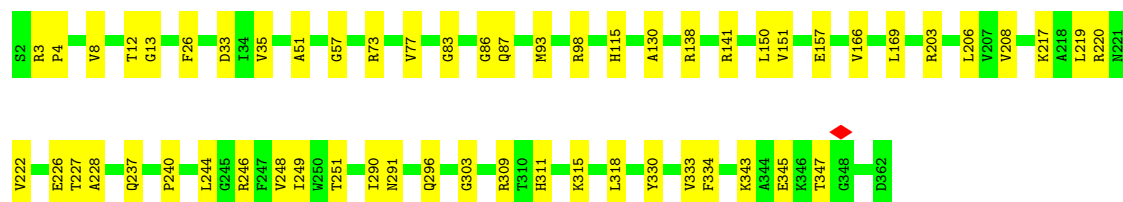
• Molecule 44: 60S ribosomal protein L3





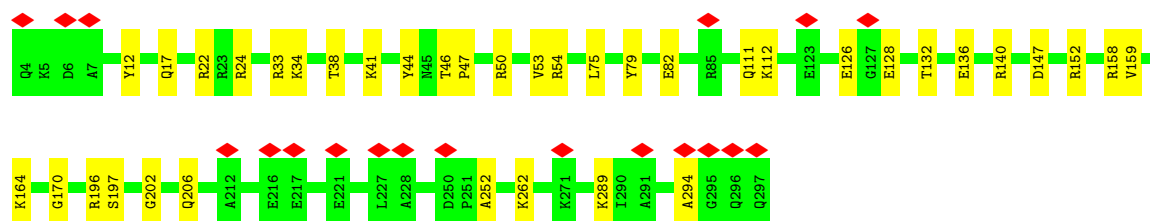
- Molecule 45: 60S ribosomal protein L4-A

Chain LF: 84% 16%



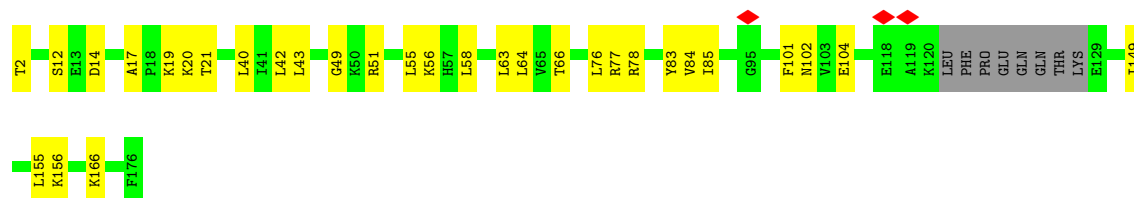
- Molecule 46: 60S ribosomal protein L5

Chain LG: 6% 87% 13%



- Molecule 47: 60S ribosomal protein L6-B

Chain LH: 78% 18% 5%



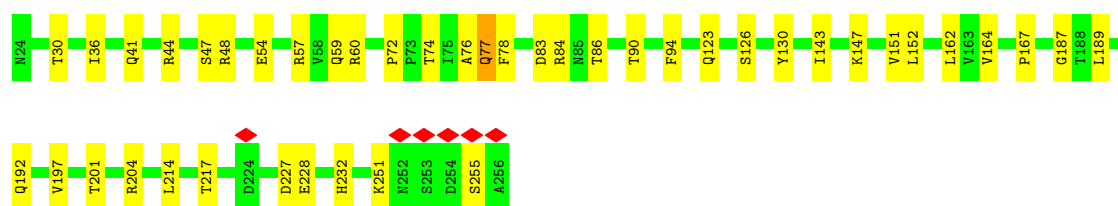
- Molecule 48: 60S ribosomal protein L7-A

Chain LI: 89% 11%

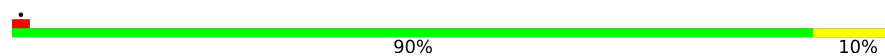


- Molecule 49: 60S ribosomal protein L8-A

Chain LJ:  82% 18%



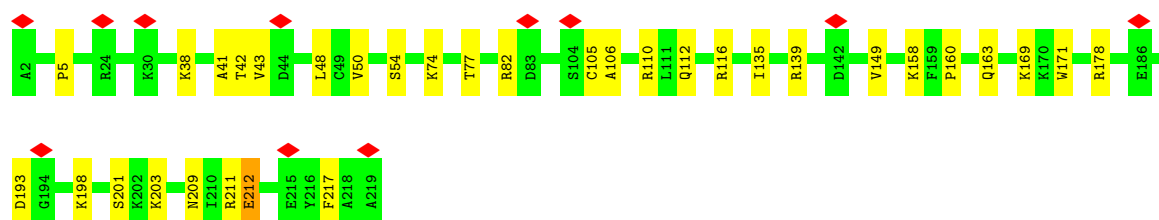
- Molecule 50: 60S ribosomal protein L9-A

Chain LK:  90% 10%

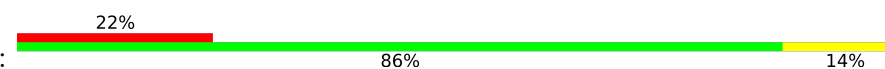


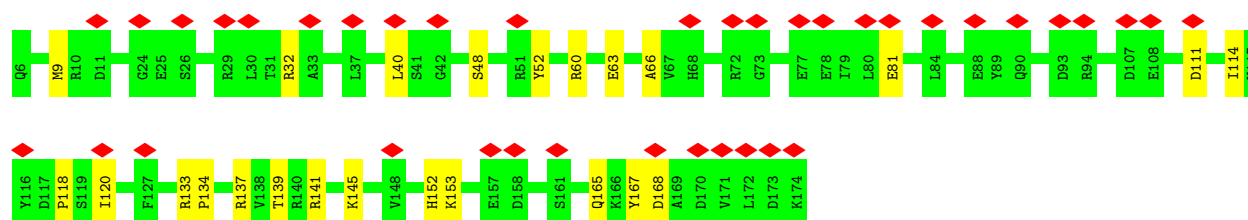
- Molecule 51: 60S ribosomal protein L10

Chain LL:  5% 85% 15%



- Molecule 52: 60S ribosomal protein L11-B

Chain LM:  22% 86% 14%



- Molecule 53: 60S ribosomal protein L13-A

Chain LN:  87% 13%

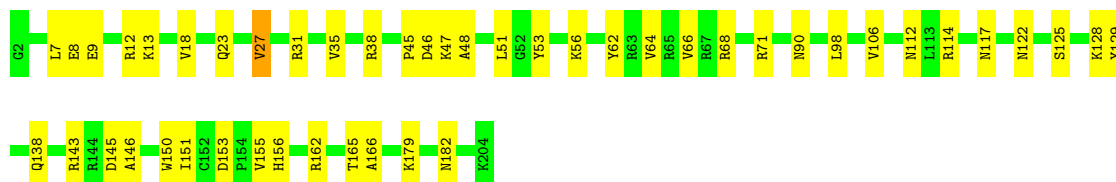
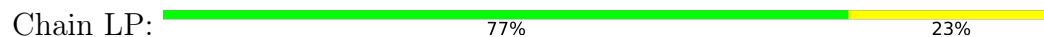


- Molecule 54: 60S ribosomal protein L14-A

Chain LO:  86% 14%



- Molecule 55: 60S ribosomal protein L15-A



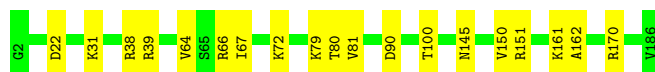
- Molecule 56: 60S ribosomal protein L16-A



- Molecule 57: 60S ribosomal protein L17-A



- Molecule 58: 60S ribosomal protein L18-A



- Molecule 59: 60S ribosomal protein L19-A

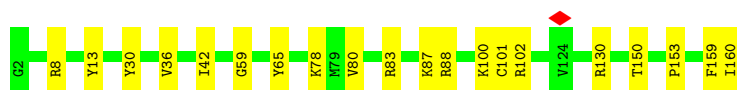


- Molecule 60: 60S ribosomal protein L20-A

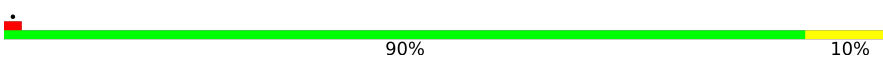


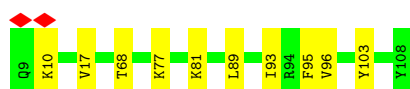
- Molecule 61: 60S ribosomal protein L21-A

Chain LV:  87% 13%



- Molecule 62: 60S ribosomal protein L22-A

Chain LW:  90% 10%



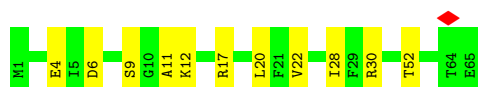
- Molecule 63: 60S ribosomal protein L23-A

Chain LX:  82% 18%

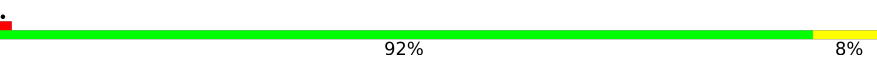


- Molecule 64: 60S ribosomal protein L24-A

Chain LY:  83% 17%



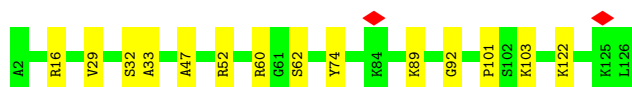
- Molecule 65: 60S ribosomal protein L25

Chain LZ:  92% 8%



- Molecule 66: 60S ribosomal protein L26-A

Chain La:  89% 11%

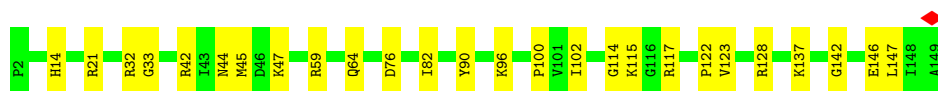
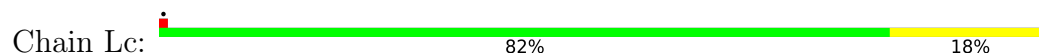


- Molecule 67: 60S ribosomal protein L27-A

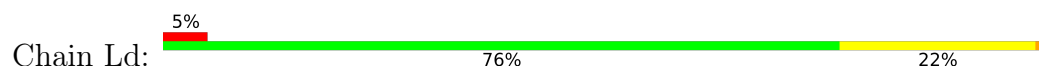
Chain Lb:  86% 14%



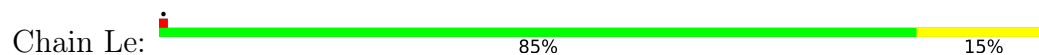
- Molecule 68: 60S ribosomal protein L28



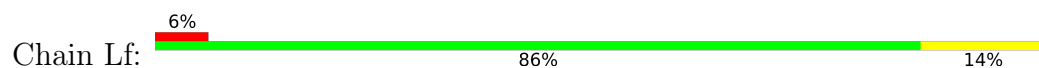
- Molecule 69: 60S ribosomal protein L29



- Molecule 70: 60S ribosomal protein L30



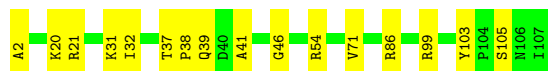
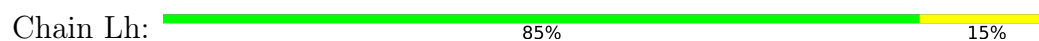
- Molecule 71: 60S ribosomal protein L31-A



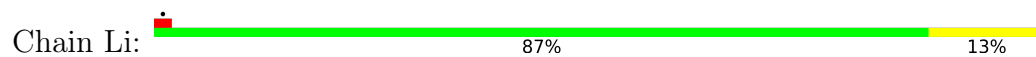
- Molecule 72: 60S ribosomal protein L32



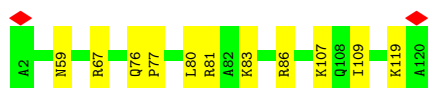
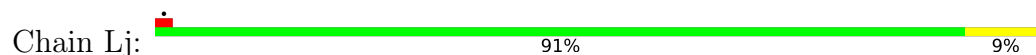
- Molecule 73: 60S ribosomal protein L33-A



- Molecule 74: 60S ribosomal protein L34-A



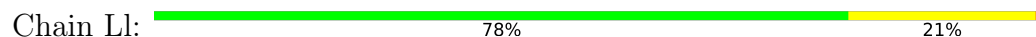
- Molecule 75: 60S ribosomal protein L35-A



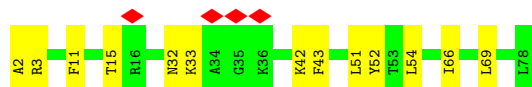
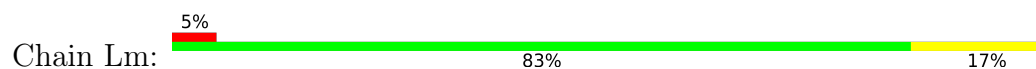
- Molecule 76: 60S ribosomal protein L36-A



- Molecule 77: 60S ribosomal protein L37-A



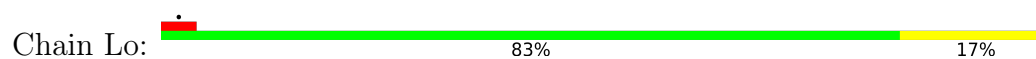
- Molecule 78: 60S ribosomal protein L38



- Molecule 79: 60S ribosomal protein L39



- Molecule 80: 60S ribosomal protein L40-A



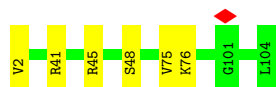
- Molecule 81: 60S ribosomal protein L41-A

Chain Lp:  92% 8%



- Molecule 82: 60S ribosomal protein L42-A

Chain Lq:  94% 6%



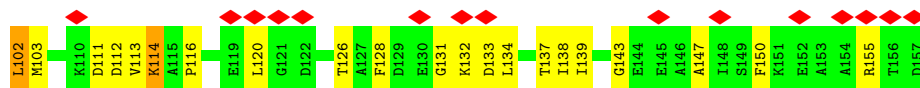
- Molecule 83: 60S ribosomal protein L43-A

Chain Lr:  79% 20%



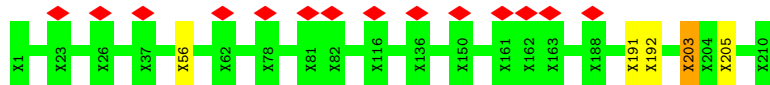
- Molecule 84: eiF5A

Chain Ls:  13% 65% 32%



- Molecule 85: L1 60S ribosomal protein

Chain Lt:  7% 98%



- Molecule 86: GCN1

Chain A:  71% 75% 21%



A2085	A2086	A2087	A2088	A2089	A2090	A2091	A2092	A2093	A2094	A2095	A2096	A2097	A2098	A2099	A2100	A2101	A2102	A2103	A2104	A2105	A2106	A2107	A2108	A2109	A2110	A2111	A2112	A2113	A2114	A2115	A2116	A2117	A2118	A2119	A2120	A2121	A2122	A2123	A2124	A2125																																																																																																																																																																																																																																																																																																				
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K1216	M1217	L1218	G1219	D1220	A1221	V1222	P1223	E1224	V1225	A1226	D1227	A1228	T1229	A1230	A1231	A1232	A1233	A1234	A1235	A1236	A1237	A1238	A1239	A1240	A1241	A1242	A1243	A1244	A1245	A1246	A1247	A1248	A1249	A1250	A1251	A1252	A1253	A1254	A1255	A1256	A1257	A1258	A1259	A1260	A1261	A1262	A1263	A1264	A1265	A1266	A1267	A1268	A1269	A1270	A1271	A1272	A1273	A1274	A1275	A1276	A1277	A1278	A1279	A1280	A1281	A1282	A1283	A1284	A1285	A1286	A1287	A1288	A1289	A1290	A1291	A1292	A1293	A1294	A1295	A1296	A1297	A1298	A1299	A1300																																																																																																																																																																																																																																																								
A1103	A1104	G1124	D1125	Y1126	L1127	G1128	I1129	L1130	M1131	E1132	L1133	N1136	P1137	T1138	A1139	A1140	A1141	A1142	A1143	A1144	A1145	A1146	A1147	A1148	A1149	A1150	A1151	A1152	A1153	A1154	A1155	A1156	A1157	A1158	A1159	A1160	A1161	A1162	A1163	A1164	A1165	A1166	A1167	A1168	A1169	A1170	A1171	A1172	A1173	A1174	A1175	A1176	A1177	A1178	A1179	A1180	A1181	A1182	A1183	A1184	A1185	A1186	A1187	A1188	A1189	A1190	A1191	A1192	A1193	A1194	A1195	A1196	A1197	A1198	A1199	A1200	A1201	A1202	A1203	A1204	A1205																																																																																																																																																																																																																																																											
A976	A977	A978	A979	A980	A981	A982	A983	A984	A985	A986	A987	A988	A989	A990	A991	A992	A993	A994	A995	A996	A997	A1019	A1020	A1021	A1022	A1023	A1024	A1025	A1033	A1034	A1035	A1036	A1037	A1038	A1039	A1040	A1041	A1042	A1043	A1044	A1068	A1069	A1070	A1071	A1072	A1073	A1074	A1084	A1085	A1086	A1087	A1088	A1089	A1100	A1101	A1102																																																																																																																																																																																																																																																																																				

A2409	A2349	A2287	A2227
A2410	A2350	A2288	A2228
A2411	A2351	A2289	A2229
A2412	A2352	A2290	A2230
A2413	A2353	A2291	A2231
A2414	A2354	A2292	A2232
A2415	A2355	A2293	A2233
A2416	A2356	A2294	A2234
A2417	A2357	A2295	A2235
A2418	A2358	A2296	A2236
A2419	A2359	A2297	A2237
A2420	A2360	A2298	A2238
A2421	A2361	A2299	A2239
A2422	A2362	A2300	A2240
A2423	A2363	A2301	A2241
A2424	A2364	A2302	A2242
A2425	A2365	A2303	A2243
A2426	A2366	A2304	A2244
A2427	A2367	A2305	A2245
A2428	A2368	A2306	A2246
	A2369	A2307	A2247
	A2370	A2308	A2248
	A2371	A2309	A2249
	A2372	A2310	A2250
	A2373	A2311	A2251
	A2374	A2312	A2252
	A2375	A2313	A2253
	A2376	A2314	A2254
	A2377	A2315	A2255
	A2378	A2316	A2256
	A2379	A2317	A2257
	A2380	A2320	A2258
	A2381	A2321	A2259
	A2382	A2322	A2260
	A2383	A2323	A2261
	A2384	A2324	A2262
	A2385	A2325	A2263
	A2386	A2326	A2264
	A2387	A2327	A2265
	A2388	A2328	A2266
	A2389	A2329	A2267
	A2390	A2330	A2268
	A2391	A2331	A2269
	A2392	A2332	A2270
	A2393	A2333	A2271
	A2394	A2334	A2272
	A2395	A2335	A2273
	A2396	A2336	A2274
	A2397	A2337	A2275
	A2398	A2338	A2276
	A2399	A2339	A2277
	A2400	A2340	A2278
	A2401	A2341	A2279
	A2402	A2342	A2280
	A2403	A2343	A2281
	A2404	A2344	A2282
	A2405	A2345	A2283
	A2406	A2346	A2284
	A2407	A2347	A2285
	A2408	A2348	A2286

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, C1	Depositor
Number of particles used	30016	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	0.512	Depositor
Minimum map value	-0.389	Depositor
Average map value	0.002	Depositor
Map value standard deviation	0.008	Depositor
Recommended contour level	0.03	Depositor
Map size (Å)	758.8, 758.8, 758.8	wwPDB
Map dimensions	700, 700, 700	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.084, 1.084, 1.084	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 5CT

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	S2	0.28	0/42211	0.59	14/65773 (0.0%)
2	SI	0.26	0/147	0.46	0/227
3	SP	0.34	0/1644	0.79	0/2249
4	SQ	0.37	0/1823	0.90	3/2447 (0.1%)
5	SE	0.37	0/936	0.87	0/1259
6	SR	0.38	0/1656	0.85	0/2251
7	SA	0.33	0/1754	0.78	0/2361
8	SS	0.38	0/2097	0.87	0/2823
9	SB	0.36	0/1625	0.83	2/2197 (0.1%)
10	ST	0.35	0/1839	0.85	0/2460
11	SU	0.39	0/1498	0.88	0/2019
12	SV	0.31	0/1501	0.78	0/2006
13	SW	0.33	0/1504	0.83	1/2016 (0.0%)
14	SC	0.37	0/769	0.85	0/1039
15	SX	0.30	0/1168	0.75	0/1575
16	SD	0.40	0/883	0.95	0/1199
17	SY	0.35	0/1215	0.83	0/1638
18	SZ	0.36	0/934	0.86	2/1257 (0.2%)
19	SF	0.33	0/1125	0.84	0/1510
20	SG	0.33	0/957	0.75	0/1283
21	SH	0.34	0/1207	0.86	0/1623
22	SI	0.36	0/1130	0.83	2/1517 (0.1%)
23	SJ	0.34	0/807	0.78	0/1091
24	Sa	0.29	0/682	0.78	1/921 (0.1%)
25	Sb	0.38	0/1038	0.87	0/1395
26	Sc	0.36	0/1139	0.86	2/1518 (0.1%)
27	Sd	0.34	0/1046	0.80	0/1401
28	SK	0.38	0/661	0.92	1/888 (0.1%)
29	Se	0.32	0/778	0.81	0/1042
30	Sf	0.29	0/620	0.82	0/838
31	SM	0.32	0/452	0.83	0/600
32	Sg	0.32	0/459	0.89	0/611

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	SN	0.33	0/567	0.89	1/764 (0.1%)
34	SO	0.32	0/2436	0.84	0/3318
35	SL	0.36	0/493	0.96	0/663
36	Sm	0.32	0/1799	0.69	0/2801
37	Sn	0.31	0/1796	0.62	0/2799
38	So	0.25	0/2769	0.67	0/3736
40	LA	0.28	0/76214	0.55	10/118821 (0.0%)
41	LB	0.25	0/2883	0.51	1/4491 (0.0%)
42	LC	0.28	0/3746	0.55	0/5832
43	LD	0.33	0/1933	0.79	0/2598
44	LE	0.33	0/3146	0.78	1/4228 (0.0%)
45	LF	0.34	0/2800	0.80	0/3790
46	LG	0.33	0/2400	0.77	2/3239 (0.1%)
47	LH	0.35	0/1329	0.81	1/1794 (0.1%)
48	LI	0.35	0/1821	0.78	0/2451
49	LJ	0.35	0/1836	0.79	0/2481
50	LK	0.32	0/1529	0.77	0/2060
51	LL	0.32	0/1801	0.80	5/2416 (0.2%)
52	LM	0.35	0/1367	0.85	0/1834
53	LN	0.32	0/1568	0.78	1/2106 (0.0%)
54	LO	0.32	0/1068	0.77	0/1438
55	LP	0.38	0/1757	0.80	0/2354
56	LQ	0.37	0/1585	0.75	0/2128
57	LR	0.32	0/1439	0.72	0/1938
58	LS	0.32	0/1465	0.79	0/1965
59	LT	0.30	0/1532	0.72	0/2043
60	LU	0.32	0/1473	0.75	0/1980
61	LV	0.32	0/1296	0.76	0/1739
62	LW	0.34	0/812	0.77	0/1099
63	LX	0.30	0/1018	0.71	0/1369
64	LY	0.23	0/540	0.66	0/717
65	LZ	0.31	0/979	0.79	0/1321
66	La	0.28	0/995	0.73	0/1329
67	Lb	0.29	0/1106	0.78	0/1485
68	Lc	0.33	0/1200	0.78	0/1607
69	Ld	0.31	0/473	0.79	0/629
70	Le	0.30	0/745	0.76	0/1001
71	Lf	0.34	0/890	0.81	0/1196
72	Lg	0.30	0/1038	0.71	0/1390
73	Lh	0.32	0/868	0.79	1/1168 (0.1%)
74	Li	0.38	0/890	0.82	0/1189
75	Lj	0.31	0/978	0.74	0/1301
76	Lk	0.31	0/772	0.77	0/1026

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
77	Ll	0.43	0/660	0.94	0/875
78	Lm	0.34	0/618	0.74	0/826
79	Ln	0.32	0/443	0.81	0/588
80	Lo	0.30	0/416	0.84	0/553
81	Lp	0.37	0/230	0.87	0/296
82	Lq	0.33	0/836	0.80	0/1104
83	Lr	0.33	0/701	0.80	1/934 (0.1%)
84	Ls	0.43	0/1142	1.26	18/1537 (1.2%)
86	A	1.43	24/6015 (0.4%)	1.76	69/8386 (0.8%)
All	All	0.38	24/227518 (0.0%)	0.72	139/333767 (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
8	SS	0	1
9	SB	0	2
11	SU	0	1
16	SD	0	1
18	SZ	0	1
19	SF	0	1
22	SI	0	1
25	Sb	0	1
33	SN	0	1
45	LF	0	3
48	LI	0	1
49	LJ	0	3
58	LS	0	1
68	Lc	0	2
69	Ld	0	2
70	Le	0	1
71	Lf	0	1
75	Lj	0	1
84	Ls	1	2
85	Lt	0	4
86	A	0	12
All	All	1	43

All (24) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
86	A	2351	ALA	N-CA	20.84	1.70	1.46
86	A	1840	ALA	N-CA	20.80	1.70	1.46
86	A	2040	ALA	N-CA	20.79	1.70	1.46
86	A	2240	ALA	N-CA	20.75	1.70	1.46
86	A	2300	ALA	N-CA	18.20	1.69	1.46
86	A	2411	ALA	N-CA	18.19	1.69	1.46
86	A	1900	ALA	N-CA	18.13	1.69	1.46
86	A	1361	PRO	N-CA	18.05	1.70	1.47
86	A	1421	PRO	N-CA	17.36	1.69	1.47
86	A	1223	PRO	N-CA	17.22	1.69	1.47
86	A	2239	ALA	C-N	10.06	1.46	1.33
86	A	2350	ALA	C-N	10.03	1.45	1.33
86	A	2039	ALA	C-N	10.02	1.45	1.33
86	A	1839	ALA	C-N	9.99	1.45	1.33
86	A	2410	ALA	C-N	8.55	1.45	1.33
86	A	2299	ALA	C-N	8.54	1.45	1.33
86	A	1899	ALA	C-N	8.52	1.45	1.33
86	A	1616	ALA	C-O	8.42	1.34	1.24
86	A	1163	LEU	C-O	-6.70	1.15	1.24
86	A	1181	GLU	C-N	6.65	1.49	1.33
86	A	1162	ALA	C-O	6.22	1.31	1.24
86	A	1256	LEU	C-N	5.59	1.41	1.33
86	A	1360	GLY	C-N	5.11	1.45	1.33
86	A	1420	VAL	C-N	5.06	1.45	1.33

All (139) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
86	A	1181	GLU	CA-C-N	20.41	145.35	119.84
86	A	1181	GLU	C-N-CA	20.41	145.35	119.84
86	A	1420	VAL	CA-C-N	17.02	141.12	119.84
86	A	1420	VAL	C-N-CA	17.02	141.12	119.84
86	A	1360	GLY	CA-C-N	15.08	138.70	119.84
86	A	1360	GLY	C-N-CA	15.08	138.70	119.84
86	A	1340	LYS	O-C-N	-14.67	103.08	122.59
86	A	2019	ALA	O-C-N	-14.62	103.15	122.59
86	A	1819	ALA	O-C-N	-14.59	103.18	122.59
86	A	2330	ALA	O-C-N	-14.57	103.21	122.59
86	A	2039	ALA	CA-C-N	12.86	138.67	120.79
86	A	2039	ALA	C-N-CA	12.86	138.67	120.79
86	A	2350	ALA	CA-C-N	12.84	138.64	120.79
86	A	2350	ALA	C-N-CA	12.84	138.64	120.79
86	A	1839	ALA	CA-C-N	12.84	138.64	120.79

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
86	A	1839	ALA	C-N-CA	12.84	138.64	120.79
86	A	2239	ALA	CA-C-N	12.84	138.64	120.79
86	A	2239	ALA	C-N-CA	12.84	138.64	120.79
86	A	2232	ALA	CA-C-N	11.15	139.26	122.65
86	A	2232	ALA	C-N-CA	11.15	139.26	122.65
86	A	2343	ALA	CA-C-N	11.14	139.25	122.65
86	A	2343	ALA	C-N-CA	11.14	139.25	122.65
86	A	1353	GLN	CA-C-N	11.14	139.25	122.65
86	A	1353	GLN	C-N-CA	11.14	139.25	122.65
86	A	2032	ALA	CA-C-N	11.14	139.24	122.65
86	A	2032	ALA	C-N-CA	11.14	139.24	122.65
86	A	1832	ALA	CA-C-N	11.12	139.22	122.65
86	A	1832	ALA	C-N-CA	11.12	139.22	122.65
86	A	1899	ALA	CA-C-N	10.25	141.11	121.54
86	A	1899	ALA	C-N-CA	10.25	141.11	121.54
86	A	2410	ALA	CA-C-N	10.22	141.06	121.54
86	A	2410	ALA	C-N-CA	10.22	141.06	121.54
86	A	2299	ALA	CA-C-N	10.20	141.03	121.54
86	A	2299	ALA	C-N-CA	10.20	141.03	121.54
86	A	2015	ALA	CA-C-N	-9.00	109.50	122.19
86	A	2015	ALA	C-N-CA	-9.00	109.50	122.19
86	A	1815	ALA	CA-C-N	-8.98	109.52	122.19
86	A	1815	ALA	C-N-CA	-8.98	109.52	122.19
86	A	2326	ALA	CA-C-N	-8.97	109.53	122.19
86	A	2326	ALA	C-N-CA	-8.97	109.53	122.19
84	Ls	132	LYS	N-CA-C	7.96	120.97	111.02
84	Ls	111	ASP	CA-C-N	7.63	136.12	121.54
84	Ls	111	ASP	C-N-CA	7.63	136.12	121.54
86	A	1615	ALA	O-C-N	-7.54	113.01	123.11
86	A	1162	ALA	CA-C-N	7.33	135.53	121.54
86	A	1162	ALA	C-N-CA	7.33	135.53	121.54
1	S2	400	A	C2'-C3'-O3'	6.79	119.69	109.50
86	A	1690	ALA	CA-C-N	6.62	134.17	121.54
86	A	1690	ALA	C-N-CA	6.62	134.17	121.54
86	A	1319	ILE	CA-C-O	-6.60	116.89	122.63
40	LA	2541	U	P-O3'-C3'	6.57	130.06	120.20
86	A	1629	ALA	N-CA-C	-6.49	104.29	111.36
86	A	1235	ALA	O-C-N	6.39	129.93	122.20
1	S2	400	A	P-O3'-C3'	6.30	129.65	120.20
13	SW	132	ARG	CA-CB-CG	6.26	126.63	114.10
86	A	1805	ALA	N-CA-C	-6.20	106.94	114.75
86	A	1326	LYS	N-CA-C	-6.18	106.96	114.75

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
86	A	2205	ALA	N-CA-C	-6.17	106.98	114.75
86	A	2005	ALA	N-CA-C	-6.16	106.99	114.75
40	LA	1582	C	P-O3'-C3'	6.12	129.38	120.20
1	S2	322	G	C2'-C3'-O3'	6.07	118.61	109.50
86	A	1704	ALA	CA-C-N	-6.06	112.62	122.26
86	A	1704	ALA	C-N-CA	-6.06	112.62	122.26
44	LE	291	GLU	CA-CB-CG	6.05	126.19	114.10
86	A	1519	ALA	N-CA-C	-5.99	105.83	113.02
86	A	2219	ALA	N-CA-C	5.99	117.81	111.28
73	Lh	86	ARG	CA-CB-CG	5.88	125.87	114.10
40	LA	1716	U	P-O3'-C3'	5.86	128.99	120.20
86	A	1239	HIS	CA-C-N	-5.83	111.33	122.53
86	A	1239	HIS	C-N-CA	-5.83	111.33	122.53
1	S2	1633	A	P-O3'-C3'	5.82	128.94	120.20
1	S2	1256	A	P-O3'-C3'	5.82	128.92	120.20
4	SQ	214	LYS	N-CA-C	5.73	117.94	110.43
40	LA	2537	U	P-O3'-C3'	5.67	128.70	120.20
86	A	1137	PRO	N-CA-C	5.67	124.15	112.47
24	Sa	10	GLU	CA-CB-CG	5.65	125.41	114.10
33	SN	136	LYS	CA-CB-CG	5.62	125.33	114.10
84	Ls	143	GLY	N-CA-C	5.58	122.52	114.10
47	LH	77	ARG	N-CA-CB	5.57	120.93	111.57
83	Lr	85	ARG	CA-CB-CG	5.56	125.22	114.10
1	S2	224	C	P-O3'-C3'	5.56	128.53	120.20
1	S2	215	A	P-O3'-C3'	5.54	128.52	120.20
86	A	1256	LEU	CA-C-N	-5.51	111.02	121.54
86	A	1256	LEU	C-N-CA	-5.51	111.02	121.54
51	LL	112	GLN	CA-C-N	5.50	132.05	121.54
51	LL	112	GLN	C-N-CA	5.50	132.05	121.54
22	SI	52	GLY	CA-C-N	5.50	132.04	121.54
22	SI	52	GLY	C-N-CA	5.50	132.04	121.54
1	S2	639	U	P-O3'-C3'	5.46	128.38	120.20
84	Ls	103	MET	CB-CG-SD	5.45	129.05	112.70
84	Ls	114	LYS	CA-CB-CG	5.40	124.90	114.10
40	LA	2514	U	P-O3'-C3'	5.39	128.29	120.20
84	Ls	113	VAL	N-CA-C	5.39	120.55	109.34
84	Ls	120	LEU	CA-C-N	5.39	125.96	119.98
84	Ls	120	LEU	C-N-CA	5.39	125.96	119.98
86	A	1223	PRO	N-CA-C	-5.37	101.42	112.47
40	LA	1815	U	P-O3'-C3'	5.36	128.25	120.20
86	A	1624	ALA	CA-C-N	5.35	127.45	120.28
86	A	1624	ALA	C-N-CA	5.35	127.45	120.28

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
84	Ls	7	THR	CA-C-N	5.34	131.74	121.54
84	Ls	7	THR	C-N-CA	5.34	131.74	121.54
4	SQ	214	LYS	CA-C-N	5.33	131.57	121.97
4	SQ	214	LYS	C-N-CA	5.33	131.57	121.97
9	SB	124	LEU	CA-C-N	5.33	131.72	121.54
9	SB	124	LEU	C-N-CA	5.33	131.72	121.54
26	Sc	4	GLY	CA-C-N	5.32	128.44	120.83
26	Sc	4	GLY	C-N-CA	5.32	128.44	120.83
86	A	1632	ALA	N-CA-C	-5.31	105.57	111.36
40	LA	1562	C	P-O3'-C3'	5.31	128.16	120.20
86	A	1489	ALA	N-CA-C	-5.29	105.43	111.14
1	S2	77	U	P-O3'-C3'	5.28	128.12	120.20
40	LA	763	G	P-O3'-C3'	5.25	128.07	120.20
18	SZ	17	ALA	CA-C-N	5.24	131.56	121.54
18	SZ	17	ALA	C-N-CA	5.24	131.56	121.54
40	LA	1562	C	C4'-C3'-O3'	5.22	117.22	109.40
86	A	1226	ARG	N-CA-C	-5.22	105.49	111.07
84	Ls	131	GLY	CA-C-N	5.15	130.61	122.78
84	Ls	131	GLY	C-N-CA	5.15	130.61	122.78
41	LB	52	G	P-O3'-C3'	5.14	127.92	120.20
1	S2	1273	G	P-O3'-C3'	5.11	127.86	120.20
1	S2	322	G	P-O3'-C3'	5.11	127.86	120.20
86	A	1659	ALA	N-CA-C	-5.10	106.22	112.90
46	LG	136	GLU	CA-C-N	5.10	131.28	121.54
46	LG	136	GLU	C-N-CA	5.10	131.28	121.54
51	LL	5	PRO	N-CA-C	5.10	119.49	111.38
51	LL	212	GLU	CA-C-N	5.10	134.24	121.80
51	LL	212	GLU	C-N-CA	5.10	134.24	121.80
1	S2	1382	A	P-O3'-C3'	5.09	127.83	120.20
40	LA	2112	U	P-O3'-C3'	5.08	127.82	120.20
84	Ls	155	ARG	CA-C-N	5.06	129.37	122.34
84	Ls	155	ARG	C-N-CA	5.06	129.37	122.34
28	SK	77	ARG	NE-CZ-NH2	5.03	123.72	119.20
86	A	1653	ALA	N-CA-C	-5.02	106.32	112.90
1	S2	139	C	P-O3'-C3'	5.01	127.72	120.20
84	Ls	150	PHE	N-CA-CB	-5.01	103.79	111.56
84	Ls	126	THR	CA-C-N	5.01	127.49	120.28
84	Ls	126	THR	C-N-CA	5.01	127.49	120.28
53	LN	137	GLN	N-CA-C	5.00	117.36	110.35
1	S2	1430	U	C2'-C3'-O3'	5.00	121.20	113.70

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
84	Ls	51	5CT	C2

All (43) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
86	A	1198	SER	Peptide
86	A	1256	LEU	Mainchain
86	A	1340	LYS	Mainchain
86	A	1580	ALA	Peptide
86	A	1615	ALA	Mainchain
86	A	1639	ALA	Peptide
86	A	1705	ALA	Peptide
86	A	1819	ALA	Mainchain
86	A	2019	ALA	Mainchain
86	A	2330	ALA	Mainchain
86	A	950	ALA	Mainchain
86	A	982	ALA	Peptide
45	LF	13	GLY	Peptide
45	LF	3	ARG	Peptide
45	LF	318	LEU	Peptide
48	LI	232	ARG	Peptide
49	LJ	30	THR	Peptide
49	LJ	76	ALA	Peptide
49	LJ	77	GLN	Peptide
58	LS	161	LYS	Peptide
68	Lc	115	LYS	Peptide
68	Lc	14	HIS	Peptide
69	Ld	19	ASN	Peptide
69	Ld	20	GLY	Peptide
70	Le	47	ASN	Peptide
71	Lf	7	VAL	Peptide
75	Lj	83	LYS	Peptide
84	Ls	112	ASP	Peptide
84	Ls	97	ASP	Peptide
85	Lt	191	UNK	Peptide
85	Lt	192	UNK	Peptide
85	Lt	203	UNK	Peptide
85	Lt	56	UNK	Peptide
9	SB	125	THR	Peptide
9	SB	42	LEU	Peptide
16	SD	108	ARG	Peptide
19	SF	40	GLU	Peptide
22	SI	120	GLY	Peptide

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Mol	Chain	Res	Type	Group
33	SN	147	VAL	Peptide
8	SS	193	GLY	Peptide
11	SU	64	VAL	Peptide
18	SZ	90	ARG	Peptide
25	Sb	54	ASP	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	S2	37739	0	18988	295	0
2	SI	131	0	66	0	0
3	SP	1603	0	1610	19	0
4	SQ	1798	0	1890	26	0
5	SE	916	0	941	17	0
6	SR	1626	0	1715	24	0
7	SA	1729	0	1812	17	0
8	SS	2056	0	2140	33	0
9	SB	1605	0	1669	20	0
10	ST	1815	0	1894	25	0
11	SU	1473	0	1555	20	0
12	SV	1476	0	1501	37	0
13	SW	1479	0	1556	26	0
14	SC	752	0	719	9	0
15	SX	1142	0	1209	13	0
16	SD	875	0	878	12	0
17	SY	1192	0	1255	14	0
18	SZ	923	0	948	20	0
19	SF	1105	0	1166	15	0
20	SG	948	0	990	13	0
21	SH	1188	0	1218	25	0
22	SI	1112	0	1122	67	0
23	SJ	797	0	863	13	0
24	Sa	673	0	662	10	0
25	Sb	1021	0	1060	17	0
26	Sc	1121	0	1196	17	0
27	Sd	1032	0	1044	18	0
28	SK	651	0	682	11	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
29	Se	765	0	814	16	0
30	Sf	610	0	633	10	0
31	SM	442	0	432	5	0
32	Sg	451	0	494	6	0
33	SN	556	0	552	7	0
34	SO	2383	0	2332	30	0
35	SL	491	0	524	3	0
36	Sm	1611	0	817	5	0
37	Sn	1606	0	816	8	0
38	So	2729	0	2780	33	0
39	Sp	240	0	50	0	0
40	LA	68091	0	34217	406	0
41	LB	2579	0	1304	19	0
42	LC	3353	0	1695	32	0
43	LD	1899	0	1957	29	0
44	LE	3075	0	3142	48	0
45	LF	2748	0	2859	39	0
46	LG	2351	0	2294	26	0
47	LH	1307	0	1377	22	0
48	LI	1784	0	1862	15	0
49	LJ	1804	0	1877	32	0
50	LK	1508	0	1572	12	0
51	LL	1764	0	1804	22	0
52	LM	1346	0	1370	23	0
53	LN	1543	0	1608	20	0
54	LO	1053	0	1149	14	0
55	LP	1720	0	1779	36	0
56	LQ	1555	0	1659	13	0
57	LR	1416	0	1433	15	0
58	LS	1441	0	1543	17	0
59	LT	1515	0	1606	14	0
60	LU	1437	0	1475	13	0
61	LV	1272	0	1312	17	0
62	LW	796	0	812	6	0
63	LX	1003	0	1048	16	0
64	LY	528	0	546	9	0
65	LZ	964	0	1025	7	0
66	La	984	0	1075	10	0
67	Lb	1080	0	1122	11	0
68	Lc	1169	0	1211	24	0
69	Ld	462	0	491	11	0
70	Le	737	0	792	7	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
71	Lf	876	0	912	7	0
72	Lg	1017	0	1081	12	0
73	Lh	850	0	880	10	0
74	Li	880	0	945	16	0
75	Lj	969	0	1078	7	0
76	Lk	766	0	844	5	0
77	Ll	645	0	649	14	0
78	Lm	612	0	682	8	0
79	Ln	436	0	475	15	0
80	Lo	410	0	446	7	0
81	Lp	229	0	273	2	0
82	Lq	824	0	892	6	0
83	Lr	694	0	738	17	0
84	Ls	1143	0	1104	25	0
85	Lt	1050	0	230	1	0
86	A	6029	0	5195	439	0
All	All	213576	0	158033	1993	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 6.

