



Full wwPDB EM Validation Report ⓘ

Jan 26, 2026 – 07:58 pm GMT

PDB ID : 9I2E / pdb_00009i2e
EMDB ID : EMD-52582
Title : NMT1-NAC bound human ribosome (combined translational states)
Authors : Denk, T.; Berninghausen, O.; Beckmann, R.
Deposited on : 2025-01-20
Resolution : 2.95 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:

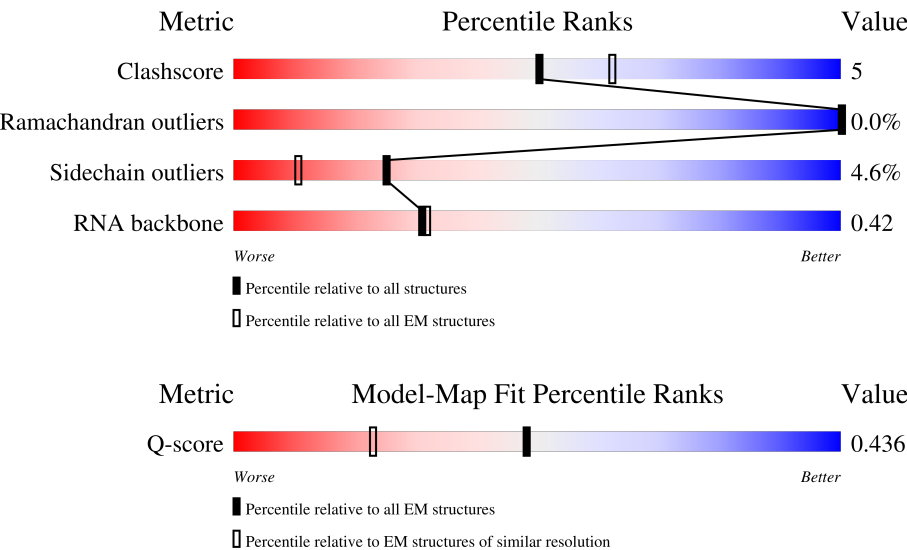
EMDB validation analysis : 0.0.1.dev129
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh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

1 Overall quality at a glance i

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

The reported resolution of this entry is 2.95 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.



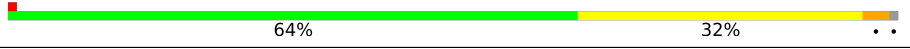
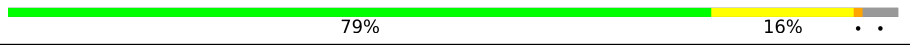
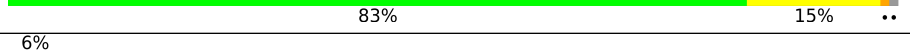
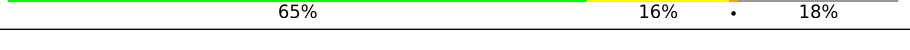
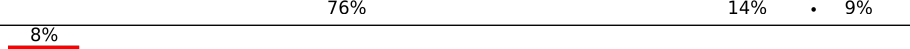
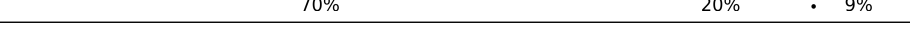
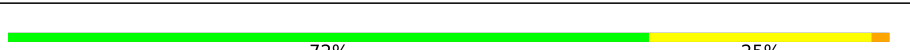
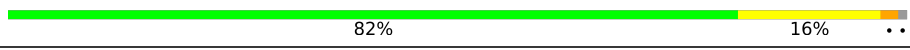
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	13114 (2.45 - 3.45)

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	CB	858	
2	CC	85	
3	CD	402	

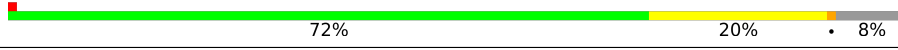
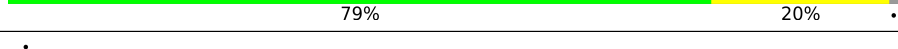
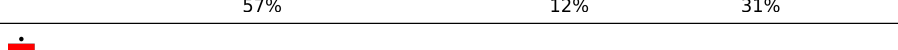
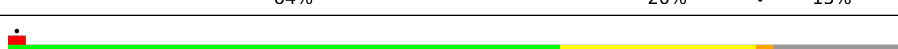
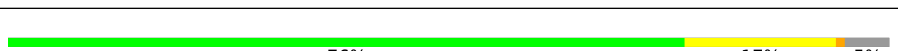
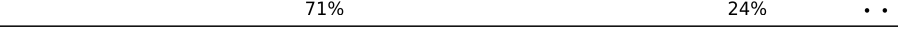
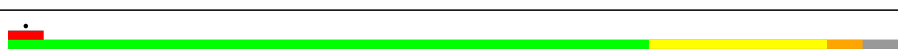
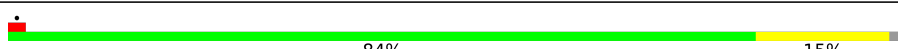
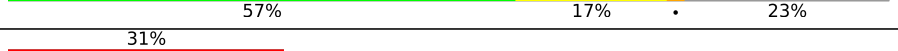
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Mol	Chain	Length	Quality of chain
4	L5	5070	
5	L7	121	
6	L8	157	
7	LA	257	
8	LB	403	
9	LC	427	
10	LD	297	
11	LE	288	
12	LF	248	
13	LG	266	
14	LH	192	
15	LI	214	
16	LJ	178	
17	LL	211	
18	LM	215	
19	LN	204	
20	LO	203	
21	LP	184	
22	LQ	188	
23	LR	196	
24	LS	176	
25	LT	160	
26	LU	128	
27	LV	140	
28	LW	157	

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Mol	Chain	Length	Quality of chain
29	LX	156	
30	LY	145	
31	LZ	136	
32	La	148	
33	Lb	159	
34	Lc	115	
35	Ld	125	
36	Le	135	
37	Lf	110	
38	Lg	117	
39	Lh	123	
40	Li	105	
41	Lj	97	
42	Lk	70	
43	Ll	51	
44	Lm	128	
45	Ln	25	
46	Lo	106	
47	Lp	92	
48	Lr	137	
49	Lz	217	
50	NA	215	
51	NB	162	
52	NM	496	
53	S2	1869	

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Mol	Chain	Length	Quality of chain
54	SA	295	
55	SB	264	
56	SC	293	
57	SD	243	
58	SE	263	
59	SF	204	
60	SG	249	
61	SH	194	
62	SI	208	
63	SJ	194	
64	SK	165	
65	SL	158	
66	SM	132	
67	SN	151	
68	SO	151	
69	SP	145	
70	SQ	146	
71	SR	135	
72	SS	152	
73	ST	145	
74	SU	119	
75	SV	83	
76	SW	130	
77	SX	143	
78	SY	133	

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Mol	Chain	Length	Quality of chain
79	SZ	125	
80	Sa	115	
81	Sb	84	
82	Sc	69	
83	Sd	56	
84	Se	133	
85	Sf	156	
86	Sg	317	

2 Entry composition

There are 88 unique types of molecules in this entry. The entry contains 230824 atoms, of which 0 are hydrogens and 0 are deuteriums.

In the tables below, the AltConf column contains the number of residues with at least one atom in alternate conformation and the Trace column contains the number of residues modelled with at most 2 atoms.

- Molecule 1 is a protein called Elongation factor 2.

Mol	Chain	Residues	Atoms					AltConf	Trace
1	CB	846	Total	C	N	O	S	0	0
			6605	4193	1136	1232	44		

- Molecule 2 is a RNA chain called E-site tRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
2	CC	85	Total	C	N	O	P	0	0
			1813	808	322	598	85		

- Molecule 3 is a protein called Isoform 2 of SERPINE1 mRNA-binding protein 1.

Mol	Chain	Residues	Atoms				AltConf	Trace
3	CD	55	Total	C	N	O	0	0
			440	263	87	90		

- Molecule 4 is a RNA chain called 28S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	L5	3772	Total	C	N	O	P	0	0
			80116	35645	14585	26115	3771		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
5	L7	120	Total	C	N	O	P	0	0
			2561	1141	456	844	120		

- Molecule 6 is a RNA chain called 5.8S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	L8	156	Total	C	N	O	P	0	0
			3314	1480	585	1094	155		

- Molecule 7 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	LA	248	Total	C	N	O	S	0	0
			1898	1189	389	314	6		

- Molecule 8 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	LB	402	Total	C	N	O	S	0	0
			3238	2060	608	556	14		

- Molecule 9 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	LC	368	Total	C	N	O	S	0	0
			2927	1840	583	489	15		

- Molecule 10 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	LD	293	Total	C	N	O	S	0	0
			2382	1507	434	427	14		

- Molecule 11 is a protein called Large ribosomal subunit protein eL6.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	LE	236	Total	C	N	O	S	0	0
			1904	1222	361	317	4		

- Molecule 12 is a protein called Large ribosomal subunit protein uL30.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	LF	225	Total	C	N	O	S	0	0
			1870	1202	358	301	9		

- Molecule 13 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	LG	241	Total	C	N	O	S	0	0
			1927	1228	371	324	4		

- Molecule 14 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	LH	190	Total	C	N	O	S	0	0
			1518	956	284	272	6		

- Molecule 15 is a protein called Ribosomal protein uL16-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	LI	202	Total	C	N	O	S	0	0
			1634	1037	314	269	14		

- Molecule 16 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	LJ	176	Total	C	N	O	S	0	0
			1410	888	263	253	6		

- Molecule 17 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
17	LL	210	Total	C	N	O	S	0	0
			1701	1064	352	281	4		

- Molecule 18 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	LM	139	Total	C	N	O	S	0	0
			1138	730	218	183	7		

- Molecule 19 is a protein called 60S ribosomal protein L15.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	LN	203	Total	C	N	O	S	0	0
			1701	1072	359	266	4		

- Molecule 20 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	LO	201	Total	C	N	O	S	0	0
			1650	1063	321	261	5		

- Molecule 21 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	LP	153	Total	C	N	O	S	0	0
			1242	776	241	216	9		

- Molecule 22 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	LQ	187	Total	C	N	O	S	0	0
			1513	944	314	250	5		

- Molecule 23 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	LR	187	Total	C	N	O	S	0	0
			1566	971	336	250	9		

- Molecule 24 is a protein called 60S ribosomal protein L18a.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	LS	175	Total	C	N	O	S	0	0
			1453	925	283	235	10		

- Molecule 25 is a protein called 60S ribosomal protein L21.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	LT	159	Total	C	N	O	S	0	0
			1298	823	252	217	6		

- Molecule 26 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
26	LU	101	Total	C	N	O	S	0	0
			825	529	144	150	2		

- Molecule 27 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	LV	131	Total	C	N	O	S	0	0
			979	618	184	172	5		

- Molecule 28 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	LW	118	Total	C	N	O	S	0	0
			965	604	199	158	4		

- Molecule 29 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	LX	120	Total	C	N	O	S	0	0
			985	630	185	169	1		

- Molecule 30 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	LY	134	Total	C	N	O	S	0	0
			1115	700	226	186	3		

- Molecule 31 is a protein called 60S ribosomal protein L27.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	LZ	135	Total	C	N	O	S	0	0
			1107	714	208	182	3		

- Molecule 32 is a protein called 60S ribosomal protein L27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	La	147	Total	C	N	O	S	0	0
			1162	736	237	186	3		

- Molecule 33 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
33	Lb	109	Total	C	N	O	S	0	0
			876	546	189	137	4		

- Molecule 34 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
34	Lc	98	Total	C	N	O	S	0	0
			764	485	135	138	6		

- Molecule 35 is a protein called 60S ribosomal protein L31.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	Ld	107	Total	C	N	O	S	0	0
			888	560	171	155	2		

- Molecule 36 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	Le	128	Total	C	N	O	S	0	0
			1053	667	216	165	5		

- Molecule 37 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Lf	109	Total	C	N	O	S	0	0
			876	555	174	144	3		

- Molecule 38 is a protein called 60S ribosomal protein L34.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	Lg	114	Total	C	N	O	S	0	0
			906	566	187	147	6		

- Molecule 39 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	Lh	122	Total	C	N	O	S	0	0
			1015	641	205	168	1		

- Molecule 40 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	Li	102	Total	C	N	O	S	0	0
			832	521	177	129	5		

- Molecule 41 is a protein called 60S ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	Lj	86	Total	C	N	O	S	0	0
			705	434	155	111	5		

- Molecule 42 is a protein called 60S ribosomal protein L38.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	Lk	69	Total	C	N	O	S	0	0
			569	366	103	99	1		

- Molecule 43 is a protein called 60S ribosomal protein L39.

Mol	Chain	Residues	Atoms					AltConf	Trace
43	Ll	50	Total	C	N	O	S	0	0
			444	281	98	64	1		

- Molecule 44 is a protein called Ubiquitin-60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	Lm	52	Total	C	N	O	S	0	0
			429	266	90	67	6		

- Molecule 45 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	Ln	24	Total	C	N	O	S	0	0
			230	139	62	26	3		

- Molecule 46 is a protein called 60S ribosomal protein L36a.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	Lo	105	Total	C	N	O	S	0	0
			862	542	175	139	6		

- Molecule 47 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Lp	91	Total	C	N	O	S	0	0
			708	445	136	120	7		

- Molecule 48 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
48	Lr	125	Total	C	N	O	S	0	0
			1002	622	207	168	5		

- Molecule 49 is a protein called 60S ribosomal protein L10a.

Mol	Chain	Residues	Atoms					AltConf	Trace
49	Lz	217	Total	C	N	O	S	0	0
			1741	1113	312	307	9		

- Molecule 50 is a protein called Nascent polypeptide-associated complex subunit alpha.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	NA	67	Total	C	N	O	S	0	0
			531	335	97	98	1		

- Molecule 51 is a protein called Isoform 2 of Transcription factor BTF3.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	NB	124	Total	C	N	O	S	0	0
			963	597	175	188	3		

- Molecule 52 is a protein called Glycylpeptide N-tetradecanoyltransferase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	NM	393	Total	C	N	O	S	3	0
			3209	2075	544	573	17		

- Molecule 53 is a RNA chain called 18S rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	S2	1740	Total	C	N	O	P	0	0
			36898	16459	6598	12102	1739		

- Molecule 54 is a protein called 40S ribosomal protein SA.

Mol	Chain	Residues	Atoms					AltConf	Trace
54	SA	221	Total	C	N	O	S	0	0
			1741	1106	305	322	8		

- Molecule 55 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	SB	214	Total	C	N	O	S	0	0
			1738	1103	310	311	14		

- Molecule 56 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	SC	222	Total	C	N	O	S	0	0
			1725	1115	298	302	10		

- Molecule 57 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	SD	227	Total	C	N	O	S	0	0
			1765	1125	317	315	8		

- Molecule 58 is a protein called 40S ribosomal protein S4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	SE	262	Total	C	N	O	S	0	0
			2076	1324	386	358	8		

- Molecule 59 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	SF	189	Total	C	N	O	S	0	0
			1495	934	284	270	7		

- Molecule 60 is a protein called 40S ribosomal protein S6.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	SG	237	Total	C	N	O	S	0	0
			1923	1200	387	329	7		

- Molecule 61 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	SH	186	Total	C	N	O	S	0	0
			1497	956	274	266	1		

- Molecule 62 is a protein called 40S ribosomal protein S8.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	SI	206	Total	C	N	O	S	0	0
			1686	1058	332	291	5		

- Molecule 63 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	SJ	185	Total	C	N	O	S	0	0
			1525	969	306	248	2		

- Molecule 64 is a protein called 40S ribosomal protein S10.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	SK	98	Total	C	N	O	S	0	0
			827	539	148	134	6		

- Molecule 65 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	SL	153	Total	C	N	O	S	0	0
			1247	793	234	214	6		

- Molecule 66 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	SM	122	Total	C	N	O	S	0	0
			940	590	164	177	9		

- Molecule 67 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	SN	150	Total	C	N	O	S	0	0
			1208	773	229	205	1		

- Molecule 68 is a protein called 40S ribosomal protein S14.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	SO	140	Total	C	N	O	S	0	0
			1049	642	204	197	6		

- Molecule 69 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	SP	121	Total	C	N	O	S	0	0
			985	623	185	170	7		

- Molecule 70 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	SQ	144	Total	C	N	O	S	0	0
			1142	726	216	197	3		

- Molecule 71 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	SR	135	Total	C	N	O	S	0	0
			1090	685	202	198	5		

- Molecule 72 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	SS	145	Total	C	N	O	S	0	0
			1198	751	242	203	2		

- Molecule 73 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	ST	143	Total	C	N	O	S	0	0
			1112	697	214	198	3		

- Molecule 74 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	SU	104	Total	C	N	O	S	0	0
			822	514	156	148	4		

- Molecule 75 is a protein called 40S ribosomal protein S21.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	SV	83	Total	C	N	O	S	0	0
			636	393	117	121	5		

- Molecule 76 is a protein called 40S ribosomal protein S15a.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	SW	129	Total	C	N	O	S	0	0
			1034	659	193	176	6		

- Molecule 77 is a protein called 40S ribosomal protein S23.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	SX	141	Total	C	N	O	S	0	0
			1098	693	219	183	3		

- Molecule 78 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	SY	131	Total	C	N	O	S	0	0
			1065	673	209	178	5		

- Molecule 79 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
79	SZ	75	Total	C	N	O	S	0	0
			598	382	111	104	1		

- Molecule 80 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	Sa	102	Total	C	N	O	S	0	0
			821	512	171	133	5		

- Molecule 81 is a protein called 40S ribosomal protein S27.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	Sb	83	Total	C	N	O	S	0	0
			651	408	121	115	7		

- Molecule 82 is a protein called 40S ribosomal protein S28.

Mol	Chain	Residues	Atoms					AltConf	Trace
82	Sc	64	Total	C	N	O	S	0	0
			506	308	102	94	2		

- Molecule 83 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
83	Sd	55	Total	C	N	O	S	0	0
			459	286	94	74	5		

- Molecule 84 is a protein called Ubiquitin-like FUBI-ribosomal protein eS30 fusion protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
84	Se	58	Total	C	N	O	S	0	0
			459	284	100	74	1		

- Molecule 85 is a protein called Ubiquitin.

Mol	Chain	Residues	Atoms					AltConf	Trace
85	Sf	67	Total	C	N	O	S	0	0
			548	346	102	93	7		

- Molecule 86 is a protein called Receptor of activated protein C kinase 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
86	Sg	313	Total	C	N	O	S	0	0
			2436	1535	424	465	12		

- Molecule 87 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
87	CC	1	Total	Mg	0
			1	1	
87	L5	211	Total	Mg	0
			211	211	
87	L7	3	Total	Mg	0
			3	3	
87	L8	5	Total	Mg	0
			5	5	
87	LA	1	Total	Mg	0
			1	1	
87	LI	1	Total	Mg	0
			1	1	
87	LP	1	Total	Mg	0
			1	1	
87	LT	1	Total	Mg	0
			1	1	
87	LV	1	Total	Mg	0
			1	1	
87	Le	1	Total	Mg	0
			1	1	
87	Lg	1	Total	Mg	0
			1	1	
87	S2	29	Total	Mg	0
			29	29	

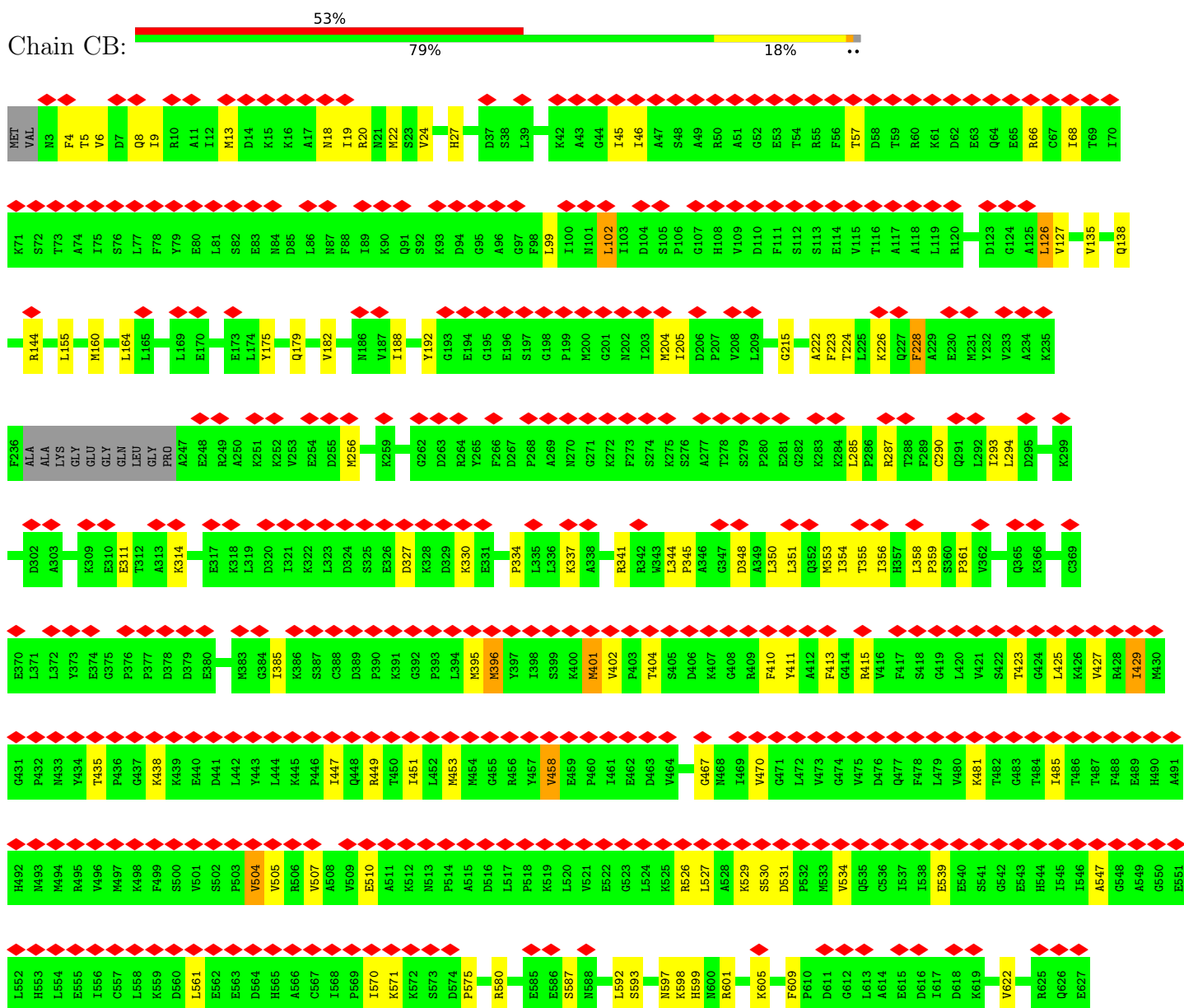
- Molecule 88 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
88	Lg	1	Total 1	Zn 1	0
88	Lj	1	Total 1	Zn 1	0
88	Lm	1	Total 1	Zn 1	0
88	Lo	1	Total 1	Zn 1	0
88	Lp	1	Total 1	Zn 1	0
88	SM	1	Total 1	Zn 1	0
88	Sa	1	Total 1	Zn 1	0
88	Sd	1	Total 1	Zn 1	0

3 Residue-property plots

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

- Molecule 1: Elongation factor 2





U2843	G2569	G2474	A2332	G	G	G1769	C1696	A1565	G1435	A1337
A2844	U2570	G2475	G2333	G	G	A1770	G1697	C1566	G1436	G1338
G2845	C2583	G2478	C2337	G	U	A1775	C1698	G1574	C1437	U1339
G2847	G2586	G2479	G2343	G	U	G1787	G1700	G1577	U1438	C1340
G2848	C2588	G2483	U2344	G	U	A1788	C1703	U1578	C1439	U1341
G2855	C2589	A2484	G2345	G	G	G1799	G1704	C1441	U1440	G1346
C2856	G2606	G2485	G2348	G	G	G1803	C1705	C1442	C1441	G1347
A2857	A2611	G2486	G2351	G	U	A1804	A1706	A1443	U1442	U1348
A2864	G2627	C2487	C2352	G	C	G1806	G1707	C1444	C1443	G1349
A2870	G2629	C2488	A2026	C	C	G1810	G1708	C1445	U1444	G1353
A2871	C2627	C2489	G2029	G	U	G1815	C1709	G1446	U1445	A1354
G2876	G2652	U2490	A2030	G	U	C1820	A	G1447	C1446	G1355
G2877	C2652	C2491	G2033	G	C	G1821	C	G1457	U1447	U1356
G2877	C2652	G2494	G2034	G	C	U1822	C	C1460	C1460	C1357
G2877	C2652	U2495	G2046	G	C	G1823	C1714	C1468	C1468	G1358
G2877	C2652	G2496	A2047	G	C	G1830	C1715	C1469	C1469	G1359
G2884	G2662	G2503	G2048	G	U	G1833	C1716	U1364	U1364	G1360
A2885	G2662	C2504	U2048	C	G	G1836	G1717	C1478	C1478	C1365
C2892	G2664	G2511	G2055	C	U	A1837	C1718	C1479	C1479	G1366
A2895	G2669	A2512	G2056	C	G	G1842	A1719	C1480	C1480	C1367
G2902	G2675	G2513	G2061	C	C	G1846	G1724	C1481	C1481	A1368
U2904	A2676	G2514	U2061	G	U	C1847	U1725	C1482	C1482	C1369
G2906	U2676	G2518	C2062	C	C	U1848	U1726	C1483	C1483	G1370
G2907	U2687	G2519	A2069	C	C	G1849	U1730	C1497	C1497	C1378
U2908	G2688	C2520	G2076	C	C	G1855	C1731	C1498	C1498	C1379
G2910	G2693	G2521	G2084	A	C	G1856	G1732	C1499	C1499	G1380
G	A2695	U2529	G2085	G	G	C1857	G1733	A1500	A1500	U1381
G	A2696	A2536	G2088	C	C	A1858	G1734	C1501	C1501	G1382
G	G2700	A2537	G2089	G	G	G1867	A1738	C1502	C1502	G1383
G	U2701	U2538	U2090	U	U	A1868	G1739	A1503	A1503	A1387
G	G2702	C2539	C2091	C	C	G1869	C1740	U1514	U1514	G1394
G	G2703	G2540	G2092	C	C	C1881	G1741	A1515	A1515	A1397
G	G2704	G2544	A2093	C	U	C1882	A1742	G1516	G1516	U1398
G	G2705	U2545	G2094	C	C	A1888	A1743	C1517	C1517	A1398
G	U2790	G2546	A2095	C	C	G1892	U1744	A1518	A1518	G1404
G	G2794	G2547	G2096	G	G	A1897	G1745	A1645	A1645	C1405
G	C2709	A2553	U2097	C	C	G1898	G1750	A1646	A1646	G1406
A	G2710	U2554	G2098	U	C	C1899	A1751	C1654	C1654	C1407
A	G2711	G2555	C2301	C	C	C1901	G1752	C1661	C1661	G1408
G	C2719	G2556	C2302	C	C	C1902	G1753	C1662	C1662	C1409
G	C2720	C2463	U2304	C	C	C1903	C1757	C1663	C1663	U1410
G	G2721	C2464	G2306	C	C	C1908	G1758	C1676	C1676	C1411
G	G2721	C2465	G2306	C	C	C1909	G1759	U1677	U1677	C1412
G	G2724	C2466	A2313	C	G	A1892	G1760	C1678	C1678	G1413
G	G2725	U2467	G2310	C	C	C1893	G1761	A1547	A1547	C1414
G	A2725	U2468	G2316	C	C	C1897	C1762	A1558	A1558	G1415
U	G2726	C2469	G2316	A	C	A1897	C1763	G1680	G1680	C1416
G	U2730	G2564	G2326	C	C	C1913	G1764	G1681	G1681	C1417
G	G2842	A2565	G2331	G	C	G1914	A1765	C1694	C1694	A1420
G		C2568		C	C	C1914	A1766	U1695	U1695	G1421
							C1768			