All (1993) 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)
22:SI:138:GLN:HG2	86:A:1303:GLU:CA	1.24	1.55
86:A:2240:ALA:N	86:A:2240:ALA:CA	1.70	1.54
86:A:2411:ALA:N	86:A:2411:ALA:CA	1.69	1.54
86:A:1421:PRO:N	86:A:1421:PRO:CA	1.69	1.53
86:A:2040:ALA:N	86:A:2040:ALA:CA	1.70	1.53
86:A:2300:ALA:N	86:A:2300:ALA:CA	1.69	1.53
86:A:1840:ALA:N	86:A:1840:ALA:CA	1.70	1.53
22:SI:138:GLN:HG2	86:A:1303:GLU:CB	1.09	1.52
86:A:1223:PRO:N	86:A:1223:PRO:CA	1.69	1.51
86:A:1900:ALA:N	86:A:1900:ALA:CA	1.69	1.51
86:A:2351:ALA:N	86:A:2351:ALA:CA	1.70	1.51
86:A:1361:PRO:N	86:A:1361:PRO:CA	1.70	1.49
86:A:987:ALA:HB1	86:A:988:ALA:N	1.30	1.45
22:SI:138:GLN:CG	86:A:1303:GLU:CB	1.93	1.45
22:SI:138:GLN:HE21	86:A:1302:LYS:C	1.22	1.43
22:SI:24:ARG:NE	86:A:1338:PRO:CB	1.83	1.40
86:A:2294:ALA:CB	86:A:2306:ALA:HB1	1.57	1.34

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:A:2094:ALA:CB	86:A:2106:ALA:HB1	1.57	1.34
86:A:1241:THR:CB	86:A:1242:GLY:N	1.88	1.34
86:A:1894:ALA:CB	86:A:1906:ALA:HB1	1.57	1.33
86:A:1415:ALA:CB	86:A:1427:ALA:HB1	1.59	1.32
22:SI:138:GLN:CG	86:A:1303:GLU:CA	2.06	1.32
86:A:2405:ALA:CB	86:A:2417:ALA:HB1	1.57	1.32
86:A:1668:ALA:O	86:A:1672:ALA:HB2	1.14	1.30
22:SI:24:ARG:CG	86:A:1338:PRO:CB	2.12	1.27
22:SI:21:PHE:CZ	86:A:1299:ASP:HA	1.69	1.27
22:SI:24:ARG:HG2	86:A:1338:PRO:CB	1.65	1.25
86:A:1428:ALA:CB	86:A:1461:ALA:HA	1.70	1.21
86:A:1221:ALA:HB1	86:A:1222:VAL:N	1.58	1.19
86:A:2104:ALA:CB	86:A:2215:ALA:HB2	1.72	1.19
22:SI:138:GLN:CG	86:A:1303:GLU:N	2.06	1.18
86:A:2094:ALA:HB1	86:A:2106:ALA:HB1	1.24	1.17
86:A:1241:THR:CB	86:A:1242:GLY:CA	2.22	1.17
86:A:965:ALA:O	86:A:969:ALA:CB	1.93	1.16
83:Lr:53:GLY:HA2	83:Lr:66:GLY:O	1.43	1.15
86:A:1894:ALA:HB1	86:A:1906:ALA:HB1	1.24	1.15
86:A:1668:ALA:O	86:A:1672:ALA:CB	1.95	1.15
83:Lr:53:GLY:CA	83:Lr:66:GLY:O	1.95	1.14
86:A:1415:ALA:HB1	86:A:1427:ALA:HB1	1.24	1.14
22:SI:138:GLN:NE2	86:A:1302:LYS:C	2.06	1.13
86:A:2100:ALA:HA	86:A:2216:ALA:N	1.26	1.13
86:A:1482:ALA:HB1	86:A:1493:ALA:HB1	1.25	1.11
22:SI:24:ARG:CD	86:A:1338:PRO:CB	2.26	1.11
86:A:987:ALA:CB	86:A:988:ALA:N	2.13	1.11
86:A:1221:ALA:C	86:A:1222:VAL:N	2.08	1.11
86:A:2405:ALA:HB1	86:A:2417:ALA:HB1	1.24	1.10
86:A:2294:ALA:HB1	86:A:2306:ALA:HB1	1.24	1.08
22:SI:21:PHE:HZ	86:A:1299:ASP:HA	0.94	1.08
86:A:1241:THR:CB	86:A:1242:GLY:HA2	1.82	1.08
86:A:1705:ALA:HB1	86:A:1815:ALA:O	1.51	1.08
86:A:2314:ALA:CB	86:A:2321:ALA:HB3	1.82	1.08
86:A:1523:ALA:H	86:A:1527:ALA:HB2	0.90	1.06
64:LY:4:GLU:O	64:LY:12:LYS:HA	1.51	1.06
86:A:2321:ALA:O	86:A:2325:ALA:HB2	1.56	1.06
86:A:2314:ALA:HB1	86:A:2321:ALA:HB3	1.12	1.05
86:A:1221:ALA:CB	86:A:1222:VAL:N	2.18	1.05
86:A:1487:ALA:O	86:A:1491:ALA:N	1.88	1.05
86:A:2010:ALA:O	86:A:2014:ALA:HB2	1.56	1.05

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:A:2104:ALA:HB2	86:A:2215:ALA:HB2	1.12	1.05
86:A:2325:ALA:O	86:A:2326:ALA:HB2	1.55	1.05
86:A:1810:ALA:O	86:A:1814:ALA:HB2	1.56	1.05
86:A:948:ALA:HB3	86:A:983:ALA:HB1	1.36	1.04
86:A:2209:ALA:O	86:A:2213:ALA:CB	2.06	1.03
86:A:1428:ALA:HB2	86:A:1461:ALA:HA	1.34	1.02
86:A:2209:ALA:O	86:A:2213:ALA:N	1.91	1.02
86:A:1894:ALA:HB2	86:A:1906:ALA:HB1	1.40	1.02
22:SI:138:GLN:HE21	86:A:1303:GLU:N	1.56	1.01
86:A:2094:ALA:HB2	86:A:2106:ALA:HB1	1.40	1.01
86:A:2100:ALA:CA	86:A:2216:ALA:N	2.23	1.01
86:A:2294:ALA:HB2	86:A:2306:ALA:HB1	1.41	1.01
86:A:2405:ALA:HB2	86:A:2417:ALA:HB1	1.40	1.01
4:SQ:136:ARG:O	4:SQ:215:VAL:HA	1.61	1.00
86:A:1523:ALA:N	86:A:1527:ALA:HB2	1.75	1.00
86:A:2014:ALA:O	86:A:2015:ALA:HB2	1.55	1.00
21:SH:51:ASP:HB3	86:A:1378:SER:O	1.62	1.00
86:A:1814:ALA:O	86:A:1815:ALA:HB2	1.55	0.99
86:A:1162:ALA:O	86:A:1166:PHE:CB	2.10	0.99
86:A:2104:ALA:HB2	86:A:2215:ALA:CB	1.93	0.99
40:LA:2844:C:H42	40:LA:2898:G:H22	1.10	0.99
86:A:1482:ALA:CB	86:A:1493:ALA:HB1	1.91	0.99
86:A:2325:ALA:O	86:A:2326:ALA:CB	2.12	0.97
1:S2:395:U:H3	1:S2:399:A:H62	1.00	0.97
22:SI:24:ARG:HE	86:A:1338:PRO:CB	1.64	0.97
86:A:2014:ALA:O	86:A:2015:ALA:CB	2.12	0.96
40:LA:2448:G:H1	40:LA:2498:U:H3	1.03	0.96
86:A:1814:ALA:O	86:A:1815:ALA:CB	2.12	0.96
86:A:1415:ALA:HB2	86:A:1427:ALA:HB1	1.43	0.96
40:LA:3232:G:H1	40:LA:3255:U:H3	1.05	0.95
86:A:1485:ALA:O	86:A:1490:ALA:HB1	1.65	0.95
22:SI:138:GLN:HG2	86:A:1303:GLU:HA	1.49	0.95
86:A:1523:ALA:H	86:A:1527:ALA:CB	1.80	0.95
22:SI:138:GLN:HG3	86:A:1303:GLU:N	1.77	0.95
86:A:2373:ALA:HB2	86:A:2413:ALA:HB1	1.49	0.94
86:A:2062:ALA:HB2	86:A:2102:ALA:HB1	1.49	0.94
22:SI:138:GLN:CB	86:A:1303:GLU:CB	2.46	0.94
86:A:1458:ALA:HB3	86:A:1461:ALA:HB3	1.49	0.94
14:SC:23:ALA:O	14:SC:64:TYR:HB2	1.67	0.94
40:LA:2844:C:H42	40:LA:2898:G:N2	1.65	0.94
86:A:1675:ALA:HB1	86:A:1714:ALA:HB2	1.45	0.94

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:A:1894:ALA:HB1	86:A:1906:ALA:CB	1.98	0.94
86:A:2094:ALA:HB1	86:A:2106:ALA:CB	1.97	0.93
86:A:2294:ALA:HB1	86:A:2306:ALA:CB	1.98	0.93
86:A:2262:ALA:HB2	86:A:2302:ALA:HB1	1.49	0.93
22:SI:138:GLN:HG3	86:A:1303:GLU:H	1.29	0.93
86:A:2405:ALA:HB1	86:A:2417:ALA:CB	1.98	0.93
86:A:1415:ALA:HB1	86:A:1427:ALA:CB	1.99	0.93
86:A:2100:ALA:HA	86:A:2216:ALA:H	1.30	0.93
22:SI:21:PHE:HZ	86:A:1299:ASP:CA	1.82	0.92
86:A:927:ALA:HB3	86:A:933:ALA:CB	1.99	0.92
86:A:1636:ALA:CB	86:A:1674:ALA:HB1	2.00	0.92
86:A:1463:ALA:HB2	86:A:1499:ALA:HB1	1.50	0.91
86:A:1862:ALA:HB2	86:A:1902:ALA:HB1	1.49	0.91
22:SI:25:GLN:HG3	86:A:1298:ASN:CB	2.00	0.91
86:A:965:ALA:O	86:A:969:ALA:N	2.03	0.90
86:A:2314:ALA:HB1	86:A:2321:ALA:CB	1.98	0.90
86:A:2100:ALA:H	86:A:2216:ALA:HA	1.34	0.90
86:A:965:ALA:O	86:A:969:ALA:HB3	1.67	0.90
22:SI:21:PHE:CZ	86:A:1299:ASP:CA	2.55	0.89
1:S2:1229:G:H21	1:S2:1256:A:H62	1.12	0.89
86:A:1523:ALA:O	86:A:1527:ALA:HB3	1.71	0.89
86:A:1458:ALA:HB3	86:A:1461:ALA:CB	2.02	0.88
83:Lr:53:GLY:HA3	83:Lr:66:GLY:O	1.74	0.88
22:SI:138:GLN:NE2	86:A:1303:GLU:N	2.21	0.87
86:A:1428:ALA:HB1	86:A:1461:ALA:HA	1.54	0.87
22:SI:138:GLN:HG2	86:A:1303:GLU:N	1.83	0.86
86:A:1637:ALA:H	86:A:1676:ALA:HB3	1.40	0.86
86:A:2211:ALA:O	86:A:2215:ALA:HB2	1.74	0.86
1:S2:1229:G:H21	1:S2:1256:A:N6	1.71	0.86
86:A:1523:ALA:HB3	86:A:1527:ALA:H	1.41	0.85
22:SI:138:GLN:OE1	86:A:1300:SER:CB	2.24	0.85
86:A:965:ALA:O	86:A:969:ALA:HB2	1.76	0.85
1:S2:1187:U:H3	1:S2:1198:G:H1	1.21	0.85
86:A:1862:ALA:HB2	86:A:1902:ALA:CB	2.07	0.85
86:A:1331:LEU:O	86:A:1335:ILE:CB	2.25	0.84
86:A:2262:ALA:HB2	86:A:2302:ALA:CB	2.07	0.84
86:A:1487:ALA:O	86:A:1491:ALA:CB	2.25	0.84
40:LA:2844:C:N4	40:LA:2898:G:H22	1.73	0.84
86:A:2062:ALA:HB2	86:A:2102:ALA:CB	2.07	0.83
86:A:2373:ALA:HB2	86:A:2413:ALA:CB	2.07	0.83
86:A:2209:ALA:O	86:A:2213:ALA:HB2	1.76	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:LA:3222:U:H3	40:LA:3263:G:H1	1.23	0.83
86:A:927:ALA:HB3	86:A:933:ALA:HB3	1.61	0.83
86:A:965:ALA:H	86:A:969:ALA:HB2	1.41	0.82
86:A:1482:ALA:HB1	86:A:1493:ALA:CB	2.08	0.82
86:A:1637:ALA:H	86:A:1676:ALA:CB	1.92	0.82
22:SI:138:GLN:HE22	86:A:1300:SER:CB	1.93	0.82
86:A:1432:GLY:CA	86:A:1468:ALA:HB2	2.09	0.82
86:A:2097:ALA:HB1	86:A:2103:ALA:CB	2.10	0.81
22:SI:138:GLN:HE22	86:A:1300:SER:CA	1.93	0.81
86:A:1636:ALA:HB2	86:A:1677:ALA:HB2	1.60	0.81
86:A:1482:ALA:CA	86:A:1493:ALA:HB1	2.10	0.81
1:S2:1229:G:N2	1:S2:1256:A:H62	1.78	0.81
52:LM:165:GLN:HB3	86:A:1601:ALA:CB	2.11	0.80
86:A:1221:ALA:CA	86:A:1222:VAL:N	2.44	0.80
86:A:1260:ALA:O	86:A:1264:LYS:N	2.13	0.80
86:A:927:ALA:HB3	86:A:933:ALA:H	1.46	0.80
86:A:2094:ALA:CB	86:A:2106:ALA:CB	2.52	0.80
86:A:1293:ILE:CB	86:A:1313:LYS:CB	2.60	0.79
86:A:2211:ALA:O	86:A:2215:ALA:CB	2.30	0.79
86:A:2349:ALA:O	86:A:2350:ALA:CB	2.31	0.79
86:A:1599:ALA:HB2	86:A:1604:ALA:HB2	1.64	0.79
86:A:1217:ASN:HA	86:A:1230:ALA:HB2	1.63	0.79
86:A:1537:ALA:O	86:A:1539:ALA:N	2.16	0.79
86:A:1838:ALA:O	86:A:1839:ALA:HB2	1.83	0.78
86:A:1485:ALA:C	86:A:1490:ALA:HB1	2.08	0.78
86:A:1216:LYS:O	86:A:1230:ALA:N	2.15	0.78
1:S2:415:C:O2	1:S2:418:G:N1	2.17	0.78
86:A:1838:ALA:O	86:A:1839:ALA:CB	2.31	0.78
86:A:1636:ALA:HB3	86:A:1674:ALA:HB1	1.65	0.78
86:A:2038:ALA:O	86:A:2039:ALA:HB2	1.83	0.78
86:A:2038:ALA:O	86:A:2039:ALA:CB	2.31	0.78
86:A:2238:ALA:O	86:A:2239:ALA:CB	2.31	0.78
86:A:2349:ALA:O	86:A:2350:ALA:HB2	1.83	0.77
86:A:1428:ALA:HB1	86:A:1464:ALA:HB3	1.66	0.77
86:A:1523:ALA:HB3	86:A:1527:ALA:N	1.99	0.77
52:LM:168:ASP:OD2	86:A:1562:ALA:HA	1.84	0.77
86:A:1810:ALA:O	86:A:1814:ALA:CB	2.32	0.77
86:A:2100:ALA:N	86:A:2216:ALA:HA	1.98	0.77
1:S2:1502:G:N7	22:SI:102:ARG:NH2	2.34	0.76
86:A:2238:ALA:O	86:A:2239:ALA:HB2	1.83	0.76
86:A:2321:ALA:O	86:A:2325:ALA:CB	2.32	0.76

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:LC:63:G:H1	42:LC:97:A:H61	1.32	0.76
86:A:2010:ALA:O	86:A:2014:ALA:CB	2.32	0.76
86:A:1223:PRO:N	86:A:1223:PRO:CB	2.49	0.76
86:A:1487:ALA:O	86:A:1491:ALA:HB2	1.86	0.75
52:LM:165:GLN:HB2	86:A:1601:ALA:HB3	1.67	0.75
52:LM:165:GLN:CB	86:A:1601:ALA:HB3	2.17	0.74
22:SI:138:GLN:CD	86:A:1303:GLU:HA	2.12	0.74
86:A:1705:ALA:O	86:A:1815:ALA:HB1	1.88	0.74
86:A:2097:ALA:HB1	86:A:2103:ALA:HB1	1.68	0.74
86:A:920:ALA:O	86:A:924:ALA:HB3	1.87	0.74
86:A:1589:ALA:HB1	86:A:1627:ALA:HB2	1.69	0.74
86:A:1675:ALA:HB1	86:A:1714:ALA:CB	2.17	0.74
86:A:1894:ALA:CB	86:A:1906:ALA:CB	2.52	0.74
86:A:948:ALA:HB3	86:A:983:ALA:CB	2.15	0.73
86:A:1421:PRO:N	86:A:1421:PRO:CB	2.51	0.73
86:A:1705:ALA:C	86:A:1815:ALA:HB1	2.13	0.73
86:A:1488:ALA:HA	86:A:1491:ALA:HB3	1.71	0.73
86:A:1537:ALA:C	86:A:1539:ALA:H	1.97	0.73
22:SI:138:GLN:CD	86:A:1303:GLU:CA	2.60	0.73
86:A:960:ALA:HB2	86:A:972:ALA:HB1	1.69	0.73
86:A:1486:ALA:O	86:A:1487:ALA:N	2.22	0.73
84:Ls:86:LYS:O	84:Ls:139:ILE:HA	1.89	0.72
86:A:1564:ALA:HB1	86:A:1598:ALA:HB1	1.70	0.72
21:SH:22:VAL:HG22	21:SH:35:ILE:HD11	1.71	0.72
1:S2:1295:G:H1	1:S2:1302:U:H3	1.38	0.72
86:A:1668:ALA:O	86:A:1672:ALA:CA	2.37	0.72
22:SI:138:GLN:NE2	86:A:1300:SER:CB	2.53	0.72
86:A:1520:ALA:O	86:A:1521:ALA:HB3	1.90	0.71
40:LA:1580:A:OP2	40:LA:2522:G:N2	2.22	0.71
86:A:2405:ALA:CB	86:A:2417:ALA:CB	2.52	0.71
44:LE:205:VAL:HA	44:LE:208:VAL:HG12	1.73	0.71
51:LL:160:PRO:O	51:LL:163:GLN:NE2	2.23	0.71
86:A:2100:ALA:O	86:A:2102:ALA:N	2.23	0.70
40:LA:2442:G:H1	40:LA:2505:U:H3	1.38	0.70
40:LA:1634:G:N7	67:Lb:17:ARG:NH1	2.39	0.70
41:LB:44:C:H4'	46:LG:152:ARG:HG3	1.74	0.70
86:A:1463:ALA:CB	86:A:1499:ALA:HB1	2.21	0.70
86:A:1218:LEU:CB	86:A:1226:ARG:CB	2.70	0.69
86:A:1869:ALA:HB2	86:A:1909:ALA:HB1	1.74	0.69
86:A:2103:ALA:HB3	86:A:2215:ALA:HA	1.73	0.69
21:SH:101:LEU:H	21:SH:104:ASN:HB2	1.56	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:A:2100:ALA:N	86:A:2216:ALA:CA	2.51	0.69
22:SI:24:ARG:CB	86:A:1338:PRO:CB	2.71	0.69
40:LA:1621:A:H62	40:LA:1820:U:H3	1.40	0.69
86:A:925:ALA:HB1	86:A:968:ALA:HB2	1.75	0.69
86:A:1223:PRO:N	86:A:1223:PRO:C	2.50	0.69
86:A:2269:ALA:HB2	86:A:2309:ALA:HB1	1.74	0.69
86:A:2209:ALA:O	86:A:2213:ALA:CA	2.41	0.69
86:A:1429:ARG:HA	86:A:1464:ALA:HB1	1.74	0.69
8:SS:100:ARG:HB3	8:SS:112:HIS:HB3	1.76	0.68
86:A:965:ALA:O	86:A:969:ALA:CA	2.41	0.68
86:A:1218:LEU:HA	86:A:1226:ARG:CB	2.23	0.68
8:SS:94:ALA:HB1	27:Sd:16:PRO:HB2	1.74	0.68
86:A:1636:ALA:HA	86:A:1676:ALA:HB3	1.74	0.68
86:A:2069:ALA:HB2	86:A:2109:ALA:HB1	1.74	0.68
40:LA:1492:G:N7	79:Ln:2:ALA:N	2.42	0.68
1:S2:1541:G:H21	1:S2:1570:A:H62	1.39	0.68
13:SW:129:ILE:HD13	13:SW:134:ILE:HG21	1.75	0.68
1:S2:868:G:OP1	17:SY:121:ARG:NH1	2.27	0.68
22:SI:138:GLN:CD	86:A:1303:GLU:N	2.51	0.68
40:LA:1656:A:OP2	74:Li:37:LYS:NZ	2.26	0.68
49:LJ:54:GLU:HG2	49:LJ:57:ARG:HH21	1.58	0.68
9:SB:121:ILE:O	9:SB:124:LEU:O	2.12	0.68
86:A:923:ALA:O	86:A:926:ALA:N	2.27	0.67
52:LM:165:GLN:CB	86:A:1601:ALA:CB	2.71	0.67
22:SI:138:GLN:CG	86:A:1303:GLU:HA	2.10	0.67
86:A:1593:ALA:HB2	86:A:1627:ALA:HB1	1.75	0.67
86:A:1361:PRO:N	86:A:1361:PRO:CB	2.56	0.67
86:A:2380:ALA:HB2	86:A:2420:ALA:HB1	1.74	0.67
1:S2:868:G:H1	1:S2:960:U:H3	1.42	0.66
1:S2:1489:U:OP2	7:SA:9:ARG:NH2	2.28	0.66
40:LA:1169:A:H4'	48:LI:219:LYS:HE2	1.78	0.66
86:A:1260:ALA:CB	86:A:1264:LYS:CB	2.73	0.66
86:A:1485:ALA:C	86:A:1490:ALA:CB	2.67	0.66
15:SX:100:TYR:OH	25:Sb:80:ASN:ND2	2.29	0.66
69:Ld:16:ALA:O	69:Ld:20:GLY:CA	2.44	0.66
44:LE:10:ARG:NH2	44:LE:11:HIS:O	2.29	0.66
86:A:1222:VAL:C	86:A:1223:PRO:CA	2.63	0.66
23:SJ:68:ARG:HH12	23:SJ:77:LYS:HG3	1.61	0.66
86:A:1222:VAL:O	86:A:1226:ARG:CB	2.44	0.66
41:LB:13:A:O2'	46:LG:24:ARG:NH1	2.29	0.66
86:A:1485:ALA:O	86:A:1490:ALA:CB	2.43	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:A:2100:ALA:O	86:A:2101:ALA:C	2.37	0.66
22:SI:24:ARG:CZ	86:A:1338:PRO:CB	2.73	0.65
43:LD:47:GLN:HE21	43:LD:60:LYS:HD2	1.60	0.65
86:A:1428:ALA:C	86:A:1464:ALA:CB	2.69	0.65
25:Sb:15:ASN:ND2	25:Sb:72:CYS:O	2.30	0.65
1:S2:1429:G:N3	23:SJ:72:ASN:ND2	2.44	0.65
86:A:1429:ARG:N	86:A:1464:ALA:HB1	2.12	0.65
86:A:1705:ALA:HA	86:A:1815:ALA:HB1	1.79	0.65
86:A:2100:ALA:O	86:A:2103:ALA:N	2.30	0.65
12:SV:5:ARG:NH1	12:SV:29:LEU:O	2.30	0.65
86:A:1260:ALA:HB1	86:A:1264:LYS:CB	2.26	0.65
86:A:1705:ALA:O	86:A:1815:ALA:O	2.14	0.65
22:SI:138:GLN:NE2	86:A:1303:GLU:CA	2.60	0.65
57:LR:107:LEU:HD23	57:LR:152:GLU:HG3	1.79	0.65
86:A:924:ALA:HA	86:A:933:ALA:C	2.21	0.65
86:A:1428:ALA:C	86:A:1464:ALA:HB1	2.21	0.65
86:A:2380:ALA:HB2	86:A:2420:ALA:CB	2.26	0.65
22:SI:138:GLN:CD	86:A:1300:SER:CB	2.70	0.65
33:SN:123:ASN:ND2	33:SN:144:CYS:SG	2.71	0.65
45:LF:330:TYR:O	45:LF:334:PHE:HB2	1.97	0.65
86:A:1705:ALA:O	86:A:1815:ALA:C	2.40	0.65
86:A:1218:LEU:CA	86:A:1226:ARG:CB	2.75	0.64
1:S2:185:U:OP1	12:SV:146:ARG:NH2	2.30	0.64
86:A:2104:ALA:HB1	86:A:2210:ALA:O	1.97	0.64
86:A:2269:ALA:HB2	86:A:2309:ALA:CB	2.26	0.64
86:A:1458:ALA:O	86:A:1460:ALA:N	2.29	0.64
86:A:1869:ALA:HB2	86:A:1909:ALA:CB	2.26	0.64
1:S2:902:G:N7	18:SZ:24:ASN:ND2	2.45	0.64
40:LA:269:G:OP1	55:LP:47:LYS:NZ	2.30	0.64
42:LC:53:A:O2'	79:Ln:40:LYS:NZ	2.30	0.64
1:S2:265:A:N7	10:ST:190:GLN:NE2	2.46	0.64
1:S2:415:C:O2	1:S2:418:G:C6	2.49	0.64
40:LA:2294:U:OP2	63:LX:71:LYS:NZ	2.30	0.64
34:SO:123:ILE:HG22	34:SO:133:VAL:HG12	1.79	0.64
49:LJ:72:PRO:HG3	55:LP:18:VAL:HA	1.80	0.64
86:A:1482:ALA:C	86:A:1493:ALA:HB1	2.22	0.64
86:A:1599:ALA:HB2	86:A:1604:ALA:CB	2.28	0.64
1:S2:1213:G:O2'	1:S2:1244:A:N7	2.30	0.64
40:LA:1156:C:OP2	48:LI:94:LYS:NZ	2.31	0.64
40:LA:1613:A:OP1	78:Lm:2:ALA:N	2.31	0.64
45:LF:150:LEU:HD23	45:LF:249:ILE:HG12	1.79	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:A:1636:ALA:HB1	86:A:1674:ALA:HB1	1.80	0.64
86:A:1637:ALA:N	86:A:1676:ALA:HB3	2.11	0.64
86:A:2069:ALA:HB2	86:A:2109:ALA:CB	2.26	0.64
6:SR:88:LYS:HD2	6:SR:95:ARG:HD3	1.79	0.64
86:A:1429:ARG:CA	86:A:1464:ALA:HB1	2.28	0.63
40:LA:2617:U:O2'	51:LL:116:ARG:NH2	2.31	0.63
60:LU:154:HIS:HA	60:LU:170:THR:HB	1.80	0.63
1:S2:780:A:H2	27:Sd:10:ARG:HG2	1.63	0.63
22:SI:77:ASN:HB3	22:SI:95:ASP:HB3	1.81	0.63
11:SU:27:LEU:O	11:SU:30:SER:O	2.17	0.63
86:A:927:ALA:HB3	86:A:933:ALA:N	2.12	0.63
22:SI:42:GLY:HA2	22:SI:84:LYS:HD3	1.81	0.63
1:S2:629:U:OP2	1:S2:969:C:N4	2.31	0.63
22:SI:138:GLN:NE2	86:A:1303:GLU:HA	2.12	0.63
43:LD:27:ALA:O	43:LD:128:ARG:NH2	2.31	0.63
67:Lb:68:ILE:O	67:Lb:115:LYS:NZ	2.32	0.63
1:S2:532:U:O2	27:Sd:34:ASN:ND2	2.32	0.63
1:S2:764:U:OP2	13:SW:82:ARG:NH1	2.31	0.63
40:LA:2679:A:HO2'	52:LM:52:TYR:HH	1.47	0.63
42:LC:52:A:OP1	79:Ln:21:ARG:NH1	2.31	0.63
42:LC:83:C:H42	66:La:52:ARG:HH22	1.46	0.63
42:LC:141:C:O2	55:LP:112:ASN:ND2	2.31	0.63
86:A:929:ALA:C	86:A:932:ALA:H	2.07	0.63
86:A:1482:ALA:O	86:A:1493:ALA:HB3	1.98	0.63
40:LA:640:U:OP1	68:Lc:21:ARG:NH2	2.29	0.62
40:LA:2800:G:O6	68:Lc:42:ARG:NH2	2.32	0.62
57:LR:56:ARG:NH1	57:LR:75:GLU:OE2	2.32	0.62
1:S2:1195:C:OP1	23:SJ:77:LYS:NZ	2.33	0.62
10:ST:154:ARG:HG2	10:ST:178:LEU:HD11	1.80	0.62
40:LA:283:G:OP1	82:Lq:45:ARG:NH1	2.31	0.62
40:LA:901:G:OP1	77:Ll:13:ASN:ND2	2.32	0.62
40:LA:1659:U:H3	40:LA:1790:G:H1	1.47	0.62
83:Lr:51:ALA:HB3	83:Lr:54:ILE:HD12	1.81	0.62
1:S2:1582:U:OP1	19:SF:135:ARG:NH1	2.31	0.62
34:SO:42:LEU:HB2	34:SO:61:PHE:HB2	1.81	0.62
40:LA:364:G:N7	77:Ll:56:ARG:NH2	2.48	0.62
86:A:1429:ARG:N	86:A:1464:ALA:CB	2.63	0.62
1:S2:229:U:O4	1:S2:237:C:N3	2.32	0.62
45:LF:77:VAL:O	45:LF:86:GLY:N	2.33	0.62
1:S2:1542:G:H1	1:S2:1568:C:HO2'	1.45	0.62
1:S2:1673:G:O6	1:S2:1728:A:N1	2.33	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:LA:1579:C:OP1	43:LD:68:LYS:NZ	2.33	0.62
67:Lb:90:GLU:HA	67:Lb:93:LYS:HE2	1.82	0.62
86:A:1456:ALA:O	86:A:1457:ALA:HB3	1.98	0.62
1:S2:1435:G:H8	14:SC:62:GLN:HE22	1.46	0.62
40:LA:388:G:H1'	57:LR:97:ASN:HD21	1.65	0.62
40:LA:1363:A:OP1	48:LI:160:ARG:NH1	2.32	0.62
44:LE:14:LEU:HA	44:LE:17:LEU:HD13	1.82	0.62
86:A:1668:ALA:C	86:A:1672:ALA:HB2	2.17	0.61
1:S2:395:U:H3	1:S2:399:A:N6	1.85	0.61
46:LG:41:LYS:NZ	61:LV:30:TYR:O	2.33	0.61
65:LZ:117:ASN:O	79:Ln:18:LYS:NZ	2.33	0.61
68:Lc:96:LYS:HG2	68:Lc:122:PRO:HG2	1.82	0.61
86:A:1216:LYS:O	86:A:1229:THR:CB	2.48	0.61
86:A:1458:ALA:O	86:A:1461:ALA:N	2.29	0.61
86:A:2209:ALA:O	86:A:2213:ALA:HB3	1.97	0.61
16:SD:43:ARG:NH2	16:SD:102:GLY:O	2.30	0.61
22:SI:138:GLN:HA	86:A:1303:GLU:CB	2.30	0.61
40:LA:68:C:OP2	40:LA:301:G:N2	2.34	0.61
40:LA:509:U:H3	40:LA:582:G:H1	1.48	0.61
1:S2:393:C:N4	1:S2:401:A:OP2	2.33	0.61
1:S2:1358:G:OP1	22:SI:130:ARG:NH1	2.34	0.61
45:LF:237:GLN:O	45:LF:246:ARG:NH1	2.33	0.61
86:A:2072:ALA:C	86:A:2074:ALA:H	2.09	0.61
3:SP:70:PRO:HG3	3:SP:185:ARG:HH12	1.65	0.61
8:SS:19:LEU:HD12	8:SS:51:ARG:HH22	1.65	0.61
22:SI:65:ILE:O	22:SI:68:ARG:O	2.19	0.61
72:Lg:83:GLU:HA	72:Lg:86:THR:HG23	1.81	0.61
86:A:1487:ALA:O	86:A:1491:ALA:CA	2.48	0.61
86:A:1640:ALA:C	86:A:1642:ALA:H	2.07	0.61
47:LH:63:LEU:O	47:LH:78:ARG:HA	2.00	0.61
52:LM:165:GLN:HB3	86:A:1601:ALA:HB2	1.83	0.61
40:LA:936:A:OP1	68:Lc:32:ARG:NH2	2.33	0.61
40:LA:2756:C:O2	61:LV:8:ARG:NH2	2.33	0.61
40:LA:2835:U:OP1	80:Lo:98:LYS:NZ	2.33	0.61
40:LA:2838:A:H4'	51:LL:74:LYS:HG2	1.83	0.61
42:LC:52:A:H62	79:Ln:27:ILE:HD13	1.66	0.61
46:LG:111:GLN:HE22	46:LG:252:ALA:HB2	1.66	0.61
55:LP:98:LEU:HD22	55:LP:128:LYS:HD2	1.83	0.61
1:S2:1339:C:O2'	1:S2:1341:A:N7	2.34	0.61
9:SB:121:ILE:O	9:SB:124:LEU:C	2.43	0.61
1:S2:821:U:H3	1:S2:852:C:N4	1.99	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:LA:2852:C:N3	51:LL:158:LYS:NZ	2.49	0.61
41:LB:6:C:OP2	46:LG:22:ARG:NH1	2.34	0.61
52:LM:139:THR:O	52:LM:145:LYS:NZ	2.33	0.61
55:LP:138:GLN:HA	55:LP:143:ARG:HH21	1.65	0.61
86:A:1432:GLY:C	86:A:1468:ALA:HB2	2.26	0.61
40:LA:120:G:N2	49:LJ:126:SER:O	2.33	0.60
40:LA:2666:C:OP2	40:LA:2687:G:N1	2.34	0.60
11:SU:46:ILE:HD13	11:SU:60:ILE:HG13	1.84	0.60
86:A:2383:ALA:C	86:A:2385:ALA:H	2.09	0.60
15:SX:102:LYS:O	26:Sc:13:ARG:NH2	2.30	0.60
40:LA:1915:A:H5''	59:LT:84:THR:HG22	1.83	0.60
55:LP:114:ARG:NH1	55:LP:151:ILE:O	2.32	0.60
1:S2:329:G:H5''	12:SV:98:LYS:HB3	1.83	0.60
20:SG:26:LEU:HD11	20:SG:62:GLN:HG3	1.83	0.60
40:LA:2282:U:OP1	40:LA:2973:G:O2'	2.18	0.60
86:A:1872:ALA:C	86:A:1874:ALA:H	2.09	0.60
86:A:2314:ALA:CB	86:A:2321:ALA:CB	2.70	0.60
1:S2:67:A:N6	1:S2:83:G:O2'	2.35	0.60
1:S2:554:C:N4	1:S2:571:G:O6	2.34	0.60
1:S2:815:G:O2'	59:LT:162:ARG:NH2	2.34	0.60
8:SS:100:ARG:NH2	8:SS:118:GLU:O	2.35	0.60
42:LC:126:A:O2'	42:LC:129:C:N4	2.34	0.60
51:LL:209:ASN:O	51:LL:212:GLU:C	2.45	0.60
82:Lq:75:VAL:HG23	82:Lq:76:LYS:HD2	1.84	0.60
86:A:927:ALA:CB	86:A:933:ALA:HB3	2.30	0.60
86:A:1393:ALA:C	86:A:1395:LEU:H	2.09	0.60
40:LA:2185:G:O2'	40:LA:2314:U:OP2	2.19	0.60
86:A:987:ALA:CB	86:A:988:ALA:CB	2.79	0.60
24:Sa:17:CYS:SG	24:Sa:18:SER:N	2.75	0.60
40:LA:1390:A:N6	40:LA:1418:A:O2'	2.34	0.60
40:LA:1488:G:H21	74:Li:12:PRO:HG3	1.65	0.60
40:LA:3092:C:O2'	40:LA:3094:A:OP2	2.20	0.60
36:Sm:37:A:O2'	40:LA:2256:A:N1	2.35	0.60
40:LA:744:A:H5'	58:LS:66:ARG:HH22	1.67	0.60
86:A:1432:GLY:HA3	86:A:1468:ALA:HB2	1.82	0.60
21:SH:19:ASN:ND2	52:LM:111:ASP:OD1	2.34	0.60
38:So:342:VAL:HG22	38:So:344:GLY:H	1.67	0.60
40:LA:89:A:OP2	58:LS:170:ARG:NH2	2.35	0.60
46:LG:75:LEU:O	46:LG:112:LYS:NZ	2.32	0.60
86:A:1428:ALA:HB2	86:A:1461:ALA:CA	2.22	0.60
14:SC:12:HIS:HA	14:SC:15:LEU:HD12	1.83	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:480:G:H1	1:S2:508:U:H3	1.48	0.59
3:SP:36:TYR:OH	24:Sa:70:ASN:ND2	2.33	0.59
40:LA:1055:A:N3	41:LB:81:U:O2'	2.34	0.59
40:LA:1833:G:O2'	79:Ln:3:ALA:O	2.21	0.59
40:LA:2452:G:O6	40:LA:2493:U:C4	2.55	0.59
5:SE:18:ARG:NH1	21:SH:90:ASN:O	2.35	0.59
8:SS:54:TYR:O	27:Sd:15:ASN:ND2	2.35	0.59
86:A:1636:ALA:HB1	86:A:1677:ALA:H	1.67	0.59
1:S2:1553:G:N1	1:S2:1556:A:OP2	2.35	0.59
55:LP:9:GLU:OE2	55:LP:13:LYS:NZ	2.35	0.59
1:S2:638:U:H1'	11:SU:112:ARG:HH22	1.65	0.59
33:SN:123:ASN:ND2	33:SN:125:THR:OG1	2.35	0.59
40:LA:2588:U:OP1	49:LJ:48:ARG:NH2	2.35	0.59
86:A:1520:ALA:O	86:A:1521:ALA:CB	2.49	0.59
40:LA:199:A:H5''	66:La:60:ARG:HD2	1.82	0.59
49:LJ:90:THR:HG22	49:LJ:214:LEU:HD21	1.84	0.59
52:LM:81:GLU:OE1	52:LM:167:TYR:OH	2.21	0.59
86:A:925:ALA:CB	86:A:968:ALA:HB2	2.32	0.59
3:SP:36:TYR:OH	3:SP:56:LYS:NZ	2.34	0.59
26:Sc:42:PRO:O	26:Sc:79:ASN:ND2	2.35	0.59
40:LA:1157:G:O2'	40:LA:1169:A:N3	2.35	0.59
40:LA:1369:A:OP1	68:Lc:21:ARG:NH1	2.35	0.59
41:LB:3:U:O2'	41:LB:25:G:N3	2.33	0.59
41:LB:64:A:OP2	46:LG:289:LYS:NZ	2.36	0.59
45:LF:291:ASN:HA	45:LF:296:GLN:HE21	1.68	0.59
86:A:1639:ALA:HB1	86:A:1641:ALA:H	1.68	0.59
71:Lf:13:THR:OG1	71:Lf:72:ARG:NH1	2.36	0.59
86:A:1636:ALA:C	86:A:1638:ALA:H	2.10	0.59
1:S2:298:C:O2'	8:SS:30:ARG:NH1	2.35	0.59
1:S2:1487:A:OP1	31:SM:34:TYR:OH	2.18	0.59
29:Se:37:LYS:O	29:Se:38:ARG:NH1	2.36	0.59
77:Ll:36:SER:HA	77:Ll:45:ARG:HH21	1.67	0.59
86:A:960:ALA:CB	86:A:972:ALA:HB1	2.32	0.59
86:A:2272:ALA:C	86:A:2274:ALA:H	2.09	0.59
1:S2:567:A:OP1	26:Sc:70:LYS:NZ	2.35	0.59
1:S2:1551:U:O4	5:SE:40:ARG:NH1	2.36	0.59
40:LA:2196:C:O2'	40:LA:2270:A:N3	2.31	0.59
40:LA:3216:G:OP2	73:Lh:2:ALA:N	2.35	0.59
49:LJ:162:LEU:HD23	55:LP:7:LEU:HD21	1.85	0.59
34:SO:153:GLN:OE1	34:SO:155:ARG:NH1	2.36	0.58
3:SP:53:THR:HG22	3:SP:161:PRO:HG2	1.84	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:So:335:ASP:O	63:LX:128:ARG:NH1	2.36	0.58
40:LA:967:A:OP1	68:Lc:47:LYS:NZ	2.36	0.58
40:LA:1566:A:N1	40:LA:1571:A:N6	2.50	0.58
40:LA:2608:G:OP1	43:LD:2:GLY:N	2.37	0.58
51:LL:201:SER:OG	51:LL:203:LYS:O	2.22	0.58
86:A:1456:ALA:O	86:A:1457:ALA:CB	2.51	0.58
1:S2:694:U:N3	11:SU:96:ARG:O	2.35	0.58
1:S2:1594:G:OP2	1:S2:1596:C:N4	2.36	0.58
40:LA:1488:G:O2'	74:Li:10:ARG:O	2.22	0.58
45:LF:219:LEU:HA	45:LF:222:VAL:HG22	1.85	0.58
40:LA:291:C:OP2	55:LP:128:LYS:NZ	2.37	0.58
41:LB:13:A:OP2	41:LB:67:G:N2	2.36	0.58
54:LO:37:GLU:OE2	54:LO:74:ARG:NH2	2.36	0.58
86:A:1705:ALA:CB	86:A:1815:ALA:O	2.39	0.58
1:S2:1459:C:OP2	21:SH:138:THR:OG1	2.21	0.58
13:SW:27:GLU:HG3	13:SW:39:LYS:HE2	1.85	0.58
40:LA:1385:C:OP1	45:LF:141:ARG:NH2	2.31	0.58
40:LA:2194:G:OP1	43:LD:247:ARG:NH1	2.36	0.58
49:LJ:77:GLN:HE22	49:LJ:167:PRO:HG2	1.68	0.58
84:Ls:87:ARG:HA	84:Ls:138:ILE:O	2.04	0.58
86:A:1636:ALA:CA	86:A:1676:ALA:HB3	2.32	0.58
86:A:2097:ALA:HB1	86:A:2103:ALA:HB2	1.84	0.58
1:S2:647:G:H22	1:S2:687:G:H1	1.52	0.58
40:LA:508:U:H3	40:LA:583:G:H1	1.50	0.58
18:SZ:16:VAL:HG12	18:SZ:80:HIS:HB2	1.86	0.58
22:SI:73:VAL:O	22:SI:77:ASN:ND2	2.36	0.58
40:LA:524:U:OP1	54:LO:77:ARG:NH2	2.37	0.58
40:LA:649:A:OP2	40:LA:2868:U:O2'	2.22	0.58
1:S2:330:G:OP2	12:SV:172:ARG:NH1	2.36	0.58
9:SB:94:THR:HG22	9:SB:114:ILE:HG13	1.86	0.58
18:SZ:82:LYS:NZ	18:SZ:116:GLU:OE1	2.36	0.58
40:LA:114:A:N1	40:LA:266:A:O2'	2.36	0.58
40:LA:593:C:OP2	47:LH:19:LYS:NZ	2.36	0.58
86:A:948:ALA:O	86:A:984:ALA:HB3	2.04	0.58
19:SF:89:LEU:HG	19:SF:105:LEU:HD21	1.86	0.58
60:LU:124:LEU:HD23	61:LV:153:PRO:HB2	1.86	0.58
1:S2:883:C:N3	1:S2:945:U:O4	2.37	0.58
1:S2:1175:U:H3	1:S2:1464:G:H1	1.52	0.58
13:SW:59:LEU:HD12	13:SW:69:ARG:HA	1.86	0.57
24:Sa:87:ARG:HH12	30:Sf:2:VAL:HG11	1.67	0.57
27:Sd:44:LEU:HA	27:Sd:47:VAL:HG12	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:LA:1302:A:N7	40:LA:2857:C:O2'	2.35	0.57
52:LM:133:ARG:NH1	52:LM:153:LYS:O	2.37	0.57
1:S2:1795:U:H5'	29:Se:79:ILE:HD11	1.85	0.57
24:Sa:15:ARG:NH1	24:Sa:33:GLN:OE1	2.37	0.57
41:LB:6:C:OP1	46:LG:54:ARG:NE	2.36	0.57
83:Lr:46:THR:HG1	83:Lr:57:CYS:HG	1.51	0.57
40:LA:67:A:N6	40:LA:271:C:O2'	2.31	0.57
40:LA:120:G:N2	49:LJ:123:GLN:O	2.37	0.57
53:LN:70:ARG:NH1	53:LN:71:ALA:O	2.37	0.57
57:LR:119:VAL:HG22	57:LR:146:ILE:HG12	1.86	0.57
70:Le:22:LYS:NZ	70:Le:94:GLU:OE2	2.38	0.57
86:A:1523:ALA:CB	86:A:1526:ALA:HB3	2.34	0.57
22:SI:65:ILE:O	22:SI:68:ARG:C	2.47	0.57
40:LA:364:G:OP2	77:Ll:52:LYS:NZ	2.37	0.57
51:LL:209:ASN:O	51:LL:212:GLU:O	2.22	0.57
7:SA:28:GLU:OE2	14:SC:58:GLN:NE2	2.34	0.57
53:LN:4:SER:O	68:Lc:44:ASN:ND2	2.34	0.57
1:S2:463:U:O2'	1:S2:527:A:N6	2.37	0.57
3:SP:88:LYS:O	3:SP:92:HIS:ND1	2.37	0.57
40:LA:1268:G:O2'	40:LA:1269:U:O2	2.23	0.57
51:LL:171:TRP:HE3	51:LL:178:ARG:HG3	1.68	0.57
86:A:1583:ALA:C	86:A:1585:ALA:H	2.13	0.57
1:S2:763:G:OP2	13:SW:79:ARG:NH2	2.38	0.57
1:S2:1674:C:OP1	10:ST:92:ARG:NH2	2.36	0.57
22:SI:24:ARG:HB3	86:A:1338:PRO:CB	2.34	0.57
40:LA:1348:U:OP1	58:LS:39:ARG:NH1	2.38	0.57
50:LK:114:VAL:HB	50:LK:124:ARG:HB2	1.87	0.57
40:LA:533:A:O2'	40:LA:535:G:OP2	2.23	0.57
40:LA:804:C:OP1	45:LF:98:ARG:NH1	2.37	0.57
43:LD:95:SER:OG	43:LD:97:ASN:ND2	2.38	0.57
51:LL:105:CYS:SG	51:LL:106:ALA:N	2.77	0.57
1:S2:151:G:N3	10:ST:13:GLN:NE2	2.52	0.57
1:S2:1337:A:OP1	19:SF:123:ARG:NH2	2.36	0.57
1:S2:1461:C:OP1	21:SH:144:ARG:NH1	2.37	0.57
3:SP:13:ASP:OD1	3:SP:179:ARG:NH2	2.38	0.57
7:SA:37:VAL:HG12	7:SA:50:ILE:HG12	1.85	0.57
38:So:135:GLN:NE2	40:LA:3027:A:N7	2.53	0.57
40:LA:1385:C:O2	47:LH:2:THR:N	2.37	0.57
44:LE:252:ILE:HD12	44:LE:266:ARG:HH12	1.70	0.57
57:LR:128:ARG:HG3	57:LR:136:ILE:HG23	1.87	0.57
77:Ll:19:CYS:SG	77:Ll:20:ASN:N	2.78	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:SR:52:THR:OG1	6:SR:54:GLU:OE1	2.22	0.57
22:SI:138:GLN:HE22	86:A:1300:SER:C	2.12	0.57
40:LA:2712:U:HO2'	40:LA:2743:A:HO2'	1.51	0.57
40:LA:3212:C:OP2	54:LO:124:ARG:NH2	2.38	0.57
50:LK:4:ILE:H	60:LU:142:GLN:HE21	1.52	0.57
68:Lc:100:PRO:HG2	68:Lc:123:VAL:HG23	1.87	0.57
18:SZ:17:ALA:O	18:SZ:29:HIS:O	2.23	0.56
40:LA:1355:A:H2	58:LS:38:ARG:HH12	1.53	0.56
11:SU:27:LEU:O	11:SU:30:SER:C	2.47	0.56
40:LA:284:A:OP2	82:Lq:41:ARG:NH1	2.38	0.56
43:LD:97:ASN:OD1	83:Lr:87:ARG:NH1	2.38	0.56
7:SA:134:CYS:SG	7:SA:135:GLU:N	2.78	0.56
25:Sb:79:PHE:O	25:Sb:124:LYS:HA	2.05	0.56
38:So:341:LEU:HB3	38:So:367:SER:HB3	1.86	0.56
40:LA:216:G:OP1	66:La:16:ARG:NH1	2.37	0.56
40:LA:271:C:O2	76:Lk:82:ARG:NH2	2.34	0.56
40:LA:292:U:OP2	55:LP:68:ARG:NH1	2.38	0.56
40:LA:2896:A:O2'	80:Lo:122:ARG:NH2	2.38	0.56
40:LA:3070:A:OP1	59:LT:62:ARG:NH2	2.38	0.56
86:A:1840:ALA:N	86:A:1840:ALA:C	2.59	0.56
86:A:2300:ALA:N	86:A:2300:ALA:CB	2.62	0.56
1:S2:247:A:O2'	15:SX:37:ASN:O	2.24	0.56
1:S2:1113:A:N6	1:S2:1132:A:OP2	2.38	0.56
8:SS:18:TRP:NE1	8:SS:41:SER:O	2.38	0.56
15:SX:121:ASP:HA	15:SX:144:ALA:HB3	1.86	0.56
24:Sa:1:MET:N	24:Sa:10:GLU:OE2	2.37	0.56
40:LA:3228:C:OP1	54:LO:137:LYS:NZ	2.38	0.56
86:A:2294:ALA:CB	86:A:2306:ALA:CB	2.52	0.56
42:LC:26:U:O2'	45:LF:51:ALA:O	2.22	0.56
1:S2:23:G:O2'	1:S2:368:U:OP1	2.23	0.56
1:S2:1029:U:OP2	29:Se:12:LYS:NZ	2.39	0.56
1:S2:1534:G:OP2	28:SK:74:SER:OG	2.22	0.56
1:S2:1368:G:OP1	22:SI:69:LYS:NZ	2.35	0.56
18:SZ:26:THR:HG21	18:SZ:97:GLY:HA3	1.87	0.56
22:SI:134:ARG:HB3	86:A:1300:SER:O	2.06	0.56
26:Sc:70:LYS:HB3	26:Sc:93:LEU:HD22	1.88	0.56
78:Lm:2:ALA:N	78:Lm:51:LEU:O	2.39	0.56
86:A:2351:ALA:N	86:A:2351:ALA:C	2.59	0.56
1:S2:956:C:OP1	1:S2:1072:C:O2'	2.23	0.56
1:S2:1254:U:OP2	16:SD:46:ARG:NH2	2.38	0.56
1:S2:1334:U:O2'	23:SJ:85:ARG:NH2	2.37	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:SQ:76:SER:OG	4:SQ:78:ASP:OD1	2.22	0.56
19:SF:129:PHE:O	19:SF:137:ARG:NH1	2.36	0.56
30:Sf:34:ASP:O	30:Sf:79:PHE:HA	2.05	0.56
40:LA:164:A:N1	40:LA:258:G:C6	2.74	0.56
40:LA:1592:G:OP1	74:Li:58:ARG:NH2	2.39	0.56
40:LA:2424:A:OP1	55:LP:90:ASN:ND2	2.36	0.56
86:A:929:ALA:O	86:A:931:ALA:N	2.39	0.56
1:S2:334:G:O6	12:SV:5:ARG:NH2	2.39	0.56
1:S2:930:A:H1'	4:SQ:111:ARG:HH12	1.71	0.56
6:SR:59:HIS:NE2	6:SR:237:VAL:O	2.39	0.56
12:SV:99:ALA:N	12:SV:169:ILE:O	2.39	0.56
14:SC:70:GLU:HA	14:SC:73:VAL:HG12	1.86	0.56
40:LA:1591:G:H5''	74:Li:37:LYS:HZ1	1.71	0.56
41:LB:44:C:OP2	52:LM:137:ARG:NH2	2.38	0.56
46:LG:294:ALA:HB1	51:LL:217:PHE:HB3	1.88	0.56
84:Ls:92:LEU:HB3	84:Ls:134:LEU:O	2.06	0.56
1:S2:415:C:O2	1:S2:418:G:O6	2.24	0.56
1:S2:444:C:OP2	27:Sd:108:ARG:NH2	2.38	0.56
1:S2:907:A:N3	1:S2:997:G:O2'	2.34	0.56
38:So:340:ALA:O	38:So:354:CYS:HB3	2.06	0.56
43:LD:101:VAL:HG22	43:LD:165:VAL:HG22	1.87	0.56
1:S2:1490:C:OP2	7:SA:9:ARG:NH1	2.39	0.55
8:SS:87:MET:HE1	8:SS:236:ILE:HG21	1.88	0.55
27:Sd:78:SER:OG	27:Sd:81:GLU:OE1	2.22	0.55
38:So:103:VAL:HG21	38:So:117:VAL:HA	1.87	0.55
40:LA:1448:U:OP1	57:LR:82:ARG:NH2	2.39	0.55
40:LA:1805:C:H2'	40:LA:1806:A:H8	1.71	0.55
27:Sd:38:ASP:O	27:Sd:52:LYS:NZ	2.38	0.55
40:LA:59:G:H2'	42:LC:33:A:H2'	1.88	0.55
40:LA:729:C:O2'	58:LS:79:LYS:NZ	2.37	0.55
40:LA:3041:U:OP1	63:LX:12:ARG:NH1	2.38	0.55
46:LG:53:VAL:HG21	46:LG:159:VAL:HG23	1.88	0.55
69:Ld:56:ALA:O	69:Ld:59:LYS:NZ	2.36	0.55
86:A:1900:ALA:N	86:A:1900:ALA:CB	2.62	0.55
86:A:2040:ALA:N	86:A:2040:ALA:C	2.59	0.55
5:SE:102:PHE:O	5:SE:104:GLN:NE2	2.39	0.55
9:SB:91:GLU:O	9:SB:95:ASN:ND2	2.40	0.55
13:SW:31:ALA:HB2	13:SW:42:ILE:HD11	1.88	0.55
40:LA:1141:C:O2'	40:LA:1153:A:N3	2.39	0.55
40:LA:3109:G:OP1	80:Lo:93:LYS:NZ	2.39	0.55
86:A:948:ALA:O	86:A:984:ALA:CB	2.54	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:1298:U:O3'	6:SR:212:LYS:NZ	2.39	0.55
5:SE:44:ARG:O	5:SE:47:ARG:C	2.49	0.55
40:LA:1361:U:O2	48:LI:159:GLN:NE2	2.38	0.55
40:LA:2241:U:HO2'	43:LD:243:THR:H	1.54	0.55
40:LA:2722:U:OP1	69:Ld:33:LYS:NZ	2.39	0.55
1:S2:1273:G:O2'	1:S2:1430:U:OP2	2.23	0.55
28:SK:35:ARG:O	28:SK:37:GLN:NE2	2.39	0.55
44:LE:137:TYR:O	44:LE:139:GLN:NE2	2.39	0.55
60:LU:9:VAL:HG22	60:LU:61:ILE:HG13	1.87	0.55
75:Lj:76:GLN:O	75:Lj:81:ARG:NH2	2.40	0.55
1:S2:143:G:N7	10:ST:177:ARG:NH1	2.53	0.55
40:LA:1940:G:OP1	59:LT:80:LYS:NZ	2.38	0.55
40:LA:2688:U:OP1	46:LG:12:TYR:OH	2.24	0.55
56:LQ:126[A]:VAL:O	60:LU:154:HIS:NE2	2.31	0.55
71:Lf:4:LEU:O	71:Lf:79:ARG:NH2	2.40	0.55
86:A:1361:PRO:N	86:A:1361:PRO:C	2.59	0.55
1:S2:1466:G:O2'	1:S2:1602:C:OP1	2.25	0.55
6:SR:81:MET:HB2	6:SR:101:VAL:HG13	1.87	0.55
23:SJ:80:GLU:OE1	31:SM:44:ARG:NH1	2.39	0.55
34:SO:258:THR:HG22	34:SO:275:ARG:HD3	1.88	0.55
34:SO:265:LEU:O	34:SO:268:GLN:NE2	2.40	0.55
38:So:107:LEU:HB3	38:So:114:ILE:HB	1.89	0.55
40:LA:401:U:O2'	79:Ln:36:ARG:NH2	2.40	0.55
55:LP:155:VAL:O	55:LP:162:ARG:NH2	2.39	0.55
86:A:927:ALA:HB1	86:A:930:ALA:H	1.71	0.55
86:A:1675:ALA:CB	86:A:1714:ALA:HB2	2.30	0.55
12:SV:103:GLN:HE21	12:SV:166:TYR:HE1	1.53	0.55
31:SM:16:LYS:O	31:SM:27:HIS:ND1	2.40	0.55
34:SO:270:LEU:HD21	34:SO:273:ASP:HB2	1.89	0.55
1:S2:486:G:N2	1:S2:501:U:O2'	2.40	0.55
6:SR:159:THR:HA	6:SR:167:VAL:O	2.07	0.55
9:SB:154:ALA:O	9:SB:156:ARG:NH1	2.40	0.55
42:LC:156:U:OP2	49:LJ:84:ARG:NH2	2.39	0.55
61:LV:80:VAL:O	61:LV:83:ARG:NH1	2.39	0.55
1:S2:447:U:O2'	8:SS:27:TYR:O	2.24	0.55
1:S2:992:A:O2'	1:S2:1785:U:O2	2.20	0.55
1:S2:1549:C:OP1	5:SE:42:ARG:NH2	2.39	0.55
21:SH:142:GLY:O	21:SH:145:ARG:NH2	2.40	0.55
38:So:152:ALA:HA	38:So:155:SER:HB3	1.88	0.55
40:LA:1551:C:HO2'	40:LA:2170:U:HO2'	1.54	0.55
40:LA:2261:G:O2'	40:LA:2263:C:N4	2.40	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:LA:2679:A:O2'	52:LM:52:TYR:OH	2.23	0.55
47:LH:42:LEU:O	47:LH:49:GLY:N	2.38	0.55
63:LX:104:ASN:OD1	63:LX:108:GLU:N	2.40	0.55
1:S2:458:G:OP1	27:Sd:109:LYS:NZ	2.38	0.54
3:SP:103:THR:O	3:SP:106:SER:OG	2.25	0.54
40:LA:689:U:H3	45:LF:227:THR:HG1	1.55	0.54
40:LA:2989:U:H1'	44:LE:266:ARG:HG2	1.88	0.54
64:LY:4:GLU:O	64:LY:12:LYS:CA	2.41	0.54
40:LA:3348:G:H1	40:LA:3357:U:H3	1.54	0.54
86:A:1260:ALA:HB3	86:A:1264:LYS:CB	2.36	0.54
22:SI:138:GLN:HE21	86:A:1303:GLU:CA	2.21	0.54
40:LA:408:A:N3	40:LA:655:C:O2'	2.36	0.54
40:LA:1595:U:O2'	40:LA:1606:U:O2	2.26	0.54
40:LA:1863:G:H4'	59:LT:82:LYS:HD3	1.87	0.54
86:A:1639:ALA:HB1	86:A:1641:ALA:HB3	1.88	0.54
45:LF:33:ASP:HB3	58:LS:22:ASP:HB2	1.90	0.54
53:LN:180:ARG:HH11	76:Lk:11:LEU:HD22	1.73	0.54
1:S2:1462:G:OP2	21:SH:143:ARG:NH1	2.39	0.54
8:SS:139:VAL:HG13	8:SS:150:PRO:HG3	1.89	0.54
83:Lr:33:GLN:OE1	83:Lr:49:ARG:NH1	2.40	0.54
7:SA:164:VAL:HG23	7:SA:168:ILE:HD13	1.89	0.54
22:SI:125:SER:OG	22:SI:127:ASN:OD1	2.20	0.54
40:LA:592:A:O2'	47:LH:20:LYS:NZ	2.32	0.54
40:LA:1178:G:N3	40:LA:1328:C:O2'	2.39	0.54
40:LA:1886:A:O2'	44:LE:226:PHE:O	2.26	0.54
40:LA:3275:U:O2'	73:Lh:99:ARG:NH1	2.40	0.54
1:S2:1211:A:N3	5:SE:97:TYR:OH	2.39	0.54
1:S2:1217:A:O3'	14:SC:44:LYS:NZ	2.39	0.54
40:LA:20:A:OP2	75:Lj:86:ARG:NH2	2.40	0.54
44:LE:227:GLU:HG2	44:LE:270:ARG:HE	1.73	0.54
86:A:924:ALA:HA	86:A:933:ALA:O	2.07	0.54
1:S2:105:A:O2'	12:SV:8:ARG:NH1	2.35	0.54
1:S2:859:A:N1	17:SY:76:LYS:NZ	2.56	0.54
40:LA:908:G:N2	40:LA:2415:C:OP2	2.41	0.54
40:LA:2522:G:O6	43:LD:72:ARG:NH1	2.41	0.54
40:LA:3039:C:O2'	63:LX:10:LYS:O	2.24	0.54
47:LH:12:SER:OG	47:LH:14:ASP:OD1	2.26	0.54
84:Ls:18:THR:HB	84:Ls:83:PRO:HA	1.89	0.54
1:S2:1179:G:H21	1:S2:1460:A:H62	1.56	0.54
12:SV:184:LEU:HD23	12:SV:189:LEU:HA	1.88	0.54
16:SD:59:LEU:HD21	16:SD:137:MET:HE1	1.88	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:LI:86:VAL:O	48:LI:114:GLY:HA2	2.07	0.54
86:A:1383:ARG:CB	86:A:1423:THR:CB	2.86	0.54
1:S2:1546:G:N7	21:SH:134:ARG:NH2	2.56	0.54
1:S2:1559:A:H5''	21:SH:135:GLY:HA3	1.90	0.54
12:SV:23:LYS:O	12:SV:25:ARG:NH1	2.41	0.54
12:SV:84:HIS:NE2	12:SV:97:THR:OG1	2.38	0.54
22:SI:138:GLN:CA	86:A:1303:GLU:CB	2.85	0.54
37:Sn:15:G:H22	37:Sn:48:C:H42	1.56	0.54
41:LB:33:U:H1'	46:LG:206:GLN:HE22	1.73	0.54
42:LC:11:C:O3'	57:LR:3:ARG:NH1	2.41	0.54
86:A:1523:ALA:O	86:A:1527:ALA:CB	2.51	0.54
19:SF:14:LYS:O	19:SF:123:ARG:NH1	2.41	0.53
40:LA:2814:G:OP1	45:LF:73:ARG:NH1	2.35	0.53
40:LA:3185:U:HO2'	60:LU:170:THR:HG1	1.56	0.53
43:LD:95:SER:O	43:LD:100:ASN:ND2	2.38	0.53
86:A:917:ALA:HA	86:A:920:ALA:HB3	1.90	0.53
86:A:1636:ALA:HB3	86:A:1674:ALA:CB	2.35	0.53
86:A:1655:ALA:HB3	86:A:1658:ALA:HB2	1.89	0.53
86:A:1705:ALA:CA	86:A:1815:ALA:HB1	2.37	0.53
37:Sn:16:U:O4'	84:Ls:87:ARG:NH1	2.40	0.53
63:LX:4:ASN:HD21	63:LX:57:MET:HE1	1.72	0.53
86:A:1705:ALA:O	86:A:1815:ALA:CB	2.56	0.53
9:SB:29:ILE:HB	9:SB:34:GLN:HE21	1.74	0.53
26:Sc:68:ILE:HD12	32:Sg:7:SER:HB2	1.90	0.53
40:LA:2554:A:H5''	74:Li:91:ARG:HH22	1.73	0.53
86:A:965:ALA:C	86:A:969:ALA:HB2	2.33	0.53
86:A:1482:ALA:O	86:A:1493:ALA:CB	2.56	0.53
1:S2:1673:G:H1	1:S2:1728:A:H2	1.53	0.53
28:SK:95:HIS:ND1	28:SK:96:SER:O	2.41	0.53
33:SN:133:ALA:HB3	33:SN:140:TYR:HB3	1.90	0.53
42:LC:150:G:H21	49:LJ:59:GLN:HE22	1.57	0.53
6:SR:222:TYR:OH	24:Sa:11:LEU:O	2.21	0.53
34:SO:295:SER:OG	34:SO:297:ASP:OD1	2.27	0.53
40:LA:1778:G:O2'	40:LA:1780:G:OP2	2.26	0.53
84:Ls:46:THR:HG22	84:Ls:57:VAL:HG22	1.89	0.53
12:SV:3:ILE:O	12:SV:30:GLY:N	2.41	0.53
16:SD:33:ARG:NH2	16:SD:99:GLU:O	2.42	0.53
23:SJ:66:SER:HA	23:SJ:80:GLU:O	2.09	0.53
73:Lh:46:GLY:N	73:Lh:71:VAL:O	2.41	0.53
1:S2:1292:G:H21	3:SP:111:ILE:HD11	1.73	0.53
34:SO:105:GLY:O	34:SO:107:LYS:NZ	2.42	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:LA:1447:G:OP2	57:LR:27:LYS:NZ	2.41	0.53
40:LA:3306:U:OP1	44:LE:269:GLN:NE2	2.39	0.53
45:LF:83:GLY:O	45:LF:87:GLN:NE2	2.41	0.53
1:S2:142:G:H22	1:S2:173:A:H2	1.54	0.53
1:S2:1445:G:N2	33:SN:87:THR:OG1	2.42	0.53
4:SQ:79:HIS:NE2	4:SQ:189:ILE:O	2.42	0.53
13:SW:107:ARG:NH1	13:SW:153:GLU:OE2	2.41	0.53
40:LA:3210:A:OP1	54:LO:109:ARG:NH1	2.40	0.53
60:LU:26:ARG:NH1	61:LV:150:THR:OG1	2.42	0.53
86:A:1392:MET:O	86:A:1395:LEU:CB	2.57	0.53
1:S2:7:G:OP2	6:SR:205:ARG:NH2	2.41	0.53
19:SF:143:ARG:NH1	37:Sn:33:U:OP2	2.40	0.53
26:Sc:130:VAL:HG13	26:Sc:140:LYS:HE2	1.91	0.53
40:LA:591:G:O2'	47:LH:17:ALA:O	2.26	0.53
40:LA:801:A:H61	53:LN:19:GLN:HE22	1.55	0.53
40:LA:2654:C:OP2	82:Lq:2:VAL:N	2.42	0.53
42:LC:13:A:O2'	57:LR:121:GLN:O	2.22	0.53
50:LK:165:CYS:SG	50:LK:179:ILE:N	2.79	0.53
1:S2:1311:U:O3'	20:SG:2:GLY:N	2.42	0.53
8:SS:194:THR:OG1	8:SS:194:THR:O	2.27	0.53
38:So:298:VAL:HB	38:So:363:GLU:HA	1.91	0.53
40:LA:798:G:OP1	68:Lc:33:GLY:N	2.41	0.53
40:LA:1468:A:N1	40:LA:1880:U:O2'	2.40	0.53
44:LE:216:ASP:OD2	44:LE:339:ARG:NH2	2.42	0.53
52:LM:60:ARG:N	52:LM:63:GLU:OE1	2.42	0.53
65:LZ:115:ARG:O	65:LZ:118:GLY:N	2.42	0.53
69:Ld:16:ALA:O	69:Ld:20:GLY:HA3	2.09	0.53
84:Ls:33:VAL:HB	84:Ls:81:GLU:HG3	1.91	0.53
86:A:1216:LYS:O	86:A:1226:ARG:O	2.27	0.53
86:A:2100:ALA:HB1	86:A:2220:ALA:HB2	1.91	0.53
1:S2:967:A:OP2	17:SY:124:ARG:NH2	2.42	0.52
1:S2:1175:U:H2'	1:S2:1176:G:H8	1.75	0.52
5:SE:50:THR:HG22	5:SE:52:LYS:HE3	1.91	0.52
86:A:927:ALA:HB3	86:A:933:ALA:HB2	1.90	0.52
1:S2:551:G:H2'	1:S2:552:G:H8	1.73	0.52
1:S2:1775:U:OP1	81:Lp:11:ARG:NH1	2.41	0.52
52:LM:134:PRO:O	52:LM:152:HIS:NE2	2.41	0.52
66:La:33:ALA:HB2	66:La:101:PRO:HB2	1.91	0.52
11:SU:22:GLN:HA	11:SU:25:VAL:HG22	1.92	0.52
40:LA:3230:G:H4'	54:LO:132:LYS:HD3	1.91	0.52
42:LC:27:U:H4'	45:LF:51:ALA:HB3	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:LG:50:ARG:NH1	46:LG:147:ASP:OD2	2.43	0.52
73:Lh:38:PRO:HA	73:Lh:41:ALA:HB3	1.91	0.52
1:S2:438:A:O2'	1:S2:465:G:N2	2.41	0.52
1:S2:821:U:H3	1:S2:852:C:H42	1.56	0.52
42:LC:143:U:OP1	55:LP:38:ARG:NH2	2.42	0.52
49:LJ:143:ILE:HD11	49:LJ:151:VAL:HG11	1.91	0.52
51:LL:50:VAL:HG11	51:LL:149:VAL:HG12	1.91	0.52
51:LL:193:ASP:OD1	51:LL:198:LYS:NZ	2.42	0.52
86:A:927:ALA:CB	86:A:933:ALA:H	2.21	0.52
1:S2:636:A:H5''	25:Sb:31:SER:HB3	1.91	0.52
1:S2:1245:G:O2'	1:S2:1247:U:OP2	2.22	0.52
1:S2:1357:A:N3	22:SI:129:GLN:NE2	2.56	0.52
40:LA:2564:G:OP2	67:Lb:55:LYS:NZ	2.41	0.52
40:LA:3231:U:H2'	40:LA:3232:G:H8	1.73	0.52
52:LM:165:GLN:OE1	86:A:1603:ALA:HB2	2.10	0.52
86:A:1458:ALA:HB3	86:A:1461:ALA:HB2	1.86	0.52
86:A:2240:ALA:N	86:A:2240:ALA:C	2.59	0.52
1:S2:217:A:N1	1:S2:844:A:O2'	2.40	0.52
1:S2:930:A:N3	4:SQ:111:ARG:NH2	2.57	0.52
1:S2:1218:G:O2'	1:S2:1265:G:N2	2.43	0.52
1:S2:1465:C:H5'	19:SF:139:GLN:HG2	1.91	0.52
1:S2:1722:A:H1'	10:ST:67:VAL:HA	1.90	0.52
8:SS:11:ARG:NH2	8:SS:21:ASP:O	2.43	0.52
38:So:122:ILE:HG21	38:So:169:VAL:HG11	1.91	0.52
40:LA:860:G:OP1	83:Lr:17:ARG:NH2	2.42	0.52
40:LA:2722:U:O2'	61:LV:88:ARG:O	2.25	0.52
41:LB:2:G:H1	41:LB:119:U:H3	1.57	0.52
55:LP:27:VAL:HG13	55:LP:31:ARG:HH21	1.75	0.52
56:LQ:125[A]:ARG:HG3	56:LQ:129[A]:LEU:HD12	1.91	0.52
1:S2:139:C:O2'	1:S2:177:U:O2	2.25	0.52
9:SB:77:TYR:HD1	9:SB:83:ARG:HG2	1.74	0.52
9:SB:196:GLU:O	9:SB:200:ASN:ND2	2.43	0.52
26:Sc:114:LYS:HB3	26:Sc:117:ILE:HD11	1.92	0.52
34:SO:182:ASN:O	34:SO:186:PHE:N	2.43	0.52
34:SO:299:GLN:O	34:SO:314:GLN:HA	2.10	0.52
36:Sm:27:G:H22	36:Sm:43:U:H3	1.58	0.52
40:LA:1604:G:H4'	40:LA:1835:A:H4'	1.91	0.52
70:Le:40:LYS:HB3	70:Le:101:LEU:HD11	1.91	0.52
78:Lm:66:ILE:HA	78:Lm:69:LEU:HD12	1.91	0.52
86:A:1803:ALA:HA	86:A:1806:ALA:HB3	1.92	0.52
1:S2:278:U:O2	1:S2:279:G:N1	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:1603:U:OP2	19:SF:132:LYS:NZ	2.36	0.52
4:SQ:82:ARG:NH1	4:SQ:191:GLU:OE2	2.42	0.52
29:Se:87:ARG:NH1	29:Se:91:ASP:O	2.43	0.52
40:LA:286:U:O2'	55:LP:179:LYS:O	2.28	0.52
86:A:1282:LEU:O	86:A:1286:VAL:N	2.36	0.52
1:S2:1204:A:OP1	1:S2:1456:C:N4	2.43	0.52
4:SQ:141:ALA:HA	4:SQ:209:ASN:O	2.10	0.52
15:SX:125:VAL:HG12	15:SX:139:VAL:HG12	1.92	0.52
38:So:354:CYS:SG	38:So:355:GLY:N	2.83	0.52
40:LA:874:U:N3	40:LA:2978:U:OP1	2.34	0.52
40:LA:2382:G:N7	56:LQ:91[A]:LYS:NZ	2.58	0.52
56:LQ:49[A]:ARG:HD2	56:LQ:53[A]:LYS:HE3	1.91	0.52
61:LV:78:LYS:HD3	61:LV:87:LYS:HZ2	1.75	0.52
63:LX:93:LEU:HA	64:LY:20:LEU:O	2.10	0.52
86:A:1535:ALA:O	86:A:1539:ALA:HB2	2.10	0.52
1:S2:395:U:O4	1:S2:399:A:N7	2.43	0.52
40:LA:938:C:O2	40:LA:2813:A:O2'	2.27	0.52
40:LA:1016:C:N4	40:LA:2671:A:OP1	2.42	0.52
40:LA:1410:U:H4'	72:Lg:75:LEU:HD11	1.92	0.52
40:LA:2144:A:OP1	40:LA:2323:G:N2	2.42	0.52
40:LA:2404:A:N7	40:LA:2872:A:N6	2.58	0.52
40:LA:3000:A:O2'	44:LE:118:PHE:O	2.28	0.52
43:LD:39:GLY:HA3	49:LJ:36:ILE:HD13	1.92	0.52
43:LD:150:LEU:O	43:LD:153:GLY:N	2.43	0.52
47:LH:149:ILE:HG23	47:LH:155:LEU:HD23	1.92	0.52
49:LJ:251:LYS:O	49:LJ:255:SER:OG	2.24	0.52
86:A:927:ALA:H	86:A:933:ALA:HB3	1.75	0.52
86:A:2203:ALA:HA	86:A:2206:ALA:HB3	1.92	0.52
1:S2:343:C:H2'	1:S2:344:A:H8	1.76	0.51
1:S2:1473:U:OP2	9:SB:189:THR:OG1	2.26	0.51
11:SU:27:LEU:O	11:SU:31:SER:OG	2.22	0.51
11:SU:77:LEU:HD22	11:SU:92:PHE:HZ	1.74	0.51
28:SK:50:ILE:HG22	28:SK:69:LEU:HD13	1.92	0.51
29:Se:7:SER:OG	29:Se:10:ARG:O	2.27	0.51
40:LA:280:U:O2'	55:LP:182:ASN:ND2	2.41	0.51
84:Ls:72:ASP:OD1	84:Ls:72:ASP:N	2.42	0.51
86:A:1428:ALA:CB	86:A:1464:ALA:HB3	2.38	0.51
13:SW:136:VAL:HB	13:SW:152:SER:HB3	1.91	0.51
40:LA:3153:U:OP2	40:LA:3293:U:O2'	2.23	0.51
86:A:2411:ALA:N	86:A:2411:ALA:CB	2.62	0.51
1:S2:918:U:O3'	18:SZ:18:ARG:NH1	2.42	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:1303:U:O2'	1:S2:1322:A:OP2	2.28	0.51
86:A:1163:LEU:O	86:A:1165:GLU:N	2.44	0.51
86:A:1538:ALA:HB3	86:A:1574:ALA:HB1	1.93	0.51
40:LA:398:A:N7	57:LR:3:ARG:NH2	2.59	0.51
40:LA:2183:A:H5''	43:LD:7:ASN:HB3	1.92	0.51
40:LA:2768:U:H2'	40:LA:2769:A:H8	1.75	0.51
51:LL:38:LYS:HG3	51:LL:41:ALA:HB2	1.93	0.51
1:S2:936:G:N7	29:Se:15:ARG:NH2	2.59	0.51
1:S2:1471:A:H2	1:S2:1474:G:H21	1.58	0.51
4:SQ:78:ASP:OD1	4:SQ:79:HIS:ND1	2.41	0.51
4:SQ:195:LYS:O	4:SQ:199:ASN:ND2	2.43	0.51
6:SR:225:LEU:HD12	24:Sa:23:ILE:HG12	1.92	0.51
37:Sn:15:G:N2	37:Sn:48:C:H42	2.08	0.51
40:LA:1348:U:OP2	58:LS:38:ARG:NH2	2.44	0.51
40:LA:1928:G:N2	40:LA:2320:A:O2'	2.41	0.51
40:LA:2555:G:OP2	74:Li:91:ARG:NH2	2.43	0.51
40:LA:3214:U:H6	47:LH:166:LYS:HE2	1.76	0.51
45:LF:330:TYR:HA	45:LF:333:VAL:HG22	1.92	0.51
48:LI:30:ARG:HA	48:LI:33:ARG:HE	1.76	0.51
6:SR:142:GLY:N	6:SR:153:SER:O	2.41	0.51
10:ST:79:LYS:HB3	10:ST:86:PRO:HG3	1.92	0.51
20:SG:44:LYS:HG3	20:SG:47:ARG:HH21	1.75	0.51
34:SO:224:ASN:O	34:SO:228:LYS:N	2.43	0.51
40:LA:104:G:O2'	40:LA:698:U:O2	2.28	0.51
40:LA:718:G:OP1	68:Lc:117:ARG:NH2	2.43	0.51
40:LA:876:A:H5''	40:LA:1890:U:H5''	1.93	0.51
40:LA:3008:A:OP2	56:LQ:74[A]:ARG:NH1	2.44	0.51
1:S2:588:U:O2	32:Sg:57:ASN:ND2	2.44	0.51
1:S2:752:A:O2'	8:SS:221:ARG:NE	2.44	0.51
40:LA:1795:U:N3	83:Lr:50:GLY:O	2.42	0.51
42:LC:57:C:OP2	77:Ll:68:LYS:NZ	2.43	0.51
53:LN:27:ASP:O	53:LN:31:LYS:HB2	2.11	0.51
86:A:1221:ALA:C	86:A:1222:VAL:CA	2.82	0.51
1:S2:428:A:N3	1:S2:440:U:O2'	2.39	0.51
40:LA:2349:U:O2'	40:LA:3307:A:N3	2.43	0.51
69:Ld:16:ALA:O	69:Ld:20:GLY:HA2	2.11	0.51
86:A:987:ALA:HB2	86:A:988:ALA:HB2	1.92	0.51
86:A:2271:ALA:O	86:A:2274:ALA:CB	2.59	0.51
1:S2:1795:U:O4	29:Se:34:LYS:NZ	2.44	0.51
13:SW:60:LEU:HB2	13:SW:93:LEU:HD23	1.92	0.51
38:So:184:LYS:NZ	38:So:218:ASN:OD1	2.44	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:LA:2745:G:N2	40:LA:2748:A:OP2	2.38	0.51
72:Lg:97:ALA:O	72:Lg:105:ARG:NH2	2.44	0.51
78:Lm:3:ARG:HD2	78:Lm:52:TYR:HE1	1.76	0.51
1:S2:354:C:H5''	12:SV:16:ALA:HB2	1.93	0.51
1:S2:1206:U:H3'	1:S2:1207:C:H2'	1.93	0.51
22:SI:65:ILE:HD13	22:SI:71:VAL:HG22	1.93	0.51
40:LA:169:U:H4'	53:LN:128:ARG:HH11	1.76	0.51
40:LA:769:G:O2'	53:LN:168:ARG:NH1	2.39	0.51
44:LE:163:HIS:HA	44:LE:177:HIS:O	2.11	0.51
44:LE:368:GLY:O	64:LY:17:ARG:NH1	2.44	0.51
45:LF:33:ASP:N	45:LF:33:ASP:OD1	2.41	0.51
45:LF:203:ARG:NH1	45:LF:226:GLU:OE2	2.44	0.51
54:LO:94:TRP:O	54:LO:97:SER:OG	2.28	0.51
55:LP:27:VAL:O	55:LP:31:ARG:HB2	2.11	0.51
63:LX:10:LYS:NZ	63:LX:56:ASP:OD1	2.42	0.51
83:Lr:46:THR:O	83:Lr:57:CYS:HA	2.10	0.51
86:A:2003:ALA:HA	86:A:2006:ALA:HB3	1.92	0.51
86:A:2104:ALA:CB	86:A:2210:ALA:O	2.59	0.51
86:A:2382:ALA:O	86:A:2385:ALA:CB	2.59	0.51
1:S2:397:A:H4'	12:SV:50:GLY:HA2	1.92	0.50
1:S2:1584:G:N2	1:S2:1611:A:OP2	2.45	0.50
40:LA:2854:U:H4'	51:LL:160:PRO:HD3	1.93	0.50
44:LE:66:LYS:NZ	63:LX:9:THR:OG1	2.43	0.50
47:LH:56:LYS:NZ	47:LH:101:PHE:O	2.44	0.50
73:Lh:31:LYS:NZ	73:Lh:32:ILE:O	2.37	0.50
86:A:921:ALA:O	86:A:925:ALA:CB	2.59	0.50
86:A:1482:ALA:C	86:A:1493:ALA:CB	2.84	0.50
1:S2:66:U:H5''	10:ST:173:PRO:HA	1.92	0.50
47:LH:102:ASN:ND2	47:LH:104:GLU:OE1	2.44	0.50
78:Lm:32:ASN:OD1	78:Lm:33:LYS:N	2.44	0.50
4:SQ:69:CYS:SG	18:SZ:114:ARG:NH1	2.85	0.50
11:SU:34:LEU:HD22	11:SU:38:LEU:HD21	1.93	0.50
49:LJ:162:LEU:HD21	55:LP:45:PRO:HG2	1.93	0.50
86:A:927:ALA:CB	86:A:933:ALA:CB	2.82	0.50
86:A:2071:ALA:O	86:A:2074:ALA:CB	2.59	0.50
86:A:2100:ALA:HA	86:A:2215:ALA:C	2.21	0.50
40:LA:3045:G:OP1	44:LE:19:ARG:NH2	2.41	0.50
44:LE:17:LEU:HD11	44:LE:233:TRP:HH2	1.75	0.50
84:Ls:116:PRO:HG3	84:Ls:147:ALA:HB3	1.94	0.50
86:A:1871:ALA:O	86:A:1874:ALA:CB	2.59	0.50
7:SA:9:ARG:HA	7:SA:12:VAL:HG22	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:SW:96:VAL:HA	13:SW:99:LEU:HG	1.93	0.50
20:SG:27:ASP:HB3	20:SG:30:THR:HG22	1.94	0.50
45:LF:345:GLU:OE1	45:LF:347:THR:OG1	2.29	0.50
50:LK:173:ARG:NH1	80:Lo:125:LYS:O	2.45	0.50
1:S2:127:G:O6	10:ST:202:ARG:NH2	2.44	0.50
1:S2:467:G:O2'	1:S2:469:C:OP2	2.29	0.50
15:SX:101:GLU:OE1	26:Sc:16:ARG:NH1	2.45	0.50
37:Sn:76:A:OP1	40:LA:2808:A:N6	2.45	0.50
44:LE:43:LEU:HB2	44:LE:208:VAL:HG23	1.94	0.50
44:LE:88:GLY:HA2	44:LE:105:VAL:O	2.11	0.50
86:A:1187:SER:CB	86:A:1225:VAL:CB	2.89	0.50
21:SH:49:LYS:NZ	21:SH:80:LYS:O	2.44	0.50
36:Sm:53:G:N7	36:Sm:54:U:N3	2.60	0.50
38:So:342:VAL:HG23	38:So:366:VAL:HG22	1.94	0.50
40:LA:1861:G:O2'	40:LA:3066:U:OP1	2.27	0.50
40:LA:3241:G:OP2	44:LE:153:LYS:NZ	2.44	0.50
42:LC:8:C:H2'	42:LC:9:A:H8	1.76	0.50
1:S2:861:U:OP2	1:S2:862:A:N6	2.44	0.50
40:LA:1523:U:OP2	40:LA:1604:G:O2'	2.30	0.50
40:LA:2808:A:H2'	84:Ls:51:5CT:H9	1.94	0.50
40:LA:2901:G:O2'	40:LA:3024:A:N1	2.43	0.50
44:LE:26:ARG:HD3	44:LE:177:HIS:HD2	1.77	0.50
86:A:1706:ALA:O	86:A:1708:ALA:N	2.44	0.50
1:S2:1315:U:OP2	1:S2:1328:G:N1	2.39	0.50
5:SE:24:LYS:HB3	5:SE:28:MET:HE2	1.94	0.50
13:SW:151:ASP:O	13:SW:155:HIS:ND1	2.45	0.50
40:LA:939:U:O2'	40:LA:2402:A:N1	2.41	0.50
40:LA:1497:C:O2'	40:LA:1602:A:N3	2.38	0.50
48:LI:184:LEU:HD21	48:LI:202:LEU:HD21	1.94	0.50
51:LL:211:ARG:NH1	51:LL:212:GLU:OE2	2.44	0.50
55:LP:62:TYR:HD2	55:LP:106:VAL:HG13	1.77	0.50
72:Lg:59:SER:HB2	72:Lg:64:LYS:HG3	1.94	0.50
84:Ls:43:ASP:HB2	84:Ls:60:VAL:HB	1.94	0.50
40:LA:351:A:N6	79:Ln:37:TYR:O	2.30	0.49
40:LA:646:A:H61	40:LA:2371:G:H21	1.60	0.49
40:LA:1899:G:O2'	40:LA:2334:U:O4	2.25	0.49
40:LA:1914:G:N2	59:LT:81:ARG:O	2.41	0.49
47:LH:2:THR:OG1	72:Lg:81:ASP:OD2	2.23	0.49
59:LT:105:LEU:HD23	59:LT:138:LEU:HD23	1.94	0.49
86:A:965:ALA:C	86:A:969:ALA:CB	2.80	0.49
1:S2:64:U:O2'	1:S2:168:A:N3	2.40	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:572:C:OP1	26:Sc:109:ARG:NH1	2.45	0.49
1:S2:705:U:O2'	1:S2:706:A:O5'	2.29	0.49
1:S2:1688:U:H3	1:S2:1713:G:H1	1.60	0.49
10:ST:44:GLU:O	10:ST:119:GLN:NE2	2.44	0.49
12:SV:138:ASN:OD1	12:SV:141:ARG:NH2	2.45	0.49
12:SV:152:ILE:HG23	15:SX:24:LYS:HE3	1.93	0.49
17:SY:47:PRO:HG2	17:SY:72:MET:HE2	1.94	0.49
40:LA:1268:G:N2	40:LA:1269:U:O4	2.45	0.49
44:LE:284:ARG:HH22	44:LE:296:THR:HG22	1.77	0.49
49:LJ:162:LEU:HA	55:LP:7:LEU:HD11	1.94	0.49
68:Lc:76:ASP:OD1	68:Lc:76:ASP:N	2.44	0.49
40:LA:348:A:N3	40:LA:352:A:O2'	2.46	0.49
40:LA:2742:C:H2'	40:LA:2743:A:H8	1.77	0.49
40:LA:2948:C:OP1	44:LE:244:ARG:NH2	2.45	0.49
40:LA:3135:U:OP1	56:LQ:148[A]:LYS:NZ	2.39	0.49
70:Le:9:SER:OG	70:Le:10:ILE:N	2.43	0.49
84:Ls:94:ASP:HA	84:Ls:128:PHE:HZ	1.76	0.49
86:A:1637:ALA:H	86:A:1676:ALA:HB2	1.76	0.49
40:LA:3009:G:N2	44:LE:15:GLY:O	2.36	0.49
68:Lc:96:LYS:NZ	68:Lc:142:GLY:O	2.45	0.49
86:A:2212:ALA:HA	86:A:2215:ALA:HB3	1.94	0.49
1:S2:1747:G:O2'	40:LA:2303:A:O2'	2.27	0.49
14:SC:47:GLN:O	14:SC:50:THR:OG1	2.29	0.49
40:LA:86:G:O2'	40:LA:98:G:O6	2.29	0.49
40:LA:98:G:N7	53:LN:13:HIS:NE2	2.60	0.49
40:LA:3026:G:N2	40:LA:3029:A:OP2	2.46	0.49
58:LS:67:ILE:HG23	58:LS:81:VAL:HG21	1.95	0.49
74:Li:41:ARG:O	74:Li:43:LYS:NZ	2.45	0.49
86:A:2072:ALA:O	86:A:2074:ALA:N	2.44	0.49
1:S2:861:U:OP1	17:SY:64:ARG:NH2	2.46	0.49
6:SR:81:MET:HG3	6:SR:211:LEU:HD11	1.94	0.49
40:LA:2307:G:O2'	40:LA:2310:U:OP2	2.31	0.49
40:LA:2452:G:O6	40:LA:2493:U:N3	2.46	0.49
40:LA:2848:G:OP1	80:Lo:100:TYR:OH	2.29	0.49
48:LI:88:ARG:NH1	48:LI:108:LEU:O	2.41	0.49
72:Lg:101:SER:OG	72:Lg:104:ASN:OD1	2.31	0.49
86:A:1635:ALA:O	86:A:1639:ALA:HB3	2.13	0.49
1:S2:195:G:N7	12:SV:137:LYS:NZ	2.51	0.49
1:S2:611:U:OP1	26:Sc:19:ARG:NH1	2.42	0.49
25:Sb:90:THR:HA	25:Sb:94:LEU:HD23	1.93	0.49
41:LB:72:A:O2'	41:LB:74:C:OP1	2.29	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
84:Ls:97:ASP:O	84:Ls:99:PHE:N	2.46	0.49
86:A:2104:ALA:HB1	86:A:2210:ALA:C	2.37	0.49
1:S2:385:A:H5'	12:SV:22:ARG:HG2	1.93	0.49
12:SV:152:ILE:HD12	15:SX:24:LYS:HE3	1.94	0.49
14:SC:11:ILE:HD11	14:SC:42:VAL:HG22	1.95	0.49
25:Sb:3:ARG:NH1	25:Sb:9:ASP:OD2	2.46	0.49
40:LA:2785:A:O2'	82:Lq:41:ARG:NH2	2.45	0.49
1:S2:258:C:O2	12:SV:178:ARG:NH2	2.41	0.49
1:S2:388:G:O3'	1:S2:425:A:N6	2.45	0.49
1:S2:929:A:OP1	1:S2:931:C:N4	2.45	0.49
4:SQ:25:THR:O	4:SQ:50:LYS:NZ	2.46	0.49
40:LA:2101:C:O2'	40:LA:2102:U:O5'	2.29	0.49
45:LF:330:TYR:O	45:LF:334:PHE:CB	2.61	0.49
71:Lf:20:LEU:HD11	71:Lf:32:ALA:HB2	1.95	0.49
84:Ls:89:GLU:HA	84:Ls:137:THR:HG22	1.95	0.49
84:Ls:90:TYR:HB3	84:Ls:102:LEU:HB3	1.94	0.49
86:A:988:ALA:C	86:A:990:ALA:H	2.19	0.49
1:S2:1332:C:OP1	20:SG:43:SER:OG	2.30	0.49
8:SS:65:LEU:HD13	8:SS:70:VAL:HG11	1.95	0.49
40:LA:90:C:O2'	40:LA:282:G:OP1	2.30	0.49
40:LA:542:G:H1	40:LA:549:U:H3	1.61	0.49
40:LA:990:U:H1'	61:LV:101:CYS:HB3	1.95	0.49
40:LA:1907:C:O2	44:LE:240:ARG:NH2	2.26	0.49
40:LA:3111:U:OP1	50:LK:184:LYS:NZ	2.46	0.49
40:LA:3243:A:H4'	44:LE:95:THR:HG22	1.93	0.49
86:A:2383:ALA:O	86:A:2385:ALA:N	2.45	0.49
1:S2:812:A:O4'	1:S2:858:G:N2	2.45	0.48
11:SU:135:ILE:HD11	11:SU:138:LYS:HD3	1.95	0.48
40:LA:528:U:H2'	40:LA:529:A:C8	2.48	0.48
40:LA:839:C:H4'	40:LA:1724:U:H2'	1.94	0.48
40:LA:925:A:N6	40:LA:2415:C:OP1	2.46	0.48
55:LP:23:GLN:NE2	55:LP:122:ASN:OD1	2.46	0.48
1:S2:61:A:O2'	1:S2:62:A:O4'	2.31	0.48
12:SV:57:ALA:HB2	12:SV:177:GLY:HA2	1.95	0.48
40:LA:38:U:H4'	68:Lc:32:ARG:HD2	1.93	0.48
40:LA:838:G:O6	83:Lr:4:ARG:NH1	2.39	0.48
42:LC:104:A:OP1	77:Ll:21:ARG:NH1	2.46	0.48
68:Lc:82:ILE:HD11	68:Lc:102:ILE:HD11	1.95	0.48
86:A:1840:ALA:N	86:A:1840:ALA:CB	2.67	0.48
1:S2:788:A:N1	8:SS:51:ARG:NH2	2.61	0.48
1:S2:979:A:N3	1:S2:1775:U:O2'	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:1042:G:H2'	1:S2:1043:A:H8	1.78	0.48
1:S2:1182:U:H4'	5:SE:124:THR:HB	1.95	0.48
1:S2:1528:U:O2'	19:SF:42:GLU:OE1	2.23	0.48
7:SA:142:LEU:HD13	7:SA:150:MET:HE3	1.95	0.48
8:SS:17:HIS:HB2	8:SS:108:ARG:HA	1.96	0.48
17:SY:62:GLN:HG3	17:SY:65:VAL:HG22	1.96	0.48
86:A:1457:ALA:O	86:A:1461:ALA:HB3	2.13	0.48
86:A:2351:ALA:N	86:A:2351:ALA:CB	2.67	0.48
1:S2:498:G:O2'	1:S2:499:U:O2	2.26	0.48
15:SX:93:TYR:OH	15:SX:98:ASN:OD1	2.31	0.48
40:LA:1046:A:O2'	40:LA:1048:A:OP2	2.24	0.48
40:LA:1813:A:O2'	40:LA:1816:A:N3	2.42	0.48
44:LE:183:LEU:O	44:LE:191:LYS:NZ	2.47	0.48
45:LF:217:LYS:O	45:LF:220:ARG:HB3	2.14	0.48
47:LH:43:LEU:HD11	47:LH:85:ILE:HG13	1.94	0.48
56:LQ:42[A]:ASN:OD1	56:LQ:125[A]:ARG:NH1	2.47	0.48
84:Ls:63:ASP:HB2	84:Ls:68:LYS:H	1.78	0.48
86:A:930:ALA:N	86:A:932:ALA:H	2.11	0.48
86:A:1458:ALA:O	86:A:1459:ALA:C	2.55	0.48
86:A:1668:ALA:O	86:A:1672:ALA:N	2.46	0.48
86:A:2100:ALA:C	86:A:2215:ALA:HB1	2.39	0.48
86:A:2272:ALA:O	86:A:2274:ALA:N	2.44	0.48
9:SB:100:ASN:HD22	9:SB:180:ARG:HD3	1.79	0.48
37:Sn:15:G:H22	37:Sn:48:C:N4	2.09	0.48
40:LA:1580:A:H8	40:LA:2522:G:H21	1.60	0.48
40:LA:3242:G:O6	44:LE:150:ARG:NH2	2.47	0.48
42:LC:40:A:OP2	42:LC:103:G:N1	2.46	0.48
42:LC:126:A:O2'	42:LC:128:U:OP2	2.26	0.48
43:LD:45:VAL:HG22	43:LD:61:VAL:HG22	1.95	0.48
86:A:1393:ALA:O	86:A:1395:LEU:N	2.45	0.48
86:A:1551:ALA:O	86:A:1554:ALA:O	2.32	0.48
86:A:1640:ALA:C	86:A:1642:ALA:N	2.72	0.48
1:S2:748:U:O3'	25:Sb:122:SER:OG	2.32	0.48
22:SI:84:LYS:HE2	22:SI:86:ARG:HG2	1.96	0.48
22:SI:138:GLN:NE2	86:A:1302:LYS:O	2.31	0.48
27:Sd:86:GLU:OE1	27:Sd:90:ARG:NH1	2.47	0.48
30:Sf:55:THR:OG1	30:Sf:56:CYS:N	2.46	0.48
38:So:67:ARG:HD2	38:So:143:ALA:HA	1.94	0.48
38:So:184:LYS:HG3	38:So:216:ILE:HD11	1.95	0.48
40:LA:1601:U:OP1	59:LT:42:ARG:NH2	2.42	0.48
1:S2:1280:C:OP1	31:SM:44:ARG:NH2	2.46	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:1441:C:O2'	1:S2:1447:C:N4	2.47	0.48
3:SP:156:VAL:O	24:Sa:65:SER:OG	2.26	0.48
21:SH:67:GLU:HA	21:SH:70:VAL:HG22	1.96	0.48
26:Sc:104:LEU:HA	26:Sc:123:LYS:O	2.14	0.48
27:Sd:2:SER:OG	27:Sd:3:ASP:N	2.45	0.48
40:LA:515:C:OP1	45:LF:343:LYS:NZ	2.45	0.48
18:SZ:92:LYS:HZ3	29:Se:69:ASN:HB2	1.79	0.48
19:SF:95:LYS:HD2	34:SO:59:ARG:HH22	1.77	0.48