C4119	A4046	C3986	U3915	C3810	U3709	G3597	C
A4127	A4047	C3987	G3916	G3811	G3710	C3598	C
A4128	U4048	C3988	A3917	U3814	A3711	A3599	C
	A4050	C3989	G3918		A3712	G3600	C
G4139	C4051	C3990		A3817	U3713		C
C4140	C4052	G3922	G3922	U3818	A3717	A3604	C
G4141	A4053	A3923	C3924	G3819	A3718	C3605	C
C4142	C4054	C3992		G3823		U3606	C
G4143	U4055	U3993	U3932	G3823	A3723	U3607	C
A4056	A4056	C3994	G3933	G3827	A3724	A3608	C
C4144	C4057	G3995	G3934	G3827	G3725	A3610	C
C4145	U4058	U3996		U3838	A3726	A3611	C
G4146	C4059	C3996	C3937	G3839	A3727		C
	U4060	C3997	G3938	U3840	A3728	G3614	C
G4150	G4061	C3998	G3939	U3849	U3729	G3615	C
C4162	A4062	C3999	A3942	U3948	A3732	U3616	C
U4163	U4063	G4000	A3943	A3849	A3733	C3617	C
A4170	G4064	A4001	G3944	C3855		C3618	C
	G4065	G4002	A3945	A3856	A3736	G3619	C
G4183	U4066	A4003	G3946	G3857	A3737		C
G4184	U4067	G4004	A3947	C3858	G3738		C
G4185	U4068	G4005	C3948	G3859	C3739		C
A4186	U4069	G4006	A3949	A3860			C
G4187		G4007	U3950	A3861	A3747		C
U4188	G4076	G4008	G3951	A3862			C
U4189	G4084	C4008	G3955	A3867	G3750	A3635	C
U4190	A4085	C4009	G3956	G3868	G3754	U3641	C
A4191	G4086	C4010	U3957		G3755	U3644	C
C4192	G4087	G4011	C3958	A3877	A3756	U3645	C
G4193	C4088	G4012	U3959	C3878		A3646	C
	G4089	G4013	A3960	G3879	A3759	A3648	C
G4196		G4014	C3961	G3880	A3760	A3649	C
G4197	G4093	G4015	A3962	G3881	C3761	C3650	C
A4203	G4094	G4016	A3963	G3885	A3766	A3656	C
	C4095	G4017	U3964	G3886		U3657	C
A4212	G4096	G4018	A3965	C3887	U3770	C3658	C
	U4097	G4019	A3966		C3771	G3659	C
A4219	A4098	U4020	G3967	A3890	U3772		C
A4220	C4100	C4021	U3968	A3891	U3773	A3662	C
G4221	C4101	C4022	G3969	U3892	A3774	A3663	C
G4222	C4102	C4023	C3970	C3893	A3775	G3664	C
	C4103	C4024	G3971	A3894	G3776	G3665	C
G4225	G4104	C4025	G3972		G3777		C
	A4105	G4026	G3973	G3897		C3670	C
U4229	G4106	G4027	C3974		A3784	G3671	C
A4233	U4107	C4028	C3975	G3900	A3785	G3585	C
	G4108	C4029	G3976	A3901	U3786	G3586	C
G4238	G4109	C4030	C3977	A3906	G3787	C3587	C
A4239	C4110	U4031	C3978	C3907	C3788		C
G4240	U4111	G4032	C3979	A3908		G3590	C
U4241	C4112	C4033	G3980	C3909	C3791	C3591	C
C4242	U4113	G4034	C3981	C3910	A3799	G3592	C
C4243	G4114	C4035	C3982	C3911		C3593	C
	C4115	G4036	G3983	U3912	U3802	C3594	C
	U4116	G4037	C3984			U3595	C
	U4117					A3596	C
G4246	U4118		C3985				C

V169	G173	D176	K177	Y186	W196	V199	M204	E208	G213	A229	K234	L246	T249	LYS	THR	VAL	GLN	GLU	LYS	GLU	ASN																				
Met	R3	V4	G13	S14	V15	R28	V32	I44	V45	R54	G55	A56	L75	F76	I77	L96	V101	L102	P103	I112	V113	C114	G115	L116	K119	R123	L126	A127	R128	A129	S130	T135	K145	T146	R147	V148	K149	K155	R163	A164	V165

Chain LB: 85% 13%

Category	Item	Value	Color
MET	S2	1220	Blue
	H3	1223	Blue
	L14	1224	Blue
	L17	1225	Red
	K34	1226	Blue
	K35	1230	Blue
	L56	1234	Blue
	V57	1235	Blue
	V73	1247	Orange
	E74	1252	Blue
MET	M84	1253	Blue
	Y92	1254	Blue
	V93	1258	Green
	E94	1275	Green
	T95	1278	Orange
	L99	1285	Blue
	A107	1286	Orange
	R117	1287	Blue
	K120	1288	Blue
	K128	1292	Blue
MET	K144	1301	Red
	V159	1330	Orange
	Q167	1331	Blue
	M168	1334	Blue
	L171	1337	Blue
	K177	1345	Blue
	V185	1351	Blue
	K193	1364	Blue
	L194	1378	Blue
	L201	1384	Blue
MET	Q204	1399	Red
	V207	1400	Red
	V210	1401	Red
	M216	1403	Red

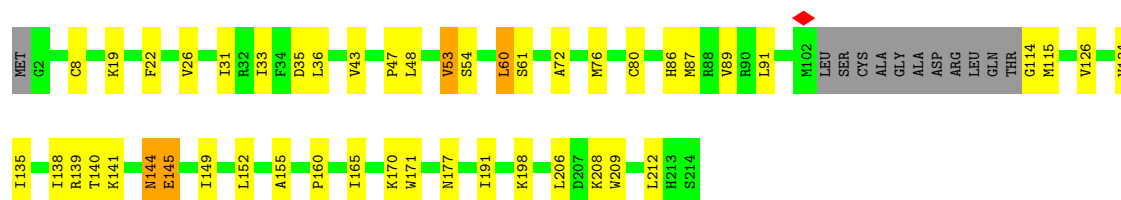
Chain LC: 71% 14% 14%

Protein	Residue	Score
PRO	L349	0.00
THR	A360	0.00
GLU	L361	0.00
GLU	K362	0.00
LYS	A363	0.00
PRO	K364	0.00
PRO	S365	0.00
ALA	D366	0.00
ALA	E367	0.00
ALA	K368	0.00
ALA	ALA	0.00
VAL	VAL	0.00
ALA	VAL	0.00
GLY	GLY	0.00
LYS	LYS	0.00
LYS	LYS	0.00
PRO	PRO	0.00
VAL	VAL	0.00
VAL	VAL	0.00
GLY	GLY	0.00
LYS	LYS	0.00
GLY	GLY	0.00
LYS	LYS	0.00
ALA	ALA	0.00
VAL	VAL	0.00
GLY	GLY	0.00
VAL	VAL	0.00
GLY	GLY	0.00
VAL	VAL	0.00
LYS	LYS	0.00
GLN	GLN	0.00
LYS	LYS	0.00
LYS	LYS	0.00
LEU	LEU	0.00
VAL	VAL	0.00
GLY	GLY	0.00
LYS	LYS	0.00
LYS	LYS	0.00
ALA	ALA	0.00
ALA	ALA	0.00
THR	THR	0.00
LYS	LYS	0.00
PRO	PRO	0.00
ALA	ALA	0.00
PRO	PRO	0.00
GLU	GLU	0.00
LYS	LYS	0.00
PRO	PRO	0.00
ALA	ALA	0.00
GLU	GLU	0.00
LYS	LYS	0.00

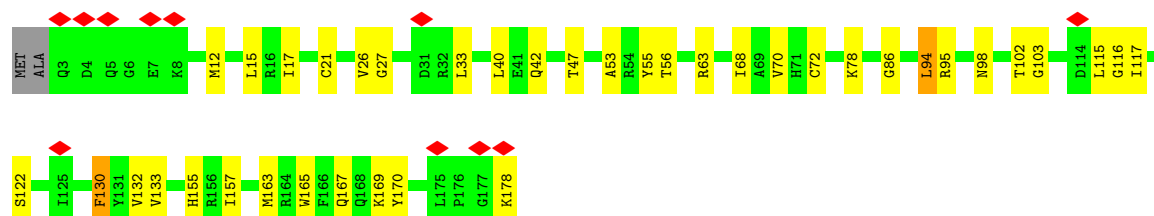
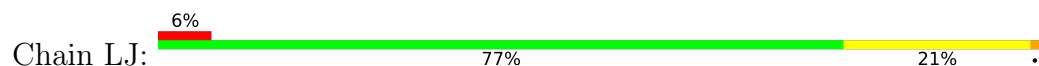
Chain LD: 83% 15% .

V194	H195	V204	K208	K228	M235	E238	K241	K258	K259	E260	M271	S272	K283	E292	R293	A294	ALA GLU SER																			
G2	F3	V4	V7	A11	E25	G26	K27	R33	V37	M45	I52	V53	C62	Q63	I64	A65	I74	V75	C76	A80	V88	L92	L109	R112	L146	T155	G156	V159	L163	K164	I173	R179	F180	P181	G182	S185

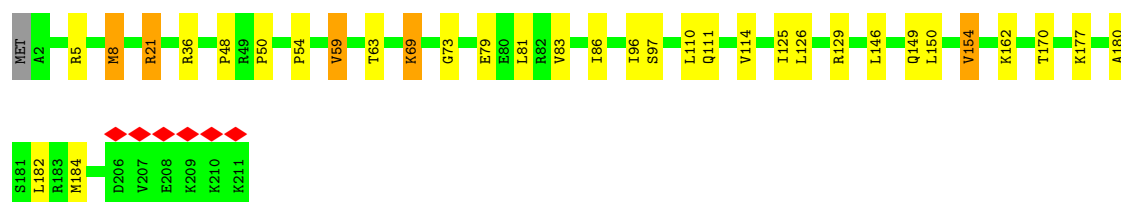
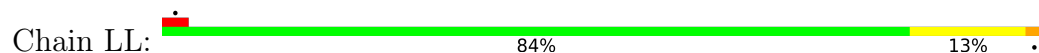
Chain LE:



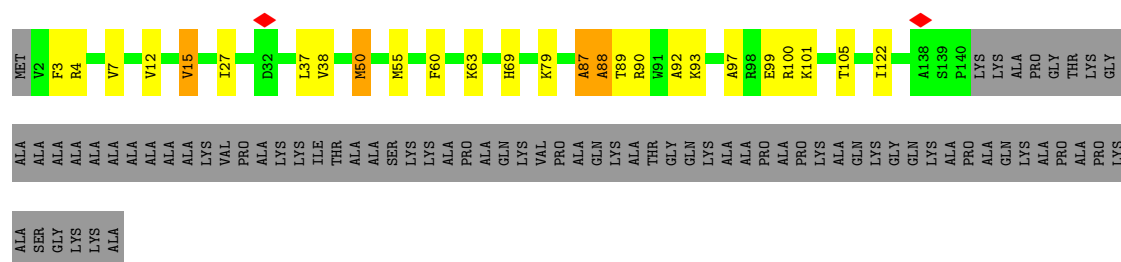
• Molecule 16: 60S ribosomal protein L11



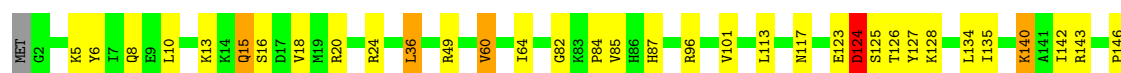
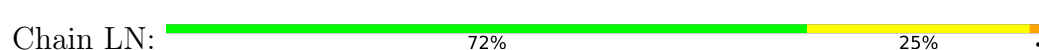
• Molecule 17: 60S ribosomal protein L13



• Molecule 18: 60S ribosomal protein L14



• Molecule 19: 60S ribosomal protein L15





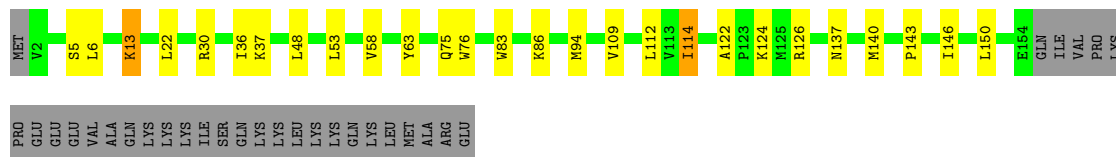
- Molecule 20: 60S ribosomal protein L13a

Chain LO: 82% 15% ..



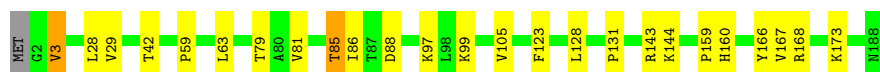
- Molecule 21: 60S ribosomal protein L17

Chain LP: 68% 14% 17%



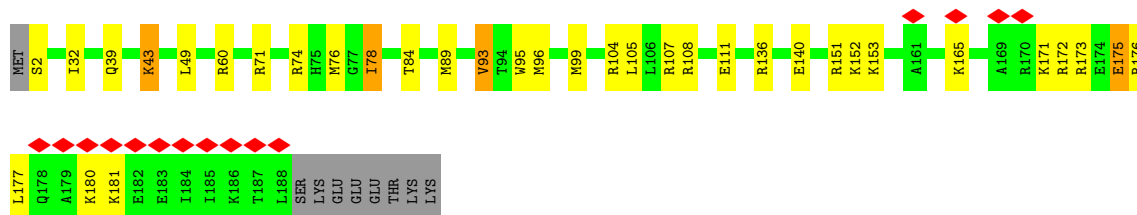
- Molecule 22: 60S ribosomal protein L18

Chain LQ: 86% 12% ..



- Molecule 23: 60S ribosomal protein L19

Chain LR: 8% 78% 16% 5%



- Molecule 24: 60S ribosomal protein L18a

Chain LS: 85% 15%



- Molecule 25: 60S ribosomal protein L21

Chain LT:  82% 16% ..



- Molecule 26: 60S ribosomal protein L22

Chain LU:  57% 21% . 21%



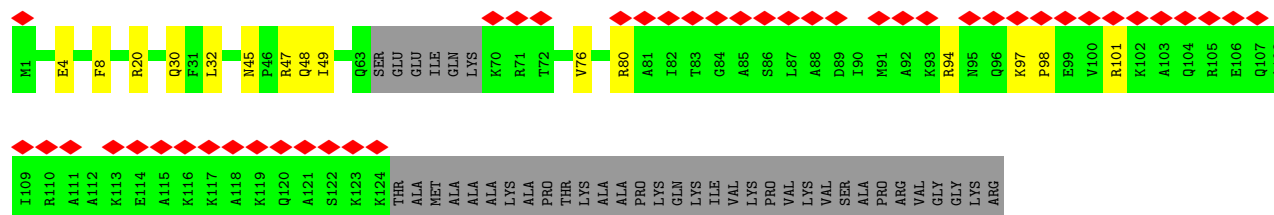
- Molecule 27: 60S ribosomal protein L23

Chain LV:  76% 16% . 6%



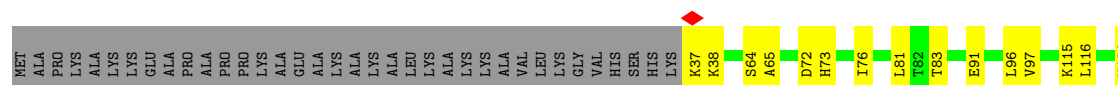
- Molecule 28: 60S ribosomal protein L24

Chain LW:  29% 66% 10% 25%



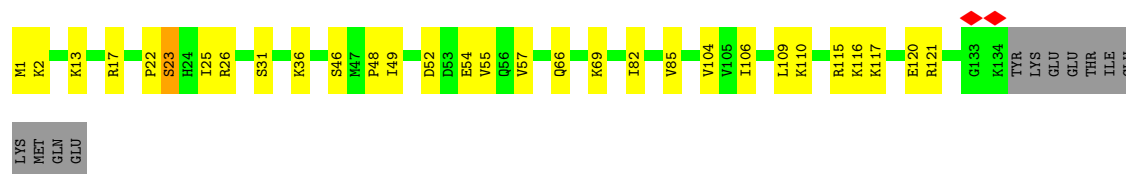
- Molecule 29: 60S ribosomal protein L23a

Chain LX:  64% 13% 23%



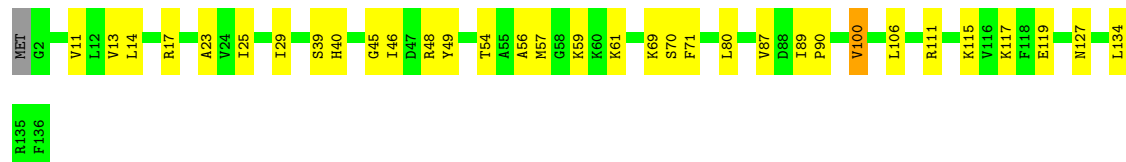
- Molecule 30: 60S ribosomal protein L26

Chain LY:  72% 20% . 8%



- Molecule 31: 60S ribosomal protein L27

Chain LZ: 75% 24% ..



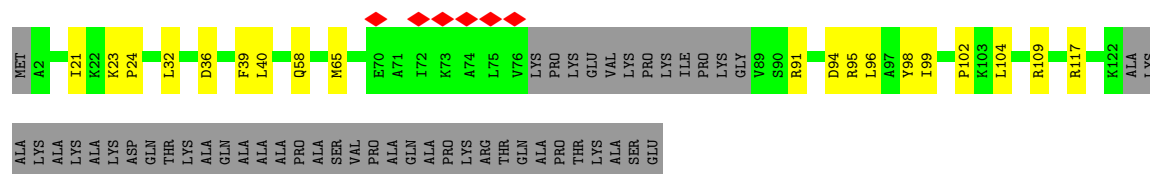
- Molecule 32: 60S ribosomal protein L27a

Chain La: 79% 20% .



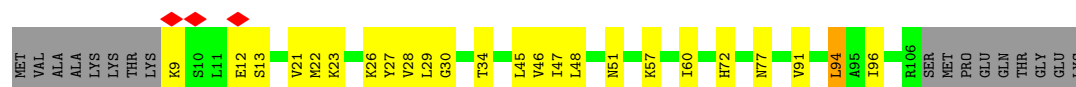
- Molecule 33: 60S ribosomal protein L29

Chain Lb: 57% 12% 31%



- Molecule 34: 60S ribosomal protein L30

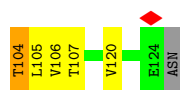
Chain Lc: 64% 20% 15%



- Molecule 35: 60S ribosomal protein L31

Chain Ld: 62% 22% 14%





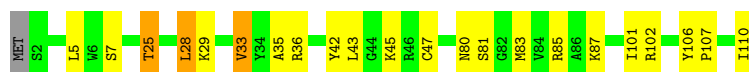
- Molecule 36: 60S ribosomal protein L32

Chain Le: 76% 17% 5%



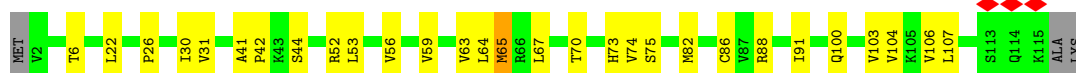
- Molecule 37: 60S ribosomal protein L35a

Chain Lf: 79% 17% 2%



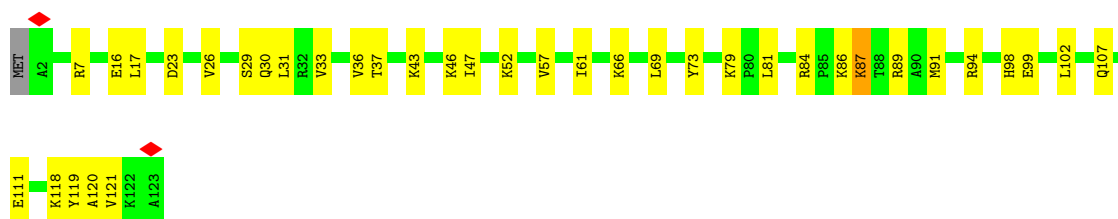
- Molecule 38: 60S ribosomal protein L34

Chain Lg: 73% 24% 3%



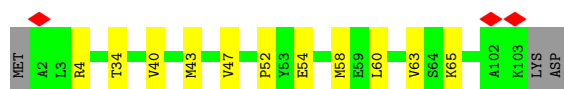
- Molecule 39: 60S ribosomal protein L35

Chain Lh: 69% 29% 2%



- Molecule 40: 60S ribosomal protein L36

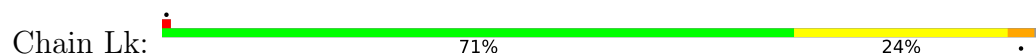
Chain Li: 87% 10% 3%



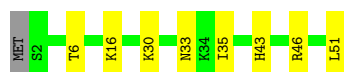
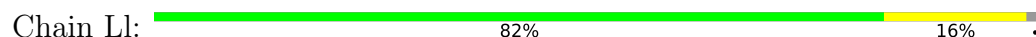
- Molecule 41: 60S ribosomal protein L37

Chain Lj: 76% 11% 11%

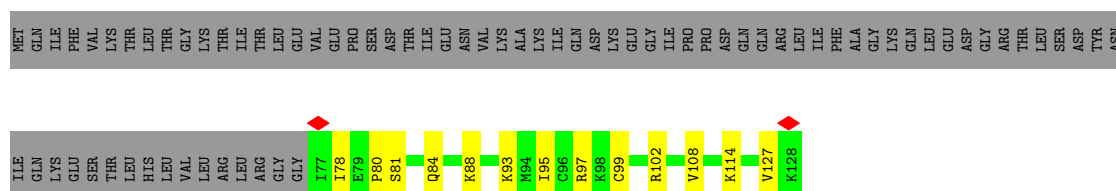
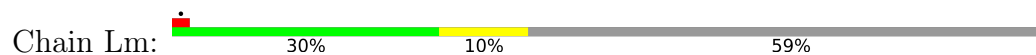
- Molecule 42: 60S ribosomal protein L38



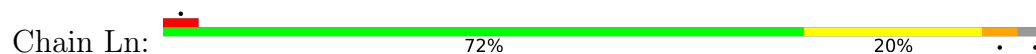
- Molecule 43: 60S ribosomal protein L39



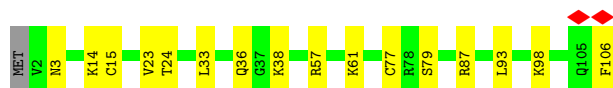
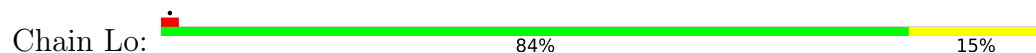
- Molecule 44: Ubiquitin-60S ribosomal protein L40



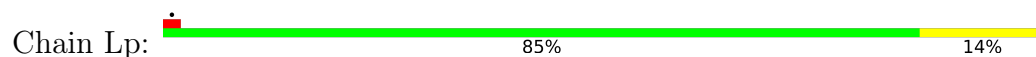
- Molecule 45: 60S ribosomal protein L41



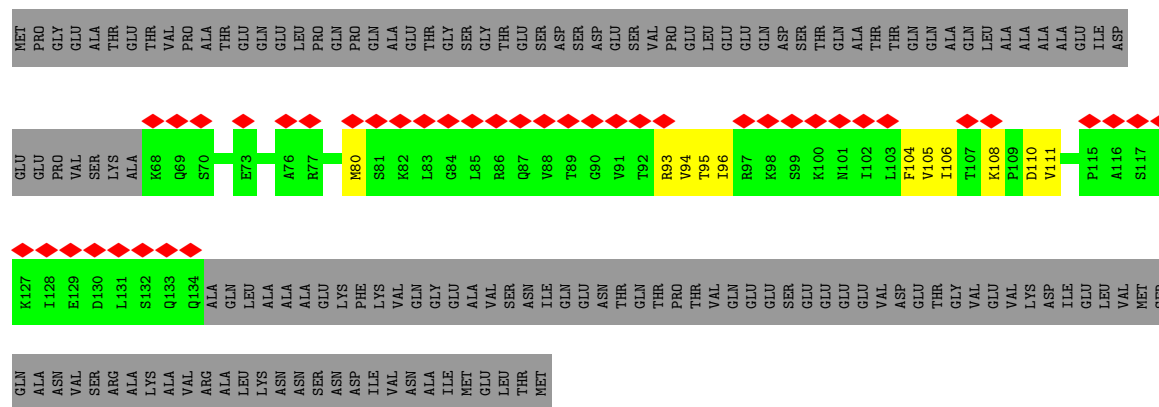
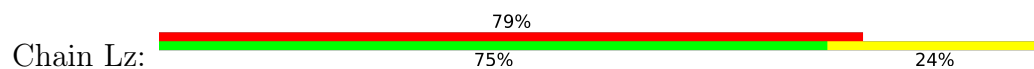
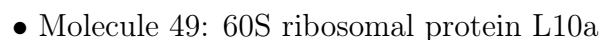
- Molecule 46: 60S ribosomal protein L36a



- Molecule 47: 60S ribosomal protein L37a



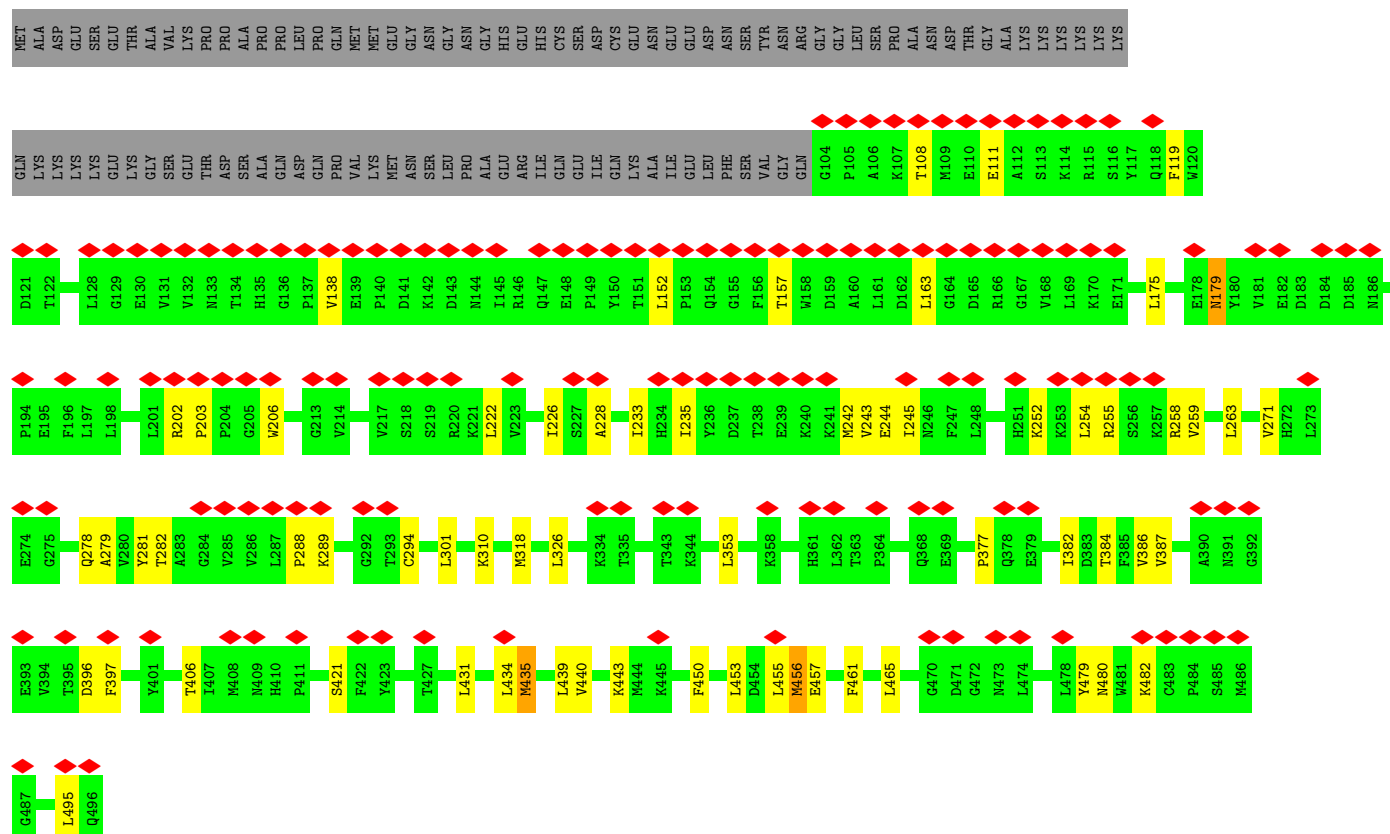
Chain Lr: 74% 15% 9%



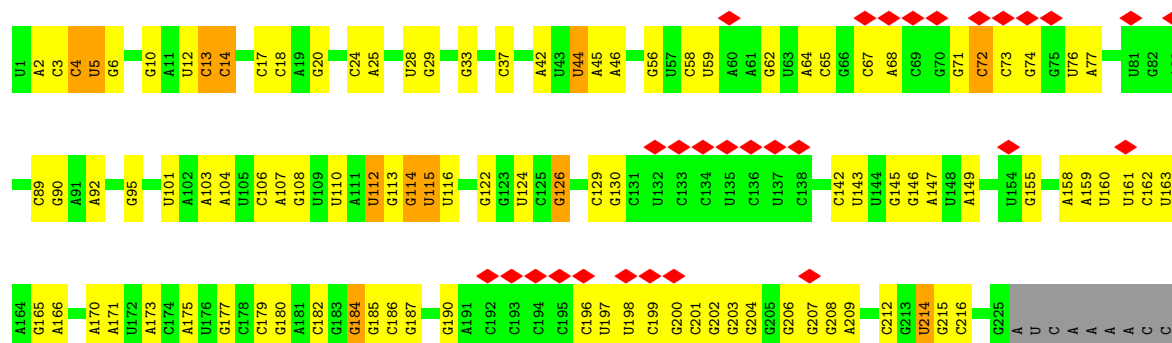
Chain NB:



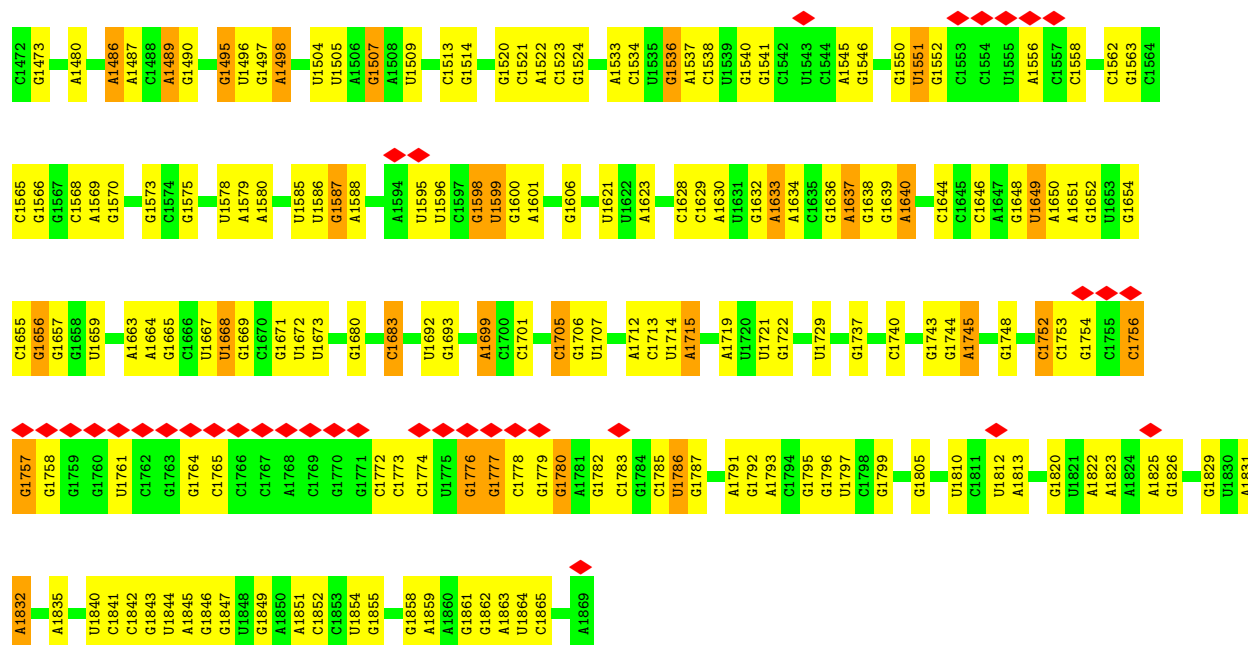
- Molecule 52: Glycylpeptide N-tetradecanoyltransferase 1



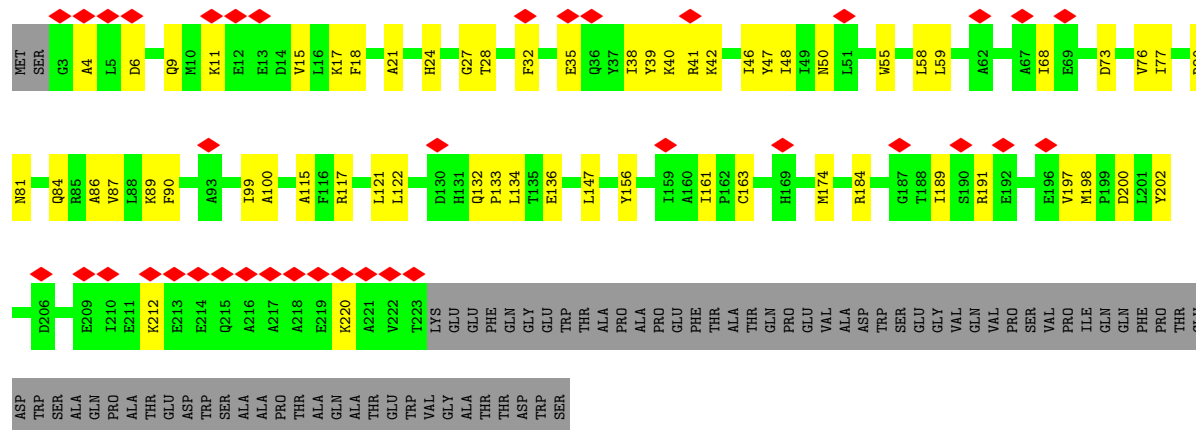
- Molecule 53: 18S rRNA



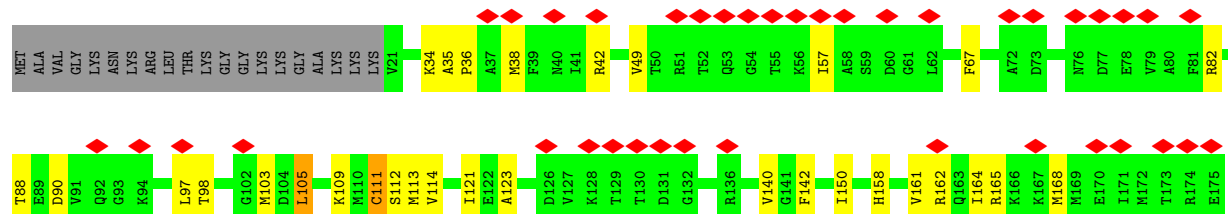


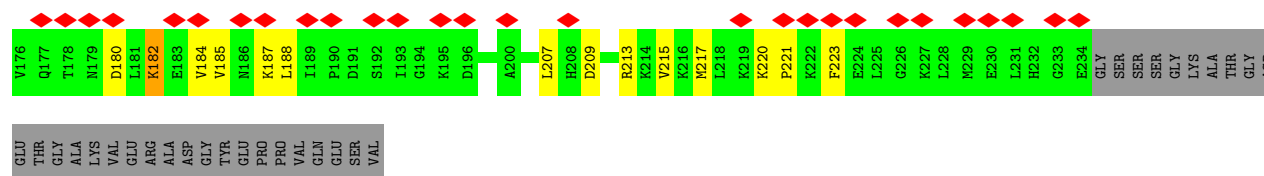


• Molecule 54: 40S ribosomal protein SA

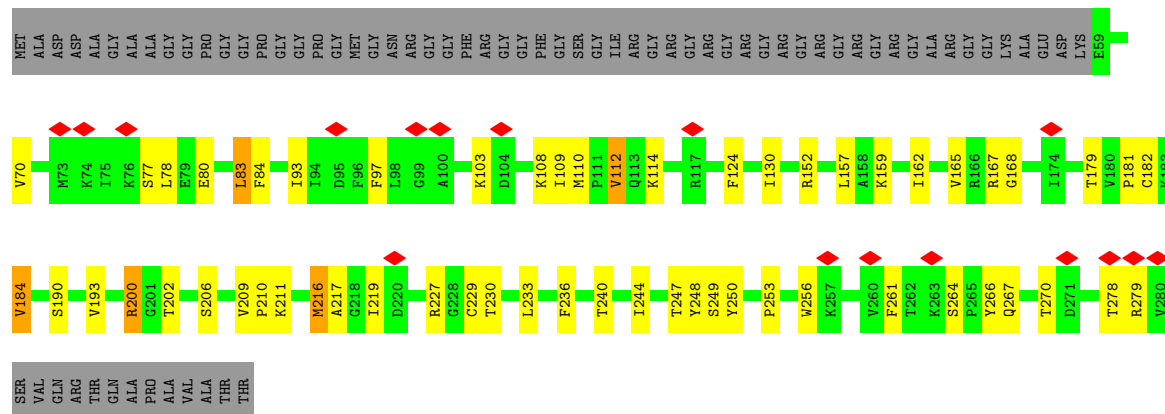


• Molecule 55: 40S ribosomal protein S3a

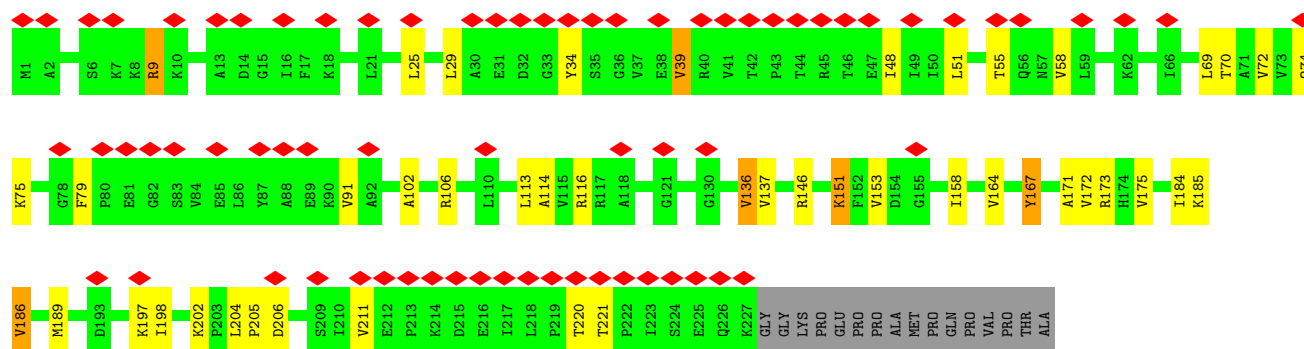
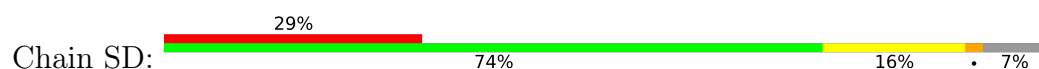




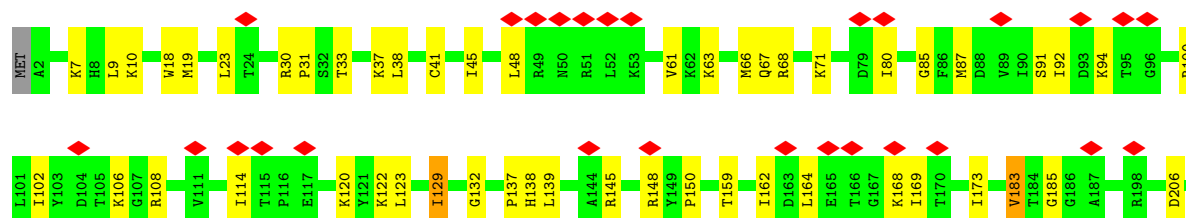
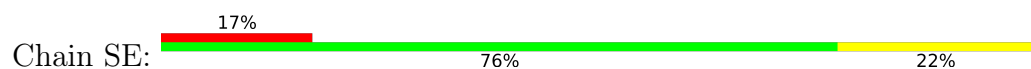
• Molecule 56: 40S ribosomal protein S2

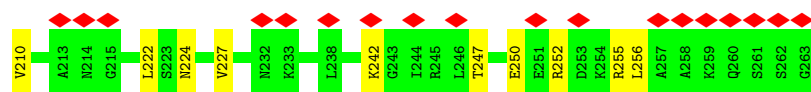


• Molecule 57: 40S ribosomal protein S3

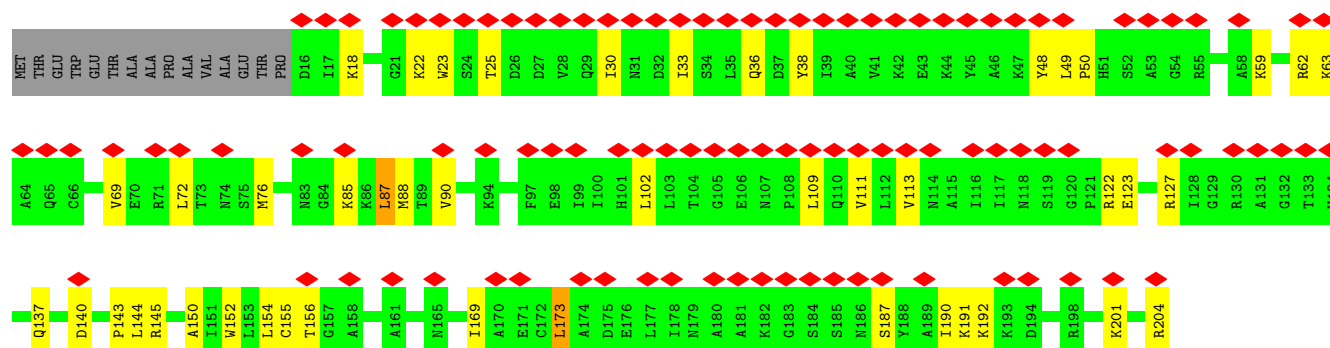
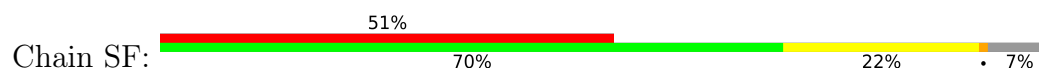


• Molecule 58: 40S ribosomal protein S4, X isoform

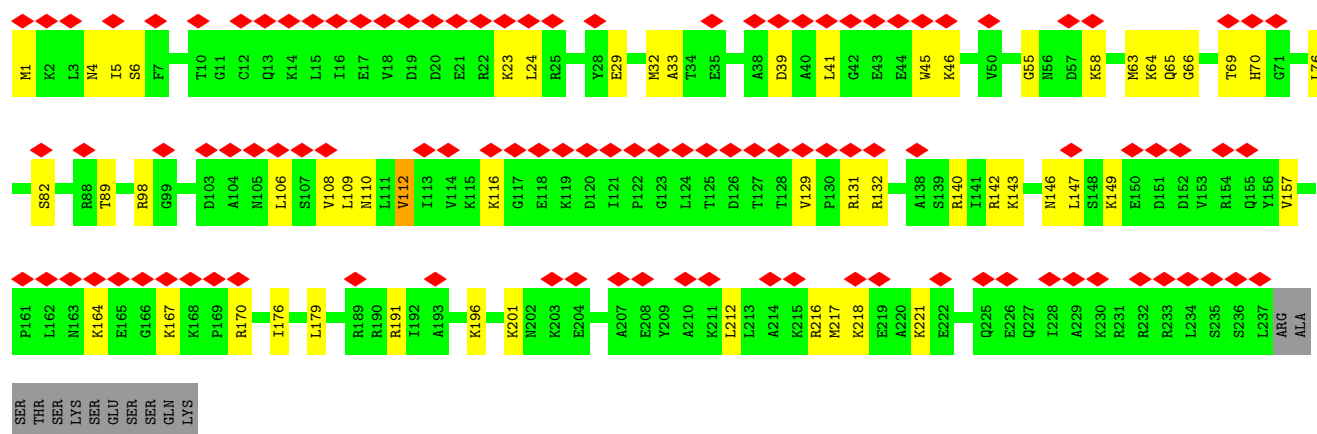
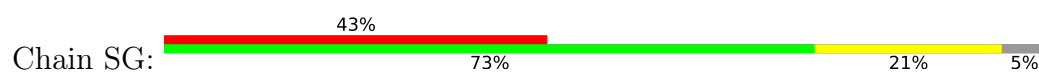




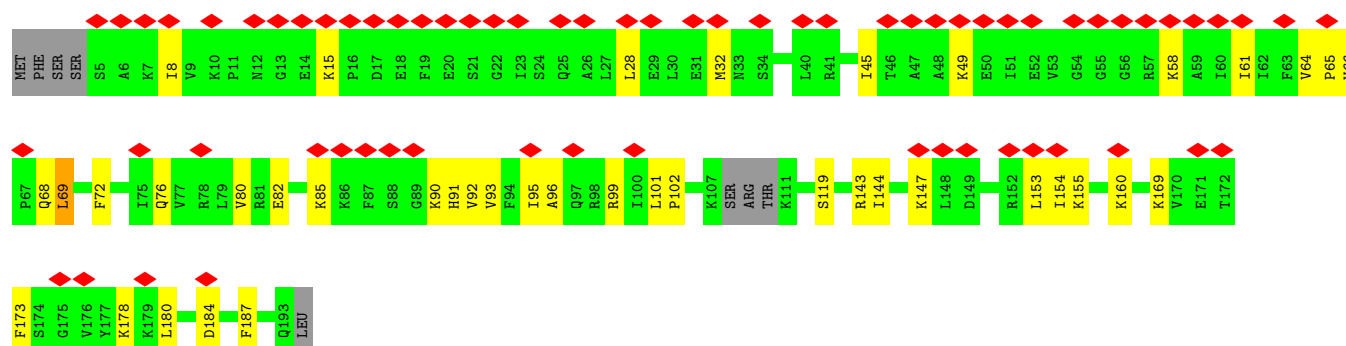
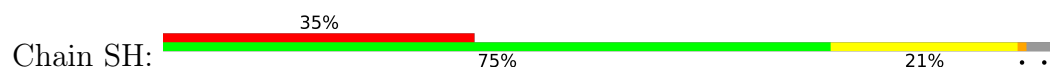
• Molecule 59: 40S ribosomal protein S5



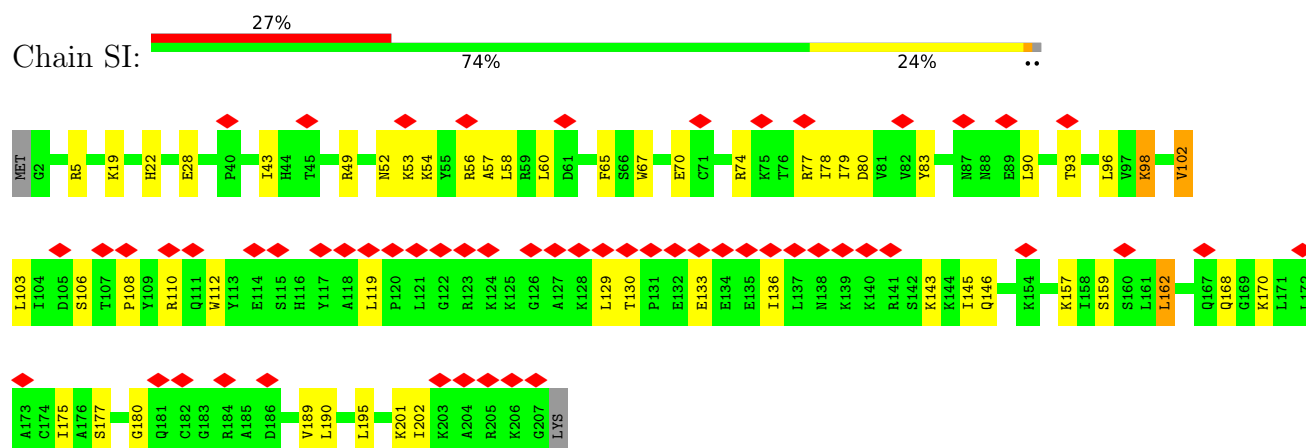
• Molecule 60: 40S ribosomal protein S6



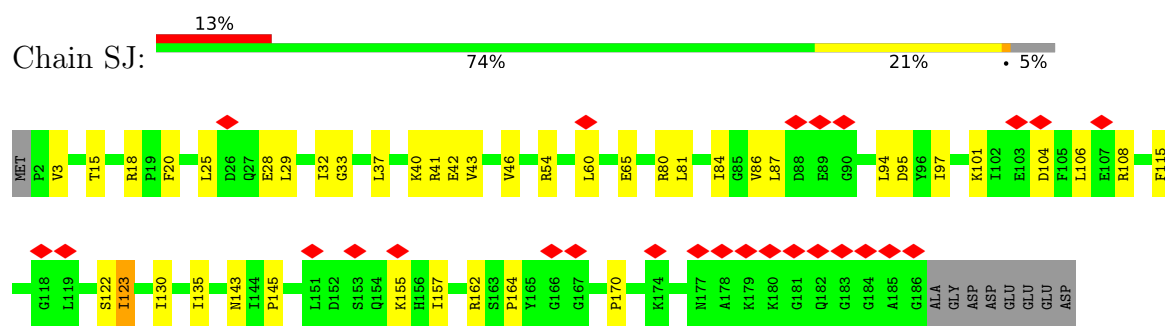
• Molecule 61: 40S ribosomal protein S7



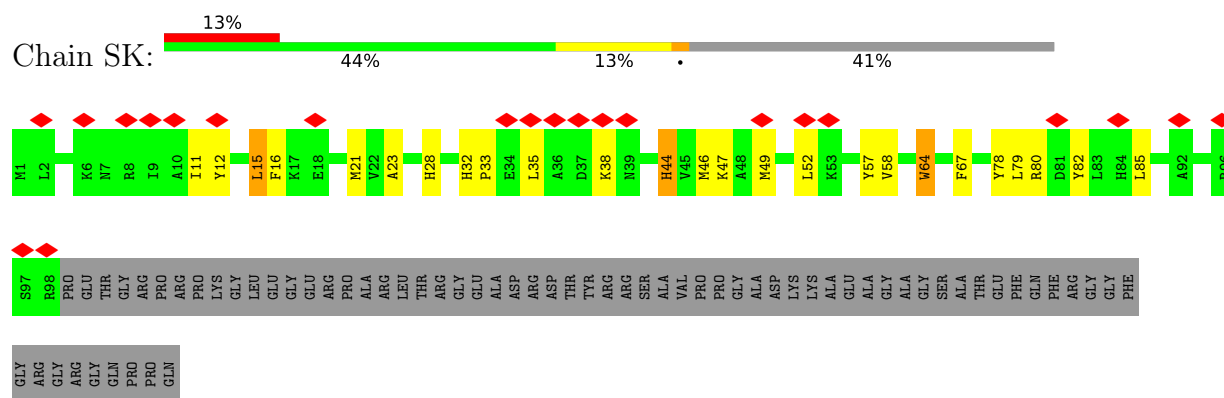
- Molecule 62: 40S ribosomal protein S8



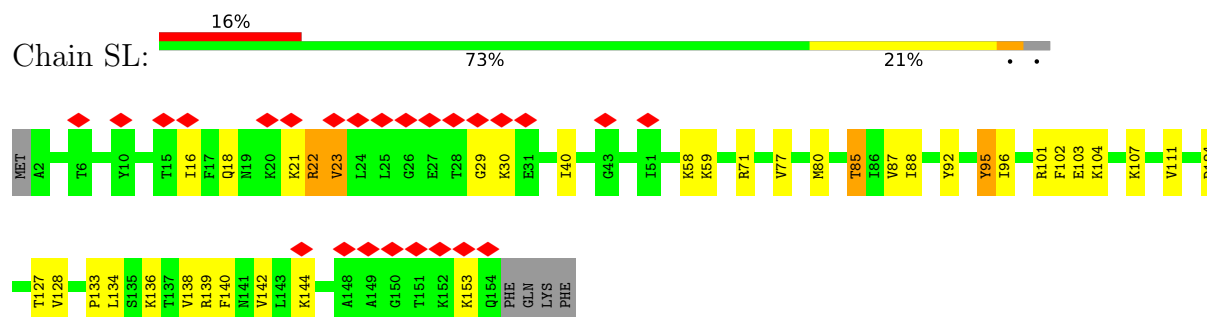
- Molecule 63: 40S ribosomal protein S9



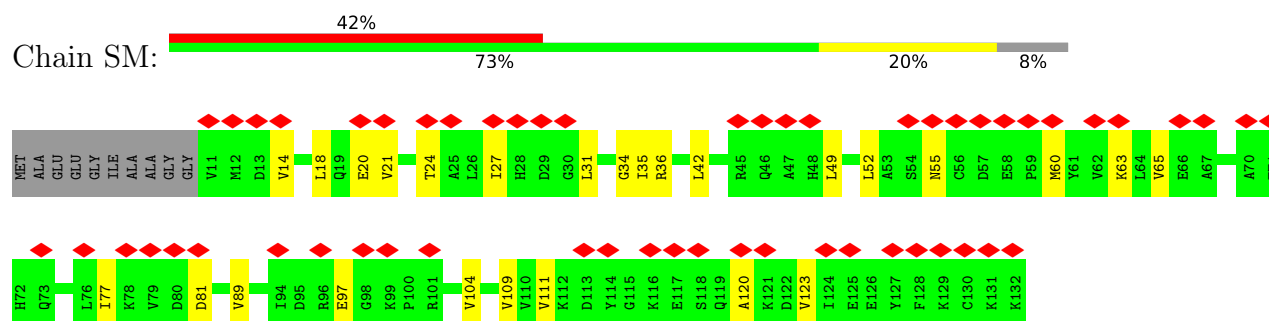
- Molecule 64: 40S ribosomal protein S10



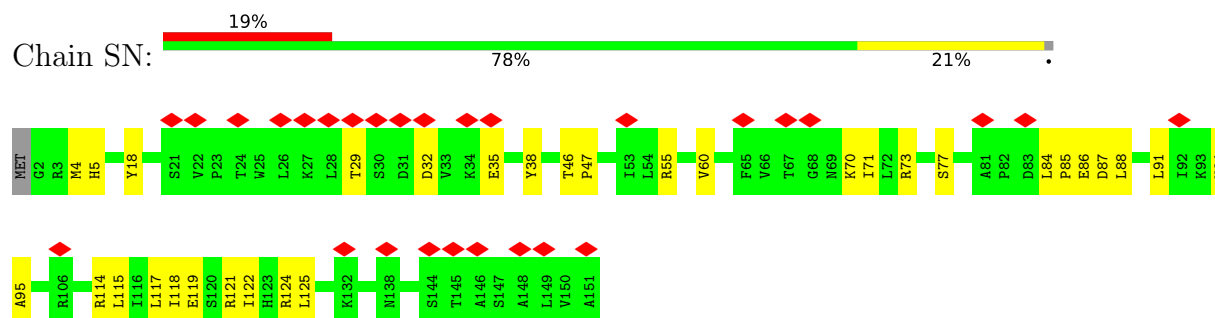
- Molecule 65: 40S ribosomal protein S11



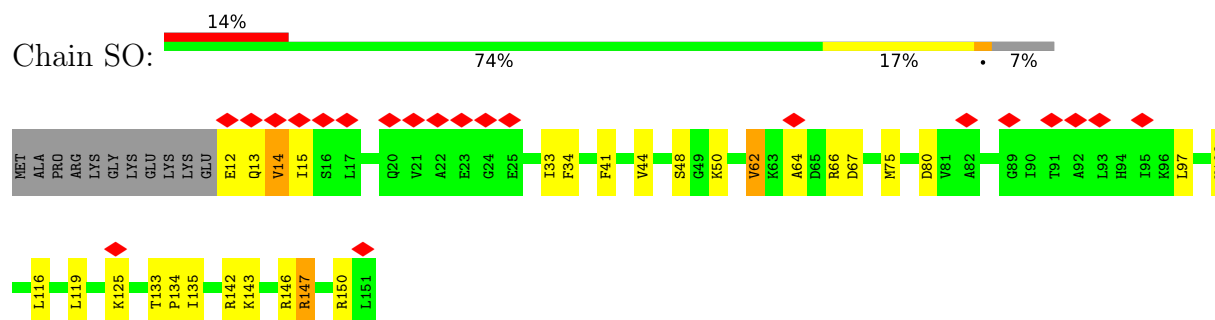
- Molecule 66: 40S ribosomal protein S12



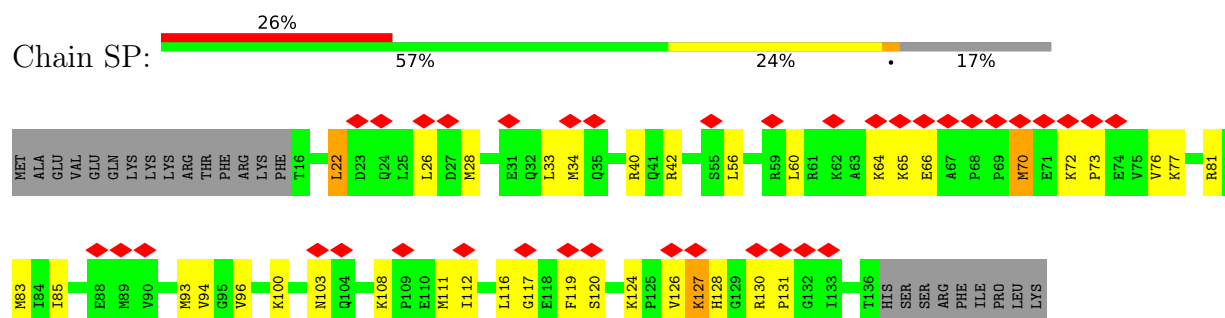
- Molecule 67: 40S ribosomal protein S13



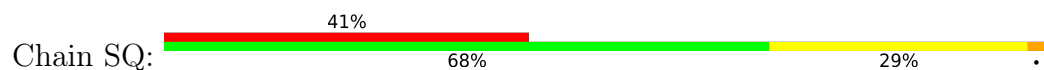
- Molecule 68: 40S ribosomal protein S14

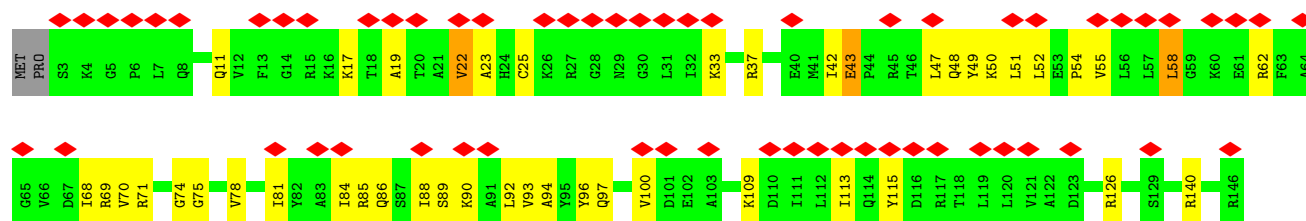


- Molecule 69: 40S ribosomal protein S15

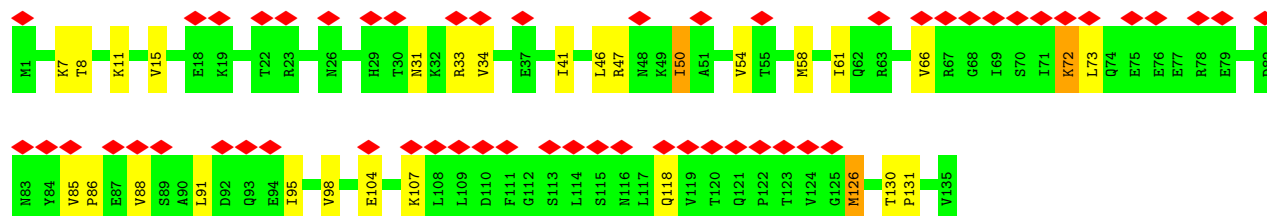
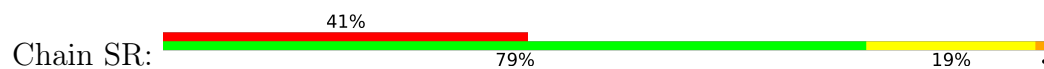


- Molecule 70: 40S ribosomal protein S16

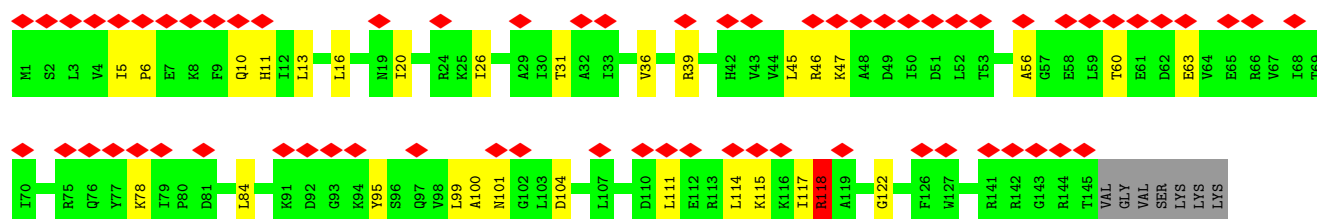
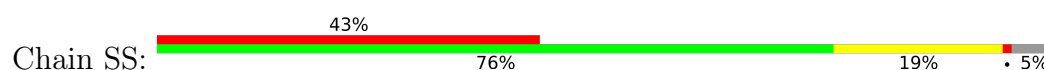




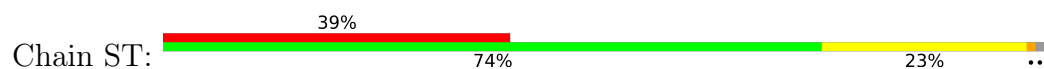
• Molecule 71: 40S ribosomal protein S17



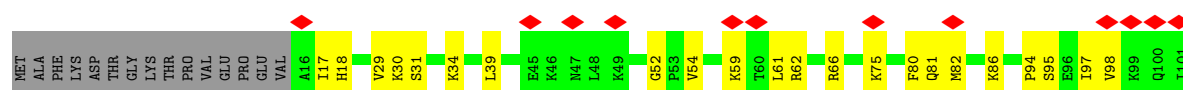
• Molecule 72: 40S ribosomal protein S18

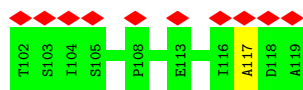


• Molecule 73: 40S ribosomal protein S19

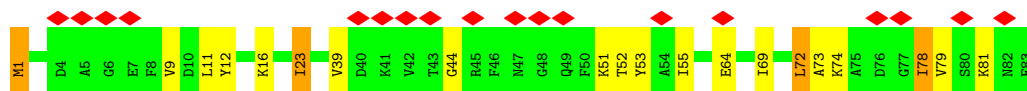
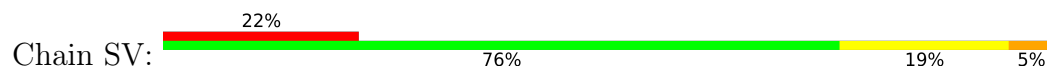


• Molecule 74: 40S ribosomal protein S20

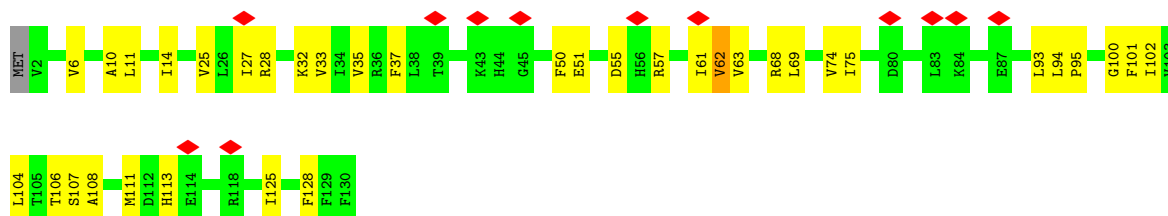




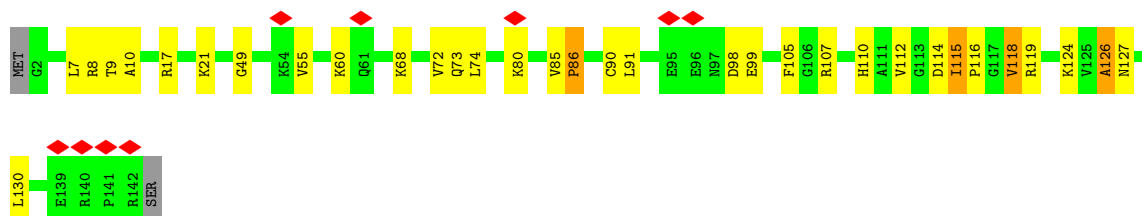
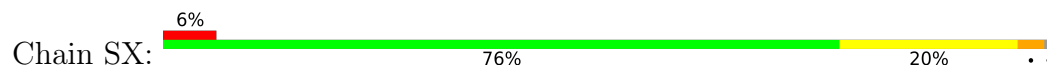
- Molecule 75: 40S ribosomal protein S21



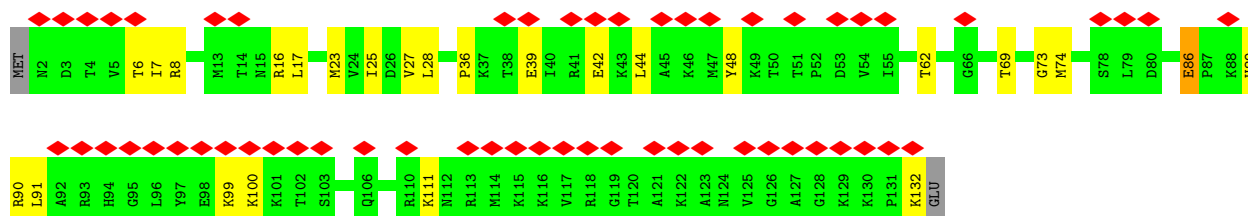
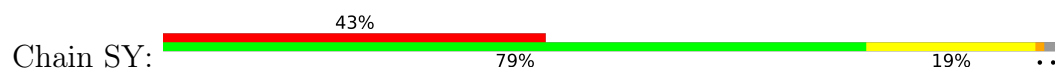
- Molecule 76: 40S ribosomal protein S15a



- Molecule 77: 40S ribosomal protein S23

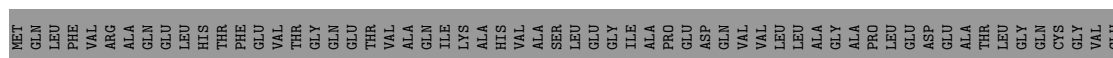


- Molecule 78: 40S ribosomal protein S24



- Molecule 79: 40S ribosomal protein S25





4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	60808	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	TFS KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	45.6	Depositor
Minimum defocus (nm)	500	Depositor
Maximum defocus (nm)	3500	Depositor
Magnification	Not provided	
Image detector	GATAN K2 SUMMIT (4k x 4k)	Depositor
Maximum map value	6.289	Depositor
Minimum map value	-2.811	Depositor
Average map value	0.018	Depositor
Map value standard deviation	0.152	Depositor
Recommended contour level	0.35	Depositor
Map size (Å)	472.05002, 472.05002, 472.05002	wwPDB
Map dimensions	450, 450, 450	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.049, 1.049, 1.049	Depositor

5 Model quality

5.1 Standard geometry

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

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	CB	0.24	0/6734	0.66	3/9094 (0.0%)
2	CC	0.15	0/2025	0.31	0/3155
3	CD	0.16	0/447	0.52	0/592
4	L5	0.29	0/89570	0.38	1/139647 (0.0%)
5	L7	0.26	0/2861	0.32	0/4459
6	L8	0.29	0/3701	0.34	0/5766
7	LA	0.34	0/1936	0.61	0/2596
8	LB	0.31	0/3306	0.59	1/4424 (0.0%)
9	LC	0.31	0/2981	0.60	4/4002 (0.1%)
10	LD	0.27	0/2428	0.62	1/3252 (0.0%)
11	LE	0.27	0/1942	0.64	1/2606 (0.0%)
12	LF	0.33	0/1905	0.61	0/2539
13	LG	0.30	0/1960	0.70	0/2637
14	LH	0.30	0/1537	0.68	1/2066 (0.0%)
15	LI	0.30	0/1673	0.60	1/2233 (0.0%)
16	LJ	0.26	0/1433	0.67	0/1915
17	LL	0.29	0/1732	0.56	0/2315
18	LM	0.29	0/1161	0.66	2/1554 (0.1%)
19	LN	0.33	0/1746	0.58	0/2338
20	LO	0.31	0/1682	0.55	0/2250
21	LP	0.32	0/1268	0.56	0/1701
22	LQ	0.31	0/1537	0.54	0/2052
23	LR	0.30	0/1582	0.69	3/2091 (0.1%)
24	LS	0.32	0/1493	0.53	0/2003
25	LT	0.33	0/1326	0.65	2/1770 (0.1%)
26	LU	0.30	0/839	0.79	1/1126 (0.1%)
27	LV	0.30	0/993	0.58	0/1332
28	LW	0.22	0/979	0.41	0/1295
29	LX	0.27	0/1002	0.56	0/1345
30	LY	0.25	0/1132	0.55	0/1504
31	LZ	0.27	0/1130	0.60	0/1507
32	La	0.31	0/1191	0.53	0/1591

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	Lb	0.28	0/889	0.68	0/1175
34	Lc	0.29	0/774	0.64	0/1038
35	Ld	0.29	0/903	0.57	0/1216
36	Le	0.32	0/1071	0.57	0/1429
37	Lf	0.33	0/895	0.63	0/1198
38	Lg	0.30	0/916	0.57	0/1220
39	Lh	0.29	0/1023	0.61	1/1351 (0.1%)
40	Li	0.25	0/843	0.56	0/1115
41	Lj	0.33	0/720	0.58	0/952
42	Lk	0.36	0/575	0.81	2/761 (0.3%)
43	Ll	0.33	0/454	0.57	0/599
44	Lm	0.25	0/435	0.46	0/575
45	Ln	0.24	0/231	0.53	0/294
46	Lo	0.29	0/876	0.63	0/1156
47	Lp	0.27	0/718	0.52	0/953
48	Lr	0.29	0/1017	0.52	0/1364
49	Lz	0.23	0/1769	0.61	1/2371 (0.0%)
50	NA	0.22	0/536	0.62	2/715 (0.3%)
51	NB	0.24	0/972	0.58	1/1304 (0.1%)
52	NM	0.19	0/3299	0.56	3/4483 (0.1%)
53	S2	0.17	0/41244	0.34	1/64263 (0.0%)
54	SA	0.25	0/1778	0.70	1/2416 (0.0%)
55	SB	0.23	0/1765	0.60	1/2362 (0.0%)
56	SC	0.26	0/1762	0.71	1/2381 (0.0%)
57	SD	0.26	0/1793	0.68	0/2414
58	SE	0.20	0/2118	0.52	0/2849
59	SF	0.24	0/1516	0.71	1/2037 (0.0%)
60	SG	0.21	0/1946	0.60	2/2590 (0.1%)
61	SH	0.23	0/1519	0.66	2/2033 (0.1%)
62	SI	0.24	0/1715	0.61	2/2287 (0.1%)
63	SJ	0.25	0/1550	0.64	1/2069 (0.0%)
64	SK	0.24	0/851	0.75	0/1147
65	SL	0.24	0/1268	0.57	0/1696
66	SM	0.20	0/950	0.59	0/1275
67	SN	0.24	0/1232	0.62	0/1656
68	SO	0.25	0/1062	0.66	2/1425 (0.1%)
69	SP	0.28	0/1003	0.84	2/1342 (0.1%)
70	SQ	0.22	0/1160	0.69	0/1553
71	SR	0.27	0/1105	0.80	1/1484 (0.1%)
72	SS	0.22	0/1216	0.69	2/1628 (0.1%)
73	ST	0.23	0/1131	0.68	1/1515 (0.1%)
74	SU	0.29	0/832	0.68	1/1117 (0.1%)
75	SV	0.24	0/643	0.65	0/860

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	$\# Z > 5$	RMSZ	$\# Z > 5$
76	SW	0.27	0/1051	0.65	0/1406
77	SX	0.25	0/1116	0.71	2/1490 (0.1%)
78	SY	0.23	0/1083	0.64	0/1438
79	SZ	0.33	0/604	1.00	2/810 (0.2%)
80	Sa	0.25	0/836	0.65	1/1121 (0.1%)
81	Sb	0.23	0/665	0.67	1/891 (0.1%)
82	Sc	0.27	0/508	0.75	0/680
83	Sd	0.23	0/470	0.68	0/623
84	Se	0.21	0/465	0.62	1/612 (0.2%)
85	Sf	0.22	0/560	0.64	0/745
86	Sg	0.20	0/2493	0.57	1/3394 (0.0%)
All	All	0.27	0/247158	0.49	60/361635 (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
1	CB	0	1
7	LA	0	2
8	LB	0	2
12	LF	0	1
13	LG	0	1
16	LJ	0	1
17	LL	0	1
18	LM	0	2
20	LO	0	1
25	LT	0	1
32	La	0	1
37	Lf	0	1
39	Lh	0	1
41	Lj	0	1
49	Lz	0	1
51	NB	0	1
55	SB	0	2
57	SD	0	1
59	SF	0	1
61	SH	0	1
63	SJ	0	1
69	SP	0	1
70	SQ	0	1

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Mol	Chain	#Chirality outliers	#Planarity outliers
72	SS	0	1
73	ST	0	1
75	SV	0	1
77	SX	0	2
80	Sa	0	1
All	All	0	33

There are no bond length outliers.

All (60) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
51	NB	102	MET	CB-CG-SD	8.22	137.38	112.70
26	LU	18	VAL	N-CA-C	-7.70	103.76	111.77
23	LR	78	ILE	N-CA-C	-7.10	105.86	112.96
77	SX	127	ASN	N-CA-C	6.93	121.18	112.87
9	LC	67	TRP	CA-CB-CG	6.41	125.77	113.60
9	LC	2	ALA	CA-C-N	6.20	132.86	121.70
9	LC	2	ALA	C-N-CA	6.20	132.86	121.70
50	NA	80	MET	CB-CG-SD	6.18	131.25	112.70
1	CB	640	GLU	CA-CB-CG	6.03	126.16	114.10
81	Sb	42	LYS	CA-CB-CG	6.03	126.15	114.10
18	LM	87	ALA	CA-C-N	5.96	132.93	121.54
18	LM	87	ALA	C-N-CA	5.96	132.93	121.54
42	Lk	9	LYS	CG-CD-CE	5.86	124.77	111.30
50	NA	108	LYS	CA-CB-CG	5.81	125.72	114.10
23	LR	43	LYS	CB-CG-CD	5.77	124.56	111.30
59	SF	173	LEU	CA-CB-CG	5.74	136.39	116.30
39	Lh	16	GLU	CA-CB-CG	5.71	125.51	114.10
69	SP	70	MET	CB-CG-SD	5.68	129.75	112.70
72	SS	118	ARG	CB-CG-CD	5.65	124.30	111.30
52	NM	435	MET	CA-CB-CG	5.63	125.36	114.10
56	SC	216	MET	CB-CG-SD	5.62	129.57	112.70
1	CB	256	MET	CB-CG-SD	5.59	129.49	112.70
52	NM	456	MET	CB-CA-C	-5.55	110.19	116.63
9	LC	268	ARG	CG-CD-NE	-5.50	99.91	112.00
60	SG	1	MET	CB-CG-SD	5.49	129.16	112.70
54	SA	73	ASP	N-CA-C	-5.46	105.91	113.18
61	SH	32	MET	CA-CB-CG	5.44	124.98	114.10
80	Sa	66	LYS	CB-CG-CD	5.43	123.80	111.30
62	SI	77	ARG	CA-CB-CG	5.41	124.91	114.10
10	LD	235	MET	CB-CG-SD	5.36	128.78	112.70
86	Sg	183	LYS	CB-CG-CD	5.35	123.61	111.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
62	SI	98	LYS	CA-CB-CG	5.35	124.80	114.10
1	CB	396	MET	CB-CG-SD	5.34	128.74	112.70
79	SZ	52	LYS	CA-CB-CG	5.34	124.79	114.10
25	LT	136	ARG	CA-CB-CG	5.29	124.69	114.10
73	ST	45	LEU	CA-CB-CG	5.29	134.80	116.30
55	SB	182	LYS	CB-CG-CD	5.26	123.39	111.30
49	Lz	119	GLN	CA-CB-CG	5.25	124.60	114.10
42	Lk	9	LYS	N-CA-CB	5.24	118.36	110.30
61	SH	69	LEU	CA-CB-CG	5.23	134.60	116.30
68	SO	14	VAL	CA-C-N	5.23	131.11	121.70
68	SO	14	VAL	C-N-CA	5.23	131.11	121.70
14	LH	141	LYS	CB-CG-CD	5.22	123.31	111.30
79	SZ	102	LYS	CA-CB-CG	5.22	124.54	114.10
74	SU	39	LEU	CA-CB-CG	5.21	134.55	116.30
69	SP	40	ARG	CA-CB-CG	5.18	124.47	114.10
15	LI	208	LYS	CA-CB-CG	5.17	124.44	114.10
77	SX	86	PRO	N-CA-C	5.16	119.69	112.26
52	NM	318	MET	CB-CG-SD	5.14	128.13	112.70
63	SJ	65	GLU	CB-CG-CD	5.11	121.29	112.60
71	SR	126	MET	CA-CB-CG	5.11	124.32	114.10
25	LT	122	LYS	CA-CB-CG	5.10	124.31	114.10
8	LB	17	LEU	CA-CB-CG	5.10	134.15	116.30
60	SG	29	GLU	CB-CG-CD	5.09	121.25	112.60
53	S2	688	U	P-O3'-C3'	5.05	127.78	120.20
4	L5	1082	C	P-O3'-C3'	5.04	127.76	120.20
23	LR	175	GLU	CA-CB-CG	5.04	124.18	114.10
84	Se	35	ARG	CG-CD-NE	5.04	123.08	112.00
72	SS	99	LEU	CA-CB-CG	5.03	133.91	116.30
11	LE	244	GLU	CA-CB-CG	5.02	124.14	114.10

There are no chirality outliers.

All (33) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
1	CB	807	GLN	Peptide
7	LA	13	GLY	Peptide
7	LA	54	ARG	Peptide
8	LB	17	LEU	Peptide
8	LB	258	HIS	Peptide
12	LF	223	LYS	Peptide
13	LG	149	ASN	Peptide
16	LJ	94	LEU	Peptide

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Mol	Chain	Res	Type	Group
17	LL	154	VAL	Peptide
18	LM	87	ALA	Peptide
18	LM	88	ALA	Peptide
20	LO	110	PRO	Peptide
25	LT	136	ARG	Peptide
32	La	22	ILE	Peptide
37	Lf	106	TYR	Peptide
39	Lh	86	LYS	Peptide
41	Lj	39	TYR	Peptide
49	Lz	183	ILE	Peptide
51	NB	52	GLY	Peptide
55	SB	111	CYS	Peptide
55	SB	221	PRO	Peptide
57	SD	164	VAL	Peptide
59	SF	87	LEU	Peptide
61	SH	15	LYS	Peptide
63	SJ	122	SER	Peptide
69	SP	127	LYS	Peptide
70	SQ	43	GLU	Peptide
72	SS	118	ARG	Sidechain
73	ST	46	ALA	Peptide
75	SV	78	ILE	Peptide
77	SX	126	ALA	Peptide
77	SX	8	ARG	Sidechain
80	Sa	15	ARG	Sidechain

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	CB	6605	0	6681	86	0
2	CC	1813	0	917	13	0
3	CD	440	0	402	10	0
4	L5	80116	0	40368	422	0
5	L7	2561	0	1295	12	0
6	L8	3314	0	1683	18	0
7	LA	1898	0	1993	19	0
8	LB	3238	0	3376	35	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
9	LC	2927	0	3104	32	0
10	LD	2382	0	2410	27	0
11	LE	1904	0	2055	29	0
12	LF	1870	0	1996	20	0
13	LG	1927	0	2074	33	0
14	LH	1518	0	1601	19	0
15	LI	1634	0	1671	26	0
16	LJ	1410	0	1441	25	0
17	LL	1701	0	1818	25	0
18	LM	1138	0	1204	12	0
19	LN	1701	0	1749	33	0
20	LO	1650	0	1794	20	0
21	LP	1242	0	1269	17	0
22	LQ	1513	0	1628	15	0
23	LR	1566	0	1729	20	0
24	LS	1453	0	1490	14	0
25	LT	1298	0	1366	16	0
26	LU	825	0	850	18	0
27	LV	979	0	1039	12	0
28	LW	965	0	1029	8	0
29	LX	985	0	1066	12	0
30	LY	1115	0	1205	14	0
31	LZ	1107	0	1182	16	0
32	La	1162	0	1213	14	0
33	Lb	876	0	948	12	0
34	Lc	764	0	804	11	0
35	Ld	888	0	930	17	0
36	Le	1053	0	1147	14	0
37	Lf	876	0	912	10	0
38	Lg	906	0	998	14	0
39	Lh	1015	0	1148	24	0
40	Li	832	0	917	9	0
41	Lj	705	0	737	8	0
42	Lk	569	0	637	8	0
43	Ll	444	0	483	4	0
44	Lm	429	0	465	4	0
45	Ln	230	0	276	3	0
46	Lo	862	0	930	11	0
47	Lp	708	0	756	6	0
48	Lr	1002	0	1068	10	0
49	Lz	1741	0	1854	32	0
50	NA	531	0	573	6	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
51	NB	963	0	982	20	0
52	NM	3209	0	3185	34	0
53	S2	36898	0	18602	325	0
54	SA	1741	0	1746	39	0
55	SB	1738	0	1809	31	0
56	SC	1725	0	1813	41	0
57	SD	1765	0	1865	32	0
58	SE	2076	0	2177	35	0
59	SF	1495	0	1549	35	0
60	SG	1923	0	2089	30	0
61	SH	1497	0	1590	26	0
62	SI	1686	0	1772	33	0
63	SJ	1525	0	1640	26	0
64	SK	827	0	854	17	0
65	SL	1247	0	1323	25	0
66	SM	940	0	965	17	0
67	SN	1208	0	1294	23	0
68	SO	1049	0	1073	18	0
69	SP	985	0	1031	28	0
70	SQ	1142	0	1213	27	0
71	SR	1090	0	1149	18	0
72	SS	1198	0	1261	20	0
73	ST	1112	0	1146	23	0
74	SU	822	0	887	16	0
75	SV	636	0	637	21	0
76	SW	1034	0	1080	19	0
77	SX	1098	0	1167	18	0
78	SY	1065	0	1142	17	0
79	SZ	598	0	656	15	0
80	Sa	821	0	870	16	0
81	Sb	651	0	672	14	0
82	Sc	506	0	536	20	0
83	Sd	459	0	452	19	0
84	Se	459	0	503	11	0
85	Sf	548	0	555	11	0
86	Sg	2436	0	2393	29	0
87	CC	1	0	0	0	0
87	L5	211	0	0	0	0
87	L7	3	0	0	0	0
87	L8	5	0	0	0	0
87	LA	1	0	0	0	0
87	LI	1	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
87	LP	1	0	0	0	0
87	LT	1	0	0	0	0
87	LV	1	0	0	0	0
87	Le	1	0	0	0	0
87	Lg	1	0	0	0	0
87	S2	29	0	0	0	0
88	Lg	1	0	0	0	0
88	Lj	1	0	0	0	0
88	Lm	1	0	0	0	0
88	Lo	1	0	0	0	0
88	Lp	1	0	0	0	0
88	SM	1	0	0	0	0
88	Sa	1	0	0	0	0
88	Sd	1	0	0	0	0
All	All	230824	0	173959	2166	0

The all-atom clashscore is defined as the number of clashes found per 1000 atoms (including hydrogen atoms). The all-atom clashscore for this structure is 5.