25:Sb:18:GLU:HG3	25:Sb:69:LEU:HD23	1.95	0.48
40:LA:590:G:O2'	45:LF:309:ARG:NH1	2.46	0.48
40:LA:691:A:N1	42:LC:28:C:O2'	2.40	0.48
45:LF:57:GLY:HA3	45:LF:98:ARG:HB3	1.95	0.48
53:LN:3:ILE:HD13	68:Lc:45:MET:HE3	1.95	0.48
53:LN:170:LEU:HD21	68:Lc:147:LEU:HD13	1.96	0.48
54:LO:15:VAL:HG12	54:LO:65:LEU:HD11	1.95	0.48
85:Lt:203:UNK:O	85:Lt:205:UNK:N	2.47	0.48
86:A:965:ALA:N	86:A:969:ALA:HB2	2.21	0.48
86:A:1705:ALA:HA	86:A:1815:ALA:CB	2.43	0.48
1:S2:418:G:H8	10:ST:59:GLN:HE21	1.62	0.48
1:S2:1149:G:N2	1:S2:1766:A:OP1	2.46	0.48
1:S2:1677:C:O3'	12:SV:59:ARG:NH1	2.47	0.48
12:SV:20:GLN:NE2	12:SV:22:ARG:O	2.47	0.48
21:SH:122:HIS:HE1	21:SH:126:ARG:HH11	1.62	0.48
22:SI:138:GLN:HB3	86:A:1303:GLU:CB	2.40	0.48
23:SJ:70:THR:OG1	23:SJ:72:ASN:OD1	2.32	0.48
40:LA:727:G:OP2	40:LA:742:G:N2	2.45	0.48
40:LA:799:G:H2'	40:LA:801:A:H62	1.79	0.48
42:LC:151:C:OP1	49:LJ:60:ARG:NH2	2.46	0.48
53:LN:157:ARG:NH2	68:Lc:146:GLU:OE2	2.47	0.48
1:S2:68:A:N6	10:ST:132:ARG:O	2.34	0.48
9:SB:117:THR:HG21	9:SB:194:LEU:HD23	1.96	0.48
21:SH:17:LEU:HD21	21:SH:66:LEU:HD23	1.96	0.48
26:Sc:132:LEU:HD23	26:Sc:135:LEU:HD12	1.94	0.48
36:Sm:15:G:N2	36:Sm:21:A:N3	2.61	0.48
38:So:150:LEU:HD11	38:So:249:TYR:HD1	1.79	0.48
38:So:262:VAL:HG22	38:So:273:VAL:HG11	1.96	0.48
40:LA:612:U:H4'	47:LH:21:THR:HG21	1.94	0.48
40:LA:638:C:OP1	72:Lg:21:HIS:NE2	2.42	0.48
40:LA:1546:A:N7	55:LP:71:ARG:NH2	2.58	0.48
86:A:1599:ALA:CB	86:A:1604:ALA:H	2.27	0.48
1:S2:1754:A:O2'	26:Sc:60:GLU:OE2	2.31	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:SA:25:PHE:HD2	7:SA:37:VAL:HG11	1.79	0.47
10:ST:223:LYS:O	10:ST:226:ILE:C	2.58	0.47
38:So:37:ARG:HB2	38:So:214:TYR:HE1	1.79	0.47
40:LA:664:U:H2'	40:LA:665:A:C8	2.49	0.47
86:A:1138:THR:HA	86:A:1139:VAL:HA	1.69	0.47
86:A:1593:ALA:HB1	86:A:1631:ALA:HB2	1.96	0.47
1:S2:511:A:H5''	13:SW:172:VAL:HG13	1.95	0.47
1:S2:1253:U:H5''	33:SN:130:VAL:HG23	1.96	0.47
8:SS:183:VAL:HG11	8:SS:188:ASN:HB2	1.97	0.47
11:SU:142:TYR:O	25:Sb:42:GLN:NE2	2.40	0.47
37:Sn:75:C:OP2	51:LL:110:ARG:NH1	2.47	0.47
40:LA:217:U:O2	66:La:103:LYS:NZ	2.35	0.47
40:LA:1312:C:O2'	56:LQ:83[A]:ALA:O	2.32	0.47
40:LA:2392:C:O2'	44:LE:266:ARG:NH2	2.47	0.47
45:LF:26:PHE:CD1	45:LF:130:ALA:HB2	2.49	0.47
86:A:1872:ALA:O	86:A:1874:ALA:N	2.44	0.47
86:A:2104:ALA:H	86:A:2215:ALA:HB2	1.79	0.47
86:A:2240:ALA:N	86:A:2240:ALA:CB	2.67	0.47
86:A:2262:ALA:CB	86:A:2302:ALA:CB	2.89	0.47
1:S2:4:C:OP2	6:SR:200:SER:OG	2.24	0.47
1:S2:399:A:N3	8:SS:3:ARG:NH2	2.62	0.47
1:S2:1785:U:H2'	1:S2:1786:G:H8	1.80	0.47
11:SU:162:ILE:HA	11:SU:165:LYS:HE2	1.95	0.47
40:LA:720:A:OP1	58:LS:72:LYS:NZ	2.37	0.47
64:LY:6:ASP:HB3	64:LY:11:ALA:H	1.79	0.47
1:S2:31:C:O2'	1:S2:547:U:OP1	2.32	0.47
1:S2:59:C:O2'	1:S2:60:U:O4'	2.31	0.47
9:SB:129:PRO:HA	9:SB:132:VAL:HG22	1.96	0.47
40:LA:838:G:N7	83:Lr:4:ARG:NH2	2.56	0.47
40:LA:1203:A:N3	40:LA:2855:U:O2'	2.46	0.47
43:LD:190:ARG:HG3	43:LD:191:LEU:HD12	1.96	0.47
56:LQ:27[A]:LEU:HG	56:LQ:33[A]:ILE:HD12	1.96	0.47
38:So:67:ARG:NH2	40:LA:3027:A:N3	2.63	0.47
44:LE:313:HIS:HB2	44:LE:332:ARG:HG3	1.95	0.47
45:LF:8:VAL:HG13	45:LF:151:VAL:HG12	1.97	0.47
63:LX:18:PRO:HA	63:LX:51:ALA:HA	1.96	0.47
67:Lb:41:ALA:HB2	67:Lb:77:TYR:HE1	1.79	0.47
1:S2:207:U:O2	12:SV:178:ARG:NH1	2.47	0.47
1:S2:477:A:O2'	32:Sg:33:ARG:NH2	2.48	0.47
1:S2:1785:U:OP2	18:SZ:133:ARG:NH1	2.45	0.47
20:SG:108:ASP:HA	20:SG:111:LYS:HG2	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:LA:801:A:N6	53:LN:19:GLN:HE22	2.11	0.47
40:LA:910:G:O6	43:LD:3:ARG:NH2	2.48	0.47
40:LA:1447:G:N7	57:LR:25:SER:OG	2.32	0.47
40:LA:1621:A:N7	40:LA:1820:U:O4	2.47	0.47
40:LA:1868:G:HO2'	40:LA:2118:C:HO2'	1.58	0.47
42:LC:36:G:OP1	77:Ll:66:TYR:OH	2.27	0.47
62:LW:89:LEU:HB3	62:LW:93:ILE:HD12	1.95	0.47
84:Ls:37:ARG:NH2	84:Ls:66:THR:OG1	2.41	0.47
1:S2:58:U:O2'	1:S2:451:A:N3	2.45	0.47
1:S2:473:A:OP1	13:SW:44:ARG:NH1	2.40	0.47
1:S2:1482:C:H4'	19:SF:77:GLN:HE22	1.80	0.47
5:SE:44:ARG:O	5:SE:47:ARG:O	2.31	0.47
8:SS:103:TYR:HB2	8:SS:182:TYR:HE2	1.79	0.47
23:SJ:56:VAL:O	23:SJ:89:ARG:HA	2.14	0.47
40:LA:116:A:OP2	76:Lk:36:ARG:NH2	2.41	0.47
40:LA:645:A:N6	40:LA:2869:U:OP1	2.48	0.47
40:LA:990:U:H4'	61:LV:100:LYS:HB3	1.97	0.47
40:LA:1134:G:O2'	40:LA:2642:A:N3	2.42	0.47
40:LA:1494:U:OP1	79:Ln:42:ARG:NH1	2.42	0.47
40:LA:1799:A:H2'	40:LA:1800:A:H8	1.80	0.47
42:LC:8:C:H2'	42:LC:9:A:C8	2.50	0.47
42:LC:97:A:O2'	75:Lj:59:ASN:OD1	2.30	0.47
86:A:1636:ALA:CB	86:A:1677:ALA:HB2	2.38	0.47
86:A:2062:ALA:CB	86:A:2102:ALA:CB	2.89	0.47
1:S2:329:G:H2'	1:S2:330:G:H8	1.80	0.47
1:S2:479:C:H2'	1:S2:480:G:H8	1.80	0.47
1:S2:1488:G:H3'	1:S2:1515:A:H61	1.80	0.47
3:SP:84:ARG:NH1	3:SP:203:PHE:O	2.48	0.47
4:SQ:149:GLN:HE22	4:SQ:154:SER:HB3	1.80	0.47
12:SV:22:ARG:HE	12:SV:25:ARG:NH2	2.13	0.47
12:SV:81:VAL:HG12	12:SV:94:ASN:HA	1.96	0.47
34:SO:69:GLN:HB2	34:SO:85:TRP:CD1	2.50	0.47
40:LA:1003:A:N1	40:LA:1049:C:O2'	2.43	0.47
40:LA:1062:A:N3	61:LV:130:ARG:NH2	2.60	0.47
40:LA:1150:A:O2'	73:Lh:21:ARG:NH1	2.47	0.47
40:LA:2724:U:OP2	40:LA:2726:C:N4	2.48	0.47
1:S2:753:A:H8	8:SS:187:ARG:HH22	1.62	0.47
1:S2:1426:C:H3'	1:S2:1427:A:H4'	1.97	0.47
1:S2:1541:G:N2	1:S2:1570:A:H62	2.11	0.47
21:SH:14:ILE:HG21	52:LM:118:PRO:HD3	1.97	0.47
26:Sc:97:ASP:OD2	38:So:224:ARG:NH2	2.48	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:LA:218:G:O6	66:La:62:SER:OG	2.29	0.47
44:LE:221:THR:O	44:LE:272:TYR:N	2.47	0.47
53:LN:136:GLU:O	75:Lj:119:LYS:NZ	2.40	0.47
66:La:47:ALA:O	66:La:122:LYS:NZ	2.48	0.47
67:Lb:11:ALA:HB2	67:Lb:25:ILE:HD11	1.97	0.47
12:SV:106:ALA:HB2	12:SV:165:LEU:HB2	1.96	0.47
19:SF:95:LYS:O	34:SO:59:ARG:NH1	2.30	0.47
23:SJ:22:ILE:HG22	23:SJ:118:VAL:HG22	1.97	0.47
40:LA:1748:G:OP2	78:Lm:42:LYS:NZ	2.40	0.47
41:LB:28:C:OP1	52:LM:141:ARG:NH1	2.48	0.47
43:LD:126:LEU:HD12	43:LD:150:LEU:HD22	1.95	0.47
67:Lb:114:VAL:O	67:Lb:118:PHE:N	2.47	0.47
71:Lf:41:LYS:HD3	71:Lf:47:ASP:HA	1.97	0.47
1:S2:246:G:N2	15:SX:38:ALA:O	2.48	0.46
1:S2:863:A:OP1	25:Sb:57:ARG:NH2	2.41	0.46
1:S2:1114:G:O2'	1:S2:1130:G:O6	2.31	0.46
1:S2:1198:G:OP1	1:S2:1199:G:O2'	2.26	0.46
1:S2:1358:G:O2'	22:SI:133:ASP:OD2	2.27	0.46
34:SO:108:SER:OG	34:SO:128:ASP:N	2.48	0.46
40:LA:726:G:N1	40:LA:743:C:OP2	2.44	0.46
40:LA:764:U:O2'	40:LA:766:U:OP2	2.31	0.46
86:A:987:ALA:HB2	86:A:988:ALA:CB	2.45	0.46
86:A:1457:ALA:HB1	86:A:1462:ALA:HB2	1.97	0.46
18:SZ:80:HIS:HA	18:SZ:113:GLY:O	2.15	0.46
30:Sf:15:GLU:O	30:Sf:29:ARG:NH2	2.48	0.46
40:LA:655:C:OP2	72:Lg:27:ARG:NH1	2.39	0.46
40:LA:826:G:OP1	40:LA:1590:G:O2'	2.30	0.46
40:LA:1238:C:N4	40:LA:1245:A:OP2	2.47	0.46
40:LA:2556:C:H41	43:LD:42:ARG:HH22	1.62	0.46
50:LK:133:THR:HG1	50:LK:147:SER:HG	1.63	0.46
54:LO:60:LEU:HD13	60:LU:152:LEU:HD11	1.98	0.46
86:A:2373:ALA:CB	86:A:2413:ALA:CB	2.89	0.46
1:S2:56:U:OP1	1:S2:403:G:N1	2.35	0.46
1:S2:1755:A:O4'	26:Sc:63:GLN:NE2	2.48	0.46
3:SP:17:LEU:HD22	3:SP:22:THR:HG21	1.96	0.46
5:SE:37:ALA:O	5:SE:42:ARG:NH1	2.48	0.46
7:SA:154:ASP:OD1	7:SA:154:ASP:N	2.48	0.46
11:SU:141:ARG:HB2	11:SU:149:ILE:HB	1.96	0.46
12:SV:48:THR:OG1	12:SV:52:ASN:O	2.28	0.46
40:LA:36:C:O2'	40:LA:808:A:N1	2.47	0.46
40:LA:424:G:O2'	72:Lg:23:ASP:OD2	2.31	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:419:G:H5'	10:ST:72:ARG:HH21	1.79	0.46
6:SR:236:PRO:O	24:Sa:33:GLN:NE2	2.48	0.46
11:SU:49:ILE:O	11:SU:57:ALA:N	2.47	0.46
21:SH:51:ASP:OD2	86:A:1379:ALA:HB3	2.15	0.46
36:Sm:74:C:O2'	40:LA:2862:U:OP1	2.31	0.46
40:LA:3379:C:H4'	44:LE:315:GLY:HA2	1.96	0.46
55:LP:31:ARG:HG3	55:LP:129:TYR:OH	2.15	0.46
55:LP:48:ALA:HB1	55:LP:53:TYR:HB3	1.97	0.46
60:LU:109:ASP:OD1	60:LU:113:ARG:NH1	2.43	0.46
64:LY:4:GLU:HG2	64:LY:30:ARG:HH11	1.80	0.46
71:Lf:87:ASN:HD22	71:Lf:88:PRO:HD2	1.80	0.46
86:A:1655:ALA:C	86:A:1657:ALA:H	2.24	0.46
4:SQ:71:ALA:HB2	4:SQ:80:SER:HA	1.97	0.46
13:SW:112:GLN:NE2	13:SW:153:GLU:OE2	2.48	0.46
40:LA:3330:A:H4'	44:LE:366:GLY:HA3	1.97	0.46
42:LC:63:G:H1	42:LC:97:A:N6	2.05	0.46
43:LD:142:ASP:N	43:LD:142:ASP:OD1	2.49	0.46
46:LG:126:GLU:HA	46:LG:196:ARG:HD2	1.96	0.46
57:LR:29:THR:HG23	57:LR:119:VAL:HG11	1.98	0.46
70:Le:25:LEU:O	70:Le:29:SER:OG	2.33	0.46
86:A:1810:ALA:O	86:A:1814:ALA:N	2.49	0.46
1:S2:707:A:N7	1:S2:731:C:N4	2.62	0.46
1:S2:1085:G:N2	1:S2:1088:A:OP2	2.42	0.46
49:LJ:228:GLU:O	49:LJ:232:HIS:ND1	2.49	0.46
51:LL:54:SER:HB2	51:LL:135:ILE:HD11	1.97	0.46
65:LZ:137:ASN:HB3	65:LZ:142:ILE:HD11	1.98	0.46
1:S2:590:C:OP1	32:Sg:42:ARG:NH2	2.30	0.46
3:SP:70:PRO:HB2	3:SP:94:GLY:HA3	1.97	0.46
13:SW:89:ASP:OD1	13:SW:89:ASP:N	2.49	0.46
23:SJ:28:SER:OG	23:SJ:29:THR:N	2.48	0.46
34:SO:167:VAL:HG13	34:SO:183:LEU:HD21	1.96	0.46
34:SO:261:LYS:NZ	34:SO:273:ASP:OD2	2.47	0.46
40:LA:341:G:O2'	42:LC:22:U:O4	2.31	0.46
40:LA:831:G:O2'	40:LA:1864:A:N3	2.44	0.46
40:LA:1240:A:H61	40:LA:1244:A:H2'	1.81	0.46
40:LA:1243:G:N2	40:LA:1270:A:O2'	2.49	0.46
40:LA:3231:U:H2'	40:LA:3232:G:C8	2.51	0.46
46:LG:197:SER:O	46:LG:202:GLY:N	2.48	0.46
51:LL:169:LYS:NZ	61:LV:160:ILE:O	2.42	0.46
73:Lh:37:THR:OG1	73:Lh:39:GLN:OE1	2.25	0.46
83:Lr:75:ALA:O	83:Lr:78:THR:OG1	2.28	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
84:Ls:92:LEU:CB	84:Ls:134:LEU:O	2.63	0.46
86:A:930:ALA:C	86:A:932:ALA:H	2.23	0.46
86:A:2010:ALA:O	86:A:2014:ALA:N	2.49	0.46
1:S2:405:C:O2'	10:ST:92:ARG:O	2.28	0.46
1:S2:1489:U:O2'	1:S2:1492:A:N3	2.47	0.46
1:S2:1523:G:OP2	1:S2:1523:G:N2	2.44	0.46
1:S2:1665:U:O2	1:S2:1736:G:O6	2.34	0.46
10:ST:3:LEU:HD13	10:ST:18:ILE:HG21	1.97	0.46
18:SZ:18:ARG:HB2	18:SZ:29:HIS:O	2.16	0.46
22:SI:134:ARG:HB2	86:A:1301:HIS:HA	1.34	0.46
29:Se:13:LYS:O	29:Se:15:ARG:NH1	2.49	0.46
40:LA:1595:U:OP2	74:Li:36:LYS:NZ	2.48	0.46
40:LA:2107:A:H2	40:LA:3344:A:H8	1.63	0.46
40:LA:2151:C:O2'	40:LA:2243:A:N1	2.43	0.46
40:LA:2688:U:N3	46:LG:17:GLN:O	2.49	0.46
40:LA:2997:G:H1	40:LA:3151:U:H3	1.64	0.46
46:LG:128:GLU:O	46:LG:164:LYS:NZ	2.34	0.46
84:Ls:88:ASN:HD22	84:Ls:138:ILE:HD11	1.79	0.46
86:A:1872:ALA:C	86:A:1874:ALA:N	2.73	0.46
1:S2:65:A:H2	1:S2:84:A:H62	1.63	0.46
1:S2:472:U:O2'	1:S2:769:A:N3	2.40	0.46
1:S2:1022:C:O2'	1:S2:1125:A:N1	2.42	0.46
1:S2:1161:C:H1'	1:S2:1619:C:H42	1.81	0.46
11:SU:166:LEU:HD12	11:SU:183:PHE:CG	2.51	0.46
21:SH:140:THR:O	21:SH:143:ARG:NE	2.49	0.46
29:Se:66:LYS:NZ	29:Se:68:TYR:OH	2.49	0.46
30:Sf:30:SER:OG	30:Sf:31:TYR:N	2.49	0.46
38:So:152:ALA:HB2	38:So:251:TYR:HB3	1.98	0.46
40:LA:3299:A:H61	40:LA:3315:G:H1	1.64	0.46
57:LR:47:TYR:OH	57:LR:57:ALA:O	2.33	0.46
66:La:60:ARG:HG2	66:La:103:LYS:HD2	1.96	0.46
68:Lc:114:GLY:O	68:Lc:137:LYS:NZ	2.49	0.46
86:A:2072:ALA:C	86:A:2074:ALA:N	2.73	0.46
8:SS:72:VAL:HG22	8:SS:90:ILE:HD13	1.96	0.46
18:SZ:43:THR:HG23	18:SZ:46:MET:H	1.81	0.46
38:So:301:LYS:HB3	38:So:367:SER:HA	1.98	0.46
40:LA:221:A:O2'	40:LA:223:U:OP2	2.25	0.46
40:LA:1473:G:O3'	59:LT:23:TRP:NE1	2.48	0.46
40:LA:1631:C:OP2	67:Lb:48:ARG:NH2	2.36	0.46
43:LD:45:VAL:O	43:LD:85:GLY:N	2.49	0.46
1:S2:1316:G:OP1	20:SG:7:LYS:N	2.48	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:LA:436:A:OP2	40:LA:621:A:N6	2.36	0.45
40:LA:1695:U:O2'	40:LA:1749:A:N1	2.36	0.45
40:LA:2452:G:N2	40:LA:2494:A:C6	2.85	0.45
63:LX:38:ALA:HB3	63:LX:59:MET:HB2	1.98	0.45
1:S2:140:A:H1'	10:ST:184:LEU:HD11	1.98	0.45
1:S2:968:U:OP1	1:S2:1033:C:O2'	2.34	0.45
34:SO:132:LYS:HA	34:SO:143:THR:HA	1.98	0.45
34:SO:175:ASP:OD2	34:SO:179:LYS:NZ	2.48	0.45
40:LA:198:A:N3	40:LA:218:G:O2'	2.42	0.45
41:LB:63:A:O2'	41:LB:65:G:O4'	2.35	0.45
46:LG:34:LYS:O	46:LG:38:THR:OG1	2.25	0.45
51:LL:77:THR:HG22	51:LL:82:ARG:HA	1.98	0.45
67:Lb:88:ASP:O	67:Lb:121:ARG:NH1	2.37	0.45
86:A:1415:ALA:CB	86:A:1427:ALA:CB	2.54	0.45
1:S2:16:G:O6	6:SR:203:LYS:NZ	2.37	0.45
1:S2:1202:A:O2'	1:S2:1204:A:OP2	2.29	0.45
1:S2:1294:G:H1	1:S2:1303:U:H3	1.64	0.45
1:S2:1523:G:N7	22:SI:64:HIS:NE2	2.60	0.45
4:SQ:137:ILE:HD11	4:SQ:172:LEU:HB3	1.97	0.45
40:LA:707:U:O2	40:LA:754:G:O2'	2.34	0.45
40:LA:901:G:P	77:Ll:13:ASN:HD21	2.39	0.45
40:LA:1203:A:H2'	40:LA:1204:A:C8	2.52	0.45
45:LF:166:VAL:HA	45:LF:169:LEU:HD12	1.98	0.45
50:LK:41:ILE:HD13	50:LK:71:VAL:HB	1.99	0.45
86:A:1331:LEU:O	86:A:1335:ILE:N	2.48	0.45
86:A:2321:ALA:O	86:A:2325:ALA:N	2.48	0.45
1:S2:21:U:O2	13:SW:17:ARG:NH1	2.49	0.45
1:S2:1288:G:OP1	1:S2:1624:C:O2'	2.34	0.45
1:S2:1353:U:H3	1:S2:1372:U:H3	1.64	0.45
4:SQ:33:LYS:HG3	4:SQ:42:ASN:HA	1.99	0.45
38:So:8:ILE:HD11	38:So:39:ARG:HD2	1.97	0.45
40:LA:743:C:O2'	58:LS:66:ARG:NH2	2.45	0.45
40:LA:837:A:H3'	40:LA:838:G:H8	1.80	0.45
41:LB:38:U:N3	41:LB:41:G:OP2	2.49	0.45
45:LF:217:LYS:HB3	45:LF:220:ARG:HH21	1.82	0.45
49:LJ:74:THR:HA	49:LJ:77:GLN:HG3	1.98	0.45
50:LK:167:VAL:HB	50:LK:172:ILE:HG22	1.99	0.45
60:LU:132:THR:HB	60:LU:144:LEU:HD13	1.98	0.45
86:A:2272:ALA:C	86:A:2274:ALA:N	2.73	0.45
15:SX:16:GLN:NE2	15:SX:61:THR:OG1	2.50	0.45
17:SY:13:SER:OG	17:SY:14:SER:N	2.49	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:SO:33:LEU:HB3	34:SO:45:TRP:HB2	1.98	0.45
40:LA:1757:A:H4'	62:LW:96:VAL:HG13	1.97	0.45
40:LA:2815:G:N2	40:LA:2818:U:O2	2.46	0.45
47:LH:66:THR:HB	47:LH:76:LEU:HD23	1.98	0.45
49:LJ:227:ASP:OD1	49:LJ:227:ASP:N	2.45	0.45
79:Ln:27:ILE:O	79:Ln:33:ASN:ND2	2.49	0.45
86:A:1537:ALA:C	86:A:1539:ALA:N	2.59	0.45
4:SQ:11:LYS:HE2	4:SQ:11:LYS:HB3	1.79	0.45
6:SR:153:SER:OG	6:SR:154:LEU:N	2.49	0.45
21:SH:51:ASP:CB	86:A:1378:SER:O	2.48	0.45
56:LQ:157[A]:GLU:OE1	56:LQ:160[A]:ARG:NH2	2.45	0.45
70:Le:17:VAL:HG11	70:Le:92:ILE:HD12	1.99	0.45
1:S2:762:A:OP1	13:SW:79:ARG:NH2	2.49	0.45
1:S2:1477:G:H2'	1:S2:1478:G:H8	1.81	0.45
25:Sb:22:LYS:NZ	30:Sf:2:VAL:O	2.49	0.45
40:LA:411:U:H2'	40:LA:412:G:H8	1.82	0.45
40:LA:2806:U:OP1	84:Ls:49:THR:OG1	2.35	0.45
40:LA:2838:A:N6	40:LA:2850:G:O2'	2.48	0.45
50:LK:90:MET:HE3	50:LK:181:VAL:HB	1.97	0.45
74:Li:58:ARG:HB2	74:Li:61:GLN:HE21	1.81	0.45
1:S2:1109:G:H1	1:S2:1136:U:H3	1.63	0.45
6:SR:139:ILE:HD12	6:SR:218:ILE:HB	1.98	0.45
40:LA:655:C:H2'	40:LA:656:A:H8	1.81	0.45
40:LA:3294:A:OP2	44:LE:126:LYS:NZ	2.49	0.45
44:LE:92:TYR:HB2	44:LE:157:VAL:HB	1.98	0.45
49:LJ:41:GLN:OE1	49:LJ:44:ARG:NH1	2.36	0.45
55:LP:35:VAL:O	55:LP:64:VAL:HA	2.17	0.45
86:A:2071:ALA:O	86:A:2074:ALA:HB2	2.17	0.45
1:S2:29:U:H2'	1:S2:30:G:H8	1.81	0.45
1:S2:1171:A:H2'	1:S2:1172:G:C8	2.52	0.45
18:SZ:71:CYS:HA	18:SZ:74:VAL:HG12	1.99	0.45
40:LA:2621:G:O2'	84:Ls:53:GLY:O	2.35	0.45
40:LA:3192:U:H3	40:LA:3200:G:H1	1.65	0.45
40:LA:3232:G:O6	40:LA:3255:U:O4	2.35	0.45
62:LW:77:LYS:HG2	62:LW:81:LYS:HE2	1.99	0.45
63:LX:17:LEU:HB2	63:LX:52:ALA:HB3	1.99	0.45
86:A:2012:ALA:HB3	86:A:2024:ALA:HB2	1.99	0.45
86:A:2271:ALA:O	86:A:2274:ALA:HB2	2.17	0.45
86:A:2383:ALA:C	86:A:2385:ALA:N	2.74	0.45
1:S2:190:C:N4	1:S2:191:C:O2	2.50	0.45
9:SB:208:SER:HB3	9:SB:211:ILE:HG12	1.99	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:SW:18:PRO:O	13:SW:23:ARG:NH2	2.36	0.45
28:SK:77:ARG:HB3	28:SK:81:ARG:NH1	2.31	0.45
28:SK:89:ILE:HD12	28:SK:101:TYR:HD2	1.82	0.45
40:LA:164:A:C2	40:LA:258:G:C2	3.05	0.45
40:LA:439:C:O2'	40:LA:440:A:OP1	2.31	0.45
40:LA:1347:U:H5''	45:LF:303:GLY:H	1.82	0.45
55:LP:56:LYS:NZ	55:LP:145:ASP:OD2	2.44	0.45
63:LX:13:ILE:HG12	63:LX:85:TRP:CD1	2.53	0.45
70:Le:26:GLY:O	70:Le:30:THR:OG1	2.34	0.45
74:Li:101:VAL:HA	74:Li:104:VAL:HG12	1.99	0.45
8:SS:19:LEU:HD11	8:SS:108:ARG:HD2	1.98	0.44
11:SU:91:ILE:HG12	11:SU:129:LEU:HD23	1.99	0.44
40:LA:551:A:O2'	40:LA:552:G:O4'	2.34	0.44
40:LA:1814:A:N3	40:LA:1815:U:N3	2.65	0.44
40:LA:1925:U:O2'	40:LA:1927:G:N7	2.49	0.44
42:LC:97:A:OP1	75:Lj:67:ARG:NH2	2.41	0.44
45:LF:290:ILE:O	45:LF:296:GLN:NE2	2.50	0.44
46:LG:79:TYR:HB2	46:LG:82:GLU:HG2	1.99	0.44
55:LP:66:VAL:HG23	55:LP:98:LEU:HD23	1.99	0.44
55:LP:165:THR:OG1	55:LP:166:ALA:N	2.49	0.44
86:A:1162:ALA:O	86:A:1166:PHE:N	2.48	0.44
86:A:1708:ALA:HB3	86:A:1711:ALA:CB	2.47	0.44
1:S2:250:C:H2'	1:S2:251:A:H8	1.81	0.44
1:S2:1498:G:H5''	22:SI:72:GLY:HA3	1.98	0.44
18:SZ:50:ALA:HB3	18:SZ:53:ASP:HB2	1.99	0.44
30:Sf:80:ARG:HD2	30:Sf:81:ARG:O	2.17	0.44
48:LI:64:GLN:NE2	48:LI:68:ASP:OD1	2.50	0.44
54:LO:21:VAL:HG12	54:LO:65:LEU:HD23	1.98	0.44
58:LS:67:ILE:HG12	58:LS:81:VAL:HG11	1.99	0.44
71:Lf:75:ILE:HG12	71:Lf:93:VAL:HG22	1.99	0.44
86:A:2211:ALA:O	86:A:2215:ALA:HB3	2.16	0.44
1:S2:123:G:OP1	8:SS:77:ARG:NH2	2.49	0.44
1:S2:934:C:H5'	29:Se:95:ARG:HH21	1.82	0.44
12:SV:12:SER:OG	12:SV:13:ALA:N	2.50	0.44
40:LA:1186:G:O3'	60:LU:113:ARG:NH2	2.51	0.44
56:LQ:84[A]:LEU:HD22	56:LQ:102[A]:LEU:HD22	1.99	0.44
62:LW:77:LYS:HE2	62:LW:95:PHE:HD2	1.83	0.44
86:A:1137:PRO:C	86:A:1140:ALA:H	2.24	0.44
86:A:1540:ALA:O	86:A:1542:ALA:N	2.50	0.44
86:A:1871:ALA:O	86:A:1874:ALA:HB2	2.17	0.44
1:S2:371:G:O2'	25:Sb:88:LYS:NZ	2.35	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:512:A:O2'	13:SW:133:HIS:NE2	2.39	0.44
1:S2:1144:U:O2'	1:S2:1301:U:O2'	2.34	0.44
11:SU:150:GLN:HB3	11:SU:181:ILE:HG22	1.98	0.44
13:SW:37:LYS:HB3	32:Sg:33:ARG:HB3	1.99	0.44
29:Se:23:CYS:SG	29:Se:24:VAL:N	2.87	0.44
40:LA:911:C:OP1	43:LD:14:SER:OG	2.31	0.44
40:LA:2661:G:H2'	40:LA:2662:G:H8	1.83	0.44
43:LD:68:LYS:HD3	43:LD:70:ARG:HE	1.82	0.44
44:LE:10:ARG:NH1	44:LE:263:SER:O	2.51	0.44
49:LJ:187:GLY:O	49:LJ:192:GLN:N	2.41	0.44
78:Lm:43:PHE:HD2	78:Lm:54:LEU:HD23	1.83	0.44
86:A:2104:ALA:H	86:A:2215:ALA:CB	2.30	0.44
3:SP:54:TRP:HZ3	3:SP:176:LEU:HD22	1.81	0.44
6:SR:169:LEU:HD22	6:SR:198:THR:HG22	1.98	0.44
8:SS:145:ARG:HG2	8:SS:147:ILE:HD11	2.00	0.44
16:SD:29:LYS:HG2	16:SD:100:TRP:HB3	1.98	0.44
40:LA:651:G:O2'	40:LA:1435:A:OP1	2.34	0.44
40:LA:1532:C:O2'	40:LA:1799:A:N3	2.48	0.44
40:LA:3329:U:H4'	44:LE:308:MET:HB3	1.99	0.44
47:LH:58:LEU:HD21	47:LH:64:LEU:HB2	2.00	0.44
51:LL:42:THR:OG1	51:LL:43:VAL:N	2.50	0.44
52:LM:9:MET:HE2	52:LM:134:PRO:HG2	1.99	0.44
65:LZ:129:ASP:N	65:LZ:129:ASP:OD1	2.51	0.44
70:Le:51:LEU:HD13	74:Li:91:ARG:HG2	2.00	0.44
86:A:2104:ALA:CA	86:A:2215:ALA:HB2	2.43	0.44
86:A:2323:ALA:HB3	86:A:2335:ALA:HB2	1.99	0.44
86:A:2382:ALA:O	86:A:2385:ALA:HB2	2.17	0.44
1:S2:74:U:O2'	1:S2:76:A:OP2	2.27	0.44
1:S2:1474:G:H2'	1:S2:1475:A:C8	2.53	0.44
29:Se:87:ARG:NH2	29:Se:92:ARG:O	2.50	0.44
34:SO:123:ILE:HB	34:SO:131:ILE:HD11	1.99	0.44
34:SO:169:ILE:HG23	34:SO:183:LEU:HD22	1.99	0.44
38:So:147:LEU:HD21	38:So:289:ILE:HD11	1.99	0.44
40:LA:1638:A:O2'	74:Li:52:GLN:NE2	2.50	0.44
42:LC:141:C:O3'	55:LP:62:TYR:OH	2.36	0.44
44:LE:63:PRO:HD2	44:LE:348:ARG:HH21	1.83	0.44
45:LF:208:VAL:HA	45:LF:228:ALA:O	2.18	0.44
52:LM:168:ASP:OD2	86:A:1562:ALA:CA	2.60	0.44
63:LX:80:ARG:HB2	63:LX:99:ALA:H	1.82	0.44
75:Lj:77:PRO:HD2	75:Lj:80:LEU:HD12	1.98	0.44
79:Ln:25:GLN:HE22	79:Ln:28:ARG:HE	1.66	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:A:948:ALA:CB	86:A:983:ALA:HB1	2.27	0.44
1:S2:953:G:H2'	1:S2:954:G:C8	2.53	0.44
22:SI:18:TYR:HD1	22:SI:135:ILE:HG21	1.83	0.44
25:Sb:6:VAL:HG23	25:Sb:29:PRO:HD2	2.00	0.44
38:So:346:SER:HB2	38:So:361:GLU:HG3	2.00	0.44
40:LA:129:U:H2'	40:LA:130:A:C8	2.53	0.44
40:LA:627:U:H2'	40:LA:628:A:C8	2.51	0.44
40:LA:3343:G:H21	40:LA:3362:A:H2	1.66	0.44
86:A:1862:ALA:CB	86:A:1902:ALA:HA	2.48	0.44
1:S2:1474:G:OP1	9:SB:109:LYS:NZ	2.49	0.44
1:S2:1525:A:N3	1:S2:1589:C:O2'	2.38	0.44
29:Se:87:ARG:HH12	29:Se:94:ASN:HB2	1.82	0.44
38:So:233:PHE:HA	38:So:236:VAL:HG12	2.00	0.44
86:A:2373:ALA:CB	86:A:2413:ALA:HA	2.48	0.44
1:S2:924:A:O2'	1:S2:987:G:OP1	2.27	0.44
1:S2:1478:G:OP1	22:SI:39:THR:OG1	2.35	0.44
1:S2:1641:C:H2'	1:S2:1642:G:C8	2.52	0.44
3:SP:198:MET:HE3	20:SG:89:SER:HA	1.99	0.44
6:SR:80:VAL:HG12	6:SR:102:VAL:HG12	2.00	0.44
20:SG:29:GLN:HB3	34:SO:85:TRP:CZ3	2.53	0.44
27:Sd:57:VAL:HB	27:Sd:60:PHE:HE2	1.83	0.44
40:LA:2357:A:H2'	40:LA:2358:A:H8	1.83	0.44
40:LA:2597:U:O2	55:LP:125:SER:OG	2.34	0.44
66:La:29:VAL:O	66:La:32:SER:OG	2.30	0.44
79:Ln:27:ILE:HA	79:Ln:30:ARG:HG3	2.00	0.44
86:A:1636:ALA:C	86:A:1638:ALA:N	2.73	0.44
86:A:1812:ALA:HB3	86:A:1824:ALA:HB2	1.99	0.44
86:A:1862:ALA:CB	86:A:1902:ALA:CB	2.89	0.44
7:SA:170:THR:HA	7:SA:186:VAL:O	2.18	0.43
27:Sd:51:GLU:OE1	27:Sd:53:ASP:N	2.50	0.43
40:LA:90:C:OP1	68:Lc:59:ARG:NH1	2.45	0.43
40:LA:1655:G:N2	40:LA:1801:U:O4	2.51	0.43
40:LA:3002:C:O2'	44:LE:180:GLU:OE2	2.36	0.43
40:LA:3344:A:C2	40:LA:3361:G:N2	2.76	0.43
48:LI:147:LEU:HD23	48:LI:244:ASN:HD22	1.82	0.43
72:Lg:19:ARG:NH1	72:Lg:33:ARG:HG3	2.33	0.43
72:Lg:23:ASP:OD1	72:Lg:23:ASP:N	2.48	0.43
77:LI:59:THR:HG22	77:LI:64:MET:HE3	2.00	0.43
86:A:1639:ALA:HB1	86:A:1641:ALA:N	2.32	0.43
1:S2:534:A:OP1	13:SW:168:ARG:NH2	2.51	0.43
13:SW:159:ALA:HB3	13:SW:162:SER:HB3	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:SD:54:ARG:HH22	33:SN:127:GLY:HA3	1.82	0.43
28:SK:103:ARG:NH2	28:SK:105:THR:OG1	2.51	0.43
40:LA:705:A:O4'	40:LA:715:A:N6	2.51	0.43
40:LA:873:C:H3'	40:LA:874:U:H4'	2.00	0.43
71:Lf:10:ARG:HG2	71:Lf:108:VAL:HG23	2.00	0.43
86:A:1657:ALA:C	86:A:1659:ALA:H	2.25	0.43
1:S2:603:U:H2'	1:S2:604:A:H8	1.82	0.43
1:S2:1218:G:H5''	1:S2:1444:A:H61	1.84	0.43
27:Sd:12:VAL:HA	27:Sd:23:PHE:HB3	2.01	0.43
40:LA:836:A:O2'	83:Lr:9:GLY:O	2.28	0.43
53:LN:18:TRP:O	53:LN:21:ARG:C	2.61	0.43
54:LO:45:LEU:HD21	54:LO:55:ARG:HE	1.83	0.43
54:LO:98:SER:HA	54:LO:101:LYS:HE3	1.99	0.43
55:LP:46:ASP:OD1	55:LP:46:ASP:N	2.51	0.43
58:LS:64:VAL:HG22	58:LS:90:ASP:H	1.83	0.43
58:LS:151:ARG:HE	58:LS:162:ALA:HB1	1.83	0.43
86:A:2262:ALA:CB	86:A:2302:ALA:HA	2.48	0.43
1:S2:323:A:OP2	12:SV:10:LYS:NZ	2.31	0.43
1:S2:818:C:N4	1:S2:819:G:N7	2.66	0.43
1:S2:1043:A:O2'	4:SQ:152:ARG:NH1	2.41	0.43
8:SS:98:ASN:HB2	8:SS:114:ILE:O	2.19	0.43
40:LA:315:C:OP2	76:Lk:28:TYR:OH	2.30	0.43
42:LC:150:G:H21	49:LJ:59:GLN:NE2	2.16	0.43
50:LK:21:LYS:HB3	50:LK:22:SER:H	1.66	0.43
55:LP:114:ARG:NH1	55:LP:153:ASP:O	2.45	0.43
64:LY:22:VAL:HG22	64:LY:28:ILE:HG12	2.00	0.43
86:A:1636:ALA:HB1	86:A:1677:ALA:N	2.32	0.43
1:S2:575:C:N4	26:Sc:65:ASN:OD1	2.47	0.43
1:S2:859:A:O2'	17:SY:73:ARG:NH1	2.52	0.43
19:SF:62:ASN:H	19:SF:63:ILE:HD12	1.84	0.43
34:SO:19:TRP:HB2	34:SO:38:ARG:HB2	1.99	0.43
38:So:248:LEU:HD23	38:So:270:ASN:HB2	2.00	0.43
40:LA:999:G:N3	40:LA:1002:A:N6	2.67	0.43
40:LA:1493:G:OP2	40:LA:1493:G:N2	2.44	0.43
40:LA:1523:U:O4	65:LZ:75:LYS:NZ	2.51	0.43
53:LN:90:ALA:HB1	53:LN:95:ILE:HB	2.00	0.43
58:LS:145:ASN:HA	58:LS:150:VAL:HG21	2.00	0.43
61:LV:36:VAL:HG23	61:LV:65:TYR:HA	2.01	0.43
1:S2:843:U:H2'	1:S2:844:A:H8	1.84	0.43
4:SQ:8:ARG:HD3	4:SQ:11:LYS:HB2	2.01	0.43
25:Sb:75:ILE:N	25:Sb:126:LEU:O	2.44	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:SO:88:THR:HG22	34:SO:104:VAL:HG12	2.00	0.43
37:Sn:27:C:H2'	37:Sn:28:A:H8	1.83	0.43
40:LA:449:U:O2'	40:LA:450:G:N2	2.51	0.43
40:LA:951:A:OP1	69:Ld:18:ARG:NH2	2.51	0.43
40:LA:1562:C:O2'	40:LA:1563:C:O4'	2.36	0.43
40:LA:2557:A:OP1	43:LD:69:TYR:OH	2.28	0.43
46:LG:132:THR:HG21	46:LG:170:GLY:HA2	2.01	0.43
1:S2:620:A:N3	1:S2:1107:G:O2'	2.41	0.43
1:S2:1565:C:OP1	21:SH:41:ARG:NH1	2.45	0.43
28:SK:78:ILE:HA	28:SK:81:ARG:HD2	2.01	0.43
40:LA:1222:G:N2	40:LA:1285:G:O2'	2.48	0.43
40:LA:2523:A:N6	49:LJ:57:ARG:HH11	2.17	0.43
42:LC:59:A:O2'	65:LZ:61:LYS:NZ	2.52	0.43
48:LI:176:TYR:CZ	48:LI:197:GLN:HG2	2.53	0.43
53:LN:66:ASN:OD1	68:Lc:128:ARG:NH2	2.51	0.43
84:Ls:99:PHE:HA	84:Ls:114:LYS:HA	2.01	0.43
1:S2:872:G:H1'	30:Sf:68:GLY:H	1.84	0.43
1:S2:1461:C:H5''	21:SH:143:ARG:HG2	2.00	0.43
7:SA:40:ARG:HB2	7:SA:47:GLU:HG2	2.00	0.43
7:SA:94:ARG:O	7:SA:97:SER:OG	2.36	0.43
35:SL:60:GLU:OE1	35:SL:60:GLU:N	2.51	0.43
40:LA:70:A:H5'	68:Lc:64:GLN:HE22	1.83	0.43
40:LA:264:G:OP1	76:Lk:34:SER:OG	2.32	0.43
47:LH:55:LEU:HD11	47:LH:66:THR:HG22	1.99	0.43
50:LK:27:VAL:HG13	50:LK:82:VAL:HG21	2.01	0.43
59:LT:115:ILE:HG13	59:LT:119:LEU:HD23	2.00	0.43
77:Ll:21:ARG:NH1	77:Ll:41:ALA:O	2.51	0.43
83:Lr:46:THR:OG1	83:Lr:57:CYS:SG	2.68	0.43
86:A:1260:ALA:HB1	86:A:1264:LYS:N	2.33	0.43
86:A:1383:ARG:CB	86:A:1423:THR:HA	2.49	0.43
86:A:1583:ALA:C	86:A:1585:ALA:N	2.77	0.43
1:S2:1545:A:OP2	21:SH:136:GLN:NE2	2.52	0.43
28:SK:45:GLU:O	28:SK:49:ARG:HB2	2.19	0.43
32:Sg:31:LYS:HA	32:Sg:31:LYS:HD3	1.71	0.43
38:So:179:ASN:HB3	38:So:224:ARG:HD2	2.00	0.43
40:LA:929:A:O2'	77:Ll:49:TRP:O	2.36	0.43
40:LA:2445:A:N1	40:LA:2502:A:N6	2.67	0.43
44:LE:220:VAL:O	44:LE:334:ARG:NH1	2.51	0.43
74:Li:74:ARG:HH12	74:Li:85:VAL:HG21	1.83	0.43
86:A:2062:ALA:CB	86:A:2102:ALA:HA	2.48	0.43
1:S2:188:A:N6	1:S2:197:A:O2'	2.51	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:S2:871:G:N2	30:Sf:68:GLY:O	2.46	0.43
1:S2:1486:G:H2'	1:S2:1487:A:C8	2.54	0.43
4:SQ:30:PHE:CD1	4:SQ:94:LYS:HG3	2.54	0.43
7:SA:39:VAL:HA	7:SA:47:GLU:O	2.18	0.43
13:SW:119:ALA:O	13:SW:124:HIS:ND1	2.52	0.43
18:SZ:125:SER:OG	18:SZ:126:THR:N	2.51	0.43
40:LA:921:A:N6	40:LA:1846:C:OP2	2.33	0.43
40:LA:2155:G:O2'	43:LD:227:ARG:NH2	2.37	0.43
45:LF:138:ARG:HH21	45:LF:240:PRO:HG2	1.83	0.43
86:A:1599:ALA:HB2	86:A:1604:ALA:H	1.84	0.43
1:S2:478:A:H62	1:S2:539:G:H22	1.65	0.42
1:S2:966:A:H5''	17:SY:4:MET:HE1	2.00	0.42
8:SS:141:THR:OG1	8:SS:143:ASP:OD1	2.26	0.42
22:SI:138:GLN:NE2	86:A:1300:SER:C	2.77	0.42
30:Sf:35:VAL:HA	30:Sf:78:SER:O	2.18	0.42
40:LA:1131:G:O2'	40:LA:2373:A:N1	2.37	0.42
40:LA:1244:A:O2'	40:LA:1247:U:OP1	2.36	0.42
41:LB:46:A:OP2	46:LG:158:ARG:NH1	2.51	0.42
86:A:921:ALA:O	86:A:925:ALA:HB2	2.18	0.42
86:A:1222:VAL:O	86:A:1226:ARG:N	2.40	0.42
1:S2:886:U:OP2	4:SQ:216:LYS:NZ	2.52	0.42
28:SK:65:LEU:HB3	28:SK:71:ILE:HD11	2.00	0.42
29:Se:36:ILE:O	29:Se:73:TYR:HB2	2.19	0.42
40:LA:360:G:N3	40:LA:814:U:O2'	2.52	0.42
40:LA:646:A:N6	40:LA:2371:G:H21	2.16	0.42
40:LA:1369:A:H5''	68:Lc:21:ARG:HH11	1.83	0.42
40:LA:2549:G:N2	40:LA:2549:G:OP2	2.52	0.42
40:LA:3116:G:OP1	40:LA:3116:G:N2	2.51	0.42
44:LE:308:MET:HE3	44:LE:308:MET:HB2	1.63	0.42
55:LP:8:GLU:O	55:LP:12:ARG:HG3	2.19	0.42
56:LQ:189[A]:ASP:HA	56:LQ:192[A]:LYS:HE2	2.02	0.42
86:A:2062:ALA:HB1	86:A:2102:ALA:HA	2.01	0.42
86:A:2262:ALA:HB1	86:A:2302:ALA:HA	2.01	0.42
1:S2:434:G:N1	1:S2:437:A:OP2	2.52	0.42
1:S2:1388:A:OP2	20:SG:32:LYS:NZ	2.52	0.42
1:S2:1542:G:N1	1:S2:1568:C:O2'	2.45	0.42
6:SR:165:VAL:HG11	6:SR:210:THR:HG22	2.01	0.42
7:SA:40:ARG:NH2	7:SA:47:GLU:OE2	2.52	0.42
9:SB:97:LEU:O	9:SB:180:ARG:NH2	2.49	0.42
12:SV:171:SER:HB2	12:SV:180:ASP:HB2	2.01	0.42
16:SD:60:VAL:HG22	16:SD:122:VAL:HG22	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:LA:650:C:H2'	40:LA:651:G:C8	2.53	0.42
45:LF:26:PHE:HD1	45:LF:130:ALA:HB2	1.84	0.42
49:LJ:78:PHE:HE2	49:LJ:164:VAL:HA	1.84	0.42
49:LJ:147:LYS:O	49:LJ:201:THR:OG1	2.33	0.42
86:A:1862:ALA:HB1	86:A:1902:ALA:HA	2.01	0.42
1:S2:311:U:OP1	26:Sc:24:TRP:NE1	2.43	0.42
3:SP:66:ALA:HB2	24:Sa:37:ALA:HB2	1.99	0.42
9:SB:140:THR:HA	9:SB:214:LYS:HE2	2.01	0.42
16:SD:34:THR:OG1	16:SD:127:GLY:O	2.31	0.42
38:So:136:VAL:O	38:So:139:THR:OG1	2.38	0.42
40:LA:695:C:OP2	45:LF:115:HIS:NE2	2.36	0.42
49:LJ:83:ASP:N	49:LJ:83:ASP:OD1	2.50	0.42
68:Lc:90:TYR:CZ	68:Lc:100:PRO:HB3	2.55	0.42
77:Ll:54:LYS:O	77:Ll:58:THR:HB	2.19	0.42
84:Ls:56:LYS:HA	84:Ls:75:PRO:HA	2.00	0.42
86:A:1260:ALA:O	86:A:1261:TRP:C	2.63	0.42
1:S2:66:U:O4	10:ST:134:GLY:N	2.50	0.42
1:S2:780:A:C2	27:Sd:8:ARG:HD3	2.55	0.42
1:S2:1217:A:C4	14:SC:40:LEU:HD11	2.54	0.42
5:SE:117:GLY:HA2	5:SE:120:SER:HB3	2.02	0.42
6:SR:173:PRO:O	6:SR:176:SER:OG	2.28	0.42
11:SU:14:THR:OG1	11:SU:15:GLU:N	2.52	0.42
38:So:44:ALA:HB3	38:So:134:LYS:HD3	2.02	0.42
40:LA:341:G:H21	40:LA:349:A:N6	2.16	0.42
40:LA:612:U:H2'	40:LA:613:G:H8	1.83	0.42
40:LA:658:G:N2	45:LF:93:MET:HB2	2.34	0.42
45:LF:311:HIS:CE1	48:LI:162:PRO:HG3	2.55	0.42
47:LH:84:VAL:O	73:Lh:105:SER:OG	2.35	0.42
52:LM:48:SER:HB2	52:LM:66:ALA:HB3	2.01	0.42
54:LO:109:ARG:HA	54:LO:112:LEU:HG	2.01	0.42
64:LY:9:SER:HA	64:LY:52:THR:HG23	2.01	0.42
86:A:1657:ALA:O	86:A:1659:ALA:N	2.51	0.42
1:S2:1182:U:H5	1:S2:1185:U:H5''	1.85	0.42
5:SE:118:GLU:O	21:SH:122:HIS:N	2.53	0.42
12:SV:159:GLN:HE22	12:SV:189:LEU:HD11	1.85	0.42
1:S2:505:A:O2'	1:S2:507:U:OP1	2.31	0.42
1:S2:523:G:O2'	1:S2:529:A:N6	2.52	0.42
1:S2:541:A:O2'	1:S2:542:A:OP1	2.36	0.42
1:S2:1187:U:H2'	1:S2:1188:G:H8	1.83	0.42
9:SB:190:ILE:HA	9:SB:193:THR:HG22	2.01	0.42
23:SJ:46:GLU:O	23:SJ:49:ASN:ND2	2.52	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
40:LA:1874:A:N7	59:LT:20:ARG:NH1	2.68	0.42
40:LA:2516:U:OP1	55:LP:31:ARG:NH1	2.52	0.42
40:LA:3369:G:N2	44:LE:380:MET:O	2.36	0.42
49:LJ:152:LEU:O	49:LJ:197:VAL:HA	2.19	0.42
79:Ln:23:LEU:HD11	79:Ln:35:ILE:HG22	2.02	0.42
79:Ln:25:GLN:NE2	79:Ln:28:ARG:HE	2.17	0.42
4:SQ:27:LYS:HB3	4:SQ:47:LEU:HD12	2.02	0.42
6:SR:116:LYS:HG2	6:SR:127:ALA:HB3	2.02	0.42
7:SA:225:TYR:HB2	34:SO:189:GLU:HA	2.01	0.42
38:So:211:LEU:HD12	38:So:216:ILE:HG21	2.00	0.42
40:LA:2149:A:N6	40:LA:2187:G:O2'	2.42	0.42
59:LT:8:LYS:HD3	59:LT:19:LYS:HB3	2.02	0.42
82:Lq:45:ARG:O	82:Lq:48:SER:OG	2.30	0.42
86:A:1708:ALA:HB3	86:A:1711:ALA:HB2	2.01	0.42
1:S2:1690:G:H2'	1:S2:1691:A:C8	2.55	0.42
5:SE:95:GLY:HA2	5:SE:103:ASN:O	2.19	0.42
8:SS:64:ILE:HD12	27:Sd:17:LEU:HB3	2.01	0.42
19:SF:44:LEU:HD12	19:SF:78:VAL:HG11	2.02	0.42
20:SG:101:ASN:ND2	20:SG:120:SER:OG	2.53	0.42
29:Se:7:SER:OG	29:Se:7:SER:O	2.37	0.42
40:LA:2799:A:O2'	68:Lc:42:ARG:NH1	2.53	0.42
50:LK:4:ILE:H	60:LU:142:GLN:NE2	2.17	0.42
58:LS:64:VAL:HA	58:LS:67:ILE:HD12	2.02	0.42
77:Ll:64:MET:HB2	77:Ll:68:LYS:HG3	2.02	0.42
86:A:1561:ALA:HA	86:A:1599:ALA:O	2.20	0.42
86:A:2040:ALA:N	86:A:2040:ALA:CB	2.67	0.42
1:S2:17:C:O2'	1:S2:1137:A:N1	2.41	0.42
1:S2:1770:U:H5''	1:S2:1794:A:H62	1.84	0.42
4:SQ:127:VAL:HG11	4:SQ:176:VAL:HG11	2.02	0.42
8:SS:9:LEU:HB2	8:SS:30:ARG:HD2	2.02	0.42
20:SG:35:CYS:HA	20:SG:38:ILE:HG22	2.01	0.42
40:LA:592:A:HO2'	47:LH:20:LYS:NZ	2.17	0.42
40:LA:3279:A:N6	73:Lh:54:ARG:HD3	2.35	0.42
53:LN:46:ILE:HD11	53:LN:51:LEU:HD12	2.02	0.42
61:LV:42:ILE:O	61:LV:59:GLY:N	2.53	0.42
86:A:2373:ALA:HB1	86:A:2413:ALA:HA	2.01	0.42
1:S2:351:C:OP1	1:S2:630:A:O2'	2.35	0.41
6:SR:139:ILE:HG13	6:SR:191:ALA:HB1	2.02	0.41
17:SY:6:SER:OG	17:SY:7:ALA:N	2.53	0.41
18:SZ:81:VAL:HB	18:SZ:115:ILE:HG22	2.02	0.41
25:Sb:79:PHE:HB2	25:Sb:125:ILE:HG22	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
34:SO:159:ASN:HD21	34:SO:167:VAL:HA	1.84	0.41
40:LA:723:U:O2'	69:Ld:29:TYR:OH	2.36	0.41
40:LA:937:G:C6	40:LA:2410:U:H5''	2.55	0.41
40:LA:2241:U:O2'	43:LD:243:THR:N	2.45	0.41
40:LA:2357:A:H2'	40:LA:2358:A:C8	2.55	0.41
45:LF:157:GLU:HG3	45:LF:251:THR:HG21	2.02	0.41
51:LL:169:LYS:HZ1	61:LV:159:PHE:HA	1.85	0.41
63:LX:14:SER:O	63:LX:81:GLN:NE2	2.53	0.41
1:S2:168:A:OP1	10:ST:137:ARG:N	2.50	0.41
1:S2:1588:G:H1	1:S2:1608:U:H3	1.66	0.41
40:LA:170:G:H2'	40:LA:171:G:C8	2.55	0.41
40:LA:528:U:H3	40:LA:564:G:H1	1.68	0.41
40:LA:629:U:H2'	40:LA:630:A:C8	2.55	0.41
40:LA:1261:G:O2'	40:LA:1278:A:N1	2.40	0.41
40:LA:1786:G:H2'	40:LA:1787:A:C8	2.55	0.41
43:LD:180:LEU:HD22	83:Lr:18:TYR:HB3	2.02	0.41
67:Lb:42:LEU:HD23	67:Lb:96:VAL:HG22	2.02	0.41
1:S2:126:A:O2'	1:S2:264:G:O2'	2.27	0.41
9:SB:57:SER:HA	35:SL:53:ILE:HB	2.03	0.41
10:ST:78:THR:HG23	10:ST:92:ARG:HG2	2.02	0.41
11:SU:156:SER:OG	11:SU:186:PRO:O	2.38	0.41
22:SI:138:GLN:NE2	86:A:1300:SER:O	2.53	0.41
40:LA:504:A:HO2'	45:LF:315:LYS:HZ2	1.58	0.41
40:LA:819:U:H2'	40:LA:820:A:H8	1.85	0.41
40:LA:1078:U:OP2	46:LG:140:ARG:NH1	2.48	0.41
40:LA:1795:U:OP2	43:LD:50:HIS:NE2	2.53	0.41
40:LA:2964:G:N2	40:LA:2967:A:OP2	2.39	0.41
40:LA:3016:A:H2'	40:LA:3017:A:H8	1.85	0.41
51:LL:48:LEU:O	51:LL:139:ARG:HA	2.20	0.41
65:LZ:59:SER:HA	65:LZ:62:VAL:HG22	2.03	0.41
69:Ld:37:PRO:HA	69:Ld:40:ARG:HB2	2.02	0.41
86:A:2104:ALA:HB3	86:A:2215:ALA:HB2	1.86	0.41
1:S2:1147:A:O2'	1:S2:1636:C:OP2	2.27	0.41
4:SQ:119:THR:N	4:SQ:143:THR:OG1	2.50	0.41
5:SE:117:GLY:O	5:SE:120:SER:C	2.64	0.41
13:SW:141:VAL:HG21	13:SW:146:PHE:HE1	1.85	0.41
15:SX:111:VAL:HG23	15:SX:139:VAL:HG21	2.02	0.41
23:SJ:74:GLU:HG3	23:SJ:75:GLY:H	1.86	0.41
40:LA:712:G:OP1	53:LN:174:ARG:NH1	2.53	0.41
40:LA:874:U:OP2	40:LA:1907:C:O2'	2.37	0.41
53:LN:162:ASN:N	53:LN:162:ASN:OD1	2.53	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
84:Ls:23:CYS:HB2	84:Ls:76:SER:HA	2.03	0.41
1:S2:996:U:H2'	1:S2:997:G:H8	1.84	0.41
6:SR:239:PRO:HA	6:SR:242:ILE:HD12	2.02	0.41
12:SV:87:ASN:HB3	12:SV:90:LEU:HG	2.03	0.41
16:SD:61:VAL:HG12	16:SD:121:VAL:HB	2.01	0.41
16:SD:98:GLY:O	16:SD:101:ALA:C	2.64	0.41
17:SY:16:ILE:H	25:Sb:57:ARG:HH22	1.68	0.41
18:SZ:14:PHE:CD1	18:SZ:78:ALA:HB3	2.56	0.41
40:LA:900:G:H1'	40:LA:1589:A:N6	2.36	0.41
40:LA:953:G:OP1	69:Ld:12:GLN:NE2	2.45	0.41
40:LA:1364:C:OP1	48:LI:110:ARG:NH2	2.45	0.41
40:LA:2516:U:O2	40:LA:2594:C:N4	2.53	0.41
40:LA:2836:C:H5	40:LA:2852:C:H42	1.68	0.41
40:LA:3253:G:H2'	40:LA:3254:G:H8	1.85	0.41
41:LB:7:G:OP1	46:LG:33:ARG:NH1	2.53	0.41
46:LG:46:THR:HA	46:LG:47:PRO:HD3	1.96	0.41
62:LW:17:VAL:HA	62:LW:103:TYR:O	2.21	0.41
5:SE:14:THR:OG1	5:SE:15:HIS:N	2.53	0.41
8:SS:207:LEU:HD22	8:SS:219:VAL:HG12	2.02	0.41
34:SO:200:ASN:ND2	34:SO:240:VAL:O	2.52	0.41
40:LA:95:A:C5	40:LA:96:G:H1'	2.56	0.41
40:LA:417:A:H2'	40:LA:418:A:C8	2.54	0.41
40:LA:655:C:H2'	40:LA:656:A:C8	2.56	0.41
40:LA:669:U:H1'	40:LA:1110:U:H4'	2.01	0.41
40:LA:2519:A:H2'	40:LA:2520:A:H8	1.86	0.41
60:LU:115:ARG:O	60:LU:117:ARG:NH2	2.53	0.41
61:LV:101:CYS:SG	61:LV:102:ARG:N	2.93	0.41
69:Ld:13:THR:O	69:Ld:17:HIS:ND1	2.54	0.41
74:Li:58:ARG:HB2	74:Li:61:GLN:NE2	2.36	0.41
86:A:1428:ALA:HB1	86:A:1461:ALA:CA	2.38	0.41
1:S2:200:A:H2'	1:S2:201:G:C8	2.55	0.41
1:S2:924:A:H2'	1:S2:925:G:C8	2.56	0.41
8:SS:11:ARG:NH2	8:SS:20:LEU:HB3	2.36	0.41
10:ST:138:ALA:HA	10:ST:153:VAL:HG11	2.03	0.41
17:SY:5:HIS:CE1	17:SY:121:ARG:HG3	2.56	0.41
19:SF:79:TYR:CD1	19:SF:82:ARG:HD3	2.56	0.41
22:SI:40:SER:OG	22:SI:41:SER:N	2.54	0.41
38:So:166:LEU:HA	38:So:169:VAL:HG22	2.02	0.41
40:LA:1203:A:H2'	40:LA:1204:A:H8	1.86	0.41
44:LE:134:SER:O	44:LE:137:TYR:C	2.64	0.41
44:LE:229:VAL:HG21	44:LE:249:VAL:HG23	2.02	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:LS:80:THR:HG23	58:LS:100:THR:HG23	2.02	0.41
83:Lr:82:THR:HA	83:Lr:85:ARG:HG2	2.02	0.41
86:A:930:ALA:C	86:A:932:ALA:N	2.79	0.41
1:S2:406:U:H2'	1:S2:407:A:H8	1.85	0.41
1:S2:590:C:H2'	1:S2:591:A:H8	1.86	0.41
1:S2:1160:A:H2'	1:S2:1161:C:C6	2.56	0.41
12:SV:67:TRP:HE3	12:SV:72:ILE:HD11	1.85	0.41
16:SD:31:VAL:HA	16:SD:34:THR:HG22	2.03	0.41
17:SY:54:LEU:HB3	17:SY:60:VAL:HG21	2.03	0.41
22:SI:138:GLN:CG	86:A:1303:GLU:H	1.92	0.41
27:Sd:10:ARG:HB2	27:Sd:24:VAL:O	2.21	0.41
40:LA:2843:U:OP2	40:LA:2844:C:N4	2.49	0.41
40:LA:3110:C:H2'	40:LA:3111:U:C6	2.56	0.41
47:LH:40:LEU:O	47:LH:51:ARG:HA	2.20	0.41
49:LJ:83:ASP:OD1	49:LJ:86:THR:OG1	2.28	0.41
66:La:89:LYS:O	66:La:92:GLY:N	2.48	0.41
67:Lb:49:TYR:CD2	67:Lb:133:LYS:HG3	2.55	0.41
86:A:1561:ALA:CB	86:A:1600:ALA:HB2	2.50	0.41
1:S2:757:A:O3'	8:SS:22:LYS:NZ	2.54	0.41
1:S2:918:U:H4'	18:SZ:18:ARG:HD3	2.03	0.41
1:S2:1171:A:H2'	1:S2:1172:G:H8	1.86	0.41
1:S2:1320:U:H2'	3:SP:101:ARG:HH21	1.86	0.41
1:S2:1383:G:OP1	23:SJ:89:ARG:NH2	2.53	0.41
1:S2:1524:A:H2'	1:S2:1525:A:C8	2.56	0.41
1:S2:1628:U:H2'	1:S2:1629:G:C8	2.56	0.41
1:S2:1727:G:H2'	1:S2:1728:A:C8	2.55	0.41
6:SR:157:LYS:HA	6:SR:169:LEU:O	2.21	0.41
12:SV:7:SER:O	12:SV:18:ARG:NH1	2.54	0.41
13:SW:132:ARG:HH21	13:SW:140:ILE:HD13	1.86	0.41
18:SZ:55:SER:O	18:SZ:55:SER:OG	2.29	0.41
20:SG:36:ASP:OD1	20:SG:37:GLU:N	2.54	0.41
38:So:68:VAL:HG22	38:So:145:LEU:HB3	2.03	0.41
40:LA:1050:U:OP2	61:LV:13:TYR:OH	2.33	0.41
40:LA:1083:G:H2'	40:LA:1084:A:H8	1.85	0.41
40:LA:2555:G:N7	74:Li:95:ILE:HD11	2.36	0.41
40:LA:3068:U:OP2	59:LT:62:ARG:NH1	2.49	0.41
40:LA:3084:C:O2'	40:LA:3332:U:OP1	2.29	0.41
40:LA:3115:C:O2	40:LA:3117:C:N4	2.53	0.41
40:LA:3206:C:H2'	54:LO:99:TRP:CZ2	2.56	0.41
41:LB:1:G:O6	46:LG:262:LYS:NZ	2.43	0.41
41:LB:4:U:H2'	41:LB:5:G:H8	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
44:LE:86:VAL:HG22	44:LE:162:VAL:HG12	2.02	0.41
47:LH:64:LEU:HD11	47:LH:76:LEU:HD22	2.02	0.41
55:LP:51:LEU:O	55:LP:117:ASN:ND2	2.54	0.41
57:LR:168:LEU:HD12	57:LR:172:GLN:HB3	2.02	0.41
62:LW:10:LYS:O	62:LW:68:THR:OG1	2.33	0.41
80:Lo:99:CYS:HB3	80:Lo:115:CYS:HB3	2.01	0.41
86:A:1428:ALA:CB	86:A:1464:ALA:CB	2.99	0.41
1:S2:391:A:OP2	12:SV:23:LYS:NZ	2.37	0.41
1:S2:1474:G:H2'	1:S2:1475:A:H8	1.86	0.41
4:SQ:210:ILE:HD12	4:SQ:210:ILE:HG23	1.83	0.41
40:LA:170:G:H5''	75:Lj:109:ILE:HG12	2.01	0.41
40:LA:584:G:H2'	40:LA:585:A:C8	2.56	0.41
40:LA:2683:U:H2'	40:LA:2684:C:C6	2.56	0.41
44:LE:260:VAL:HG11	44:LE:266:ARG:HH11	1.86	0.41
44:LE:307:PRO:HA	44:LE:361:THR:HG22	2.03	0.41
45:LF:35:VAL:HG21	45:LF:244:LEU:HD21	2.03	0.41
55:LP:150:TRP:O	55:LP:156:HIS:ND1	2.53	0.41
86:A:987:ALA:CB	86:A:988:ALA:CA	2.97	0.41
1:S2:209:U:H2'	1:S2:210:A:H8	1.85	0.40
1:S2:406:U:H2'	1:S2:407:A:C8	2.56	0.40
1:S2:628:G:OP1	17:SY:124:ARG:NH1	2.50	0.40
5:SE:118:GLU:HA	21:SH:122:HIS:HB2	2.03	0.40
8:SS:44:LEU:HD12	8:SS:65:LEU:HD11	2.03	0.40
10:ST:39:GLU:HB3	10:ST:47:GLY:H	1.85	0.40
40:LA:1403:C:OP2	72:Lg:11:LYS:NZ	2.54	0.40
40:LA:2585:G:O6	49:LJ:47:SER:OG	2.28	0.40
40:LA:2883:U:H4'	44:LE:261:MET:HE1	2.02	0.40
40:LA:2904:U:H2'	40:LA:2905:U:H6	1.86	0.40
86:A:2104:ALA:N	86:A:2215:ALA:HB2	2.36	0.40
10:ST:31:ARG:HG2	10:ST:101:ILE:HD13	2.03	0.40
10:ST:77:LEU:HD12	10:ST:95:LYS:HB2	2.03	0.40
35:SL:58:GLU:OE1	35:SL:60:GLU:N	2.54	0.40
40:LA:1084:A:H4'	46:LG:44:TYR:CE2	2.56	0.40
40:LA:1132:C:HO2'	40:LA:2865:U:HO2'	1.68	0.40
40:LA:1798:A:H2'	40:LA:1799:A:C8	2.56	0.40
40:LA:2184:U:OP2	43:LD:6:ARG:NH2	2.54	0.40
40:LA:2366:C:H2'	40:LA:2367:A:H8	1.87	0.40
40:LA:2728:G:O6	61:LV:87:LYS:NZ	2.54	0.40
40:LA:3067:C:H3'	59:LT:62:ARG:HH12	1.85	0.40
40:LA:3313:U:H4'	44:LE:173:GLN:HG3	2.04	0.40
40:LA:3322:A:H2'	40:LA:3323:A:H8	1.86	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:LC:9:A:H2'	42:LC:10:A:C8	2.57	0.40
47:LH:83:TYR:HD1	73:Lh:103:TYR:HB2	1.86	0.40
48:LI:37:ASN:O	48:LI:41:ARG:HG2	2.20	0.40
48:LI:156:ILE:HD12	48:LI:161:VAL:HG21	2.01	0.40
58:LS:66:ARG:HD2	58:LS:66:ARG:HA	1.90	0.40
63:LX:95:PHE:CD1	64:LY:22:VAL:HB	2.55	0.40
84:Ls:40:LYS:HE3	84:Ls:40:LYS:HB2	1.97	0.40
86:A:1333:GLN:CB	86:A:1345:ALA:HB2	2.52	0.40
3:SP:2:SER:OG	3:SP:3:LEU:N	2.54	0.40
3:SP:3:LEU:HD13	3:SP:7:PHE:HB2	2.04	0.40
4:SQ:133:TYR:HE2	4:SQ:181:LEU:HD22	1.85	0.40
15:SX:33:ARG:NH2	15:SX:51:GLY:O	2.54	0.40
28:SK:48:ASP:HA	28:SK:51:LEU:HD12	2.03	0.40
31:SM:12:ARG:O	31:SM:18:SER:OG	2.26	0.40
34:SO:21:THR:H	34:SO:37:SER:HA	1.86	0.40
40:LA:312:C:H2'	40:LA:313:A:H8	1.86	0.40
45:LF:206:LEU:HD23	45:LF:248:VAL:HG22	2.03	0.40
49:LJ:214:LEU:O	49:LJ:217:THR:OG1	2.30	0.40
57:LR:125:GLN:O	57:LR:140:GLU:HA	2.21	0.40
78:Lm:11:PHE:O	78:Lm:15:THR:HG23	2.22	0.40
1:S2:916:U:H3	18:SZ:41:ARG:NE	2.20	0.40
1:S2:1779:U:O4	81:Lp:12:ARG:NH1	2.51	0.40
3:SP:17:LEU:HD13	3:SP:50:VAL:HB	2.04	0.40
7:SA:222:VAL:HA	34:SO:191:ASP:O	2.21	0.40
8:SS:206:ASP:HB3	8:SS:222:LEU:HD13	2.02	0.40
11:SU:103:SER:OG	11:SU:104:ARG:N	2.50	0.40
16:SD:130:THR:HG23	16:SD:133:LEU:H	1.87	0.40
40:LA:110:G:OP2	53:LN:73:ARG:NH1	2.40	0.40
40:LA:2116:G:OP1	40:LA:2118:C:N4	2.55	0.40
40:LA:3181:C:O2'	56:LQ:164[A]:SER:OG	2.37	0.40
49:LJ:94:PHE:HB3	49:LJ:189:LEU:HD11	2.04	0.40
49:LJ:130:TYR:HD2	49:LJ:204:ARG:HH21	1.70	0.40
52:LM:40:LEU:HD12	52:LM:114:ILE:HD11	2.03	0.40
80:Lo:110:CYS:SG	80:Lo:111:ARG:N	2.95	0.40
86:A:1280:THR:C	86:A:1282:LEU:H	2.29	0.40
1:S2:126:A:OP2	10:ST:197:ASN:ND2	2.54	0.40
1:S2:1699:G:H2'	1:S2:1701:A:H62	1.87	0.40
4:SQ:158:SER:HA	4:SQ:161:ILE:HD12	2.04	0.40
9:SB:94:THR:HA	9:SB:97:LEU:HD12	2.04	0.40
9:SB:198:LEU:HD23	9:SB:198:LEU:HA	1.98	0.40
12:SV:26:LYS:HA	12:SV:29:LEU:HD23	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:SW:85:VAL:HG12	13:SW:99:LEU:HD13	2.04	0.40
21:SH:88:ARG:O	21:SH:98:TYR:N	2.48	0.40
25:Sb:94:LEU:HD21	25:Sb:102:VAL:HG23	2.04	0.40
27:Sd:37:LYS:HZ3	27:Sd:60:PHE:HD2	1.70	0.40
33:SN:113:LYS:NZ	33:SN:114:VAL:O	2.54	0.40
52:LM:32:ARG:HD2	52:LM:120:ILE:HA	2.03	0.40
69:Ld:36:ASP:HA	69:Ld:37:PRO:HD3	1.97	0.40
79:Ln:16:ALA:HB1	79:Ln:42:ARG:HH21	1.86	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	
3	SP	204/206 (99%)	183 (90%)	21 (10%)	0	100	100
4	SQ	222/232 (96%)	201 (90%)	21 (10%)	0	100	100
5	SE	115/117 (98%)	100 (87%)	15 (13%)	0	100	100
6	SR	214/216 (99%)	190 (89%)	24 (11%)	0	100	100
7	SA	220/222 (99%)	209 (95%)	11 (5%)	0	100	100
8	SS	256/258 (99%)	229 (90%)	27 (10%)	0	100	100
9	SB	204/206 (99%)	189 (93%)	15 (7%)	0	100	100
10	ST	226/228 (99%)	211 (93%)	14 (6%)	1 (0%)	30	65
11	SU	182/184 (99%)	163 (90%)	19 (10%)	0	100	100
12	SV	183/198 (92%)	167 (91%)	16 (9%)	0	100	100
13	SW	182/184 (99%)	165 (91%)	16 (9%)	1 (0%)	25	60
14	SC	90/92 (98%)	79 (88%)	11 (12%)	0	100	100
15	SX	140/142 (99%)	124 (89%)	16 (11%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
16	SD	119/121 (98%)	91 (76%)	26 (22%)	2 (2%)	7	36
17	SY	148/150 (99%)	133 (90%)	15 (10%)	0	100	100
18	SZ	125/127 (98%)	110 (88%)	15 (12%)	0	100	100
19	SF	139/141 (99%)	125 (90%)	14 (10%)	0	100	100
20	SG	117/125 (94%)	112 (96%)	5 (4%)	0	100	100
21	SH	143/145 (99%)	131 (92%)	12 (8%)	0	100	100
22	SI	141/143 (99%)	128 (91%)	13 (9%)	0	100	100
23	SJ	98/100 (98%)	88 (90%)	10 (10%)	0	100	100
24	Sa	85/87 (98%)	73 (86%)	12 (14%)	0	100	100
25	Sb	127/129 (98%)	113 (89%)	14 (11%)	0	100	100
26	Sc	142/144 (99%)	123 (87%)	19 (13%)	0	100	100
27	Sd	132/134 (98%)	124 (94%)	8 (6%)	0	100	100
28	SK	80/82 (98%)	69 (86%)	11 (14%)	0	100	100
29	Se	95/97 (98%)	84 (88%)	11 (12%)	0	100	100
30	Sf	79/81 (98%)	67 (85%)	12 (15%)	0	100	100
31	SM	51/53 (96%)	48 (94%)	3 (6%)	0	100	100
32	Sg	55/57 (96%)	43 (78%)	12 (22%)	0	100	100
33	SN	71/73 (97%)	48 (68%)	23 (32%)	0	100	100
34	SO	310/312 (99%)	268 (86%)	42 (14%)	0	100	100
35	SL	61/63 (97%)	57 (93%)	4 (7%)	0	100	100
38	So	341/366 (93%)	311 (91%)	30 (9%)	0	100	100
43	LD	249/251 (99%)	223 (90%)	26 (10%)	0	100	100
44	LE	384/386 (100%)	355 (92%)	29 (8%)	0	100	100
45	LF	359/361 (99%)	323 (90%)	35 (10%)	1 (0%)	37	70
46	LG	292/294 (99%)	266 (91%)	26 (9%)	0	100	100
47	LH	163/175 (93%)	147 (90%)	16 (10%)	0	100	100
48	LI	220/222 (99%)	203 (92%)	17 (8%)	0	100	100
49	LJ	231/233 (99%)	208 (90%)	23 (10%)	0	100	100
50	LK	189/191 (99%)	174 (92%)	15 (8%)	0	100	100
51	LL	216/218 (99%)	189 (88%)	27 (12%)	0	100	100
52	LM	167/169 (99%)	153 (92%)	14 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
53	LN	191/193 (99%)	171 (90%)	19 (10%)	1 (0%)	25	60
54	LO	134/136 (98%)	121 (90%)	13 (10%)	0	100	100
55	LP	201/203 (99%)	181 (90%)	19 (10%)	1 (0%)	25	60
56	LQ	195/197 (99%)	186 (95%)	9 (5%)	0	100	100
57	LR	181/183 (99%)	168 (93%)	13 (7%)	0	100	100
58	LS	183/185 (99%)	170 (93%)	13 (7%)	0	100	100
59	LT	186/188 (99%)	178 (96%)	8 (4%)	0	100	100
60	LU	169/171 (99%)	159 (94%)	10 (6%)	0	100	100
61	LV	157/159 (99%)	143 (91%)	14 (9%)	0	100	100
62	LW	98/100 (98%)	93 (95%)	5 (5%)	0	100	100
63	LX	134/136 (98%)	128 (96%)	6 (4%)	0	100	100
64	LY	63/65 (97%)	59 (94%)	4 (6%)	0	100	100
65	LZ	119/121 (98%)	110 (92%)	9 (8%)	0	100	100
66	La	123/125 (98%)	117 (95%)	6 (5%)	0	100	100
67	Lb	133/135 (98%)	117 (88%)	16 (12%)	0	100	100
68	Lc	146/148 (99%)	130 (89%)	16 (11%)	0	100	100
69	Ld	56/58 (97%)	47 (84%)	9 (16%)	0	100	100
70	Le	94/96 (98%)	92 (98%)	2 (2%)	0	100	100
71	Lf	107/109 (98%)	93 (87%)	14 (13%)	0	100	100
72	Lg	125/127 (98%)	115 (92%)	10 (8%)	0	100	100
73	Lh	104/106 (98%)	98 (94%)	6 (6%)	0	100	100
74	Li	110/112 (98%)	105 (96%)	5 (4%)	0	100	100
75	Lj	117/119 (98%)	109 (93%)	8 (7%)	0	100	100
76	Lk	97/99 (98%)	91 (94%)	6 (6%)	0	100	100
77	Ll	79/81 (98%)	71 (90%)	8 (10%)	0	100	100
78	Lm	75/77 (97%)	72 (96%)	3 (4%)	0	100	100
79	Ln	48/50 (96%)	46 (96%)	2 (4%)	0	100	100
80	Lo	50/52 (96%)	44 (88%)	6 (12%)	0	100	100
81	Lp	23/25 (92%)	23 (100%)	0	0	100	100
82	Lq	101/103 (98%)	93 (92%)	8 (8%)	0	100	100
83	Lr	89/91 (98%)	87 (98%)	2 (2%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
84	Ls	151/154 (98%)	117 (78%)	31 (20%)	3 (2%)	6	33
86	A	1182/1209 (98%)	929 (79%)	190 (16%)	63 (5%)	1	18
All	All	12588/12828 (98%)	11260 (90%)	1255 (10%)	73 (1%)	24	57