All (2166) 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)
63:SJ:143:ASN:CA	63:SJ:143:ASN:CB	1.75	1.60
53:S2:886:A:N6	53:S2:901:G:C4	2.19	1.10
55:SB:109:LYS:O	55:SB:113:MET:HB2	1.53	1.06
4:L5:1762:C:N4	4:L5:1770:A:C2	2.25	1.04
4:L5:1269:G:N2	4:L5:1441:C:C2	2.24	1.04
53:S2:804:U:H3	53:S2:859:G:H1	1.07	1.03
53:S2:1748:G:H1	53:S2:1786:U:H3	1.07	0.99
53:S2:186:C:N4	53:S2:214:U:H3	1.61	0.98
53:S2:748:C:H42	53:S2:795:A:N6	1.62	0.97
53:S2:925:G:H1	53:S2:1017:U:H3	0.98	0.97
80:Sa:88:SER:O	80:Sa:92:ARG:HB2	1.65	0.95
53:S2:748:C:N4	53:S2:795:A:H61	1.65	0.94
53:S2:1652:G:H1	53:S2:1672:U:H3	1.14	0.92
53:S2:1743:G:N2	53:S2:1791:A:H62	1.65	0.92
4:L5:2557:G:H1	4:L5:2570:U:H3	1.09	0.91
53:S2:1324:G:H1	53:S2:1504:U:H3	1.12	0.91
4:L5:1095:A:H2	4:L5:1200:G:H1	1.17	0.91
53:S2:1206:G:H1	53:S2:1692:U:H3	1.18	0.90
53:S2:1656:G:H1	53:S2:1668:U:H3	0.95	0.90

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:S2:1743:G:H21	53:S2:1791:A:N6	1.69	0.90
4:L5:3955:G:N2	4:L5:3966:A:C5	2.40	0.90
53:S2:1743:G:H21	53:S2:1791:A:H62	0.90	0.89
53:S2:748:C:H42	53:S2:795:A:H61	1.16	0.88
53:S2:186:C:H42	53:S2:214:U:H3	0.89	0.88
53:S2:677:G:H21	53:S2:1028:A:H62	1.18	0.87
53:S2:885:U:H3	53:S2:901:G:H1	1.20	0.86
4:L5:493:G:H1	4:L5:660:A:H2	1.23	0.86
4:L5:1709:C:H42	4:L5:1716:G:H22	1.23	0.85
53:S2:366:U:H3	53:S2:394:G:H1	1.24	0.84
4:L5:1479:G:H21	17:LL:184:MET:HE1	1.42	0.83
53:S2:878:G:H1	53:S2:908:A:H2	1.23	0.82
4:L5:2483:G:H1	4:L5:2495:U:H3	1.26	0.82
4:L5:4887:C:H42	4:L5:4932:U:H3	1.27	0.82
14:LH:44:GLU:O	14:LH:57:VAL:HA	1.79	0.81
53:S2:4:C:H5'	56:SC:230:THR:HG21	1.63	0.79
53:S2:1729:U:H3	53:S2:1805:G:H1	1.31	0.78
53:S2:1452:A:H61	53:S2:1473:G:H21	1.29	0.78
17:LL:63:THR:HG21	32:La:66:ASN:HB3	1.67	0.76
4:L5:1095:A:C2	4:L5:1200:G:N1	2.50	0.76
26:LU:24:ASP:HB3	26:LU:111:GLU:HB2	1.68	0.76
70:SQ:54:PRO:O	70:SQ:58:LEU:HB2	1.85	0.75
76:SW:57:ARG:HH12	81:Sb:26:GLN:HE21	1.34	0.75
12:LF:243:LEU:O	12:LF:247:MET:HB2	1.84	0.75
4:L5:1414:C:H2'	4:L5:1415:G:H8	1.52	0.75
4:L5:3955:G:C2	4:L5:3966:A:C5	2.74	0.75
53:S2:1452:A:H61	53:S2:1473:G:N2	1.84	0.75
4:L5:1709:C:N4	4:L5:1716:G:H22	1.84	0.74
68:SO:34:PHE:HB3	68:SO:41:PHE:HB2	1.68	0.74
55:SB:38:MET:HE3	55:SB:38:MET:H	1.52	0.74
53:S2:1050:A:H62	53:S2:1068:G:H21	1.34	0.74
53:S2:1657:G:H1	53:S2:1667:U:H3	1.35	0.74
53:S2:928:G:H1	53:S2:1013:U:H3	1.36	0.73
4:L5:1269:G:N2	4:L5:1441:C:O2	2.21	0.73
4:L5:1709:C:H42	4:L5:1716:G:N2	1.86	0.72
19:LN:135:ILE:HD11	19:LN:151:ILE:HG21	1.72	0.72
4:L5:4887:C:N4	4:L5:4932:U:H3	1.86	0.72
53:S2:886:A:N6	53:S2:901:G:C5	2.58	0.71
4:L5:3961:G:N2	4:L5:3965:A:C5	2.58	0.71
17:LL:8:MET:HE1	22:LQ:168:ARG:HB3	1.73	0.71
2:CC:13:G:H21	2:CC:22:A:H62	1.39	0.71