All (73) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
84	Ls	133	ASP
86	A	1162	ALA
86	A	1163	LEU
86	A	1164	SER
86	A	1182	PRO
86	A	1341	TYR
86	A	1353	GLN
86	A	1394	ILE
86	A	1421	PRO
86	A	1442	ALA
86	A	1459	ALA
86	A	1538	ALA
86	A	1541	ALA
86	A	1561	ALA
86	A	1616	ALA
86	A	1820	ALA
86	A	1832	ALA
86	A	1839	ALA
86	A	1900	ALA
86	A	2020	ALA
86	A	2032	ALA
86	A	2039	ALA
86	A	2101	ALA
86	A	2232	ALA
86	A	2239	ALA
86	A	2300	ALA
86	A	2331	ALA
86	A	2343	ALA
86	A	2350	ALA
86	A	2411	ALA
16	SD	109	GLU
86	A	1136	ASN
86	A	1245	VAL
86	A	1249	ILE

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Mol	Chain	Res	Type
86	A	1257	ASP
86	A	1290	VAL
86	A	1691	ALA
86	A	1815	ALA
86	A	1873	ALA
86	A	2015	ALA
86	A	2073	ALA
86	A	2273	ALA
86	A	2326	ALA
86	A	2384	ALA
45	LF	4	PRO
84	Ls	8	PHE
86	A	1402	ILE
86	A	1454	ALA
86	A	1457	ALA
86	A	1521	ALA
86	A	1618	ALA
86	A	1707	ALA
86	A	1881	ALA
86	A	2081	ALA
86	A	2281	ALA
86	A	2392	ALA
84	Ls	98	GLY
86	A	943	ALA
86	A	1137	PRO
86	A	1277	LEU
86	A	1537	ALA
86	A	1556	ALA
86	A	1600	ALA
86	A	1637	ALA
86	A	1223	PRO
86	A	1641	ALA
55	LP	146	ALA
86	A	1236	ILE
13	SW	18	PRO
53	LN	61	PRO
10	ST	226	ILE
16	SD	127	GLY
86	A	1338	PRO

5.3.2 Protein sidechains ⓘ

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	
3	SP	170/173 (98%)	170 (100%)	0	100	100
4	SQ	200/205 (98%)	200 (100%)	0	100	100
5	SE	95/98 (97%)	95 (100%)	0	100	100
6	SR	175/175 (100%)	175 (100%)	0	100	100
7	SA	182/182 (100%)	180 (99%)	2 (1%)	70	79
8	SS	220/220 (100%)	220 (100%)	0	100	100
9	SB	172/173 (99%)	172 (100%)	0	100	100
10	ST	189/195 (97%)	189 (100%)	0	100	100
11	SU	163/165 (99%)	163 (100%)	0	100	100
12	SV	148/159 (93%)	148 (100%)	0	100	100
13	SW	156/157 (99%)	155 (99%)	1 (1%)	84	88
14	SC	77/85 (91%)	76 (99%)	1 (1%)	65	76
15	SX	126/127 (99%)	125 (99%)	1 (1%)	79	84
16	SD	88/98 (90%)	88 (100%)	0	100	100
17	SY	127/127 (100%)	126 (99%)	1 (1%)	79	84
18	SZ	90/96 (94%)	90 (100%)	0	100	100
19	SF	117/117 (100%)	116 (99%)	1 (1%)	75	83
20	SG	101/113 (89%)	101 (100%)	0	100	100
21	SH	127/128 (99%)	126 (99%)	1 (1%)	79	84
22	SI	115/115 (100%)	114 (99%)	1 (1%)	75	83
23	SJ	93/93 (100%)	93 (100%)	0	100	100
24	Sa	71/74 (96%)	71 (100%)	0	100	100
25	Sb	110/110 (100%)	110 (100%)	0	100	100
26	Sc	119/119 (100%)	118 (99%)	1 (1%)	79	84
27	Sd	102/112 (91%)	102 (100%)	0	100	100
28	SK	67/73 (92%)	67 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
29	Se	82/83 (99%)	81 (99%)	1 (1%)	67	78
30	Sf	70/70 (100%)	70 (100%)	0	100	100
31	SM	47/47 (100%)	47 (100%)	0	100	100
32	Sg	48/49 (98%)	48 (100%)	0	100	100
33	SN	56/63 (89%)	56 (100%)	0	100	100
34	SO	250/257 (97%)	250 (100%)	0	100	100
35	SL	55/56 (98%)	55 (100%)	0	100	100
38	So	298/308 (97%)	297 (100%)	1 (0%)	91	92
43	LD	190/193 (98%)	190 (100%)	0	100	100
44	LE	318/322 (99%)	317 (100%)	1 (0%)	91	92
45	LF	288/288 (100%)	287 (100%)	1 (0%)	91	92
46	LG	241/243 (99%)	241 (100%)	0	100	100
47	LH	139/154 (90%)	138 (99%)	1 (1%)	81	86
48	LI	186/186 (100%)	186 (100%)	0	100	100
49	LJ	187/191 (98%)	187 (100%)	0	100	100
50	LK	168/171 (98%)	168 (100%)	0	100	100
51	LL	185/185 (100%)	185 (100%)	0	100	100
52	LM	145/147 (99%)	145 (100%)	0	100	100
53	LN	154/154 (100%)	154 (100%)	0	100	100
54	LO	107/107 (100%)	107 (100%)	0	100	100
55	LP	175/175 (100%)	174 (99%)	1 (1%)	84	88
56	LQ	160/160 (100%)	160 (100%)	0	100	100
57	LR	138/145 (95%)	138 (100%)	0	100	100
58	LS	150/150 (100%)	149 (99%)	1 (1%)	81	86
59	LT	152/153 (99%)	152 (100%)	0	100	100
60	LU	155/155 (100%)	155 (100%)	0	100	100
61	LV	135/136 (99%)	135 (100%)	0	100	100
62	LW	87/87 (100%)	87 (100%)	0	100	100
63	LX	104/104 (100%)	104 (100%)	0	100	100
64	LY	54/57 (95%)	54 (100%)	0	100	100
65	LZ	104/105 (99%)	104 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
66	La	108/108 (100%)	107 (99%)	1 (1%)	75	83
67	Lb	112/115 (97%)	112 (100%)	0	100	100
68	Lc	117/118 (99%)	117 (100%)	0	100	100
69	Ld	46/46 (100%)	46 (100%)	0	100	100
70	Le	81/81 (100%)	81 (100%)	0	100	100
71	Lf	92/96 (96%)	92 (100%)	0	100	100
72	Lg	108/109 (99%)	108 (100%)	0	100	100
73	Lh	90/90 (100%)	89 (99%)	1 (1%)	70	79
74	Li	95/95 (100%)	95 (100%)	0	100	100
75	Lj	104/104 (100%)	103 (99%)	1 (1%)	73	81
76	Lk	80/81 (99%)	79 (99%)	1 (1%)	65	76
77	Ll	67/67 (100%)	64 (96%)	3 (4%)	23	48
78	Lm	68/68 (100%)	68 (100%)	0	100	100
79	Ln	45/45 (100%)	45 (100%)	0	100	100
80	Lo	45/47 (96%)	45 (100%)	0	100	100
81	Lp	22/23 (96%)	22 (100%)	0	100	100
82	Lq	87/88 (99%)	87 (100%)	0	100	100
83	Lr	71/71 (100%)	70 (99%)	1 (1%)	62	75
84	Ls	118/129 (92%)	117 (99%)	1 (1%)	79	84
All	All	9584/9771 (98%)	9558 (100%)	26 (0%)	90	92

All (26) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
7	SA	168	ILE
7	SA	185	LYS
13	SW	39	LYS
14	SC	64	TYR
15	SX	32	LYS
17	SY	39	LYS
19	SF	107	LYS
21	SH	98	TYR
22	SI	84	LYS
26	Sc	140	LYS
29	Se	66	LYS

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Mol	Chain	Res	Type
38	So	257	VAL
44	LE	104	THR
45	LF	12	THR
47	LH	156	LYS
55	LP	27	VAL
58	LS	31	LYS
66	La	74	TYR
73	Lh	20	LYS
75	Lj	107	LYS
76	Lk	4	LYS
77	Ll	11	ARG
77	Ll	19	CYS
77	Ll	22	CYS
83	Lr	45	LYS
84	Ls	102	LEU

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (140) such sidechains are listed below:

Mol	Chain	Res	Type
3	SP	39	ASN
3	SP	140	ASN
4	SQ	40	ASN
4	SQ	74	GLN
6	SR	94	GLN
6	SR	110	HIS
6	SR	220	ASN
8	SS	69	HIS
8	SS	96	ASN
9	SB	34	GLN
9	SB	100	ASN
9	SB	186	ASN
10	ST	56	ASN
10	ST	59	GLN
10	ST	139	ASN
10	ST	197	ASN
11	SU	29	ASN
11	SU	74	GLN
11	SU	174	ASN
12	SV	20	GLN
12	SV	35	ASN
12	SV	52	ASN
12	SV	103	GLN

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Mol	Chain	Res	Type
12	SV	159	GLN
13	SW	112	GLN
13	SW	176	ASN
14	SC	62	GLN
15	SX	22	ASN
17	SY	58	HIS
17	SY	105	ASN
18	SZ	12	GLN
18	SZ	24	ASN
19	SF	77	GLN
19	SF	83	GLN
20	SG	29	GLN
20	SG	74	GLN
20	SG	101	ASN
21	SH	8	GLN
21	SH	21	ASN
21	SH	71	GLN
21	SH	99	HIS
22	SI	16	ASN
22	SI	70	GLN
22	SI	101	ASN
22	SI	138	GLN
23	SJ	49	ASN
24	Sa	29	HIS
25	Sb	56	HIS
25	Sb	80	ASN
27	Sd	34	ASN
27	Sd	110	GLN
29	Se	43	ASN
30	Sf	5	GLN
30	Sf	19	HIS
30	Sf	42	ASN
32	Sg	17	GLN
33	SN	123	ASN
33	SN	135	HIS
33	SN	145	HIS
33	SN	151	ASN
34	SO	159	ASN
34	SO	308	ASN
35	SL	27	GLN
38	So	168	ASN
38	So	241	HIS

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Mol	Chain	Res	Type
38	So	292	GLN
38	So	358	HIS
43	LD	47	GLN
43	LD	97	ASN
43	LD	205	ASN
44	LE	198	HIS
44	LE	279	ASN
44	LE	293	ASN
45	LF	87	GLN
45	LF	296	GLN
45	LF	316	ASN
45	LF	322	GLN
46	LG	206	GLN
48	LI	61	ASN
48	LI	64	GLN
48	LI	186	HIS
48	LI	244	ASN
49	LJ	59	GLN
49	LJ	77	GLN
49	LJ	192	GLN
49	LJ	243	GLN
50	LK	59	ASN
50	LK	149	ASN
50	LK	157	ASN
50	LK	169	ASN
52	LM	90	GLN
53	LN	19	GLN
53	LN	105	ASN
53	LN	160	GLN
54	LO	41	GLN
55	LP	117	ASN
55	LP	182	ASN
56	LQ	50[A]	ASN
57	LR	55	GLN
57	LR	97	ASN
57	LR	118	GLN
58	LS	9	GLN
58	LS	23	ASN
58	LS	45	ASN
58	LS	58	ASN
59	LT	166	ASN
60	LU	49	HIS

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Mol	Chain	Res	Type
60	LU	108	GLN
60	LU	138	GLN
62	LW	49	ASN
62	LW	87	ASN
64	LY	59	HIS
66	La	4	GLN
66	La	110	HIS
67	Lb	103	GLN
67	Lb	122	HIS
67	Lb	123	GLN
67	Lb	127	ASN
68	Lc	14	HIS
68	Lc	62	HIS
68	Lc	64	GLN
69	Ld	10	HIS
70	Le	11	ASN
71	Lf	87	ASN
72	Lg	6	HIS
72	Lg	13	HIS
73	Lh	26	ASN
73	Lh	42	GLN
73	Lh	88	ASN
74	Li	52	GLN
74	Li	61	GLN
76	Lk	92	ASN
78	Lm	57	ASN
79	Ln	25	GLN
79	Ln	32	ASN
80	Lo	109	ASN
82	Lq	23	HIS
82	Lq	59	HIS
84	Ls	88	ASN
84	Ls	104	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
1	S2	1768/1800 (98%)	533 (30%)	52 (2%)
2	Sl	5/6 (83%)	1 (20%)	0
36	Sm	75/76 (98%)	35 (46%)	0
37	Sn	74/75 (98%)	23 (31%)	0

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Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
40	LA	3180/3394 (93%)	717 (22%)	42 (1%)
41	LB	120/121 (99%)	15 (12%)	1 (0%)
42	LC	157/158 (99%)	32 (20%)	3 (1%)
All	All	5379/5630 (95%)	1356 (25%)	98 (1%)

All (1356) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
1	S2	2	A
1	S2	4	C
1	S2	14	C
1	S2	25	C
1	S2	26	A
1	S2	34	G
1	S2	43	A
1	S2	45	U
1	S2	47	A
1	S2	56	U
1	S2	57	G
1	S2	62	A
1	S2	65	A
1	S2	67	A
1	S2	68	A
1	S2	69	G
1	S2	73	U
1	S2	74	U
1	S2	75	U
1	S2	76	A
1	S2	78	A
1	S2	79	C
1	S2	80	A
1	S2	81	G
1	S2	104	A
1	S2	114	C
1	S2	116	U
1	S2	121	U
1	S2	127	G
1	S2	129	U
1	S2	130	C
1	S2	131	C
1	S2	132	U
1	S2	133	U

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Mol	Chain	Res	Type
1	S2	134	U
1	S2	135	A
1	S2	136	C
1	S2	137	U
1	S2	138	A
1	S2	140	A
1	S2	141	U
1	S2	142	G
1	S2	153	G
1	S2	155	U
1	S2	156	A
1	S2	158	U
1	S2	161	U
1	S2	168	A
1	S2	171	A
1	S2	172	C
1	S2	174	U
1	S2	176	C
1	S2	178	U
1	S2	179	A
1	S2	182	A
1	S2	185	U
1	S2	186	C
1	S2	187	G
1	S2	188	A
1	S2	189	C
1	S2	191	C
1	S2	193	U
1	S2	194	U
1	S2	195	G
1	S2	201	G
1	S2	203	U
1	S2	204	G
1	S2	216	U
1	S2	217	A
1	S2	218	A
1	S2	223	U
1	S2	224	C
1	S2	225	A
1	S2	227	U
1	S2	228	G
1	S2	230	C

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Mol	Chain	Res	Type
1	S2	232	U
1	S2	233	C
1	S2	234	G
1	S2	235	G
1	S2	236	A
1	S2	238	U
1	S2	240	U
1	S2	241	U
1	S2	243	G
1	S2	246	G
1	S2	250	C
1	S2	256	A
1	S2	260	U
1	S2	261	U
1	S2	265	A
1	S2	270	C
1	S2	272	U
1	S2	274	G
1	S2	276	C
1	S2	277	U
1	S2	278	U
1	S2	279	G
1	S2	280	U
1	S2	287	G
1	S2	299	A
1	S2	313	U
1	S2	314	C
1	S2	316	A
1	S2	320	U
1	S2	321	C
1	S2	322	G
1	S2	323	A
1	S2	324	U
1	S2	330	G
1	S2	333	A
1	S2	334	G
1	S2	337	G
1	S2	338	C
1	S2	352	A
1	S2	353	A
1	S2	359	A
1	S2	360	A

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Mol	Chain	Res	Type
1	S2	361	C
1	S2	369	A
1	S2	370	A
1	S2	373	G
1	S2	378	A
1	S2	380	U
1	S2	388	G
1	S2	390	G
1	S2	400	A
1	S2	401	A
1	S2	402	C
1	S2	404	G
1	S2	406	U
1	S2	411	C
1	S2	415	C
1	S2	417	A
1	S2	419	G
1	S2	423	G
1	S2	424	C
1	S2	425	A
1	S2	426	G
1	S2	434	G
1	S2	435	C
1	S2	438	A
1	S2	439	U
1	S2	444	C
1	S2	446	A
1	S2	447	U
1	S2	448	C
1	S2	454	U
1	S2	460	A
1	S2	468	A
1	S2	482	U
1	S2	485	A
1	S2	487	G
1	S2	489	C
1	S2	491	C
1	S2	492	A
1	S2	493	U
1	S2	494	U
1	S2	495	C
1	S2	496	G