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:CB:396:MET:HB3	1:CB:485:ILE:HB	1.73	0.70
74:SU:17:ILE:HD13	74:SU:94:PRO:HD3	1.73	0.70
58:SE:94:LYS:HB3	78:SY:16:ARG:HE	1.55	0.70
60:SG:32:MET:HG3	60:SG:65:GLN:HG3	1.74	0.70
16:LJ:63:ARG:HH12	46:Lo:106:PHE:HA	1.57	0.70
53:S2:1452:A:N6	53:S2:1473:G:H21	1.91	0.69
57:SD:102:ALA:HB1	57:SD:173:ARG:HE	1.56	0.69
56:SC:70:VAL:HG11	56:SC:93:ILE:HG22	1.75	0.69
4:L5:3955:G:N2	4:L5:3966:A:C6	2.61	0.69
36:Le:6:PRO:HG3	36:Le:73:GLY:HA3	1.73	0.69
53:S2:677:G:N2	53:S2:1028:A:H62	1.89	0.68
72:SS:114:LEU:HD13	72:SS:122:GLY:HA2	1.75	0.68
75:SV:73:ALA:HA	75:SV:78:ILE:HD13	1.75	0.68
69:SP:72:LYS:HE2	69:SP:72:LYS:H	1.58	0.68
69:SP:116:LEU:HA	69:SP:119:PHE:HB2	1.75	0.68
4:L5:1271:G:H1'	12:LF:34:ARG:HH21	1.59	0.68
10:LD:52:ILE:O	10:LD:62:CYS:HA	1.95	0.67
4:L5:3951:G:N1	4:L5:4060:U:N3	2.43	0.66
4:L5:3955:G:C2	4:L5:3966:A:N7	2.62	0.66
53:S2:165:G:H2'	53:S2:166:A:H8	1.60	0.66
4:L5:3967:G:O6	4:L5:4055:U:O4	2.14	0.66
83:Sd:43:PHE:O	83:Sd:47:ALA:HB2	1.96	0.66
4:L5:493:G:O6	4:L5:660:A:N1	2.28	0.66
71:SR:41:ILE:HG12	71:SR:47:ARG:HB2	1.76	0.66
28:LW:94:ARG:HE	60:SG:146:ASN:HB2	1.59	0.66
49:Lz:147:LYS:HE2	49:Lz:151:VAL:H	1.61	0.66
53:S2:943:U:H2'	53:S2:944:A:H8	1.61	0.66
70:SQ:23:ALA:HB1	70:SQ:68:ILE:HD11	1.77	0.66
53:S2:377:G:H5'	62:SI:98:LYS:HD3	1.77	0.66
59:SF:30:ILE:HD12	59:SF:113:VAL:HG21	1.77	0.66
1:CB:415:ARG:HH21	1:CB:467:GLY:HA2	1.61	0.66
72:SS:45:LEU:HB3	72:SS:46:ARG:HH21	1.60	0.66
53:S2:878:G:O6	53:S2:908:A:N1	2.30	0.65
74:SU:61:LEU:O	74:SU:81:GLN:HA	1.96	0.65
21:LP:126:ARG:HG2	21:LP:140:MET:HE1	1.79	0.65
53:S2:1752:C:H42	53:S2:1778:C:H42	1.44	0.65
60:SG:212:LEU:HG	60:SG:216:ARG:HE	1.62	0.65
73:ST:5:THR:HG23	73:ST:7:LYS:H	1.61	0.65
72:SS:111:LEU:HA	72:SS:114:LEU:HG	1.78	0.65
10:LD:163:LEU:HD11	10:LD:173:ILE:HG21	1.78	0.65
25:LT:159:MET:HE3	25:LT:159:MET:H	1.61	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:S2:1096:G:H1	53:S2:1136:U:H3	1.44	0.65
61:SH:66:VAL:HA	61:SH:69:LEU:HG	1.78	0.65
7:LA:114:CYS:HB2	7:LA:169:VAL:HG12	1.79	0.65
54:SA:81:ASN:HA	54:SA:84:GLN:HB2	1.79	0.65
12:LF:105:VAL:HG13	12:LF:136:VAL:HG12	1.77	0.64
24:LS:101:THR:HG23	24:LS:104:GLY:H	1.62	0.64
42:Lk:33:LYS:HA	42:Lk:45:LEU:O	1.97	0.64
4:L5:1095:A:H2	4:L5:1200:G:N1	1.91	0.64
1:CB:13:MET:HE3	1:CB:13:MET:H	1.61	0.64
62:SI:103:LEU:HD12	62:SI:170:LYS:HB3	1.79	0.64
4:L5:2611:A:H5'	4:L5:2688:G:H4'	1.79	0.64
46:Lo:33:LEU:HA	46:Lo:38:LYS:HG2	1.79	0.64
52:Nm:228:ALA:HA	52:Nm:244:GLU:O	1.98	0.64
1:CB:745:TYR:HA	1:CB:815:ASP:HB3	1.80	0.64
53:S2:72:C:H42	60:SG:170:ARG:HB3	1.63	0.64
63:SJ:143:ASN:CB	63:SJ:143:ASN:N	2.60	0.64
75:SV:69:ILE:HA	75:SV:72:LEU:HD23	1.80	0.64
54:SA:122:LEU:HD21	54:SA:133:PRO:HB2	1.79	0.63
63:SJ:32:ILE:HD11	63:SJ:40:LYS:HB3	1.81	0.63
4:L5:2020:U:H2'	4:L5:2021:G:H8	1.62	0.63
53:S2:1401:A:H4'	74:SU:52:GLY:HA3	1.81	0.63
54:SA:84:GLN:HG2	54:SA:100:ALA:HB1	1.78	0.63
62:SI:67:TRP:HD1	62:SI:70:GLU:H	1.44	0.63
53:S2:1298:G:H5'	69:SP:77:LYS:HB2	1.80	0.63
56:SC:80:GLU:HA	56:SC:83:LEU:HD22	1.80	0.63
63:SJ:130:ILE:HG12	63:SJ:135:ILE:HG12	1.80	0.63
2:CC:15:G:N2	2:CC:57:C:O2	2.30	0.63
61:SH:101:LEU:HD22	61:SH:102:PRO:HD2	1.79	0.63
4:L5:3754:G:H1	4:L5:3770:U:H3	1.47	0.63
8:LB:56:ILE:O	8:LB:73:VAL:HA	1.99	0.63
9:LC:116:ASN:HB2	9:LC:119:GLN:HG3	1.79	0.63
11:LE:283:PRO:HA	11:LE:286:LEU:HD12	1.80	0.63
35:Ld:64:ILE:HG23	35:Ld:68:LEU:HD23	1.80	0.63
45:Ln:2:ARG:HB2	45:Ln:5:TRP:HB2	1.80	0.63
61:SH:61:ILE:HD12	61:SH:95:ILE:HG21	1.80	0.63
1:CB:654:PRO:HD2	1:CB:658:GLY:HA3	1.81	0.63
38:Lg:64:LEU:HA	38:Lg:67:LEU:HB2	1.79	0.63
4:L5:4052:C:H1'	49:Lz:209:THR:HA	1.81	0.63
65:SL:22:ARG:HD3	65:SL:22:ARG:H	1.63	0.63
12:LF:222:LYS:HB3	12:LF:231:GLY:HA2	1.80	0.62
4:L5:234:G:H22	4:L5:2304:U:H3	1.45	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L5:2337:C:H4'	48:Lr:19:LYS:HB2	1.80	0.62
61:SH:144:ILE:HG22	61:SH:154:ILE:HD12	1.79	0.62
77:SX:49:GLY:O	77:SX:99:GLU:HA	1.98	0.62
4:L5:1095:A:N1	4:L5:1200:G:O6	2.32	0.62
19:LN:16:SER:O	19:LN:20:ARG:HB2	1.99	0.62
30:LY:117:LYS:HE3	30:LY:121:ARG:HH22	1.64	0.62
35:Ld:29:ILE:O	35:Ld:33:ILE:HB	1.98	0.62
52:Nm:278:GLN:HG3	52:Nm:480:ASN:HB3	1.81	0.62
76:SW:27:ILE:HB	76:SW:61:ILE:HG23	1.82	0.62
4:L5:4769:G:H5''	20:LO:176:ARG:HD3	1.82	0.62
26:LU:26:THR:HG22	26:LU:68:SER:HB2	1.80	0.62
62:SI:106:SER:HB3	62:SI:110:ARG:HH21	1.63	0.62
82:Sc:31:ARG:HH21	82:Sc:43:ILE:HB	1.63	0.62
75:SV:74:LYS:HA	75:SV:81:LYS:HD2	1.82	0.62
59:SF:122:ARG:HH21	82:Sc:58:LEU:HB2	1.65	0.62
32:La:117:LEU:HB2	32:La:140:VAL:HG11	1.82	0.62
57:SD:167:TYR:HE2	57:SD:204:LEU:HB2	1.65	0.62
8:LB:14:LEU:HD23	8:LB:17:LEU:HD21	1.81	0.61
18:LM:3:PHE:H	24:LS:175:PHE:HZ	1.47	0.61
53:S2:649:U:H2'	53:S2:650:A:H8	1.65	0.61
53:S2:1047:C:H5'	68:SO:143:LYS:HB2	1.82	0.61
53:S2:1218:C:H1'	53:S2:1683:C:H42	1.65	0.61
55:SB:34:LYS:HD2	55:SB:42:ARG:HG3	1.81	0.61
1:CB:45:ILE:HD12	1:CB:46:ILE:H	1.65	0.61
4:L5:4618:G:H5''	27:LV:15:ARG:HB2	1.81	0.61
13:LG:58:PRO:HD2	13:LG:61:ILE:HD12	1.82	0.61
56:SC:109:ILE:HD11	56:SC:124:PHE:HB3	1.82	0.61
37:Lf:25:THR:HG22	37:Lf:87:LYS:HE2	1.83	0.61
56:SC:256:TRP:HA	75:SV:16:LYS:HZ2	1.65	0.61
19:LN:113:LEU:HB2	19:LN:134:LEU:HD12	1.81	0.61
4:L5:1762:C:N4	4:L5:1770:A:H2	1.94	0.61
4:L5:2521:G:H4'	38:Lg:26:PRO:HD2	1.83	0.61
4:L5:2554:U:O2	4:L5:2764:A:N7	2.33	0.61
4:L5:3937:C:H1'	19:LN:125:SER:HB3	1.82	0.61
5:L7:112:U:H2'	5:L7:113:G:H8	1.66	0.61
53:S2:101:U:H5''	62:SI:19:LYS:HD2	1.83	0.61
53:S2:1550:G:H3'	53:S2:1579:A:H61	1.65	0.61
59:SF:145:ARG:HE	82:Sc:47:LYS:HE2	1.64	0.61
66:SM:35:ILE:HD12	66:SM:36:ARG:HD3	1.82	0.61
19:LN:123:GLU:HB3	19:LN:128:LYS:HG3	1.82	0.60
20:LO:156:LEU:HD23	20:LO:159:LYS:HD3	1.83	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:LA:77:ILE:HD13	7:LA:128:ARG:HB2	1.83	0.60
4:L5:4966:A:H5'	8:LB:128:LYS:HG3	1.84	0.60
61:SH:45:ILE:HG22	61:SH:64:VAL:HG12	1.84	0.60
70:SQ:22:VAL:HG13	70:SQ:71:ARG:HG3	1.82	0.60
53:S2:522:A:H62	63:SJ:41:ARG:HH12	1.47	0.60
1:CB:435:THR:H	1:CB:438:LYS:HE3	1.66	0.60
4:L5:512:U:H3	4:L5:647:G:H1	1.49	0.60
4:L5:753:C:H41	4:L5:910:G:H1	1.49	0.60
53:S2:346:C:H5''	58:SE:38:LEU:HD22	1.84	0.60
53:S2:851:C:H5''	53:S2:852:G:H5'	1.82	0.60
54:SA:39:TYR:HB2	54:SA:50:ASN:HD21	1.64	0.60
47:Lp:47:MET:HE2	47:Lp:57:CYS:HB2	1.84	0.60
71:SR:61:ILE:HG22	71:SR:66:VAL:HB	1.84	0.60
4:L5:5024:C:H41	4:L5:5028:G:H21	1.49	0.60
7:LA:116:LEU:HB3	7:LA:126:LEU:HB2	1.82	0.60
61:SH:80:VAL:HG23	61:SH:92:VAL:HB	1.82	0.60
72:SS:6:PRO:HD2	79:SZ:49:LEU:HD21	1.84	0.60
1:CB:327:ASP:HA	1:CB:330:LYS:HG3	1.84	0.59
10:LD:182:GLY:HA2	10:LD:194:VAL:HG13	1.84	0.59
54:SA:87:VAL:HA	54:SA:90:PHE:HB3	1.83	0.59
62:SI:129:LEU:HG	62:SI:133:GLU:HB2	1.84	0.59
53:S2:1101:U:H2'	53:S2:1102:G:H8	1.67	0.59
26:LU:56:LEU:HD12	26:LU:61:VAL:HB	1.83	0.59
53:S2:345:U:H5''	58:SE:37:LYS:HG2	1.85	0.59
55:SB:90:ASP:HB2	55:SB:223:PHE:HZ	1.68	0.59
53:S2:345:U:H1'	58:SE:33:THR:HG23	1.84	0.59
57:SD:106:ARG:HG3	57:SD:175:VAL:HG22	1.84	0.59
65:SL:96:ILE:HD11	77:SX:10:ALA:HB1	1.84	0.59
33:Lb:102:PRO:HA	33:Lb:109:ARG:HH22	1.68	0.59
34:Lc:45:LEU:HD12	34:Lc:96:ILE:HD12	1.85	0.59
73:ST:124:THR:HG23	73:ST:127:GLY:H	1.67	0.59
12:LF:94:ARG:HA	12:LF:140:ILE:HG22	1.85	0.59
53:S2:1009:A:H5''	67:SN:94:LYS:HD2	1.83	0.59
1:CB:839:ARG:HE	1:CB:844:LEU:HB2	1.68	0.59
62:SI:74:ARG:HG2	62:SI:108:PRO:HB2	1.84	0.59
4:L5:989:U:O2	4:L5:1064:G:O6	2.20	0.59
21:LP:22:LEU:HD12	21:LP:146:ILE:HD12	1.84	0.59
53:S2:677:G:H21	53:S2:1028:A:N6	1.97	0.59
53:S2:924:G:H1	53:S2:1018:U:H3	1.51	0.59
64:SK:15:LEU:HD13	64:SK:21:MET:HE1	1.84	0.58
69:SP:130:ARG:HD3	69:SP:131:PRO:HD2	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
80:Sa:20:PRO:HA	80:Sa:31:PRO:HA	1.85	0.58
17:LL:50:PRO:HB3	17:LL:150:LEU:HB3	1.84	0.58
36:Le:8:VAL:HG12	36:Le:10:PRO:HD3	1.83	0.58
61:SH:58:LYS:HD3	61:SH:90:LYS:HB3	1.84	0.58
69:SP:103:ASN:HD21	69:SP:120:SER:HA	1.68	0.58
30:LY:57:VAL:HA	30:LY:104:VAL:HG12	1.84	0.58
53:S2:874:G:H2'	53:S2:875:A:H8	1.68	0.58
86:Sg:238:ALA:HB3	86:Sg:251:ALA:HB3	1.85	0.58
23:LR:177:LEU:HA	23:LR:180:LYS:HD2	1.84	0.58
70:SQ:42:ILE:HG21	70:SQ:51:LEU:HD21	1.83	0.58
4:L5:2520:C:H2'	4:L5:2521:G:H8	1.68	0.58
13:LG:182:CYS:HB3	13:LG:222:ILE:HD11	1.86	0.58
70:SQ:17:LYS:HA	70:SQ:126:ARG:HD3	1.84	0.58
28:LW:4:GLU:HG2	28:LW:30:GLN:HG2	1.86	0.58
58:SE:247:THR:HG22	58:SE:250:GLU:HG3	1.85	0.58
62:SI:83:TYR:HB2	62:SI:202:ILE:HD11	1.85	0.58
17:LL:21:ARG:HB2	19:LN:197:THR:HG22	1.85	0.58
24:LS:127:MET:HA	25:LT:153:PRO:HG2	1.86	0.58
65:SL:128:VAL:HG22	65:SL:142:VAL:HA	1.84	0.58
4:L5:1849:U:H3'	17:LL:5:ARG:HH12	1.67	0.58
12:LF:48:LYS:HE3	33:Lb:96:LEU:HD11	1.85	0.58
17:LL:111:GLN:HA	17:LL:114:VAL:HG22	1.86	0.58
71:SR:8:THR:HA	71:SR:11:LYS:HE3	1.86	0.58
3:CD:197:SER:HB2	53:S2:1489:A:H62	1.69	0.57
4:L5:4544:A:H5''	7:LA:213:GLY:HA3	1.86	0.57
18:LM:7:VAL:HG13	18:LM:27:ILE:HD13	1.86	0.57
59:SF:87:LEU:HA	59:SF:90:VAL:HG22	1.86	0.57
52:NM:294:CYS:HB3	52:NM:453:LEU:HD12	1.85	0.57
53:S2:177:G:H22	53:S2:313:A:H5'	1.68	0.57
59:SF:59:LYS:HB2	59:SF:62:ARG:HE	1.70	0.57
61:SH:178:LYS:HD2	61:SH:184:ASP:HB3	1.86	0.57
5:L7:115:A:H1'	10:LD:74:ILE:HD11	1.86	0.57
27:LV:107:ASN:HD21	27:LV:111:GLU:HB3	1.69	0.57
37:Lf:47:CYS:HA	37:Lf:102:ARG:O	2.04	0.57
40:Li:63:VAL:HG23	40:Li:65:LYS:HG3	1.86	0.57
59:SF:201:LYS:HZ2	82:Sc:59:LEU:HD11	1.69	0.57
73:ST:44:GLU:HG2	73:ST:45:LEU:HD23	1.87	0.57
4:L5:1535:C:H5''	41:Lj:10:LYS:HG3	1.87	0.57
54:SA:58:LEU:HG	54:SA:161:ILE:HD11	1.84	0.57
12:LF:95:ILE:HD13	12:LF:232:ASP:HB2	1.87	0.57
4:L5:444:G:H22	4:L5:1303:A:H2	1.51	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:LN:5:LYS:HG3	40:Li:40:VAL:HG11	1.85	0.57
31:LZ:57:MET:HB3	31:LZ:61:LYS:HD3	1.86	0.57
39:Lh:17:LEU:HD13	39:Lh:61:ILE:HG22	1.85	0.57
53:S2:639:C:H2'	53:S2:640:A:H8	1.70	0.57
56:SC:200:ARG:HH21	63:SJ:95:ASP:HA	1.69	0.57
9:LC:13:GLU:HG3	9:LC:14:LYS:HD2	1.85	0.57
34:Lc:51:ASN:HB2	34:Lc:77:ASN:HB2	1.86	0.57
52:NM:461:PHE:HB2	52:NM:465:LEU:HD13	1.86	0.57
53:S2:329:G:H2'	53:S2:330:G:C8	2.39	0.57
53:S2:1659:U:O2	53:S2:1664:A:N7	2.38	0.57
4:L5:3697:U:H5''	4:L5:3698:G:H5'	1.87	0.57
13:LG:176:LYS:HD3	40:Li:43:MET:HE1	1.85	0.57
18:LM:38:VAL:HG21	18:LM:50:MET:HE3	1.86	0.57
52:NM:440:VAL:HA	52:NM:443:LYS:HE3	1.87	0.57
53:S2:820:U:O2	53:S2:828:G:N2	2.37	0.57
1:CB:451:ILE:HD11	1:CB:458:VAL:HB	1.86	0.57
4:L5:1332:C:H2'	4:L5:1333:A:H8	1.69	0.57
4:L5:2495:U:H2'	4:L5:2496:G:H8	1.69	0.57
4:L5:3946:G:H22	4:L5:4067:U:H3	1.53	0.57
47:Lp:27:LYS:HZ2	47:Lp:31:ILE:HD11	1.69	0.57
75:SV:16:LYS:HG2	75:SV:23:ILE:HG22	1.87	0.57
77:SX:68:LYS:HG2	77:SX:91:LEU:HD22	1.87	0.57
4:L5:1762:C:C4	4:L5:1770:A:N1	2.72	0.57
10:LD:292:GLU:HB3	10:LD:293:ARG:HH12	1.69	0.57
21:LP:37:LYS:HA	21:LP:114:ILE:HD11	1.87	0.57
27:LV:90:ARG:HB2	27:LV:94:VAL:HG13	1.86	0.57
52:NM:138:VAL:HG22	52:NM:482:LYS:HG3	1.87	0.57
53:S2:5:U:H2'	53:S2:6:G:H8	1.70	0.57
56:SC:209:VAL:HG21	56:SC:233:LEU:HD12	1.86	0.57
57:SD:72:VAL:HG12	57:SD:75:LYS:HZ1	1.69	0.57
75:SV:11:LEU:HD23	75:SV:12:TYR:HD1	1.70	0.57
1:CB:334:PRO:HA	1:CB:337:LYS:HG2	1.87	0.56
19:LN:124:ASP:HB3	19:LN:126:THR:H	1.70	0.56
53:S2:588:G:H4'	53:S2:589:G:H5'	1.86	0.56
1:CB:22:MET:HE1	1:CB:102:LEU:HD23	1.87	0.56
32:La:71:PRO:HG2	32:La:108:TYR:HA	1.86	0.56
48:Lr:16:PHE:HB3	48:Lr:27:THR:H	1.70	0.56
65:SL:95:TYR:HA	65:SL:102:PHE:HA	1.87	0.56
72:SS:5:ILE:HG12	79:SZ:49:LEU:HG	1.86	0.56
13:LG:231:ASP:HB3	13:LG:235:ARG:HH21	1.70	0.56
35:Ld:62:VAL:HG12	35:Ld:104:THR:HG23	1.86	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:SC:108:LYS:HG2	56:SC:233:LEU:HD21	1.86	0.56
69:SP:81:ARG:HB2	69:SP:117:GLY:HA2	1.87	0.56
69:SP:96:VAL:HG13	69:SP:120:SER:HB3	1.86	0.56
4:L5:138:G:H2'	4:L5:139:G:C8	2.40	0.56
4:L5:3948:C:N3	4:L5:4066:U:O4	2.38	0.56
53:S2:1432:U:H5''	53:S2:1433:C:H5''	1.86	0.56
58:SE:100:ARG:HB2	58:SE:114:ILE:HD13	1.88	0.56
4:L5:1762:C:N3	4:L5:1770:A:N1	2.53	0.56
4:L5:4274:A:H2'	4:L5:4275:G:C8	2.41	0.56
53:S2:14:C:H5''	56:SC:229:CYS:HB2	1.87	0.56
53:S2:1228:A:H2'	53:S2:1229:G:H8	1.70	0.56
54:SA:4:ALA:H	75:SV:79:VAL:HG23	1.71	0.56
67:SN:4:MET:HE3	67:SN:124:ARG:HH21	1.70	0.56
81:Sb:23:ARG:HD2	81:Sb:26:GLN:HA	1.88	0.56
7:LA:229:ALA:HB3	7:LA:234:LYS:HB3	1.88	0.56
56:SC:244:ILE:HA	56:SC:247:THR:HG23	1.87	0.56
63:SJ:20:PHE:HA	63:SJ:25:LEU:HD11	1.88	0.56
64:SK:46:MET:HE3	64:SK:46:MET:H	1.71	0.56
76:SW:62:VAL:HG21	81:Sb:8:LEU:HD11	1.86	0.56
4:L5:4139:G:H21	4:L5:4140:C:H41	1.51	0.56
53:S2:886:A:N6	53:S2:901:G:N3	2.52	0.56
83:Sd:48:LYS:H	83:Sd:48:LYS:HE2	1.71	0.56
4:L5:1709:C:O2	4:L5:1716:G:O6	2.24	0.56
72:SS:26:ILE:HA	72:SS:56:ALA:HB2	1.87	0.56
74:SU:59:LYS:HZ1	74:SU:86:LYS:HB2	1.71	0.56
9:LC:37:VAL:HG21	9:LC:246:VAL:HG13	1.86	0.56
30:LY:31:SER:HA	30:LY:48:PRO:HA	1.87	0.56
49:Lz:56:LYS:HZ3	49:Lz:152:LYS:HG2	1.71	0.56
53:S2:642:U:H4'	53:S2:644:G:H4'	1.87	0.56
53:S2:1486:A:H5'	57:SD:151:LYS:NZ	2.19	0.56
83:Sd:22:ARG:HG2	83:Sd:38:MET:HB3	1.88	0.56
23:LR:173:ARG:HG2	23:LR:176:ARG:HH21	1.70	0.56
53:S2:1017:U:H5'	67:SN:55:ARG:HH21	1.70	0.56
53:S2:1705:C:H2'	53:S2:1706:G:C8	2.41	0.56
7:LA:177:LYS:HB2	47:Lp:29:ILE:HG21	1.88	0.55
35:Ld:63:ARG:HB2	35:Ld:105:LEU:HD23	1.88	0.55
49:Lz:206:ILE:HD11	49:Lz:214:GLN:HB2	1.88	0.55
59:SF:122:ARG:HH12	82:Sc:63:ARG:HH22	1.54	0.55
4:L5:4108:G:H2'	4:L5:4109:G:H8	1.72	0.55
58:SE:137:PRO:HG2	58:SE:150:PRO:HD2	1.88	0.55
68:SO:106:LYS:HE3	68:SO:135:ILE:HA	1.88	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L5:158:A:H5''	4:L5:159:C:H2'	1.89	0.55
10:LD:80:ALA:HB1	10:LD:92:LEU:HD12	1.87	0.55
54:SA:184:ARG:HD3	54:SA:191:ARG:HG3	1.88	0.55
57:SD:171:ALA:HB3	57:SD:186:VAL:HG22	1.88	0.55
57:SD:172:VAL:HG22	57:SD:185:LYS:HG3	1.88	0.55
60:SG:70:HIS:HA	60:SG:98:ARG:HH12	1.71	0.55
61:SH:143:ARG:HB2	61:SH:155:LYS:HG2	1.86	0.55
4:L5:1538:U:H2'	4:L5:1539:G:H8	1.72	0.55
13:LG:83:PHE:HA	13:LG:183:ILE:HD13	1.88	0.55
36:Le:38:PRO:HB2	36:Le:46:ARG:HB2	1.86	0.55
53:S2:1538:C:H4'	73:ST:45:LEU:HD21	1.87	0.55
59:SF:169:ILE:HG22	59:SF:173:LEU:HD22	1.89	0.55
68:SO:125:LYS:HB3	80:Sa:58:VAL:HG12	1.88	0.55
4:L5:513:U:H1'	4:L5:516:C:H41	1.71	0.55
16:LJ:169:LYS:HG3	16:LJ:170:TYR:HD2	1.70	0.55
53:S2:1228:A:H2'	53:S2:1229:G:C8	2.41	0.55
4:L5:425:U:H4'	21:LP:6:LEU:HD21	1.87	0.55
15:LI:152:LEU:HB3	15:LI:165:ILE:HD12	1.87	0.55
53:S2:508:A:H3'	53:S2:509:G:H8	1.70	0.55
53:S2:570:C:H4'	78:SY:36:PRO:HG3	1.88	0.55
55:SB:36:PRO:HB2	55:SB:38:MET:HE1	1.89	0.55
1:CB:429:ILE:HD13	1:CB:485:ILE:HG13	1.89	0.55
4:L5:3955:G:N2	4:L5:3966:A:C4	2.74	0.55
9:LC:298:ILE:HD13	22:LQ:131:PRO:HB3	1.89	0.55
53:S2:808:A:H2	53:S2:855:G:H22	1.54	0.55
53:S2:886:A:C6	53:S2:901:G:N3	2.74	0.55
69:SP:96:VAL:HG21	69:SP:116:LEU:HB3	1.89	0.55
4:L5:4363:A:H5''	46:Lo:36:GLN:HG2	1.88	0.55
53:S2:104:A:H62	53:S2:356:C:H5	1.54	0.55
53:S2:962:A:H5''	68:SO:66:ARG:HG2	1.89	0.55
69:SP:85:ILE:HG22	69:SP:112:ILE:HD12	1.89	0.55
4:L5:99:A:H5''	19:LN:184:ILE:HD12	1.88	0.55
53:S2:1027:A:H3'	53:S2:1028:A:H8	1.71	0.55
54:SA:59:LEU:HD11	75:SV:79:VAL:HG11	1.89	0.55
79:SZ:68:ILE:HB	79:SZ:109:TYR:HB2	1.87	0.55
4:L5:1942:A:H2'	4:L5:1943:A:C8	2.42	0.55
5:L7:51:G:H21	16:LJ:12:MET:HE1	1.72	0.55
10:LD:146:LEU:HD22	10:LD:163:LEU:HD13	1.88	0.55
13:LG:209:SER:HA	13:LG:212:LYS:HE2	1.89	0.55
53:S2:1832:A:H5''	53:S2:1840:U:H5''	1.89	0.55
76:SW:106:THR:HG23	76:SW:108:ALA:H	1.72	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:CB:527:LEU:HA	1:CB:530:SER:HB3	1.89	0.54
20:LO:26:GLN:HG3	20:LO:31:ARG:HG2	1.89	0.54
57:SD:204:LEU:HD22	57:SD:205:PRO:HD2	1.89	0.54
26:LU:99:TRP:HE1	51:NB:15:GLN:HG2	1.72	0.54
27:LV:109:LYS:HE3	27:LV:111:GLU:HB2	1.89	0.54
29:LX:73:HIS:HB2	29:LX:115:LYS:HZ3	1.71	0.54
38:Lg:42:PRO:HD2	38:Lg:56:VAL:HG21	1.89	0.54
1:CB:6:VAL:HA	1:CB:9:ILE:HB	1.88	0.54
1:CB:423:THR:HG22	1:CB:449:ARG:HA	1.88	0.54
33:Lb:36:ASP:HB3	33:Lb:39:PHE:HB3	1.88	0.54
46:Lo:24:THR:HA	46:Lo:93:LEU:HD21	1.89	0.54
53:S2:1756:C:N3	53:S2:1776:G:N1	2.55	0.54
4:L5:182:G:H22	4:L5:254:G:H22	1.56	0.54
4:L5:3585:G:H2'	4:L5:3586:G:H8	1.73	0.54
10:LD:156:GLY:HA2	10:LD:181:PRO:HG3	1.88	0.54
24:LS:31:ARG:HH12	24:LS:129:VAL:HB	1.73	0.54
33:Lb:32:LEU:HD13	33:Lb:40:LEU:HD11	1.90	0.54
53:S2:1097:G:H4'	54:SA:32:PHE:HB3	1.89	0.54
56:SC:249:SER:HA	75:SV:23:ILE:HD11	1.90	0.54
65:SL:95:TYR:HD1	65:SL:102:PHE:HB3	1.71	0.54
4:L5:1514:U:H2'	4:L5:1515:A:C8	2.43	0.54
54:SA:86:ALA:HA	54:SA:89:LYS:HE2	1.89	0.54
60:SG:142:ARG:HB2	60:SG:147:LEU:HB2	1.88	0.54
65:SL:59:LYS:HE2	65:SL:134:LEU:HD12	1.89	0.54
78:SY:86:GLU:HB3	78:SY:91:LEU:HD11	1.90	0.54
1:CB:27:HIS:CD2	1:CB:138:GLN:HB2	2.43	0.54
1:CB:734:LEU:HD13	1:CB:854:PHE:HE1	1.73	0.54
53:S2:1745:A:H1'	60:SG:66:GLY:HA2	1.90	0.54
4:L5:1593:A:H5''	4:L5:2839:U:H5''	1.89	0.54
8:LB:168:MET:HA	8:LB:171:LEU:HD12	1.90	0.54
66:SM:60:MET:HA	66:SM:63:LYS:HG2	1.89	0.54
74:SU:29:VAL:HG13	74:SU:30:LYS:HE2	1.90	0.54
1:CB:655:ASP:HA	84:Se:7:ALA:HB1	1.90	0.54
4:L5:2520:C:H2'	4:L5:2521:G:C8	2.42	0.54
86:Sg:40:ILE:HD11	86:Sg:66:VAL:HG11	1.89	0.54
10:LD:283:LYS:HD2	15:LI:206:LEU:HD23	1.89	0.54
52:NM:226:ILE:HG21	52:NM:263:LEU:HB3	1.90	0.54
59:SF:76:MET:HE2	59:SF:169:ILE:HG21	1.90	0.54
62:SI:190:LEU:HG	62:SI:195:LEU:HB3	1.88	0.54
4:L5:1332:C:H2'	4:L5:1333:A:C8	2.43	0.53
4:L5:4910:G:H22	20:LO:107:GLY:HA3	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
7:LA:173:GLY:O	7:LA:176:ASP:HB2	2.08	0.53
8:LB:220:ILE:HG23	8:LB:278:THR:HG22	1.90	0.53
22:LQ:86:ILE:HB	22:LQ:105:VAL:HG13	1.90	0.53
25:LT:84:ILE:HD12	33:Lb:21:ILE:HG22	1.91	0.53
53:S2:609:U:H2'	53:S2:610:G:H8	1.73	0.53
53:S2:1398:G:H1	53:S2:1448:A:H2	1.53	0.53
67:SN:35:GLU:HA	67:SN:38:TYR:HB2	1.90	0.53
4:L5:703:G:H2'	4:L5:704:C:H4'	1.90	0.53
53:S2:1092:G:H2'	53:S2:1093:A:H8	1.73	0.53
53:S2:1288:U:H3	53:S2:1311:C:H42	1.56	0.53
53:S2:1864:U:H3'	80:Sa:5:ARG:HH21	1.72	0.53
67:SN:119:GLU:HA	67:SN:122:ILE:HD12	1.90	0.53
75:SV:64:GLU:HG2	81:Sb:3:LEU:HG	1.91	0.53
77:SX:107:ARG:HG3	77:SX:110:HIS:HB2	1.90	0.53
86:Sg:42:MET:HE1	86:Sg:57:ARG:HB3	1.90	0.53
1:CB:354:ILE:HG23	1:CB:358:LEU:HD12	1.89	0.53
53:S2:59:U:H5''	53:S2:503:C:H41	1.73	0.53
53:S2:1277:C:H2'	53:S2:1278:A:H8	1.73	0.53
4:L5:1095:A:N1	4:L5:1200:G:C6	2.76	0.53
8:LB:224:LYS:HG3	8:LB:226:LYS:HE3	1.91	0.53
20:LO:54:TYR:HD1	20:LO:145:VAL:HG21	1.74	0.53
85:Sf:144:CYS:HB2	85:Sf:146:LEU:HD23	1.89	0.53
27:LV:87:SER:HA	27:LV:97:TYR:HB3	1.90	0.53
53:S2:747:U:N3	53:S2:796:G:N1	2.57	0.53
55:SB:142:PHE:HB2	55:SB:209:ASP:HB2	1.89	0.53
60:SG:132:ARG:HD3	60:SG:132:ARG:H	1.73	0.53