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Mol	Chain	Res	Type
1	S2	498	G
1	S2	499	U
1	S2	500	C
1	S2	502	U
1	S2	506	A
1	S2	507	U
1	S2	510	G
1	S2	511	A
1	S2	512	A
1	S2	513	U
1	S2	517	U
1	S2	518	A
1	S2	519	C
1	S2	520	A
1	S2	525	A
1	S2	527	A
1	S2	529	A
1	S2	534	A
1	S2	538	A
1	S2	539	G
1	S2	540	G
1	S2	541	A
1	S2	542	A
1	S2	543	C
1	S2	554	C
1	S2	555	A
1	S2	556	A
1	S2	557	G
1	S2	558	U
1	S2	565	C
1	S2	571	G
1	S2	572	C
1	S2	578	U
1	S2	579	A
1	S2	580	A
1	S2	594	A
1	S2	595	G
1	S2	606	A
1	S2	609	U
1	S2	610	G
1	S2	611	U
1	S2	617	U

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Mol	Chain	Res	Type
1	S2	619	A
1	S2	620	A
1	S2	623	A
1	S2	624	G
1	S2	635	A
1	S2	638	U
1	S2	639	U
1	S2	640	U
1	S2	641	G
1	S2	643	G
1	S2	645	C
1	S2	651	G
1	S2	653	C
1	S2	654	C
1	S2	655	G
1	S2	656	G
1	S2	677	G
1	S2	678	A
1	S2	680	U
1	S2	682	C
1	S2	684	A
1	S2	687	G
1	S2	693	U
1	S2	694	U
1	S2	696	C
1	S2	697	C
1	S2	698	U
1	S2	700	C
1	S2	702	G
1	S2	703	G
1	S2	704	C
1	S2	705	U
1	S2	706	A
1	S2	707	A
1	S2	708	C
1	S2	709	C
1	S2	710	U
1	S2	711	U
1	S2	712	G
1	S2	714	G
1	S2	728	U
1	S2	729	G

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Mol	Chain	Res	Type
1	S2	730	G
1	S2	732	G
1	S2	733	A
1	S2	736	C
1	S2	738	G
1	S2	739	G
1	S2	741	C
1	S2	742	U
1	S2	743	U
1	S2	744	U
1	S2	745	U
1	S2	753	A
1	S2	755	A
1	S2	756	A
1	S2	765	G
1	S2	766	U
1	S2	771	A
1	S2	774	A
1	S2	775	G
1	S2	778	G
1	S2	781	U
1	S2	782	U
1	S2	783	G
1	S2	787	G
1	S2	789	A
1	S2	794	U
1	S2	804	A
1	S2	807	A
1	S2	812	A
1	S2	813	U
1	S2	814	A
1	S2	815	G
1	S2	816	G
1	S2	818	C
1	S2	819	G
1	S2	820	U
1	S2	821	U
1	S2	823	G
1	S2	832	U
1	S2	833	U
1	S2	836	U
1	S2	837	G

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Mol	Chain	Res	Type
1	S2	839	U
1	S2	840	U
1	S2	841	U
1	S2	846	G
1	S2	851	U
1	S2	852	C
1	S2	855	A
1	S2	856	A
1	S2	857	U
1	S2	863	A
1	S2	865	A
1	S2	873	U
1	S2	876	G
1	S2	877	G
1	S2	886	U
1	S2	898	A
1	S2	899	G
1	S2	901	G
1	S2	902	G
1	S2	904	G
1	S2	912	U
1	S2	913	G
1	S2	929	A
1	S2	932	U
1	S2	933	A
1	S2	934	C
1	S2	935	U
1	S2	940	A
1	S2	945	U
1	S2	960	U
1	S2	964	U
1	S2	966	A
1	S2	970	A
1	S2	973	A
1	S2	977	A
1	S2	988	A
1	S2	989	U
1	S2	992	A
1	S2	996	U
1	S2	998	A
1	S2	1001	A
1	S2	1004	U

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Mol	Chain	Res	Type
1	S2	1024	U
1	S2	1026	A
1	S2	1028	C
1	S2	1029	U
1	S2	1032	G
1	S2	1039	A
1	S2	1040	G
1	S2	1052	U
1	S2	1053	G
1	S2	1057	U
1	S2	1058	U
1	S2	1059	U
1	S2	1060	U
1	S2	1061	A
1	S2	1062	A
1	S2	1063	U
1	S2	1074	G
1	S2	1080	U
1	S2	1081	A
1	S2	1082	C
1	S2	1092	A
1	S2	1096	C
1	S2	1099	U
1	S2	1100	G
1	S2	1109	G
1	S2	1111	G
1	S2	1113	A
1	S2	1138	A
1	S2	1156	C
1	S2	1158	C
1	S2	1160	A
1	S2	1164	G
1	S2	1167	G
1	S2	1170	G
1	S2	1183	A
1	S2	1185	U
1	S2	1186	U
1	S2	1187	U
1	S2	1191	U
1	S2	1194	A
1	S2	1196	A
1	S2	1197	C

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Mol	Chain	Res	Type
1	S2	1199	G
1	S2	1200	G
1	S2	1208	A
1	S2	1212	G
1	S2	1214	U
1	S2	1217	A
1	S2	1218	G
1	S2	1227	A
1	S2	1229	G
1	S2	1241	G
1	S2	1243	G
1	S2	1244	A
1	S2	1245	G
1	S2	1246	C
1	S2	1252	C
1	S2	1256	A
1	S2	1257	U
1	S2	1258	U
1	S2	1263	G
1	S2	1264	G
1	S2	1265	G
1	S2	1269	U
1	S2	1273	G
1	S2	1274	C
1	S2	1275	A
1	S2	1276	U
1	S2	1285	U
1	S2	1294	G
1	S2	1301	U
1	S2	1307	U
1	S2	1314	U
1	S2	1315	U
1	S2	1318	G
1	S2	1321	A
1	S2	1322	A
1	S2	1325	A
1	S2	1337	A
1	S2	1341	A
1	S2	1344	A
1	S2	1345	A
1	S2	1346	A
1	S2	1348	A

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Mol	Chain	Res	Type
1	S2	1349	G
1	S2	1354	G
1	S2	1360	A
1	S2	1361	U
1	S2	1363	U
1	S2	1367	G
1	S2	1370	U
1	S2	1371	A
1	S2	1372	U
1	S2	1373	C
1	S2	1381	U
1	S2	1382	A
1	S2	1383	G
1	S2	1385	G
1	S2	1390	U
1	S2	1398	U
1	S2	1399	C
1	S2	1400	A
1	S2	1402	G
1	S2	1414	U
1	S2	1415	U
1	S2	1421	A
1	S2	1427	A
1	S2	1431	C
1	S2	1432	U
1	S2	1433	G
1	S2	1446	A
1	S2	1447	C
1	S2	1448	G
1	S2	1457	C
1	S2	1458	G
1	S2	1459	C
1	S2	1460	A
1	S2	1469	A
1	S2	1472	C
1	S2	1473	U
1	S2	1479	A
1	S2	1482	C
1	S2	1483	A
1	S2	1488	G
1	S2	1489	U
1	S2	1490	C

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Mol	Chain	Res	Type
1	S2	1491	U
1	S2	1492	A
1	S2	1493	A
1	S2	1496	U
1	S2	1510	U
1	S2	1514	U
1	S2	1515	A
1	S2	1516	A
1	S2	1517	U
1	S2	1518	C
1	S2	1521	G
1	S2	1523	G
1	S2	1524	A
1	S2	1528	U
1	S2	1529	C
1	S2	1531	G
1	S2	1537	C
1	S2	1540	G
1	S2	1543	A
1	S2	1545	A
1	S2	1556	A
1	S2	1557	U
1	S2	1558	U
1	S2	1559	A
1	S2	1572	G
1	S2	1573	A
1	S2	1574	G
1	S2	1575	G
1	S2	1576	A
1	S2	1583	A
1	S2	1584	G
1	S2	1585	U
1	S2	1590	G
1	S2	1592	A
1	S2	1601	G
1	S2	1607	G
1	S2	1611	A
1	S2	1614	A
1	S2	1616	G
1	S2	1619	C
1	S2	1622	G
1	S2	1634	C

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Mol	Chain	Res	Type
1	S2	1637	C
1	S2	1657	U
1	S2	1658	G
1	S2	1660	A
1	S2	1673	G
1	S2	1676	U
1	S2	1682	U
1	S2	1688	U
1	S2	1689	A
1	S2	1693	A
1	S2	1700	C
1	S2	1701	A
1	S2	1702	A
1	S2	1703	C
1	S2	1709	C
1	S2	1711	C
1	S2	1715	G
1	S2	1717	G
1	S2	1736	G
1	S2	1740	A
1	S2	1755	A
1	S2	1757	G
1	S2	1760	G
1	S2	1762	A
1	S2	1766	A
1	S2	1767	G
1	S2	1769	U
1	S2	1770	U
1	S2	1780	G
1	S2	1782	A
1	S2	1783	C
1	S2	1788	G
1	S2	1792	G
1	S2	1793	G
1	S2	1794	A
1	S2	1796	C
1	S2	1799	U
2	Sl	2	U
36	Sm	3	G
36	Sm	8	U
36	Sm	10	G
36	Sm	14	A

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Mol	Chain	Res	Type
36	Sm	15	G
36	Sm	16	U
36	Sm	19	G
36	Sm	20	U
36	Sm	21	A
36	Sm	34	U
36	Sm	35	U
36	Sm	46	G
36	Sm	47	U
36	Sm	48	C
36	Sm	49	G
36	Sm	50	C
36	Sm	51	A
36	Sm	52	G
36	Sm	53	G
36	Sm	54	U
36	Sm	55	U
36	Sm	57	G
36	Sm	58	A
36	Sm	59	A
36	Sm	60	U
36	Sm	61	C
36	Sm	62	C
36	Sm	64	G
36	Sm	65	C
36	Sm	66	A
36	Sm	67	C
36	Sm	68	G
36	Sm	69	A
36	Sm	73	A
36	Sm	74	C
37	Sn	8	U
37	Sn	9	G
37	Sn	11	C
37	Sn	14	A
37	Sn	19	G
37	Sn	20	A
37	Sn	21	A
37	Sn	25	C
37	Sn	27	C
37	Sn	36	U
37	Sn	45	U

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Mol	Chain	Res	Type
37	Sn	46	G
37	Sn	47	U
37	Sn	48	C
37	Sn	49	C
37	Sn	54	A
37	Sn	57	G
37	Sn	59	A
37	Sn	61	C
37	Sn	63	G
37	Sn	64	A
37	Sn	66	C
37	Sn	76	A
40	LA	6	A
40	LA	11	A
40	LA	14	U
40	LA	21	G
40	LA	22	G
40	LA	26	A
40	LA	30	G
40	LA	40	A
40	LA	43	A
40	LA	44	U
40	LA	48	A
40	LA	49	A
40	LA	51	A
40	LA	59	G
40	LA	60	A
40	LA	65	A
40	LA	66	A
40	LA	73	C
40	LA	74	G
40	LA	76	G
40	LA	85	A
40	LA	89	A
40	LA	92	G
40	LA	109	A
40	LA	110	G
40	LA	111	C
40	LA	113	C
40	LA	120	G
40	LA	121	A
40	LA	122	A

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Mol	Chain	Res	Type
40	LA	133	U
40	LA	136	G
40	LA	150	A
40	LA	156	G
40	LA	157	A
40	LA	166	C
40	LA	173	G
40	LA	187	A
40	LA	190	U
40	LA	191	U
40	LA	200	C
40	LA	206	G
40	LA	210	U
40	LA	211	A
40	LA	213	A
40	LA	218	G
40	LA	219	A
40	LA	221	A
40	LA	231	G
40	LA	236	G
40	LA	239	G
40	LA	240	U
40	LA	243	G
40	LA	249	U
40	LA	252	U
40	LA	258	G
40	LA	263	C
40	LA	269	G
40	LA	282	G
40	LA	283	G
40	LA	286	U
40	LA	295	A
40	LA	298	U
40	LA	315	C
40	LA	323	A
40	LA	329	U
40	LA	330	G
40	LA	334	A
40	LA	338	A
40	LA	339	C
40	LA	346	C
40	LA	350	C

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Mol	Chain	Res	Type
40	LA	351	A
40	LA	376	G
40	LA	385	A
40	LA	390	G
40	LA	395	A
40	LA	397	A
40	LA	399	A
40	LA	401	U
40	LA	402	A
40	LA	403	C
40	LA	421	G
40	LA	422	A
40	LA	438	A
40	LA	440	A
40	LA	441	U
40	LA	442	G
40	LA	443	G
40	LA	445	G
40	LA	446	U
40	LA	447	U
40	LA	448	U
40	LA	449	U
40	LA	450	G
40	LA	487	U
40	LA	488	U
40	LA	489	U
40	LA	490	C
40	LA	491	A
40	LA	492	C
40	LA	494	G
40	LA	498	A
40	LA	510	G
40	LA	515	C
40	LA	517	G
40	LA	520	U
40	LA	521	A
40	LA	535	G
40	LA	543	C
40	LA	544	C
40	LA	545	U
40	LA	546	C
40	LA	547	G

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Mol	Chain	Res	Type
40	LA	552	G
40	LA	555	U
40	LA	557	A
40	LA	559	A
40	LA	568	G
40	LA	578	A
40	LA	579	G
40	LA	597	G
40	LA	600	G
40	LA	603	A
40	LA	604	G
40	LA	609	G
40	LA	610	G
40	LA	611	A
40	LA	612	U
40	LA	619	A
40	LA	620	U
40	LA	621	A
40	LA	625	G
40	LA	637	C
40	LA	638	C
40	LA	642	U
40	LA	649	A
40	LA	650	C
40	LA	660	A
40	LA	667	C
40	LA	677	A
40	LA	681	U
40	LA	691	A
40	LA	699	A
40	LA	705	A
40	LA	712	G
40	LA	716	A
40	LA	720	A
40	LA	726	G
40	LA	737	G
40	LA	742	G
40	LA	758	C
40	LA	763	G
40	LA	764	U
40	LA	765	C
40	LA	766	U

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Mol	Chain	Res	Type
40	LA	767	U
40	LA	771	A
40	LA	774	G
40	LA	776	U
40	LA	777	U
40	LA	780	A
40	LA	781	G
40	LA	785	G
40	LA	786	A
40	LA	806	A
40	LA	808	A
40	LA	817	A
40	LA	830	A
40	LA	832	G
40	LA	848	A
40	LA	849	C
40	LA	850	U
40	LA	851	C
40	LA	861	C
40	LA	865	U
40	LA	868	C
40	LA	871	U
40	LA	874	U
40	LA	879	U
40	LA	894	G
40	LA	895	A
40	LA	896	A
40	LA	899	U
40	LA	906	A
40	LA	907	G
40	LA	908	G
40	LA	914	A
40	LA	916	G
40	LA	917	A
40	LA	921	A
40	LA	923	C
40	LA	932	U
40	LA	934	G
40	LA	937	G
40	LA	944	C
40	LA	959	C
40	LA	960	U

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Mol	Chain	Res	Type
40	LA	971	G
40	LA	974	G
40	LA	981	U
40	LA	982	C
40	LA	991	G
40	LA	1002	A
40	LA	1012	G
40	LA	1015	U
40	LA	1018	G
40	LA	1020	G
40	LA	1021	G
40	LA	1024	G
40	LA	1026	A
40	LA	1028	U
40	LA	1029	G
40	LA	1040	A
40	LA	1041	U
40	LA	1045	C
40	LA	1047	A
40	LA	1049	C
40	LA	1064	A
40	LA	1065	A
40	LA	1072	G
40	LA	1081	U
40	LA	1093	A
40	LA	1094	U
40	LA	1095	U
40	LA	1096	U
40	LA	1097	G
40	LA	1098	A
40	LA	1103	A
40	LA	1104	G
40	LA	1117	G
40	LA	1118	C
40	LA	1128	U
40	LA	1131	G
40	LA	1144	U
40	LA	1145	G
40	LA	1148	G
40	LA	1153	A
40	LA	1158	A
40	LA	1159	A

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Mol	Chain	Res	Type
40	LA	1177	G
40	LA	1178	G
40	LA	1180	A
40	LA	1181	U
40	LA	1182	A
40	LA	1190	A
40	LA	1192	C
40	LA	1193	A
40	LA	1196	C
40	LA	1197	A
40	LA	1201	C
40	LA	1202	A
40	LA	1206	G
40	LA	1208	U
40	LA	1217	A
40	LA	1218	U
40	LA	1222	G
40	LA	1223	A
40	LA	1227	C
40	LA	1229	G
40	LA	1234	G
40	LA	1236	G
40	LA	1237	G
40	LA	1238	C
40	LA	1239	C
40	LA	1240	A
40	LA	1241	U
40	LA	1242	G
40	LA	1243	G
40	LA	1244	A
40	LA	1245	A
40	LA	1246	G
40	LA	1248	C
40	LA	1251	A
40	LA	1253	U
40	LA	1258	U
40	LA	1262	G
40	LA	1263	A
40	LA	1264	G
40	LA	1266	G
40	LA	1267	U
40	LA	1269	U

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Mol	Chain	Res	Type
40	LA	1270	A
40	LA	1271	A
40	LA	1272	C
40	LA	1278	A
40	LA	1279	C
40	LA	1280	C
40	LA	1282	G
40	LA	1285	G
40	LA	1286	A
40	LA	1287	A
40	LA	1295	G
40	LA	1307	G
40	LA	1308	A
40	LA	1309	U
40	LA	1313	G
40	LA	1316	C
40	LA	1318	A
40	LA	1325	U
40	LA	1330	A
40	LA	1345	G
40	LA	1348	U
40	LA	1349	G
40	LA	1351	U
40	LA	1352	A
40	LA	1354	G
40	LA	1355	A
40	LA	1356	U
40	LA	1357	G
40	LA	1386	A
40	LA	1392	G
40	LA	1399	A
40	LA	1400	G
40	LA	1418	A
40	LA	1419	A
40	LA	1421	G
40	LA	1429	G
40	LA	1430	U
40	LA	1431	G
40	LA	1434	G
40	LA	1437	C
40	LA	1442	U
40	LA	1443	G

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Mol	Chain	Res	Type
40	LA	1446	A
40	LA	1450	G
40	LA	1455	U
40	LA	1481	A
40	LA	1482	A
40	LA	1483	G
40	LA	1484	U
40	LA	1487	G
40	LA	1488	G
40	LA	1503	A
40	LA	1508	C
40	LA	1511	U
40	LA	1523	U
40	LA	1528	G
40	LA	1533	U
40	LA	1536	G
40	LA	1542	G
40	LA	1549	U
40	LA	1555	U
40	LA	1556	C
40	LA	1557	A
40	LA	1559	A
40	LA	1560	G
40	LA	1562	C
40	LA	1563	C
40	LA	1565	G
40	LA	1566	A
40	LA	1567	U
40	LA	1568	U
40	LA	1569	U
40	LA	1572	U
40	LA	1573	G
40	LA	1574	C
40	LA	1575	A
40	LA	1576	G
40	LA	1580	A
40	LA	1581	C
40	LA	1582	C
40	LA	1583	A
40	LA	1587	A
40	LA	1588	A
40	LA	1589	A

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Mol	Chain	Res	Type
40	LA	1590	G
40	LA	1602	A
40	LA	1605	A
40	LA	1621	A
40	LA	1629	U
40	LA	1632	A
40	LA	1639	C
40	LA	1642	A
40	LA	1643	A
40	LA	1645	U
40	LA	1658	G
40	LA	1677	G
40	LA	1683	A
40	LA	1687	U
40	LA	1688	U
40	LA	1696	A
40	LA	1704	A
40	LA	1705	U
40	LA	1715	A
40	LA	1716	U
40	LA	1717	U
40	LA	1722	U
40	LA	1724	U
40	LA	1725	C
40	LA	1750	A
40	LA	1751	G
40	LA	1756	C
40	LA	1760	A
40	LA	1765	U
40	LA	1766	G
40	LA	1770	G
40	LA	1775	G
40	LA	1780	G
40	LA	1788	C
40	LA	1796	G
40	LA	1797	A
40	LA	1814	A
40	LA	1816	A
40	LA	1817	G
40	LA	1819	U
40	LA	1820	U
40	LA	1821	U

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Mol	Chain	Res	Type
40	LA	1822	C
40	LA	1839	A
40	LA	1840	U
40	LA	1841	A
40	LA	1842	A
40	LA	1846	C
40	LA	1849	C
40	LA	1850	A
40	LA	1866	C
40	LA	1867	A
40	LA	1874	A
40	LA	1880	U
40	LA	1881	A
40	LA	1893	A
40	LA	1897	G
40	LA	1906	G
40	LA	1908	A
40	LA	1930	A
40	LA	1935	G
40	LA	1943	C
40	LA	1951	C
40	LA	1952	G
40	LA	1953	G
40	LA	1954	G
40	LA	2101	C
40	LA	2102	U
40	LA	2111	G
40	LA	2112	U
40	LA	2113	A
40	LA	2121	G
40	LA	2122	G
40	LA	2131	A
40	LA	2139	A
40	LA	2149	A
40	LA	2158	A
40	LA	2169	G
40	LA	2170	U
40	LA	2187	G
40	LA	2188	A
40	LA	2201	G
40	LA	2205	U
40	LA	2206	G

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Mol	Chain	Res	Type
40	LA	2207	A
40	LA	2209	U
40	LA	2223	A
40	LA	2232	A
40	LA	2244	A
40	LA	2249	G
40	LA	2250	G
40	LA	2252	A
40	LA	2256	A
40	LA	2262	A
40	LA	2272	G
40	LA	2273	G
40	LA	2274	U
40	LA	2279	A
40	LA	2280	A
40	LA	2281	A
40	LA	2282	U
40	LA	2284	C
40	LA	2285	C
40	LA	2288	G
40	LA	2299	A
40	LA	2306	C
40	LA	2307	G
40	LA	2308	C
40	LA	2309	A
40	LA	2310	U
40	LA	2313	A
40	LA	2314	U
40	LA	2315	G
40	LA	2335	G
40	LA	2336	U
40	LA	2347	U
40	LA	2364	G
40	LA	2372	A
40	LA	2373	A
40	LA	2374	C
40	LA	2375	G
40	LA	2385	G
40	LA	2388	U
40	LA	2393	G
40	LA	2394	G
40	LA	2397	A

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Mol	Chain	Res	Type
40	LA	2402	A
40	LA	2403	G
40	LA	2404	A
40	LA	2411	U
40	LA	2412	G
40	LA	2419	A
40	LA	2422	C
40	LA	2434	U
40	LA	2435	G
40	LA	2437	G
40	LA	2438	A
40	LA	2439	A
40	LA	2440	G
40	LA	2446	U
40	LA	2451	G
40	LA	2452	G
40	LA	2493	U
40	LA	2496	C
40	LA	2498	U
40	LA	2501	U
40	LA	2502	A
40	LA	2503	G
40	LA	2507	C
40	LA	2514	U
40	LA	2515	A
40	LA	2522	G
40	LA	2523	A
40	LA	2524	A
40	LA	2525	G
40	LA	2526	C
40	LA	2531	C
40	LA	2532	U
40	LA	2537	U
40	LA	2538	U
40	LA	2539	C
40	LA	2540	A
40	LA	2541	U
40	LA	2542	U
40	LA	2543	U
40	LA	2546	C
40	LA	2549	G
40	LA	2552	C

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Mol	Chain	Res	Type
40	LA	2554	A
40	LA	2561	A
40	LA	2569	A
40	LA	2570	U
40	LA	2571	U
40	LA	2572	C
40	LA	2573	G
40	LA	2576	G
40	LA	2585	G
40	LA	2589	G
40	LA	2593	A
40	LA	2594	C
40	LA	2595	A
40	LA	2606	G
40	LA	2607	G
40	LA	2614	G
40	LA	2626	A
40	LA	2629	U
40	LA	2636	A
40	LA	2648	G
40	LA	2652	U
40	LA	2656	A
40	LA	2672	G
40	LA	2674	A
40	LA	2677	G
40	LA	2689	A
40	LA	2691	A
40	LA	2694	A
40	LA	2696	A
40	LA	2703	A
40	LA	2704	A
40	LA	2714	G
40	LA	2719	U
40	LA	2728	G
40	LA	2748	A
40	LA	2749	G
40	LA	2752	U
40	LA	2753	G
40	LA	2755	C
40	LA	2777	G
40	LA	2778	G
40	LA	2796	G

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Mol	Chain	Res	Type
40	LA	2800	G
40	LA	2801	A
40	LA	2802	A
40	LA	2803	A
40	LA	2804	A
40	LA	2805	G
40	LA	2810	C
40	LA	2817	A
40	LA	2818	U
40	LA	2821	C
40	LA	2842	U
40	LA	2844	C
40	LA	2845	A
40	LA	2847	A
40	LA	2849	C
40	LA	2856	G
40	LA	2861	U
40	LA	2867	C
40	LA	2871	G
40	LA	2872	A
40	LA	2873	U
40	LA	2875	U
40	LA	2876	C
40	LA	2887	A
40	LA	2894	C
40	LA	2899	C
40	LA	2910	A
40	LA	2916	U
40	LA	2918	G
40	LA	2923	U
40	LA	2928	C
40	LA	2933	A
40	LA	2935	U
40	LA	2936	A
40	LA	2941	A
40	LA	2942	C
40	LA	2947	G
40	LA	2954	U
40	LA	2955	U
40	LA	2957	G
40	LA	2971	A
40	LA	2983	C

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Mol	Chain	Res	Type
40	LA	2990	G
40	LA	2996	U
40	LA	2997	G
40	LA	3003	G
40	LA	3012	A
40	LA	3030	G
40	LA	3055	U
40	LA	3056	U
40	LA	3058	U
40	LA	3059	G
40	LA	3078	U
40	LA	3079	U
40	LA	3080	G
40	LA	3086	A
40	LA	3092	C
40	LA	3101	G
40	LA	3104	U
40	LA	3115	C
40	LA	3116	G
40	LA	3118	C
40	LA	3119	U
40	LA	3122	A
40	LA	3129	A
40	LA	3130	A
40	LA	3131	U
40	LA	3142	A
40	LA	3143	C
40	LA	3151	U
40	LA	3154	C
40	LA	3155	U
40	LA	3156	U
40	LA	3157	U
40	LA	3158	G
40	LA	3165	A
40	LA	3170	A
40	LA	3172	A
40	LA	3173	G
40	LA	3174	A
40	LA	3175	U
40	LA	3176	G
40	LA	3180	A
40	LA	3181	C

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Mol	Chain	Res	Type
40	LA	3187	A
40	LA	3196	U
40	LA	3199	G
40	LA	3207	U
40	LA	3209	A
40	LA	3210	A
40	LA	3216	G
40	LA	3217	C
40	LA	3218	A
40	LA	3219	G
40	LA	3222	U
40	LA	3229	G
40	LA	3242	G
40	LA	3243	A
40	LA	3244	A
40	LA	3245	A
40	LA	3247	G
40	LA	3259	U
40	LA	3260	G
40	LA	3263	G
40	LA	3270	U
40	LA	3273	A
40	LA	3276	G
40	LA	3277	U
40	LA	3281	U
40	LA	3286	G
40	LA	3287	U
40	LA	3288	G
40	LA	3289	G
40	LA	3294	A
40	LA	3295	A
40	LA	3304	U
40	LA	3313	U
40	LA	3316	A
40	LA	3318	G
40	LA	3319	U
40	LA	3320	A
40	LA	3334	U
40	LA	3341	U
40	LA	3345	G
40	LA	3346	U
40	LA	3347	A

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Mol	Chain	Res	Type
40	LA	3351	U
40	LA	3352	U
40	LA	3353	G
40	LA	3354	U
40	LA	3355	U
40	LA	3356	G
40	LA	3368	U
40	LA	3369	G
40	LA	3378	C
40	LA	3381	U
40	LA	3382	U
40	LA	3386	G
40	LA	3389	U
40	LA	3390	G
40	LA	3396	U
41	LB	7	G
41	LB	10	C
41	LB	17	A
41	LB	22	A
41	LB	35	C
41	LB	52	G
41	LB	53	U
41	LB	54	U
41	LB	65	G
41	LB	74	C
41	LB	76	A
41	LB	99	G
41	LB	102	A
41	LB	112	G
41	LB	121	U
42	LC	16	G
42	LC	25	G
42	LC	34	U
42	LC	35	C
42	LC	38	U
42	LC	59	A
42	LC	62	C
42	LC	63	G
42	LC	80	A
42	LC	81	U
42	LC	82	U
42	LC	83	C

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Mol	Chain	Res	Type
42	LC	84	C
42	LC	85	G
42	LC	86	U
42	LC	87	G
42	LC	90	U
42	LC	95	G
42	LC	97	A
42	LC	99	C
42	LC	104	A
42	LC	106	C
42	LC	111	A
42	LC	112	U
42	LC	113	U
42	LC	125	U
42	LC	126	A
42	LC	138	A
42	LC	148	G
42	LC	152	G
42	LC	157	U
42	LC	158	U

All (98) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
1	S2	68	A
1	S2	77	U
1	S2	139	C
1	S2	141	U
1	S2	215	A
1	S2	224	C
1	S2	237	C
1	S2	278	U
1	S2	313	U
1	S2	322	G
1	S2	352	A
1	S2	387	A
1	S2	400	A
1	S2	447	U
1	S2	511	A
1	S2	518	A
1	S2	539	G
1	S2	541	A

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Mol	Chain	Res	Type
1	S2	555	A
1	S2	609	U
1	S2	639	U
1	S2	640	U
1	S2	705	U
1	S2	711	U
1	S2	740	A
1	S2	755	A
1	S2	803	A
1	S2	819	G
1	S2	912	U
1	S2	928	U
1	S2	1023	A
1	S2	1207	C
1	S2	1226	A
1	S2	1245	G
1	S2	1251	U
1	S2	1256	A
1	S2	1273	G
1	S2	1274	C
1	S2	1314	U
1	S2	1344	A
1	S2	1348	A
1	S2	1382	A
1	S2	1399	C
1	S2	1430	U
1	S2	1471	A
1	S2	1556	A
1	S2	1557	U
1	S2	1573	A
1	S2	1584	G
1	S2	1633	A
1	S2	1636	C
1	S2	1700	C
40	LA	13	A
40	LA	282	G
40	LA	439	C
40	LA	637	C
40	LA	763	G
40	LA	849	C
40	LA	873	C
40	LA	896	A

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Mol	Chain	Res	Type
40	LA	916	G
40	LA	993	G
40	LA	1064	A
40	LA	1097	G
40	LA	1271	A
40	LA	1307	G
40	LA	1355	A
40	LA	1562	C
40	LA	1572	U
40	LA	1582	C
40	LA	1716	U
40	LA	1815	U
40	LA	1820	U
40	LA	2112	U
40	LA	2231	C
40	LA	2445	A
40	LA	2500	A
40	LA	2501	U
40	LA	2502	A
40	LA	2513	U
40	LA	2514	U
40	LA	2525	G
40	LA	2537	U
40	LA	2538	U
40	LA	2541	U
40	LA	3055	U
40	LA	3078	U
40	LA	3121	U
40	LA	3218	A
40	LA	3228	C
40	LA	3269	U
40	LA	3275	U
40	LA	3319	U
40	LA	3350	C
41	LB	52	G
42	LC	82	U
42	LC	85	G
42	LC	125	U

5.4 Non-standard residues in protein, DNA, RNA chains ⓘ

1 non-standard protein/DNA/RNA residue is modelled in this entry.

In the following table, the Counts columns list the number of bonds (or angles) for which Mogul statistics could be retrieved, the number of bonds (or angles) that are observed in the model and the number of bonds (or angles) that are defined in the Chemical Component Dictionary. The Link column lists molecule types, if any, to which the group is linked. The Z score for a bond length (or angle) is the number of standard deviations the observed value is removed from the expected value. A bond length (or angle) with $|Z| > 2$ is considered an outlier worth inspection. RMSZ is the root-mean-square of all Z scores of the bond lengths (or angles).

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# $ Z > 2$	Counts	RMSZ	# $ Z > 2$
84	5CT	Ls	51	84	13,14,15	2.31	1 (7%)	9,15,17	2.26	4 (44%)

In the following table, the Chirals column lists the number of chiral outliers, the number of chiral centers analysed, the number of these observed in the model and the number defined in the Chemical Component Dictionary. Similar counts are reported in the Torsion and Rings columns. '-' means no outliers of that kind were identified.

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
84	5CT	Ls	51	84	1/1/2/4	5/13/14/16	-

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
84	Ls	51	5CT	O1-C2	-8.19	1.18	1.43

All (4) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
84	Ls	51	5CT	O1-C2-C3	3.62	119.57	109.21
84	Ls	51	5CT	O1-C2-C1	3.37	120.84	109.32
84	Ls	51	5CT	C3-C2-C1	3.26	119.58	112.16
84	Ls	51	5CT	C1-NZ-CE	-2.69	107.41	113.42

All (1) chirality outliers are listed below:

Mol	Chain	Res	Type	Atom
84	Ls	51	5CT	C2

All (5) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
84	Ls	51	5CT	C2-C1-NZ-CE
84	Ls	51	5CT	NZ-C1-C2-C3

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Mol	Chain	Res	Type	Atoms
84	Ls	51	5CT	O1-C2-C3-C4
84	Ls	51	5CT	C2-C3-C4-N1
84	Ls	51	5CT	CE-CD-CG-CB

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
84	Ls	51	5CT	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

There are no ligands in this entry.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
86	A	13

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	1104:ALA	C	1124:GLY	N	40.36
1	A	997:ALA	C	1019:ALA	N	35.44
1	A	1917:ALA	C	2000:ALA	N	14.67
1	A	1044:ALA	C	1055:ALA	N	12.76
1	A	1074:ALA	C	1084:ALA	N	11.98
1	A	2117:ALA	C	2200:ALA	N	11.35
1	A	2317:ALA	C	2320:ALA	N	6.51

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Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A	1438:LEU	C	1441:ALA	N	5.15
1	A	1722:ALA	C	1800:ALA	N	4.52
1	A	987:ALA	C	988:ALA	N	3.81
1	A	1241:THR	C	1242:GLY	N	3.62
1	A	1486:ALA	C	1487:ALA	N	3.09
1	A	1221:ALA	C	1222:VAL	N	2.08

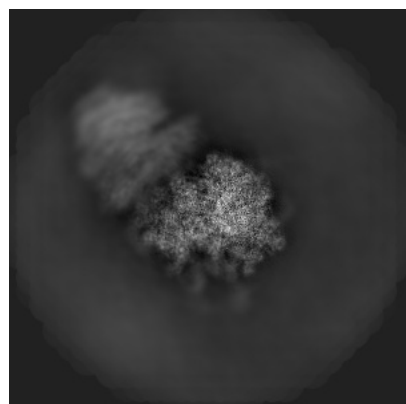
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-12534. These allow visual inspection of the internal detail of the map and identification of artifacts.