4:L5:33:A:H5''	4:L5:47:A:H61	1.73	0.53
4:L5:502:C:H3'	4:L5:503:C:H3'	1.90	0.53
9:LC:210:ILE:HG13	9:LC:230:LEU:HB3	1.90	0.53
49:Lz:54:ARG:HH22	49:Lz:156:LYS:HE3	1.74	0.53
76:SW:50:PHE:HB3	76:SW:63:VAL:HG23	1.90	0.53
83:Sd:33:LYS:HB3	83:Sd:34:TYR:HD1	1.73	0.53
4:L5:3967:G:N1	4:L5:4055:U:N3	2.56	0.53
15:LI:53:VAL:HG12	15:LI:134:VAL:HG12	1.89	0.53
15:LI:91:LEU:HD12	15:LI:135:ILE:HG23	1.91	0.53
30:LY:106:ILE:HG21	30:LY:109:LEU:HD13	1.91	0.53
65:SL:92:TYR:O	65:SL:104:LYS:HA	2.08	0.53
70:SQ:19:ALA:HB2	70:SQ:75:GLY:HA3	1.91	0.53
2:CC:18:G:H2'	4:L5:3958:G:H5'	1.89	0.53
4:L5:121:A:H62	4:L5:152:U:H3	1.57	0.53
14:LH:104:VAL:HG12	14:LH:113:GLU:HB2	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
31:LZ:71:PHE:HA	31:LZ:111:ARG:HD3	1.91	0.53
53:S2:928:G:H2'	53:S2:929:G:C8	2.43	0.53
56:SC:240:THR:O	56:SC:244:ILE:HD12	2.09	0.53
60:SG:140:ARG:HA	60:SG:143:LYS:HG3	1.90	0.53
68:SO:48:SER:HB2	68:SO:50:LYS:HE2	1.91	0.53
84:Se:53:LYS:HD2	84:Se:54:GLY:N	2.24	0.53
8:LB:117:ARG:HA	8:LB:177:LYS:HD2	1.91	0.53
17:LL:48:PRO:HG3	39:Lh:118:LYS:HE3	1.91	0.53
53:S2:1656:G:O6	53:S2:1668:U:O4	2.26	0.53
61:SH:69:LEU:HA	61:SH:72:PHE:HB2	1.90	0.53
74:SU:94:PRO:HD2	74:SU:97:ILE:HD11	1.90	0.53
80:Sa:22:ARG:HH21	80:Sa:27:ALA:HB1	1.73	0.53
23:LR:93:VAL:HA	23:LR:96:MET:HB2	1.91	0.52
53:S2:913:A:H8	61:SH:99:ARG:HH12	1.57	0.52
57:SD:220:THR:HG22	57:SD:221:THR:H	1.74	0.52
60:SG:140:ARG:HG2	60:SG:143:LYS:HE3	1.90	0.52
63:SJ:86:VAL:HG23	63:SJ:104:ASP:HB3	1.90	0.52
4:L5:1709:C:N3	4:L5:1716:G:N1	2.48	0.52
4:L5:1799:G:H21	25:LT:61:THR:HG21	1.74	0.52
19:LN:36:LEU:HD22	19:LN:64:ILE:HD12	1.91	0.52
26:LU:65:ARG:HG2	26:LU:70:ILE:HG13	1.91	0.52
67:SN:18:TYR:HE1	81:Sb:26:GLN:HG3	1.73	0.52
4:L5:4128:A:H1'	13:LG:35:ARG:HG3	1.91	0.52
9:LC:171:LEU:HD22	9:LC:176:ALA:HB3	1.91	0.52
4:L5:3664:G:H2'	4:L5:3665:G:H8	1.75	0.52
30:LY:82:ILE:HB	30:LY:85:VAL:HG22	1.91	0.52
37:Lf:42:TYR:HA	37:Lf:45:LYS:HG3	1.91	0.52
44:Lm:93:LYS:HD3	44:Lm:102:ARG:HD2	1.91	0.52
4:L5:1272:C:H41	4:L5:2108:G:H21	1.57	0.52
11:LE:149:ILE:HD12	11:LE:271:LEU:HD21	1.91	0.52
23:LR:95:TRP:CE2	23:LR:99:MET:HE3	2.44	0.52
52:Nm:431:LEU:HA	52:Nm:434:LEU:HG	1.91	0.52
53:S2:1004:U:H2'	53:S2:1005:G:H8	1.74	0.52
58:SE:92:ILE:HG21	78:SY:17:LEU:HD11	1.90	0.52
4:L5:2297:G:H5'	9:LC:205:ARG:HG2	1.92	0.52
20:LO:81:TRP:HB2	20:LO:104:VAL:HG21	1.91	0.52
24:LS:52:LYS:HE3	25:LT:151:LEU:HD11	1.92	0.52
32:La:72:THR:HG22	32:La:110:LYS:HB3	1.92	0.52
72:SS:10:GLN:HE22	72:SS:13:LEU:HA	1.75	0.52
4:L5:1364:U:H5''	17:LL:36:ARG:HH22	1.75	0.52
4:L5:2838:G:H5'	8:LB:247:GLY:HA2	1.92	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L5:4250:G:H5''	16:LJ:98:ASN:HD22	1.74	0.52
42:Lk:33:LYS:HG2	42:Lk:46:VAL:HG12	1.92	0.52
51:NB:155:GLU:HA	51:NB:158:LYS:HB2	1.91	0.52
58:SE:45:ILE:HG13	58:SE:61:VAL:HG11	1.92	0.52
86:Sg:42:MET:H	86:Sg:42:MET:HE3	1.75	0.52
1:CB:401:MET:HA	1:CB:411:TYR:O	2.10	0.52
4:L5:2411:C:H2'	4:L5:2412:A:H8	1.75	0.52
4:L5:2704:C:H2'	4:L5:2705:G:H8	1.75	0.52
7:LA:28:ARG:HB2	7:LA:123:ARG:HB3	1.92	0.52
32:La:89:ASN:O	32:La:93:ASN:HB3	2.10	0.52
55:SB:182:LYS:HE2	55:SB:182:LYS:HA	1.92	0.52
4:L5:1762:C:C4	4:L5:1770:A:C2	2.96	0.52
4:L5:4274:A:H2'	4:L5:4275:G:H8	1.75	0.52
12:LF:114:LEU:HD21	12:LF:121:THR:HG22	1.92	0.52
31:LZ:54:THR:HG22	31:LZ:56:ALA:H	1.75	0.52
64:SK:28:HIS:HE1	83:Sd:7:TYR:OH	1.92	0.52
65:SL:103:GLU:HB2	77:SX:10:ALA:HB3	1.92	0.52
69:SP:76:VAL:HG13	69:SP:94:VAL:HG12	1.92	0.52
2:CC:15:G:N2	2:CC:57:C:C2	2.78	0.52
4:L5:498:C:H42	4:L5:657:C:H42	1.58	0.52
24:LS:15:ARG:HB3	24:LS:27:LEU:HD23	1.91	0.52
34:Lc:21:VAL:HG11	34:Lc:96:ILE:HG12	1.92	0.52
51:NB:102:MET:HE1	51:NB:106:ILE:HG23	1.92	0.52
53:S2:106:C:H2'	53:S2:107:A:H8	1.75	0.52
53:S2:381:C:H5''	62:SI:54:LYS:HE3	1.91	0.52
60:SG:176:ILE:HG23	60:SG:179:LEU:HD22	1.92	0.52
71:SR:95:ILE:HB	71:SR:118:GLN:HE22	1.75	0.52
4:L5:1100:U:H3	4:L5:1194:G:H1	1.58	0.51
4:L5:4233:A:H4'	46:Lo:98:LYS:HE2	1.91	0.51
4:L5:5025:C:H41	62:SI:168:GLN:HE22	1.58	0.51
14:LH:8:GLN:HE22	14:LH:71:ARG:HA	1.75	0.51
54:SA:35:GLU:HA	54:SA:38:ILE:HB	1.91	0.51
69:SP:119:PHE:HA	72:SS:118:ARG:NH2	2.26	0.51
79:SZ:69:THR:HG22	79:SZ:72:VAL:HG12	1.91	0.51
1:CB:481:LYS:HD3	1:CB:529:LYS:HA	1.93	0.51
15:LI:76:MET:O	15:LI:80:CYS:HB2	2.09	0.51
4:L5:3857:G:H5''	21:LP:86:LYS:HB2	1.91	0.51
4:L5:4743:G:H2'	4:L5:4744:A:C8	2.46	0.51
43:Ll:30:LYS:HB2	43:Ll:33:ASN:HB2	1.92	0.51
53:S2:1844:U:H2'	53:S2:1845:A:C8	2.45	0.51
56:SC:165:VAL:HG12	56:SC:167:ARG:HG2	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:SP:108:LYS:HB2	69:SP:111:MET:HG2	1.92	0.51
86:Sg:155:ARG:HG2	86:Sg:198:VAL:HG23	1.91	0.51
10:LD:75:VAL:HB	10:LD:112:ARG:HH21	1.74	0.51
12:LF:127:LYS:HB2	25:LT:133:ALA:HB3	1.92	0.51
57:SD:197:LYS:HG2	57:SD:198:ILE:HG23	1.91	0.51
4:L5:3946:G:H21	4:L5:3947:A:H62	1.59	0.51
4:L5:4601:U:H2'	4:L5:4602:A:H8	1.75	0.51
52:NM:163:LEU:HD11	52:NM:202:ARG:HG3	1.91	0.51
53:S2:1050:A:H62	53:S2:1068:G:N2	2.05	0.51
4:L5:261:G:H2'	4:L5:262:G:C8	2.46	0.51
20:LO:27:VAL:HG13	20:LO:98:ALA:HB1	1.92	0.51
28:LW:97:LYS:HG3	28:LW:98:PRO:HD3	1.93	0.51
53:S2:1447:G:H2'	53:S2:1448:A:C8	2.46	0.51
1:CB:223:PHE:HB3	1:CB:344:LEU:HD13	1.92	0.51
1:CB:510:GLU:HG2	1:CB:571:LYS:HB3	1.92	0.51
35:Ld:19:GLU:HA	35:Ld:90:ARG:HH21	1.75	0.51
52:NM:386:VAL:HG12	52:NM:397:PHE:HB3	1.93	0.51
53:S2:114:G:H22	53:S2:350:C:H1'	1.76	0.51
53:S2:522:A:H5''	63:SJ:145:PRO:HD2	1.91	0.51
53:S2:916:A:H1'	67:SN:73:ARG:HH21	1.76	0.51
53:S2:1308:U:H2'	53:S2:1309:C:H6	1.76	0.51
67:SN:55:ARG:HH12	81:Sb:51:GLN:NE2	2.08	0.51
83:Sd:32:ARG:HD3	83:Sd:33:LYS:HD3	1.91	0.51
42:Lk:52:LYS:HA	42:Lk:55:LYS:HG2	1.92	0.51
49:Lz:120:ILE:HG23	49:Lz:124:LEU:HD12	1.92	0.51
53:S2:5:U:H2'	53:S2:6:G:C8	2.46	0.51
53:S2:323:C:H2'	53:S2:327:G:H22	1.75	0.51
53:S2:1644:C:H4'	70:SQ:140:ARG:HB2	1.93	0.51
57:SD:69:LEU:HA	57:SD:72:VAL:HG22	1.93	0.51
61:SH:173:PHE:HB2	61:SH:187:PHE:HE2	1.76	0.51
66:SM:36:ARG:HG3	85:Sf:103:LEU:HD11	1.93	0.51
66:SM:55:ASN:HB2	66:SM:81:ASP:HA	1.91	0.51
69:SP:34:MET:HB3	69:SP:42:ARG:HG3	1.92	0.51
73:ST:110:LEU:HD22	73:ST:112:MET:HB2	1.92	0.51
86:Sg:64:HIS:HB3	86:Sg:83:TRP:HB3	1.92	0.51
4:L5:1234:G:H2'	4:L5:1235:G:C8	2.46	0.51
8:LB:14:LEU:HA	8:LB:17:LEU:HD23	1.93	0.51
54:SA:21:ALA:HB2	71:SR:91:LEU:HD11	1.94	0.51
70:SQ:94:ALA:HA	70:SQ:97:GLN:HG2	1.92	0.51
4:L5:2748:C:H4'	38:Lg:65:MET:HE2	1.93	0.50
4:L5:4258:C:H2'	4:L5:4259:C:H6	1.76	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:LH:140:GLN:NE2	14:LH:143:GLU:HB3	2.25	0.50
53:S2:639:C:H2'	53:S2:640:A:C8	2.46	0.50
57:SD:137:VAL:HB	57:SD:151:LYS:HB3	1.93	0.50
62:SI:79:ILE:HD12	62:SI:80:ASP:HB3	1.93	0.50
62:SI:159:SER:HB3	62:SI:162:LEU:HD23	1.92	0.50
63:SJ:46:VAL:HG11	63:SJ:106:LEU:HD11	1.93	0.50
67:SN:114:ARG:HE	67:SN:117:LEU:HD12	1.75	0.50
68:SO:62:VAL:HG21	68:SO:67:ASP:HB2	1.94	0.50
69:SP:81:ARG:HA	69:SP:116:LEU:HB2	1.93	0.50
1:CB:350:LEU:HA	1:CB:353:MET:HG3	1.93	0.50
1:CB:675:ILE:HG13	1:CB:709:LEU:HD13	1.92	0.50
3:CD:195:ARG:HH22	53:S2:1699:A:H5''	1.76	0.50
4:L5:2469:C:H5	4:L5:2471:G:H1	1.59	0.50
4:L5:3717:A:H2'	4:L5:3718:A:C8	2.46	0.50
4:L5:3951:G:N2	4:L5:4060:U:O2	2.45	0.50
53:S2:126:G:H21	53:S2:180:G:H21	1.58	0.50
53:S2:1051:G:H2'	53:S2:1052:A:H8	1.76	0.50
64:SK:35:LEU:HB3	64:SK:38:LYS:HZ3	1.75	0.50
1:CB:587:SER:HB3	1:CB:605:LYS:HE3	1.93	0.50
1:CB:649:ILE:HA	1:CB:663:THR:HG22	1.93	0.50
4:L5:1730:U:H1'	25:LT:101:SER:HB3	1.92	0.50
4:L5:4099:G:H2'	4:L5:4101:C:H41	1.76	0.50
53:S2:944:A:H5''	68:SO:134:PRO:HB3	1.93	0.50
53:S2:1652:G:O6	53:S2:1672:U:O4	2.29	0.50
53:S2:1729:U:O2	53:S2:1805:G:N2	2.37	0.50
58:SE:159:THR:HB	58:SE:173:ILE:HB	1.93	0.50
61:SH:147:LYS:HD3	61:SH:153:LEU:HG	1.93	0.50
4:L5:908:G:H2'	4:L5:909:A:H8	1.76	0.50
26:LU:116:GLN:HE22	51:NB:30:LYS:HE2	1.76	0.50
30:LY:110:LYS:H	30:LY:115:ARG:HH21	1.59	0.50
53:S2:1283:C:H3'	66:SM:104:VAL:HG21	1.94	0.50
53:S2:1854:U:H2'	53:S2:1855:G:H8	1.77	0.50
71:SR:58:MET:HA	71:SR:61:ILE:HG12	1.93	0.50
4:L5:1478:C:H2'	4:L5:1479:G:H8	1.77	0.50
48:Lr:28:GLU:HB3	48:Lr:43:LEU:HD13	1.94	0.50
56:SC:202:THR:HG22	63:SJ:54:ARG:HH22	1.76	0.50
3:CD:220:THR:HG22	3:CD:223:ASP:H	1.76	0.50
4:L5:1743:A:H5'	10:LD:11:ALA:HB1	1.93	0.50
4:L5:3917:A:H2'	4:L5:3918:G:H8	1.75	0.50
4:L5:4389:C:H2'	4:L5:4390:A:C8	2.47	0.50
5:L7:61:G:H5''	10:LD:271:MET:HE3	1.93	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:LG:111:LYS:HA	13:LG:114:LEU:HD12	1.93	0.50
59:SF:123:GLU:HG2	59:SF:140:ASP:HA	1.93	0.50
61:SH:65:PRO:HG2	61:SH:68:GLN:HE21	1.77	0.50
53:S2:1737:G:H1	53:S2:1797:U:H3	1.60	0.50
67:SN:87:ASP:HB3	67:SN:125:LEU:HD21	1.93	0.50
74:SU:95:SER:HA	74:SU:98:VAL:HG22	1.92	0.50
82:Sc:29:GLN:HB3	82:Sc:43:ILE:HD11	1.94	0.50
1:CB:337:LYS:HB3	1:CB:341:ARG:HH21	1.77	0.50
4:L5:717:U:H2'	4:L5:718:C:C6	2.47	0.50
4:L5:1538:U:H2'	4:L5:1539:G:C8	2.47	0.50
8:LB:50:LYS:HB2	8:LB:345:LEU:HD11	1.92	0.50
49:Lz:24:LYS:HD2	49:Lz:29:LEU:HD12	1.93	0.50
53:S2:146:G:H2'	53:S2:147:A:C8	2.46	0.50
59:SF:18:LYS:HE3	59:SF:22:LYS:HA	1.93	0.50
72:SS:84:LEU:HG	72:SS:95:TYR:HB3	1.93	0.50
85:Sf:107:LYS:HG3	85:Sf:117:LEU:HD11	1.94	0.50
35:Ld:44:ARG:O	35:Ld:48:GLU:HG2	2.12	0.50
53:S2:201:C:H3'	53:S2:202:G:H21	1.77	0.50
57:SD:39:VAL:HG12	57:SD:48:ILE:HG12	1.93	0.50
58:SE:41:CYS:HA	58:SE:85:GLY:HA2	1.94	0.50
73:ST:113:VAL:HG23	73:ST:123:LEU:HD23	1.93	0.50
75:SV:55:ILE:HD11	75:SV:69:ILE:HD11	1.93	0.50
86:Sg:197:THR:HG21	86:Sg:238:ALA:HA	1.94	0.50
4:L5:1460:C:H5''	22:LQ:144:LYS:HB2	1.94	0.49
4:L5:4239:A:H2'	4:L5:4240:G:C8	2.46	0.49
8:LB:92:TYR:HB2	8:LB:159:VAL:HG13	1.93	0.49
36:Le:90:MET:HG3	48:Lr:33:LYS:HA	1.93	0.49
52:Nm:279:ALA:HB3	52:Nm:479:TYR:HB3	1.94	0.49
53:S2:385:G:H3'	65:SL:136:LYS:HB2	1.92	0.49
53:S2:820:U:H3	53:S2:828:G:H1	1.57	0.49
53:S2:1636:G:H5''	53:S2:1637:A:H5'	1.94	0.49
56:SC:108:LYS:HB2	56:SC:233:LEU:HD11	1.93	0.49
83:Sd:32:ARG:HA	83:Sd:37:ASN:HA	1.94	0.49
4:L5:318:A:H2'	4:L5:319:A:C8	2.47	0.49
4:L5:1258:G:H2'	4:L5:1259:G:C8	2.47	0.49
4:L5:4220:A:H2'	4:L5:4222:G:H5''	1.94	0.49
4:L5:4242:U:H3	4:L5:4281:A:H2	1.60	0.49
53:S2:866:U:H2'	53:S2:867:G:H8	1.76	0.49
53:S2:1764:G:H5'	53:S2:1765:C:H5''	1.94	0.49
60:SG:41:LEU:HB2	60:SG:45:TRP:HD1	1.76	0.49
75:SV:53:TYR:CG	75:SV:72:LEU:HD22	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:Sg:108:VAL:HG23	86:Sg:124:SER:HB2	1.94	0.49
4:L5:452:A:H62	4:L5:1293:G:H3'	1.78	0.49
18:LM:89:THR:HG23	18:LM:92:ALA:H	1.78	0.49
49:Lz:47:LYS:HE2	49:Lz:159:MET:HE3	1.94	0.49
53:S2:420:G:H21	53:S2:661:U:H3	1.59	0.49
53:S2:999:G:C8	80:Sa:17:HIS:HB3	2.47	0.49
58:SE:87:MET:HE2	58:SE:123:LEU:HB3	1.94	0.49
58:SE:252:ARG:HD2	58:SE:255:ARG:HH21	1.78	0.49
59:SF:50:PRO:HB3	59:SF:69:VAL:HG22	1.93	0.49
8:LB:57:VAL:HG22	8:LB:73:VAL:HG12	1.95	0.49
13:LG:108:GLN:O	13:LG:112:GLN:HG2	2.12	0.49
34:Lc:30:GLY:O	34:Lc:34:THR:HG23	2.13	0.49
53:S2:921:G:C4	81:Sb:22:LYS:HG2	2.47	0.49
53:S2:1226:G:H21	53:S2:1640:A:N6	2.10	0.49
67:SN:70:LYS:HB2	67:SN:73:ARG:HG3	1.95	0.49
76:SW:62:VAL:HG21	81:Sb:8:LEU:HD21	1.95	0.49
1:CB:531:ASP:HB3	1:CB:534:VAL:HG22	1.94	0.49
4:L5:2536:A:H5'	42:Lk:42:LEU:HD22	1.95	0.49
43:Ll:43:HIS:HB3	43:Ll:46:ARG:HB2	1.94	0.49
4:L5:654:C:H4'	9:LC:268:ARG:NH2	2.27	0.49
4:L5:4389:C:H2'	4:L5:4390:A:H8	1.78	0.49
4:L5:4875:G:H5''	24:LS:170:LYS:HD3	1.94	0.49
8:LB:223:THR:HB	8:LB:275:HIS:H	1.78	0.49
13:LG:205:THR:HG22	13:LG:206:GLN:H	1.78	0.49
14:LH:106:GLN:HB2	14:LH:111:LEU:HB3	1.94	0.49
53:S2:600:G:H2'	53:S2:601:G:H8	1.78	0.49
53:S2:1507:G:H22	85:Sf:87:THR:H	1.60	0.49
53:S2:1748:G:O6	53:S2:1786:U:O4	2.30	0.49
55:SB:112:SER:HB3	80:Sa:68:TYR:CE2	2.48	0.49
72:SS:60:THR:HG23	72:SS:63:GLU:HB2	1.95	0.49
76:SW:11:LEU:HD23	76:SW:74:VAL:HG23	1.95	0.49
4:L5:994:G:H2'	4:L5:995:C:H4'	1.95	0.49
4:L5:1994:C:H2'	4:L5:1995:G:C8	2.47	0.49
9:LC:34:PRO:HA	9:LC:37:VAL:HG22	1.94	0.49
31:LZ:46:ILE:HA	31:LZ:70:SER:HA	1.95	0.49
31:LZ:115:LYS:O	31:LZ:119:GLU:HG2	2.13	0.49
53:S2:1049:A:N7	53:S2:1069:U:O2	2.46	0.49
56:SC:206:SER:HB3	56:SC:211:LYS:HG3	1.95	0.49
62:SI:67:TRP:CD1	62:SI:70:GLU:H	2.29	0.49
75:SV:78:ILE:HG22	75:SV:79:VAL:H	1.77	0.49
80:Sa:36:ILE:HD11	80:Sa:78:ALA:HB2	1.95	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
81:Sb:79:PHE:H	81:Sb:80:ARG:NH2	2.11	0.49
1:CB:228:PHE:HE1	1:CB:293:ILE:HA	1.78	0.49
4:L5:493:G:N1	4:L5:660:A:C2	2.70	0.49
19:LN:153:LYS:HG3	19:LN:154:PRO:HD2	1.94	0.49
29:LX:64:SER:HB2	39:Lh:69:LEU:HD13	1.95	0.49
39:Lh:81:LEU:HD23	39:Lh:84:ARG:HD2	1.94	0.49
58:SE:31:PRO:HG2	58:SE:38:LEU:HB2	1.94	0.49
3:CD:284:LEU:HA	3:CD:287:TRP:HB3	1.94	0.49
4:L5:2745:A:H2'	4:L5:2746:A:H8	1.78	0.49
13:LG:246:SER:O	13:LG:250:ILE:HG12	2.13	0.49
32:La:98:ALA:HB2	32:La:121:PRO:HB2	1.95	0.49
55:SB:105:LEU:HD23	55:SB:213:ARG:HA	1.95	0.49
56:SC:193:VAL:HG11	56:SC:240:THR:HG22	1.94	0.49
57:SD:29:LEU:HD11	57:SD:58:VAL:HG23	1.95	0.49
73:ST:107:LEU:HD13	73:ST:112:MET:HG3	1.95	0.49
75:SV:39:VAL:HB	75:SV:44:GLY:HA2	1.94	0.49
4:L5:1676:C:H41	4:L5:4378:A:H5''	1.77	0.49
4:L5:4187:G:H4'	19:LN:82:GLY:HA2	1.94	0.49
6:L8:19:C:H2'	6:L8:20:A:C8	2.48	0.49
8:LB:84:MET:O	8:LB:204:GLN:HA	2.13	0.49
26:LU:22:THR:HB	26:LU:109:SER:HB2	1.94	0.49
34:Lc:9:LYS:O	34:Lc:13:SER:HB3	2.13	0.49
53:S2:1144:A:H5'	53:S2:1355:C:H41	1.78	0.49
53:S2:1692:U:H2'	53:S2:1693:G:C8	2.48	0.49
58:SE:132:GLY:HA3	58:SE:138:HIS:HE2	1.78	0.49
4:L5:318:A:H2'	4:L5:319:A:H8	1.78	0.48
4:L5:4291:G:H5'	4:L5:4293:U:C6	2.48	0.48
16:LJ:95:ARG:HD3	16:LJ:95:ARG:H	1.77	0.48
46:Lo:61:LYS:HE2	46:Lo:87:ARG:HH22	1.78	0.48
53:S2:976:G:H4'	68:SO:50:LYS:HZ3	1.78	0.48
56:SC:210:PRO:HB3	56:SC:240:THR:HG21	1.94	0.48
4:L5:4250:G:H5''	16:LJ:98:ASN:ND2	2.28	0.48
46:Lo:14:LYS:HG2	46:Lo:77:CYS:HB2	1.95	0.48
46:Lo:61:LYS:HD2	46:Lo:87:ARG:HH12	1.77	0.48
66:SM:24:THR:HA	66:SM:27:ILE:HG12	1.95	0.48
70:SQ:33:LYS:HG3	70:SQ:69:ARG:HG3	1.95	0.48
78:SY:89:HIS:CE1	78:SY:90:ARG:HG3	2.48	0.48
1:CB:155:LEU:HB2	1:CB:205:ILE:HD11	1.95	0.48
1:CB:404:THR:HG23	1:CB:411:TYR:HE1	1.76	0.48
1:CB:835:VAL:HA	1:CB:838:THR:HG22	1.95	0.48
4:L5:1558:A:H2'	4:L5:1559:G:C8	2.47	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
6:L8:67:U:H5''	41:Lj:86:PRO:HA	1.95	0.48
16:LJ:40:LEU:HD12	16:LJ:70:VAL:HG12	1.94	0.48
20:LO:85:ARG:HG2	20:LO:99:LEU:HD11	1.96	0.48
27:LV:96:LEU:HD23	28:LW:20:ARG:HG2	1.95	0.48
53:S2:1101:U:H2'	53:S2:1102:G:C8	2.46	0.48
56:SC:77:SER:O	56:SC:80:GLU:HG3	2.13	0.48
61:SH:8:ILE:HG12	61:SH:28:LEU:HD11	1.95	0.48
76:SW:102:ILE:HG13	76:SW:128:PHE:HB3	1.95	0.48
78:SY:6:THR:HG23	78:SY:28:LEU:HB2	1.95	0.48
86:Sg:199:THR:HG21	86:Sg:241:PHE:H	1.78	0.48
4:L5:1503:A:H4'	4:L5:1504:G:H5'	1.95	0.48
4:L5:4872:G:H4'	4:L5:4873:G:H5''	1.95	0.48
11:LE:223:ARG:HA	11:LE:224:LYS:HA	1.64	0.48
26:LU:117:ILE:HG23	51:NB:31:LYS:HB3	1.95	0.48
57:SD:158:ILE:H	57:SD:189:MET:HE1	1.78	0.48
65:SL:88:ILE:HD11	65:SL:128:VAL:HG21	1.96	0.48
1:CB:686:ALA:HB2	1:CB:726:ARG:HG3	1.94	0.48
4:L5:3932:U:H2'	4:L5:3933:G:C8	2.49	0.48
4:L5:4537:C:H2'	4:L5:4538:G:C8	2.49	0.48
4:L5:4992:G:H2'	4:L5:4993:G:C8	2.48	0.48
6:L8:96:C:H5''	39:Lh:66:LYS:HG2	1.96	0.48
7:LA:112:ILE:HD13	7:LA:135:THR:HG22	1.95	0.48
9:LC:284:MET:HE2	9:LC:287:THR:HA	1.95	0.48
17:LL:8:MET:HG2	22:LQ:166:TYR:HB3	1.95	0.48
21:LP:30:ARG:HD2	21:LP:63:TYR:HE1	1.78	0.48
31:LZ:17:ARG:HG3	38:Lg:75:SER:HB3	1.96	0.48
34:Lc:47:ILE:HB	34:Lc:94:LEU:HG	1.95	0.48
53:S2:1337:C:H2'	53:S2:1338:G:H8	1.77	0.48
59:SF:144:LEU:HD21	82:Sc:49:PRO:HG2	1.96	0.48
86:Sg:5:MET:SD	86:Sg:310:TRP:HB3	2.53	0.48
13:LG:108:GLN:HE21	13:LG:112:GLN:HE21	1.60	0.48
13:LG:137:ARG:HD3	13:LG:146:LEU:HD21	1.96	0.48
13:LG:171:PRO:HB3	13:LG:181:TYR:CZ	2.49	0.48
15:LI:54:SER:HB3	15:LI:135:ILE:HD11	1.94	0.48
16:LJ:27:GLY:HA2	16:LJ:68:ILE:HG23	1.95	0.48
17:LL:162:LYS:HD2	17:LL:162:LYS:HA	1.75	0.48
19:LN:159:ARG:HB3	19:LN:164:LEU:HB2	1.94	0.48
19:LN:160:GLU:HG2	19:LN:161:MET:HG3	1.95	0.48
19:LN:191:ALA:O	19:LN:195:ARG:HG2	2.12	0.48
40:Li:54:GLU:O	40:Li:58:MET:HG2	2.13	0.48
51:NB:79:VAL:HG12	51:NB:90:ILE:HD13	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:NM:252:LYS:HA	52:NM:255:ARG:HG3	1.94	0.48
53:S2:28:U:H2'	53:S2:29:G:H8	1.79	0.48
53:S2:312:G:H2'	60:SG:191:ARG:HE	1.79	0.48
53:S2:433:A:H2'	53:S2:434:G:C8	2.48	0.48
53:S2:934:G:H22	53:S2:1008:A:H2	1.61	0.48
59:SF:143:PRO:HD3	82:Sc:56:LEU:HD23	1.95	0.48
59:SF:169:ILE:H	59:SF:169:ILE:HD12	1.78	0.48
61:SH:72:PHE:O	61:SH:76:GLN:HB2	2.13	0.48
69:SP:111:MET:HE1	72:SS:117:ILE:HA	1.94	0.48
71:SR:50:ILE:O	71:SR:54:VAL:HG23	2.13	0.48
81:Sb:14:GLU:HA	81:Sb:17:ARG:HB3	1.94	0.48
4:L5:2411:C:H2'	4:L5:2412:A:C8	2.49	0.48
4:L5:2749:C:H2'	4:L5:2750:G:C8	2.48	0.48
14:LH:132:VAL:HG13	14:LH:154:VAL:HG12	1.95	0.48
27:LV:60:MET:HE3	27:LV:78:PRO:HB3	1.94	0.48
52:NM:175:LEU:HD22	52:NM:222:LEU:HG	1.95	0.48
57:SD:204:LEU:HD13	57:SD:206:ASP:H	1.79	0.48
79:SZ:69:THR:O	79:SZ:73:VAL:HG12	2.12	0.48
1:CB:534:VAL:HA	1:CB:547:ALA:O	2.14	0.48
4:L5:93:G:H2'	4:L5:94:A:C8	2.49	0.48
4:L5:2745:A:H2'	4:L5:2746:A:C8	2.48	0.48
20:LO:109:PRO:HB2	20:LO:111:PRO:HD2	1.95	0.48
23:LR:136:ARG:O	23:LR:140:GLU:HG3	2.14	0.48
33:Lb:23:LYS:HG3	33:Lb:24:PRO:HD2	1.95	0.48
36:Le:109:LYS:O	36:Le:113:GLU:HG2	2.14	0.48
53:S2:439:A:H4'	53:S2:1799:G:H4'	1.95	0.48
53:S2:834:C:H42	53:S2:839:C:H42	1.62	0.48
53:S2:1656:G:N2	53:S2:1668:U:O2	2.39	0.48
4:L5:163:A:H2'	4:L5:164:G:H8	1.79	0.48
6:L8:94:G:H21	41:Lj:82:THR:HB	1.78	0.48
8:LB:107:ALA:HB2	8:LB:201:LEU:HG	1.94	0.48
53:S2:1486:A:H5'	57:SD:151:LYS:HZ2	1.77	0.48
53:S2:1507:G:H1	85:Sf:87:THR:HA	1.77	0.48
53:S2:1740:C:H5''	62:Sl:58:LEU:HD21	1.96	0.48
56:SC:266:TYR:O	56:SC:270:THR:HB	2.13	0.48
68:SO:116:LEU:HD13	68:SO:119:LEU:HD12	1.96	0.48
73:ST:2:PRO:HA	73:ST:3:GLY:HA3	1.66	0.48
76:SW:94:LEU:HD12	76:SW:95:PRO:HD2	1.94	0.48
82:Sc:13:ARG:HH11	82:Sc:13:ARG:HA	1.78	0.48
4:L5:4108:G:H2'	4:L5:4109:G:C8	2.48	0.48
4:L5:4291:G:H8	4:L5:4328:G:H2'	1.78	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:LH:44:GLU:HB2	14:LH:58:ASP:HB2	1.96	0.48
22:LQ:59:PRO:HG3	22:LQ:143:ARG:HA	1.96	0.48
62:SI:43:ILE:HG12	62:SI:57:ALA:HA	1.95	0.48
76:SW:32:LYS:HA	76:SW:35:VAL:HG22	1.96	0.48
4:L5:1500:A:H5''	4:L5:1501:C:H5''	1.95	0.47
18:LM:12:VAL:HB	18:LM:60:PHE:HB2	1.96	0.47
26:LU:84:LYS:HB2	26:LU:110:TYR:CZ	2.49	0.47
31:LZ:48:ARG:HB2	31:LZ:69:LYS:HB3	1.97	0.47
53:S2:748:C:N4	53:S2:795:A:N6	2.34	0.47
53:S2:1203:G:H2'	53:S2:1204:A:C8	2.48	0.47
54:SA:58:LEU:HD21	54:SA:174:MET:HE3	1.96	0.47
62:SI:170:LYS:HB2	62:SI:170:LYS:HE2	1.61	0.47
70:SQ:25:CYS:HB2	70:SQ:68:ILE:HD13	1.94	0.47