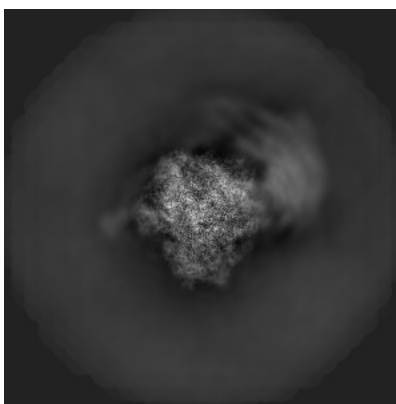
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

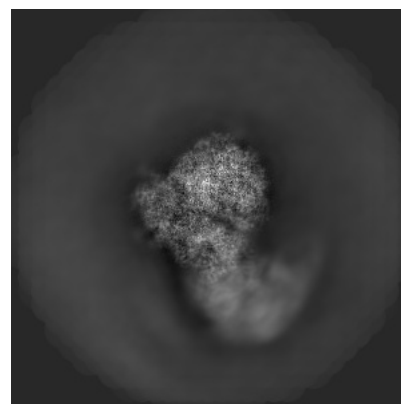
6.1.1 Primary map



X

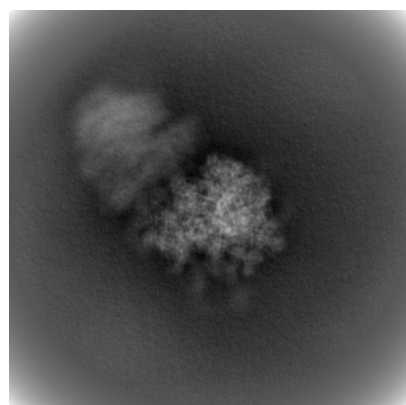


Y

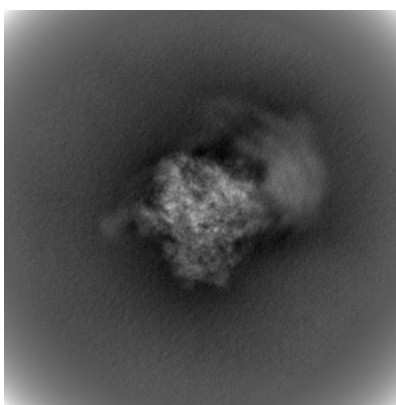


Z

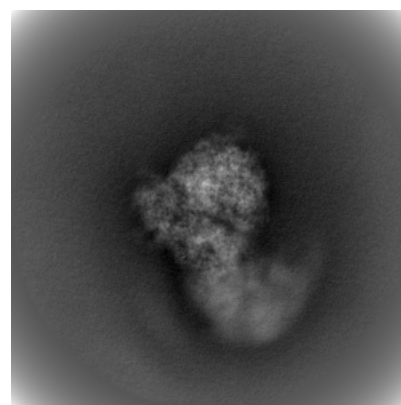
6.1.2 Raw map



X



Y

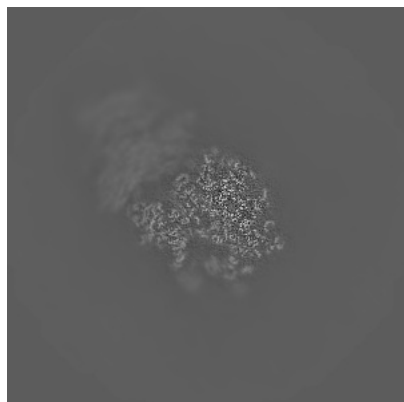


Z

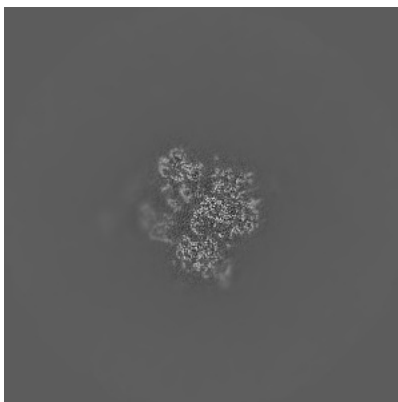
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

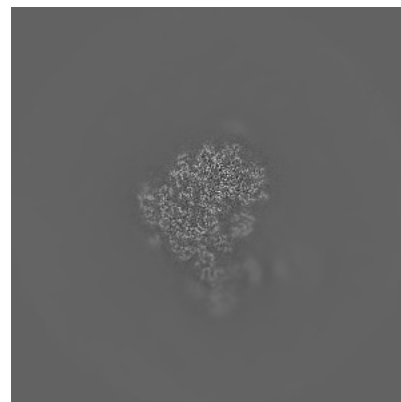
6.2.1 Primary map



X Index: 350

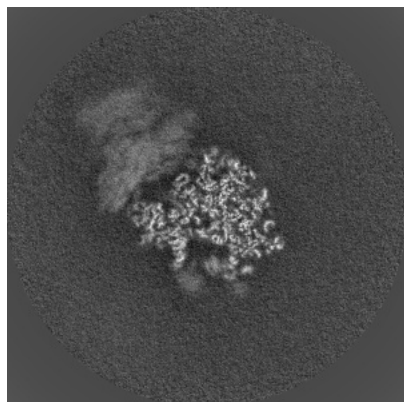


Y Index: 350

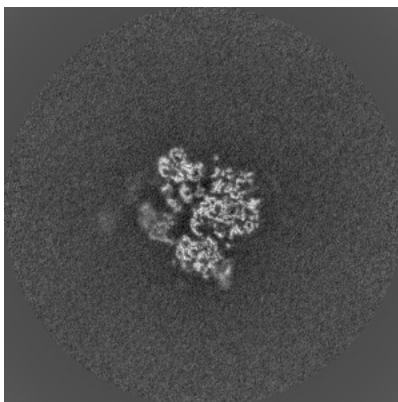


Z Index: 350

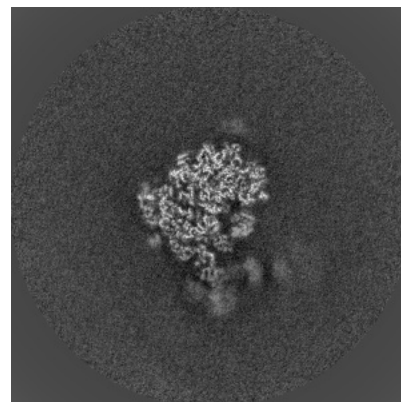
6.2.2 Raw map



X Index: 350



Y Index: 350

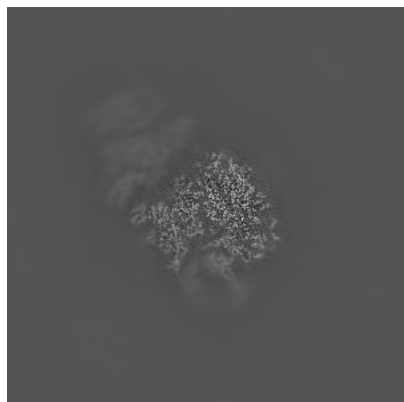


Z Index: 350

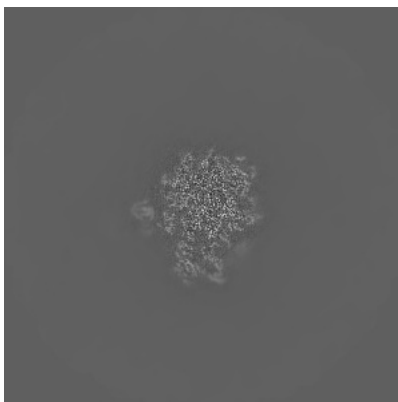
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

6.3.1 Primary map



X Index: 338

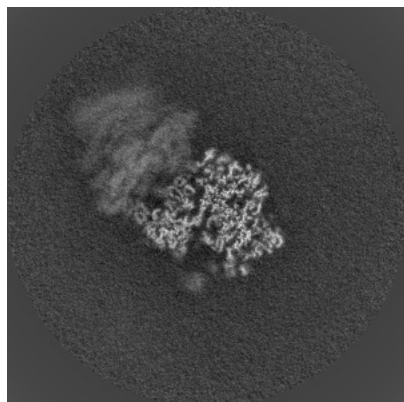


Y Index: 381

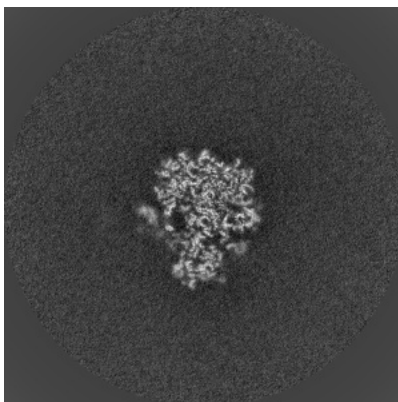


Z Index: 356

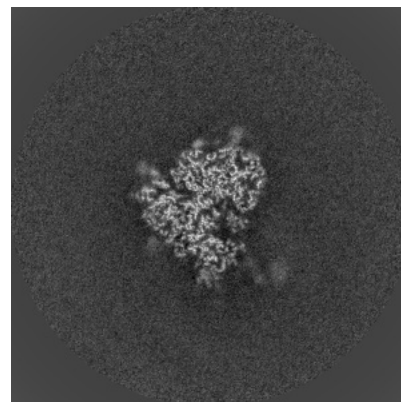
6.3.2 Raw map



X Index: 360



Y Index: 369

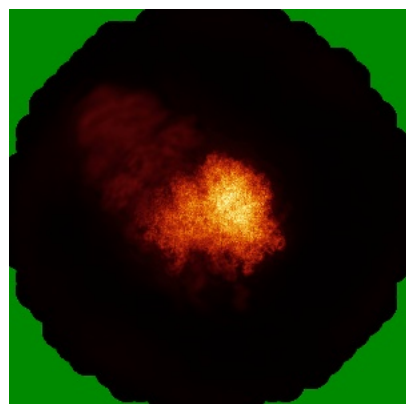


Z Index: 334

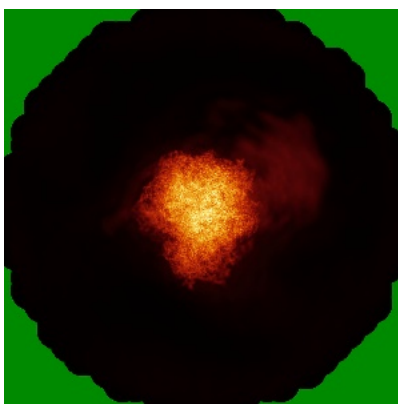
The images above show the largest variance slices of the map in three orthogonal directions.

6.4 Orthogonal standard-deviation projections (False-color) ⓘ

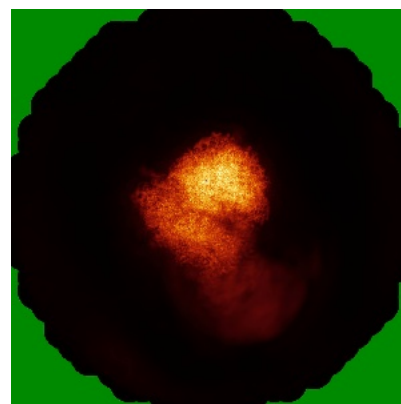
6.4.1 Primary map



X

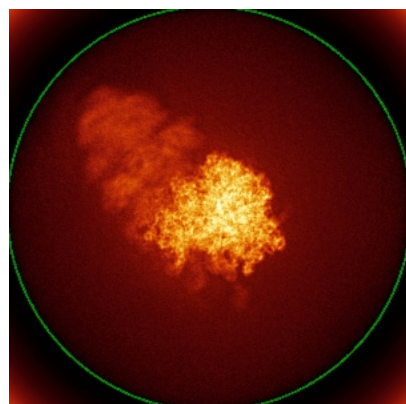


Y

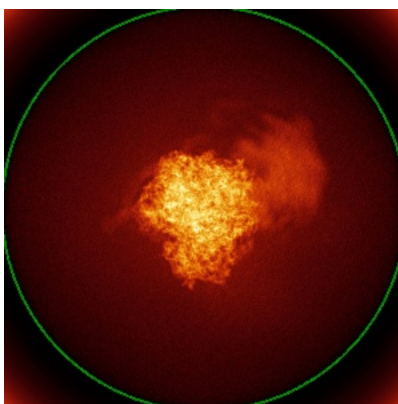


Z

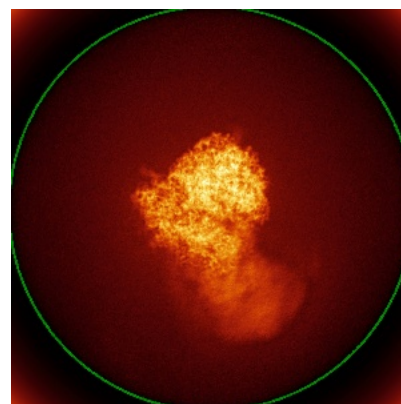
6.4.2 Raw map



X



Y

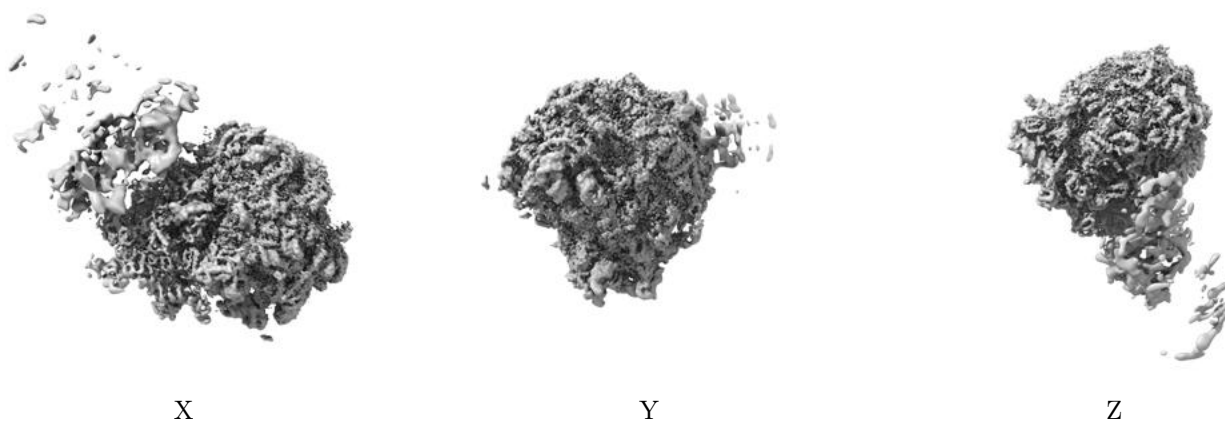


Z

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.

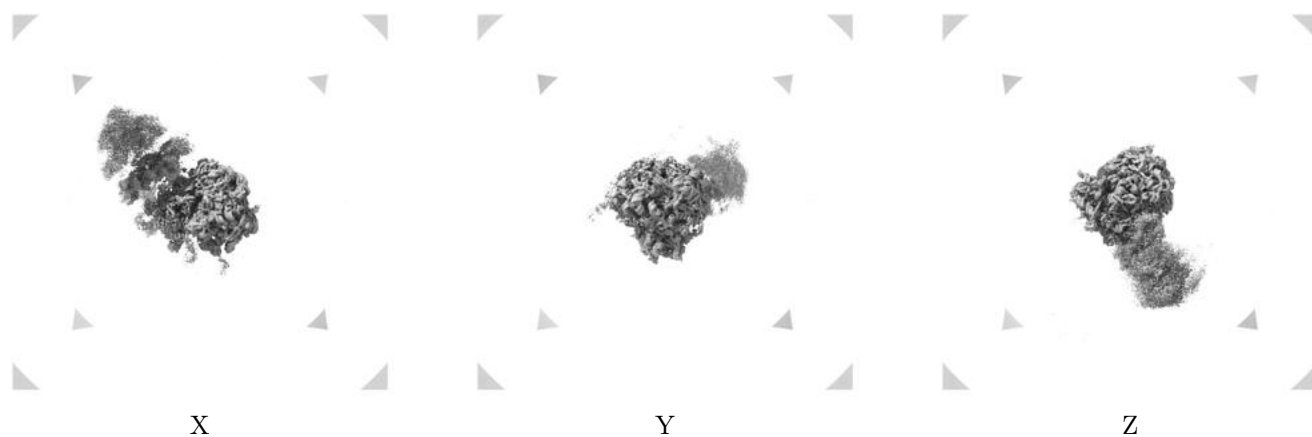
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



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

6.5.2 Raw map



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

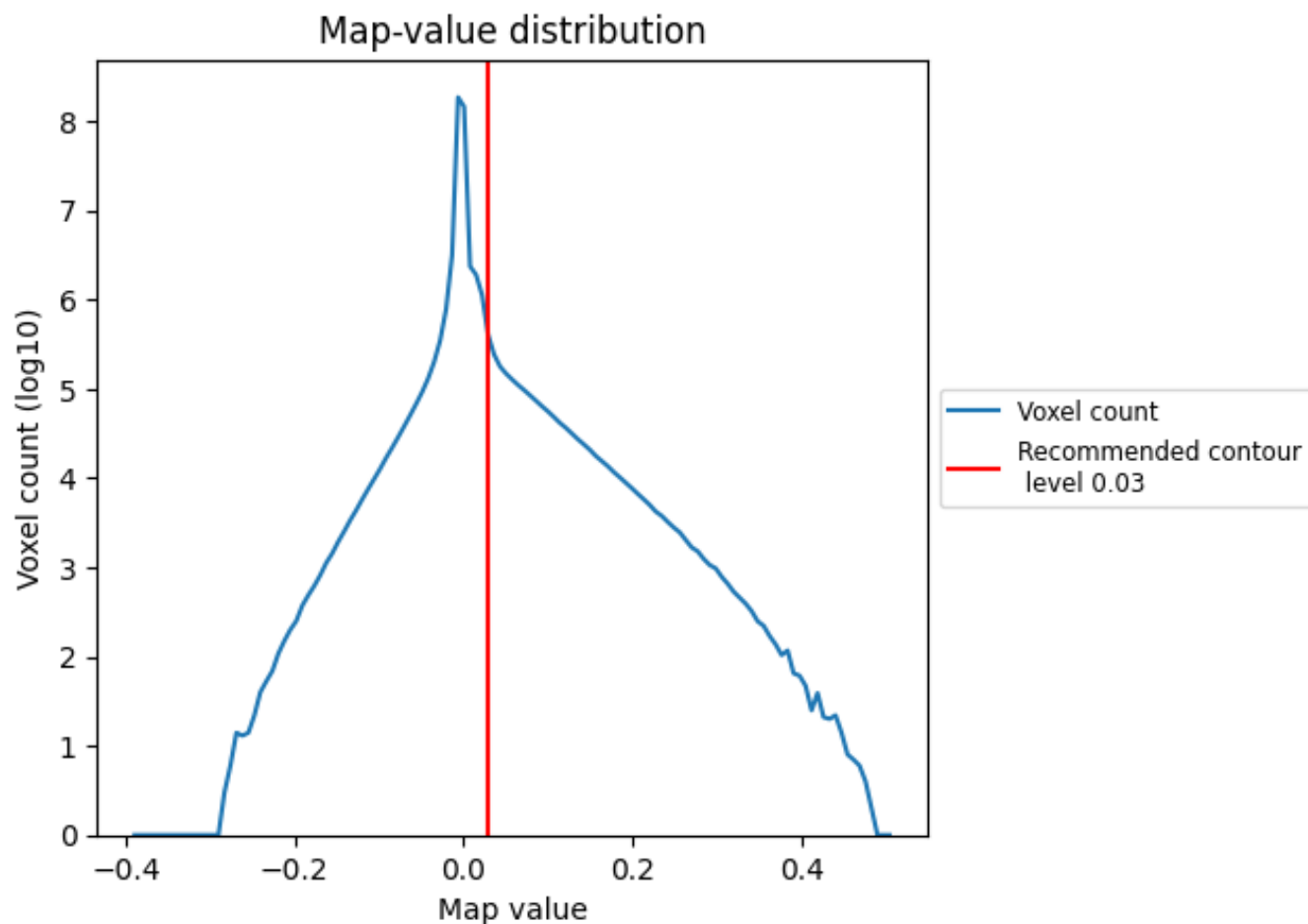
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

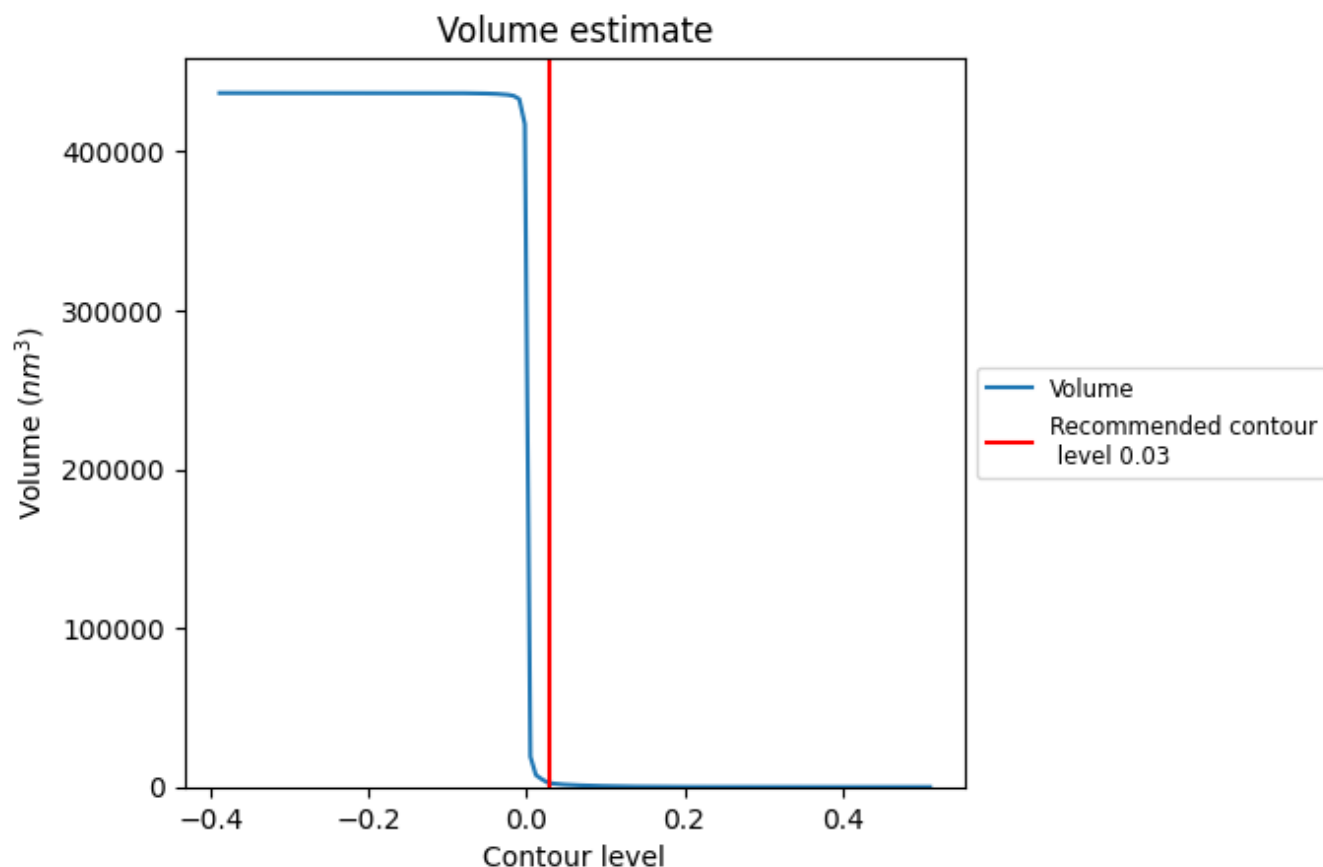
This section contains the results of statistical analysis of the map.

7.1 Map-value distribution [i](#)



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

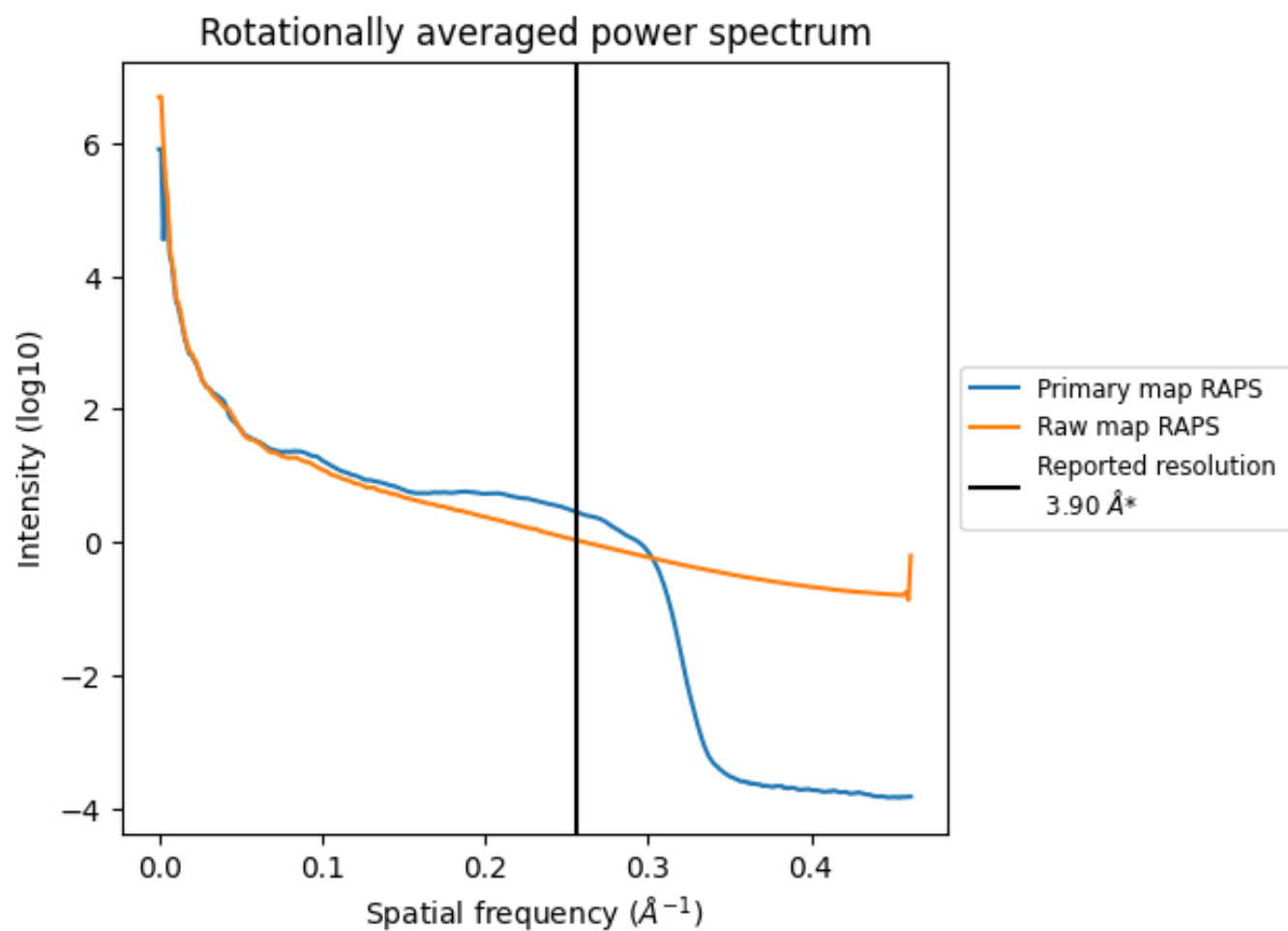
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2499 nm^3 ; this corresponds to an approximate mass of 2257 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 ⓘ

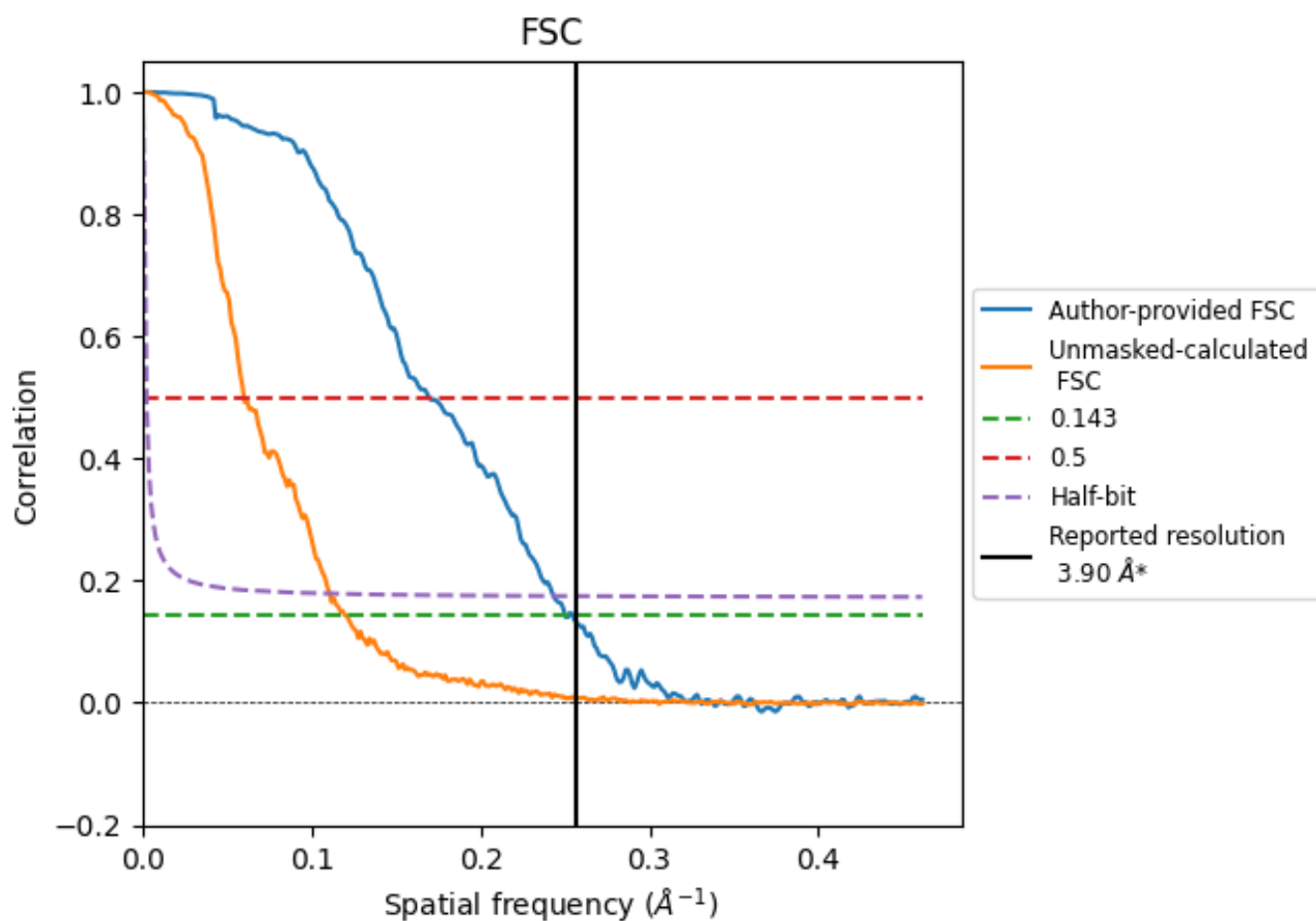


*Reported resolution corresponds to spatial frequency of 0.256 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.256 Å⁻¹

8.2 Resolution estimates [i](#)

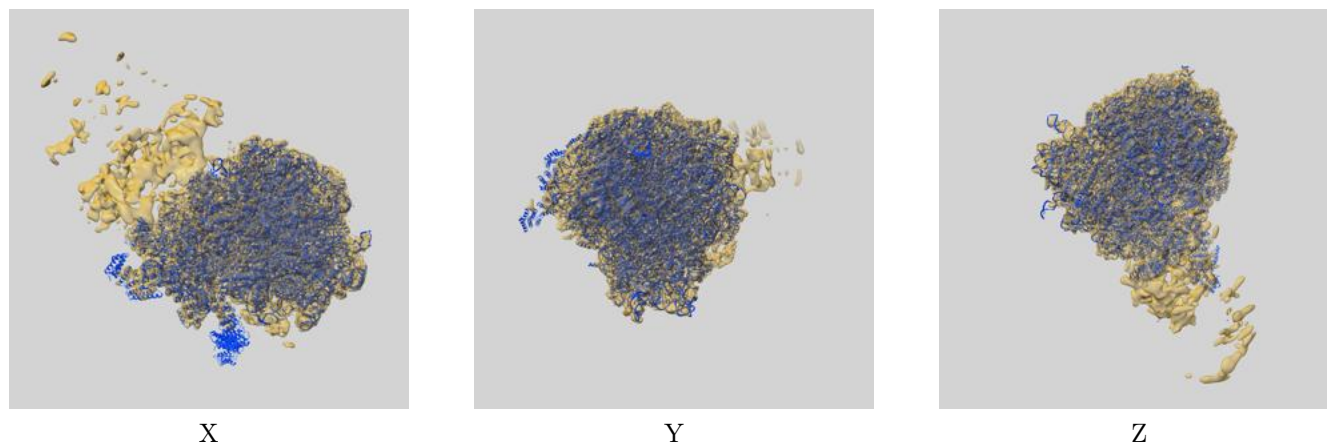
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.90	-	-
Author-provided FSC curve	4.00	5.90	4.11
Unmasked-calculated*	8.33	16.61	9.03

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 8.33 differs from the reported value 3.9 by more than 10 %

9 Map-model fit [i](#)

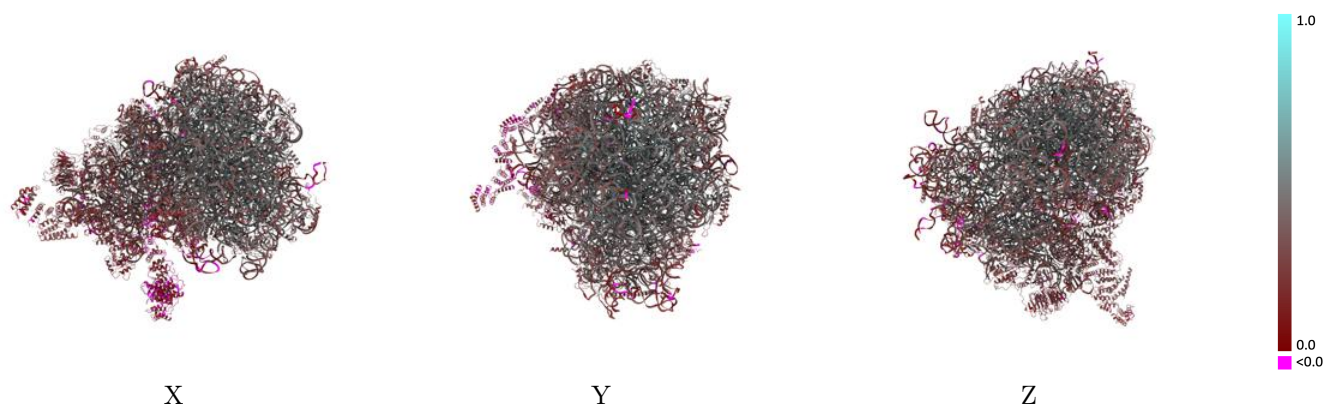
This section contains information regarding the fit between EMDB map EMD-12534 and PDB model 7NRC. Per-residue inclusion information can be found in section 3 on page 20.

9.1 Map-model overlay [i](#)



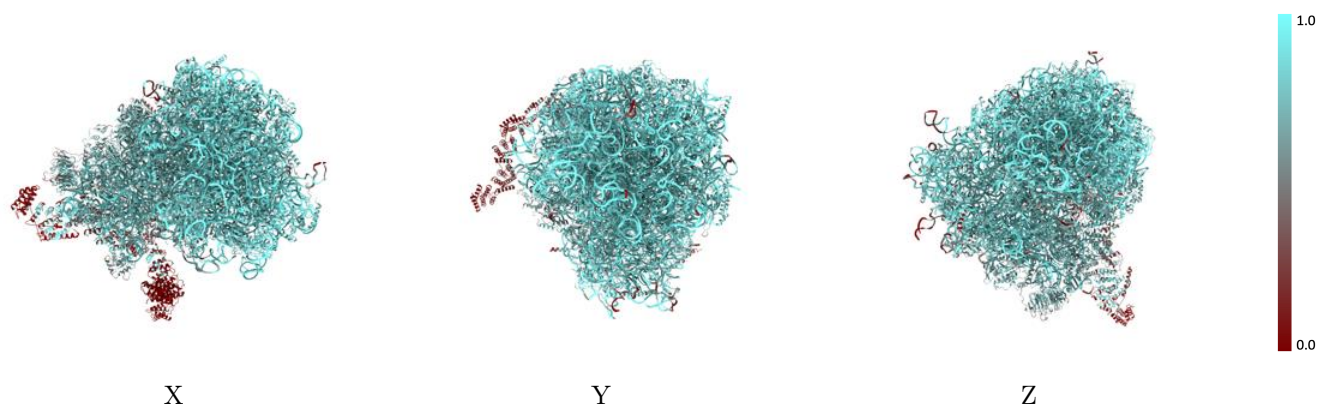
The images above show the 3D surface view of the map at the recommended contour level 0.03 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



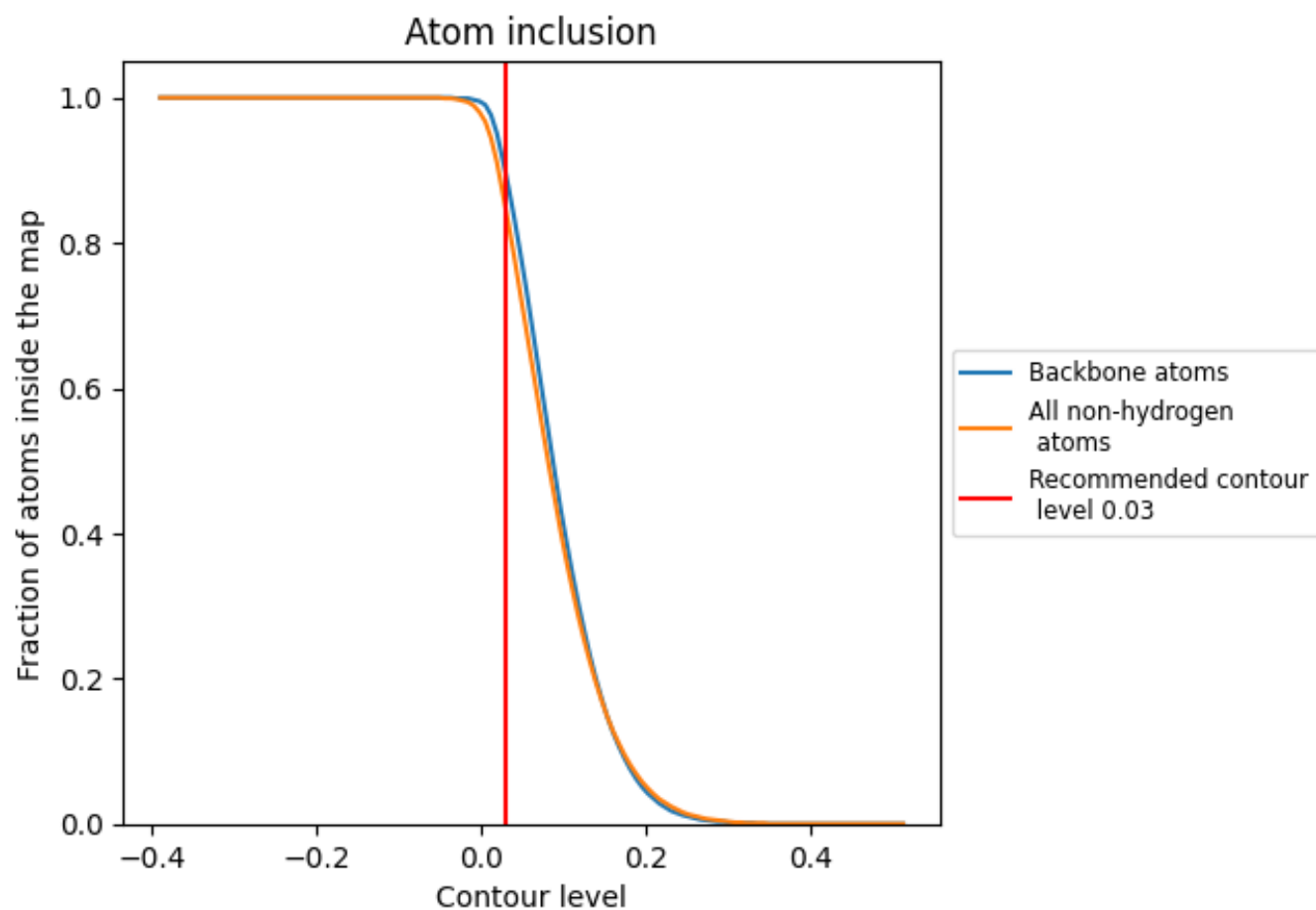
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



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

9.4 Atom inclusion [i](#)



At the recommended contour level, 89% of all backbone atoms, 84% of all non-hydrogen atoms, are inside the map.

9.5 Map-model fit summary

The table lists the average atom inclusion at the recommended contour level (0.03) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8450	 0.3780
A	 0.2820	 0.1550
LA	 0.9450	 0.4340
LB	 0.9490	 0.3610
LC	 0.9520	 0.4520
LD	 0.8640	 0.4660
LE	 0.8640	 0.4320
LF	 0.8480	 0.4070
LG	 0.7670	 0.2890
LH	 0.8260	 0.3730
LI	 0.8670	 0.4010
LJ	 0.8090	 0.3590
LK	 0.8110	 0.3720
LL	 0.7860	 0.3500
LM	 0.6150	 0.1650
LN	 0.8410	 0.3960
LO	 0.8610	 0.3760
LP	 0.8800	 0.4560
LQ	 0.8740	 0.4510
LR	 0.8630	 0.4320
LS	 0.8550	 0.4130
LT	 0.7830	 0.3720
LU	 0.8390	 0.4170
LV	 0.8430	 0.4050
LW	 0.7860	 0.3220
LX	 0.8210	 0.4320
LY	 0.8500	 0.4500
LZ	 0.8320	 0.4090
La	 0.8350	 0.3670
Lb	 0.8310	 0.3800
Lc	 0.8660	 0.4240
Ld	 0.8520	 0.3950
Le	 0.8040	 0.3710
Lf	 0.8120	 0.4100
Lg	 0.8670	 0.4440



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Chain	Atom inclusion	Q-score
Lh	 0.8840	 0.4680
Li	 0.8060	 0.4110
Lj	 0.8220	 0.3790
Lk	 0.8090	 0.3610
Ll	 0.8950	 0.4670
Lm	 0.7860	 0.3300
Ln	 0.8750	 0.4410
Lo	 0.8260	 0.3990
Lp	 0.8030	 0.4130
Lq	 0.8350	 0.4320
Lr	 0.8280	 0.4270
Ls	 0.6430	 0.3290
Lt	 0.8380	 0.2970
S2	 0.9020	 0.3700
SA	 0.6950	 0.3000
SB	 0.6820	 0.2860
SC	 0.6760	 0.2400
SD	 0.5780	 0.1730
SE	 0.7390	 0.2740
SF	 0.7310	 0.3150
SG	 0.6800	 0.2890
SH	 0.7010	 0.2750
SI	 0.6770	 0.2650
SJ	 0.7050	 0.2900
SK	 0.6080	 0.2620
SL	 0.6960	 0.3260
SM	 0.7850	 0.3670
SN	 0.5750	 0.1420
SO	 0.6180	 0.2390
SP	 0.7100	 0.3030
SQ	 0.6700	 0.3000
SR	 0.7780	 0.3720
SS	 0.7970	 0.3580
ST	 0.7680	 0.3090
SU	 0.6480	 0.2620
SV	 0.8290	 0.3660
SW	 0.7500	 0.3100
SX	 0.7890	 0.3990
SY	 0.7630	 0.3580
SZ	 0.7420	 0.3590
Sa	 0.7410	 0.3490
Sb	 0.8140	 0.3970

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Chain	Atom inclusion	Q-score
Sc	 0.8090	 0.4200
Sd	 0.7740	 0.3140
Se	 0.8140	 0.3980
Sf	 0.7390	 0.3380
Sg	 0.7490	 0.3190
Sl	 0.9470	 0.4400
Sm	 0.8870	 0.3140
Sn	 0.8950	 0.3330
So	 0.5370	 0.2640
Sp	 0.7580	 0.2700