76:SW:25:VAL:O	76:SW:62:VAL:HA	2.14	0.47
15:LI:72:ALA:HB2	15:LI:155:ALA:HB2	1.96	0.47
23:LR:43:LYS:HE2	23:LR:43:LYS:HA	1.96	0.47
39:Lh:91:MET:HA	39:Lh:94:ARG:HG3	1.96	0.47
53:S2:1324:G:O6	53:S2:1504:U:O4	2.31	0.47
56:SC:165:VAL:HG22	56:SC:244:ILE:HG21	1.96	0.47
73:ST:11:GLN:HB3	73:ST:62:ARG:HH12	1.78	0.47
1:CB:175:TYR:HE2	1:CB:287:ARG:HD2	1.78	0.47
4:L5:1994:C:H2'	4:L5:1995:G:H8	1.79	0.47
4:L5:3736:A:H2'	4:L5:3737:A:C8	2.50	0.47
4:L5:4991:U:H2'	4:L5:4992:G:H8	1.79	0.47
9:LC:66:SER:HA	9:LC:77:PRO:HA	1.96	0.47
17:LL:81:LEU:HD21	17:LL:96:ILE:HG21	1.95	0.47
49:Lz:13:ALA:HA	49:Lz:217:TYR:HB3	1.95	0.47
53:S2:373:G:H2'	53:S2:374:G:H8	1.79	0.47
53:S2:640:A:H2'	53:S2:641:A:C8	2.48	0.47
53:S2:1536:G:H2'	53:S2:1537:A:C8	2.49	0.47
54:SA:38:ILE:HD12	54:SA:47:TYR:HB3	1.95	0.47
59:SF:109:LEU:H	59:SF:109:LEU:HD12	1.80	0.47
63:SJ:28:GLU:HG3	63:SJ:40:LYS:HD2	1.97	0.47
65:SL:127:THR:HB	65:SL:144:LYS:HB2	1.95	0.47
80:Sa:59:PHE:HB2	80:Sa:62:TYR:HB2	1.95	0.47
4:L5:2098:G:H2'	4:L5:2099:G:C8	2.50	0.47
11:LE:150:LEU:O	11:LE:161:ARG:HA	2.14	0.47
23:LR:107:ARG:O	23:LR:111:GLU:HG2	2.13	0.47
26:LU:84:LYS:HE3	26:LU:102:VAL:HG13	1.97	0.47
41:Lj:34:CYS:HB3	41:Lj:39:TYR:H	1.79	0.47
51:NB:77:PRO:HB2	51:NB:90:ILE:HD11	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:S2:107:A:H2'	53:S2:108:G:H8	1.78	0.47
53:S2:606:G:H5''	84:Se:56:ASN:HD22	1.78	0.47
53:S2:913:A:H61	61:SH:119:SER:HB3	1.79	0.47
53:S2:925:G:N2	53:S2:1017:U:O2	2.31	0.47
53:S2:1540:G:H2'	53:S2:1541:G:C8	2.49	0.47
54:SA:89:LYS:HE3	54:SA:202:TYR:HA	1.97	0.47
55:SB:35:ALA:HA	55:SB:98:THR:HG22	1.95	0.47
56:SC:103:LYS:HZ1	56:SC:216:MET:HB3	1.80	0.47
57:SD:74:GLN:HG2	57:SD:79:PHE:HB2	1.95	0.47
4:L5:1259:G:H2'	4:L5:1260:G:H8	1.79	0.47
4:L5:1327:C:H2'	4:L5:1328:G:C8	2.49	0.47
4:L5:1414:C:H2'	4:L5:1415:G:C8	2.40	0.47
6:L8:86:U:H2'	39:Lh:7:ARG:HH12	1.79	0.47
9:LC:56:GLU:CD	9:LC:56:GLU:H	2.22	0.47
9:LC:321:ASN:HB3	9:LC:324:ILE:HB	1.97	0.47
11:LE:62:MET:HE3	11:LE:62:MET:HB3	1.68	0.47
15:LI:191:ILE:HG13	15:LI:198:LYS:HB2	1.96	0.47
30:LY:23:SER:HA	30:LY:26:ARG:HB2	1.95	0.47
49:Lz:16:GLU:HG2	49:Lz:18:LEU:HD13	1.95	0.47
54:SA:134:LEU:HD12	54:SA:156:TYR:HB2	1.96	0.47
55:SB:164:ILE:HD13	55:SB:207:LEU:HD11	1.96	0.47
58:SE:122:LYS:HD3	58:SE:164:LEU:HD11	1.95	0.47
63:SJ:162:ARG:HA	63:SJ:162:ARG:HD2	1.69	0.47
79:SZ:41:ARG:HH12	79:SZ:44:LEU:HB2	1.79	0.47
79:SZ:77:LEU:HG	79:SZ:78:LYS:H	1.79	0.47
4:L5:460:C:H2'	4:L5:461:G:H8	1.80	0.47
4:L5:2295:C:H2'	4:L5:2296:G:H8	1.80	0.47
4:L5:4459:U:H2'	4:L5:4460:U:C6	2.50	0.47
8:LB:92:TYR:HB3	8:LB:99:LEU:HD22	1.97	0.47
11:LE:243:THR:HG23	11:LE:246:ARG:H	1.80	0.47
24:LS:154:LEU:HB3	24:LS:157:ARG:HD3	1.97	0.47
53:S2:1013:U:H2'	53:S2:1014:G:H8	1.80	0.47
53:S2:1398:G:O6	53:S2:1448:A:N1	2.47	0.47
61:SH:49:LYS:HB3	61:SH:61:ILE:HG12	1.96	0.47
61:SH:82:GLU:HA	61:SH:85:LYS:HG2	1.96	0.47
64:SK:16:PHE:HD1	64:SK:79:LEU:HD23	1.79	0.47
67:SN:114:ARG:NH2	67:SN:121:ARG:HH21	2.12	0.47
4:L5:1628:C:H42	7:LA:3:ARG:HD2	1.79	0.47
4:L5:1823:G:H4'	10:LD:45:ASN:HB2	1.97	0.47
4:L5:2107:C:H2'	4:L5:2108:G:H8	1.79	0.47
4:L5:2744:A:H2'	4:L5:2745:A:C8	2.49	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L5:3910:C:H2'	4:L5:3911:C:C6	2.49	0.47
4:L5:3948:C:O2	4:L5:4066:U:N3	2.42	0.47
4:L5:4507:A:H2'	4:L5:4508:C:C6	2.50	0.47
4:L5:4699:U:H1'	4:L5:4700:A:H5''	1.97	0.47
4:L5:4764:A:N1	14:LH:60:TRP:HB2	2.30	0.47
9:LC:171:LEU:HD11	9:LC:227:ILE:HD11	1.96	0.47
14:LH:20:LEU:HD21	14:LH:45:LEU:HB3	1.96	0.47
15:LI:87:MET:HB2	15:LI:138:ILE:HD13	1.96	0.47
17:LL:8:MET:HB3	17:LL:8:MET:HE2	1.43	0.47
18:LM:122:ILE:HD11	20:LO:189:ILE:HG12	1.96	0.47
19:LN:193:ARG:O	19:LN:197:THR:HG23	2.15	0.47
26:LU:24:ASP:OD2	26:LU:26:THR:HG23	2.15	0.47
51:NB:65:PHE:HB3	51:NB:71:VAL:HG12	1.96	0.47
52:NM:387:VAL:HB	52:NM:396:ASP:HB2	1.95	0.47
53:S2:1234:C:H4'	53:S2:1246:A:H61	1.80	0.47
53:S2:1495:G:C2	83:Sd:41:GLN:HB3	2.49	0.47
53:S2:1858:G:H2'	53:S2:1859:A:C8	2.49	0.47
55:SB:150:ILE:HG22	71:SR:131:PRO:HG3	1.97	0.47
55:SB:184:VAL:HA	55:SB:187:LYS:HE3	1.95	0.47
58:SE:129:ILE:HG22	58:SE:139:LEU:HB3	1.96	0.47
59:SF:187:SER:HB3	59:SF:190:ILE:HG22	1.95	0.47
61:SH:65:PRO:HB2	61:SH:68:GLN:HG3	1.95	0.47
63:SJ:81:LEU:HB3	63:SJ:87:LEU:HG	1.97	0.47
66:SM:49:LEU:HD21	66:SM:77:ILE:HG12	1.97	0.47
70:SQ:48:GLN:HE21	70:SQ:52:LEU:HD23	1.80	0.47
4:L5:1359:G:H4'	19:LN:203:TYR:HB2	1.97	0.47
39:Lh:23:ASP:HA	39:Lh:26:VAL:HG12	1.97	0.47
41:Lj:27:TYR:HA	41:Lj:34:CYS:HA	1.97	0.47
49:Lz:17:VAL:HB	49:Lz:180:VAL:HG22	1.97	0.47
54:SA:24:HIS:HD2	54:SA:48:ILE:HG23	1.80	0.47
61:SH:169:LYS:HB2	61:SH:173:PHE:CZ	2.50	0.47
62:SI:56:ARG:HA	62:SI:180:GLY:HA2	1.97	0.47
1:CB:4:PHE:HE2	1:CB:45:ILE:HG22	1.78	0.47
4:L5:3799:A:C5	27:LV:40:ILE:HD12	2.49	0.47
4:L5:4260:U:H2'	4:L5:4261:C:C6	2.50	0.47
9:LC:333:LYS:O	9:LC:337:ARG:HG3	2.15	0.47
11:LE:183:ARG:HD2	11:LE:183:ARG:HA	1.60	0.47
11:LE:239:LYS:HD3	11:LE:239:LYS:HA	1.70	0.47
26:LU:26:THR:HA	26:LU:29:VAL:HG22	1.96	0.47
26:LU:117:ILE:HG21	51:NB:17:GLN:HG2	1.97	0.47
28:LW:80:ARG:HD3	60:SG:131:ARG:HE	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:La:36:GLY:HA3	32:La:40:HIS:CE1	2.50	0.47
47:Lp:21:SER:O	47:Lp:25:MET:HG3	2.14	0.47
49:Lz:89:ALA:HA	49:Lz:92:LYS:HG2	1.95	0.47
52:Nm:233:ILE:HB	52:Nm:242:MET:HG2	1.97	0.47
53:S2:636:C:H5''	84:Se:22:GLN:HE22	1.79	0.47
53:S2:981:A:H2'	53:S2:982:G:C8	2.50	0.47
54:SA:200:ASP:HB3	71:SR:86:PRO:HD2	1.97	0.47
56:SC:184:VAL:HG11	56:SC:247:THR:HG22	1.97	0.47
57:SD:106:ARG:HD3	57:SD:173:ARG:HD2	1.97	0.47
62:SI:57:ALA:HB1	62:SI:60:LEU:HD21	1.97	0.47
76:SW:75:ILE:HD11	76:SW:93:LEU:HD11	1.96	0.47
86:Sg:112:ALA:HB3	86:Sg:121:VAL:HG22	1.96	0.47
1:CB:402:VAL:HB	1:CB:411:TYR:HB2	1.95	0.47
2:CC:14:A:H3'	2:CC:15:G:H8	1.79	0.47
4:L5:3911:C:H2'	4:L5:3912:U:H6	1.80	0.47
4:L5:4996:C:H4'	35:Ld:26:THR:HB	1.96	0.47
7:LA:101:VAL:HG22	7:LA:165:VAL:HG22	1.97	0.47
14:LH:59:LYS:HE3	14:LH:66:GLU:HG3	1.96	0.47
16:LJ:15:LEU:HD23	16:LJ:165:TRP:HB2	1.97	0.47
21:LP:109:VAL:HG13	21:LP:112:LEU:HD12	1.96	0.47
53:S2:871:U:H4'	67:SN:77:SER:HA	1.96	0.47
53:S2:885:U:O4	53:S2:901:G:O6	2.33	0.47
53:S2:1598:G:H1'	53:S2:1599:U:H5	1.79	0.47
54:SA:147:LEU:HD23	54:SA:161:ILE:HG23	1.97	0.47
58:SE:162:ILE:HG22	58:SE:169:ILE:HA	1.97	0.47
71:SR:11:LYS:O	71:SR:15:VAL:HG13	2.15	0.47
74:SU:66:ARG:HH12	74:SU:75:LYS:HA	1.79	0.47
86:Sg:286:CYS:HA	86:Sg:302:TYR:HA	1.97	0.47
4:L5:2749:C:H2'	4:L5:2750:G:H8	1.80	0.46
4:L5:4258:C:H2'	4:L5:4259:C:C6	2.50	0.46
19:LN:6:TYR:O	19:LN:10:LEU:HB2	2.14	0.46
53:S2:433:A:H5''	62:SI:22:HIS:HB3	1.97	0.46
55:SB:82:ARG:HG2	55:SB:103:MET:HE1	1.98	0.46
65:SL:21:LYS:HA	65:SL:21:LYS:HD3	1.62	0.46
77:SX:91:LEU:HD21	84:Se:6:LEU:HD12	1.97	0.46
86:Sg:88:ARG:HG3	86:Sg:100:ARG:HB3	1.97	0.46
2:CC:79:U:H2'	2:CC:80:A:C8	2.50	0.46
4:L5:138:G:H2'	4:L5:139:G:H8	1.81	0.46
4:L5:667:A:H5''	4:L5:668:C:H5''	1.98	0.46
4:L5:4279:A:H5'	4:L5:4281:A:H1'	1.97	0.46
23:LR:32:ILE:HD11	23:LR:49:LEU:HB3	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:SB:111:CYS:HA	55:SB:114:VAL:HG12	1.97	0.46
58:SE:183:VAL:HA	58:SE:224:ASN:O	2.15	0.46
65:SL:29:GLY:HA3	65:SL:30:LYS:HA	1.58	0.46
72:SS:39:ARG:HE	73:ST:38:LYS:HG3	1.80	0.46
72:SS:111:LEU:O	72:SS:115:LYS:HG3	2.15	0.46
4:L5:4353:U:H5''	4:L5:4354:U:H5'	1.97	0.46
53:S2:795:A:H2'	53:S2:796:G:C8	2.50	0.46
53:S2:980:A:H2'	53:S2:981:A:C8	2.51	0.46
54:SA:184:ARG:HG2	54:SA:189:ILE:HB	1.98	0.46
55:SB:38:MET:HE2	55:SB:182:LYS:HD2	1.96	0.46
61:SH:91:HIS:CG	61:SH:169:LYS:HD2	2.50	0.46
65:SL:111:VAL:HA	65:SL:138:VAL:HG13	1.97	0.46
67:SN:5:HIS:HB3	67:SN:117:LEU:HD13	1.96	0.46
86:Sg:14:HIS:HD2	86:Sg:43:TRP:HZ2	1.64	0.46
4:L5:257:C:H2'	4:L5:258:G:C8	2.50	0.46
4:L5:1306:C:H2'	4:L5:1307:A:C8	2.51	0.46
9:LC:212:ASN:HD22	9:LC:255:SER:HB2	1.80	0.46
53:S2:77:A:H4'	60:SG:157:VAL:HG21	1.97	0.46
55:SB:103:MET:HB3	55:SB:215:VAL:HB	1.97	0.46
64:SK:23:ALA:O	64:SK:67:PHE:HB2	2.16	0.46
79:SZ:66:LYS:HA	79:SZ:111:ARG:HH21	1.81	0.46
1:CB:5:THR:HG21	78:SY:132:LYS:HE3	1.98	0.46
1:CB:599:HIS:HB3	1:CB:710:HIS:HB2	1.97	0.46
4:L5:651:C:H2'	4:L5:652:G:H8	1.80	0.46
4:L5:956:A:H1'	4:L5:2076:G:H5''	1.98	0.46
4:L5:1333:A:H2'	4:L5:1334:A:C8	2.51	0.46
4:L5:4967:A:H2'	4:L5:4968:A:C8	2.51	0.46
31:LZ:54:THR:HB	31:LZ:57:MET:HE3	1.97	0.46
37:Lf:35:ALA:HA	37:Lf:81:SER:HA	1.96	0.46
37:Lf:36:ARG:HD2	37:Lf:80:ASN:H	1.81	0.46
49:Lz:123:ILE:HG23	49:Lz:124:LEU:HD23	1.97	0.46
62:SI:78:ILE:HG23	62:SI:102:VAL:HG11	1.98	0.46
72:SS:13:LEU:HD12	72:SS:20:ILE:HD11	1.97	0.46
73:ST:144:LYS:HD2	73:ST:144:LYS:HA	1.75	0.46
83:Sd:11:PRO:HG2	83:Sd:13:LYS:HD2	1.98	0.46
83:Sd:31:ILE:HG23	83:Sd:33:LYS:HE2	1.97	0.46
4:L5:1590:C:H4'	4:L5:2857:A:H5'	1.98	0.46
4:L5:2784:C:H2'	4:L5:2785:C:H6	1.80	0.46
5:L7:54:A:C5	16:LJ:12:MET:HG2	2.51	0.46
10:LD:204:VAL:O	10:LD:208:MET:HG3	2.15	0.46
12:LF:48:LYS:O	12:LF:52:GLU:HG2	2.15	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:LP:36:ILE:HG22	21:LP:114:ILE:HD13	1.97	0.46
53:S2:107:A:H2'	53:S2:108:G:C8	2.50	0.46
55:SB:113:MET:HE1	55:SB:209:ASP:HB3	1.97	0.46
59:SF:63:LYS:H	59:SF:63:LYS:HD2	1.81	0.46
82:Sc:49:PRO:HB2	82:Sc:51:ARG:HE	1.80	0.46
1:CB:345:PRO:HG2	1:CB:348:ASP:HB3	1.98	0.46
4:L5:2751:G:H2'	4:L5:2752:G:H8	1.80	0.46
27:LV:84:GLN:HE21	27:LV:86:LYS:HB3	1.80	0.46
52:NM:288:PRO:HA	52:NM:289:LYS:HA	1.59	0.46
52:NM:377:PRO:HG3	52:NM:384:THR:H	1.81	0.46
53:S2:656:G:H21	53:S2:663:C:H5''	1.81	0.46
53:S2:1310:U:H2'	53:S2:1311:C:H6	1.81	0.46
53:S2:1779:G:H2'	53:S2:1780:G:C8	2.51	0.46
56:SC:110:MET:HG2	56:SC:112:VAL:HG23	1.98	0.46
56:SC:264:SER:HB3	56:SC:267:GLN:HG2	1.98	0.46
57:SD:136:VAL:O	57:SD:151:LYS:HA	2.15	0.46
58:SE:206:ASP:HB2	58:SE:222:LEU:HG	1.97	0.46
64:SK:78:TYR:O	64:SK:82:TYR:HB3	2.16	0.46
76:SW:101:PHE:HA	76:SW:113:HIS:HE1	1.80	0.46
83:Sd:3:HIS:CE1	83:Sd:5:GLN:HG2	2.51	0.46
4:L5:181:C:H3'	4:L5:182:G:H8	1.81	0.46
4:L5:2693:G:H2'	4:L5:2694:G:N2	2.31	0.46
4:L5:3861:A:H2'	4:L5:3862:A:C8	2.51	0.46
4:L5:3951:G:O6	4:L5:4060:U:O4	2.34	0.46
12:LF:94:ARG:HD2	12:LF:109:LEU:HD22	1.98	0.46
33:Lb:98:TYR:CE2	33:Lb:104:LEU:HB3	2.50	0.46
64:SK:28:HIS:CE1	83:Sd:7:TYR:OH	2.69	0.46
69:SP:56:LEU:HD23	69:SP:60:LEU:HD23	1.98	0.46
70:SQ:37:ARG:HH21	73:ST:7:LYS:HE3	1.81	0.46
10:LD:25:GLU:HB3	10:LD:27:LYS:HD2	1.98	0.46
14:LH:103:VAL:HG11	14:LH:144:LEU:HD21	1.98	0.46
28:LW:8:PHE:HZ	28:LW:49:ILE:HG13	1.81	0.46
39:Lh:107:GLN:O	39:Lh:111:GLU:HG3	2.15	0.46
49:Lz:38:LEU:HD22	49:Lz:197:ASN:HD22	1.81	0.46
53:S2:1536:G:H2'	53:S2:1537:A:H8	1.81	0.46
53:S2:1551:U:H5''	57:SD:9:ARG:HH22	1.80	0.46
81:Sb:36:LYS:HA	81:Sb:36:LYS:HD2	1.52	0.46
4:L5:1317:U:H2'	4:L5:1318:C:C6	2.51	0.46
4:L5:1662:C:H2'	4:L5:1663:C:C6	2.50	0.46
4:L5:1933:G:H2'	4:L5:1934:A:C8	2.51	0.46
4:L5:4380:A:H5'	46:Lo:57:ARG:HD2	1.98	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L5:4743:G:H2'	4:L5:4744:A:H8	1.81	0.46
16:LJ:53:ALA:HB2	16:LJ:68:ILE:HD11	1.97	0.46
16:LJ:169:LYS:HG3	16:LJ:170:TYR:CD2	2.51	0.46
44:Lm:99:CYS:HB2	44:Lm:114:LYS:HD2	1.99	0.46
51:NB:106:ILE:HA	51:NB:109:GLN:HG2	1.97	0.46
53:S2:1201:U:H2'	53:S2:1202:U:C6	2.50	0.46
69:SP:73:PRO:HG2	69:SP:93:MET:HB3	1.98	0.46
81:Sb:20:LYS:HA	81:Sb:23:ARG:HE	1.81	0.46
82:Sc:31:ARG:NH2	82:Sc:43:ILE:HB	2.31	0.46
4:L5:4685:U:H2'	4:L5:4686:G:C8	2.51	0.45
8:LB:287:ILE:HD13	8:LB:331:VAL:HG22	1.98	0.45
8:LB:378:ARG:HE	28:LW:32:LEU:HD21	1.81	0.45
11:LE:284:HIS:CE1	37:Lf:33:VAL:HG12	2.51	0.45
29:LX:81:LEU:HD22	29:LX:83:THR:HG23	1.97	0.45
52:NM:243:VAL:HG11	52:NM:271:VAL:HG21	1.98	0.45
53:S2:655:A:H4'	53:S2:656:G:H3'	1.97	0.45
53:S2:1486:A:H2'	53:S2:1487:A:C8	2.51	0.45
54:SA:6:ASP:HA	54:SA:9:GLN:NE2	2.31	0.45
56:SC:253:PRO:HA	56:SC:256:TRP:CD2	2.51	0.45
74:SU:18:HIS:HB3	74:SU:117:ALA:HB2	1.97	0.45
1:CB:629:LYS:HD2	53:S2:1320:G:H5'	1.98	0.45
4:L5:223:G:H4'	4:L5:225:G:N7	2.31	0.45
4:L5:1238:A:H5'	11:LE:59:ARG:HB3	1.98	0.45
4:L5:3664:G:H2'	4:L5:3665:G:C8	2.51	0.45
4:L5:4578:G:H5''	8:LB:120:LYS:HD2	1.98	0.45
4:L5:4742:G:H2'	4:L5:4743:G:H8	1.81	0.45
13:LG:161:VAL:HG11	13:LG:200:THR:HG23	1.98	0.45
19:LN:189:ARG:HE	19:LN:189:ARG:HB2	1.55	0.45
23:LR:165:LYS:HE3	23:LR:165:LYS:HB3	1.74	0.45
30:LY:36:LYS:HA	30:LY:36:LYS:HD2	1.73	0.45
42:Lk:8:ILE:O	42:Lk:12:LEU:HD22	2.16	0.45
57:SD:146:ARG:HD2	57:SD:146:ARG:HA	1.69	0.45
63:SJ:101:LYS:HD3	63:SJ:101:LYS:HA	1.68	0.45
64:SK:52:LEU:HD12	64:SK:57:TYR:HD2	1.80	0.45
71:SR:72:LYS:HD2	71:SR:73:LEU:N	2.30	0.45
73:ST:131:LEU:HD23	73:ST:134:ILE:HD11	1.97	0.45
84:Se:38:TYR:HD1	84:Se:42:PHE:HD2	1.62	0.45
4:L5:493:G:C6	4:L5:660:A:N1	2.84	0.45
4:L5:1308:C:H2'	4:L5:1309:C:C6	2.51	0.45
4:L5:1348:U:H2'	4:L5:1349:G:H8	1.82	0.45
9:LC:7:LEU:HG	9:LC:21:ASN:HB3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:LE:72:LYS:HB2	11:LE:72:LYS:HE3	1.83	0.45
14:LH:7:ASN:HD22	14:LH:56:ARG:HD2	1.81	0.45
15:LI:33:ILE:HG13	15:LI:36:LEU:HD11	1.98	0.45
17:LL:182:LEU:HD21	32:La:128:PHE:HA	1.99	0.45
25:LT:115:LYS:HA	25:LT:118:GLU:HG3	1.98	0.45
53:S2:600:G:H2'	53:S2:601:G:C8	2.51	0.45
53:S2:1154:U:H4'	53:S2:1155:U:H3'	1.97	0.45
53:S2:1199:A:H5''	80:Sa:2:THR:HG23	1.98	0.45
63:SJ:108:ARG:HA	63:SJ:108:ARG:HD2	1.73	0.45
70:SQ:109:LYS:O	70:SQ:113:ILE:HG13	2.16	0.45
11:LE:211:HIS:HD1	11:LE:211:HIS:H	1.63	0.45
53:S2:1310:U:H2'	53:S2:1311:C:C6	2.51	0.45
57:SD:171:ALA:O	57:SD:185:LYS:HA	2.17	0.45
60:SG:106:LEU:HG	60:SG:109:LEU:HD21	1.99	0.45
62:SI:90:LEU:HA	62:SI:93:THR:HG22	1.98	0.45
64:SK:12:TYR:HA	64:SK:15:LEU:HD23	1.97	0.45
69:SP:70:MET:HE2	69:SP:70:MET:O	2.16	0.45
72:SS:16:LEU:HD23	72:SS:100:ALA:HB2	1.97	0.45
1:CB:290:CYS:HA	1:CB:294:LEU:HB2	1.99	0.45
4:L5:710:G:H5''	11:LE:192:LYS:HE2	1.98	0.45
4:L5:1940:G:H22	4:L5:4434:C:H5''	1.81	0.45
9:LC:95:MET:HB3	9:LC:95:MET:HE3	1.85	0.45
16:LJ:42:GLN:HB3	16:LJ:117:ILE:HG12	1.98	0.45
18:LM:93:LYS:HE2	18:LM:93:LYS:HB3	1.75	0.45
53:S2:146:G:H1	53:S2:173:A:H61	1.65	0.45
53:S2:184:G:H2'	53:S2:185:G:H8	1.81	0.45
53:S2:1545:A:H4'	70:SQ:74:GLY:HA2	1.98	0.45
59:SF:49:LEU:HD13	70:SQ:50:LYS:HE2	1.97	0.45
72:SS:31:THR:HA	72:SS:36:VAL:HB	1.98	0.45
74:SU:31:SER:HA	74:SU:34:LYS:HG2	1.98	0.45
79:SZ:88:LEU:HD13	79:SZ:109:TYR:HE2	1.81	0.45
4:L5:478:G:H5'	48:Lr:66:ARG:HD2	1.98	0.45
4:L5:1645:C:H2'	4:L5:1646:A:C8	2.52	0.45
4:L5:2864:A:H5''	23:LR:84:THR:HG22	1.99	0.45
9:LC:10:VAL:HB	9:LC:20:LYS:HG3	1.97	0.45
11:LE:141:ARG:HB3	11:LE:144:ILE:HD12	1.98	0.45
21:LP:112:LEU:HD13	21:LP:150:LEU:HD12	1.99	0.45
32:La:75:LEU:HD11	32:La:133:ALA:HA	1.97	0.45
38:Lg:100:GLN:HA	38:Lg:103:VAL:HG12	1.98	0.45
42:Lk:10:ASP:HA	42:Lk:13:LEU:HG	1.99	0.45
44:Lm:80:PRO:O	44:Lm:84:GLN:HG2	2.16	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:Lr:71:ARG:HG3	48:Lr:72:LYS:HD3	1.97	0.45
52:Nm:203:PRO:HD2	52:Nm:206:TRP:HB3	1.97	0.45
53:S2:10:G:H21	56:SC:114:LYS:HA	1.82	0.45
53:S2:1239:U:H4'	69:SP:124:LYS:HE2	1.99	0.45
60:SG:58:LYS:HB2	60:SG:58:LYS:HE2	1.82	0.45
67:SN:29:THR:HG23	67:SN:32:ASP:HB2	1.99	0.45
76:SW:10:ALA:O	76:SW:14:ILE:HG13	2.17	0.45
76:SW:94:LEU:HD11	76:SW:100:GLY:HA3	1.99	0.45
4:L5:1481:C:H41	40:Li:4:ARG:HG3	1.82	0.45
4:L5:1751:A:H2'	4:L5:1752:G:C8	2.51	0.45
10:LD:258:LYS:H	10:LD:259:LYS:HZ2	1.65	0.45
25:LT:122:LYS:HE2	25:LT:122:LYS:N	2.32	0.45
54:SA:80:ARG:HD3	54:SA:81:ASN:H	1.80	0.45
70:SQ:81:ILE:HA	70:SQ:84:ILE:HG12	1.99	0.45
80:Sa:82:LYS:HA	80:Sa:85:ARG:HH21	1.81	0.45
4:L5:86:U:H2'	4:L5:87:A:C8	2.52	0.45
4:L5:4347:G:H2'	4:L5:4348:A:C8	2.52	0.45
8:LB:285:TYR:CE1	8:LB:334:LYS:HB2	2.52	0.45
10:LD:238:GLU:HA	10:LD:241:LYS:HG2	1.98	0.45
11:LE:98:GLY:HA3	11:LE:99:ASP:HA	1.75	0.45
18:LM:101:LYS:HB2	20:LO:200:GLY:HA3	1.99	0.45
35:Ld:25:TYR:HD2	35:Ld:88:LEU:HD13	1.81	0.45
35:Ld:32:ARG:HD3	35:Ld:48:GLU:HB3	1.97	0.45
38:Lg:42:PRO:HB2	38:Lg:53:LEU:HD12	1.97	0.45
38:Lg:82:MET:HE2	38:Lg:82:MET:HB3	1.81	0.45
52:Nm:301:LEU:HD11	52:Nm:439:LEU:HD12	1.99	0.45
53:S2:1098:C:H2'	53:S2:1099:G:C8	2.52	0.45
54:SA:27:GLY:HA2	54:SA:28:THR:HA	1.76	0.45
59:SF:127:ARG:HD3	59:SF:137:GLN:HG2	1.98	0.45
69:SP:65:LYS:HE3	69:SP:66:GLU:HG3	1.98	0.45
70:SQ:90:LYS:HA	70:SQ:93:VAL:HG12	1.99	0.45
86:Sg:70:VAL:HG12	86:Sg:79:LEU:HB3	1.99	0.45
4:L5:4642:U:H2'	4:L5:4643:G:H8	1.82	0.45
4:L5:4910:G:H4'	8:LB:95:THR:HG22	1.98	0.45
13:LG:168:VAL:HG23	19:LN:10:LEU:HD11	1.99	0.45
16:LJ:15:LEU:HB3	16:LJ:165:TRP:CD1	2.51	0.45
27:LV:112:MET:HE2	27:LV:112:MET:HB3	1.78	0.45
39:Lh:73:TYR:HB3	39:Lh:79:LYS:HG2	1.98	0.45
53:S2:1144:A:H2'	53:S2:1145:A:C8	2.51	0.45
53:S2:1655:C:H2'	53:S2:1656:G:C8	2.52	0.45
54:SA:24:HIS:CD2	54:SA:48:ILE:HG23	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:SB:140:VAL:HG13	55:SB:213:ARG:HB2	1.98	0.45
55:SB:165:ARG:HA	55:SB:168:MET:HE2	1.99	0.45
56:SC:200:ARG:NH2	63:SJ:95:ASP:HA	2.31	0.45
57:SD:55:THR:HA	57:SD:58:VAL:HG12	1.98	0.45
57:SD:202:LYS:HA	57:SD:202:LYS:HD2	1.75	0.45
59:SF:152:TRP:O	59:SF:156:THR:HG22	2.16	0.45
66:SM:20:GLU:O	66:SM:24:THR:HG23	2.17	0.45
85:Sf:132:MET:HB2	85:Sf:140:TYR:C	2.42	0.45
2:CC:2:U:H2'	2:CC:3:A:C8	2.52	0.45
4:L5:1699:A:H61	4:L5:1706:A:H4'	1.82	0.45
4:L5:4642:U:H2'	4:L5:4643:G:C8	2.51	0.45
13:LG:104:PRO:HG2	13:LG:194:VAL:HG23	1.98	0.45
13:LG:120:LYS:HA	13:LG:120:LYS:HD3	1.74	0.45
17:LL:126:LEU:HD23	39:Lh:119:TYR:HB3	1.99	0.45
20:LO:51:LYS:HE3	20:LO:144:GLU:HB3	1.98	0.45
35:Ld:40:LYS:O	35:Ld:44:ARG:HB2	2.17	0.45
49:Lz:2:SER:HA	49:Lz:207:LYS:HG2	1.99	0.45
53:S2:145:G:H2'	53:S2:146:G:C8	2.51	0.45
53:S2:943:U:H2'	53:S2:944:A:C8	2.46	0.45
53:S2:1792:G:H2'	53:S2:1793:A:H8	1.81	0.45
55:SB:123:ALA:HB2	55:SB:165:ARG:HE	1.80	0.45
67:SN:18:TYR:CZ	76:SW:55:ASP:HB3	2.52	0.45
77:SX:60:LYS:H	77:SX:60:LYS:HG3	1.66	0.45
78:SY:44:LEU:O	78:SY:48:TYR:HB2	2.17	0.45
1:CB:351:LEU:O	1:CB:355:THR:HG23	2.17	0.44
3:CD:190:LYS:HB2	3:CD:190:LYS:HE3	1.72	0.44
4:L5:1183:C:H2'	4:L5:1184:A:C8	2.52	0.44
4:L5:3641:U:H5	4:L5:3646:A:N7	2.14	0.44
13:LG:90:GLN:O	13:LG:94:GLN:HG2	2.17	0.44
23:LR:104:ARG:O	23:LR:108:ARG:HG3	2.17	0.44
36:Le:12:ILE:HD11	36:Le:69:MET:HE2	1.98	0.44
37:Lf:29:LYS:HG2	37:Lf:83:MET:SD	2.58	0.44
49:Lz:17:VAL:HG21	49:Lz:180:VAL:HA	1.98	0.44
50:NA:111:VAL:HG22	50:NA:122:VAL:HG22	1.99	0.44
53:S2:920:A:H4'	76:SW:57:ARG:HE	1.81	0.44
53:S2:960:U:H1'	53:S2:963:A:H62	1.82	0.44
60:SG:149:LYS:HD2	60:SG:149:LYS:HA	1.80	0.44
71:SR:41:ILE:HD11	71:SR:46:LEU:HB3	1.99	0.44
72:SS:47:LYS:HD3	72:SS:47:LYS:HA	1.75	0.44
4:L5:691:C:H2'	4:L5:692:A:C8	2.52	0.44
4:L5:1306:C:H2'	4:L5:1307:A:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L5:1577:G:O2'	4:L5:1612:G:H4'	2.17	0.44
4:L5:3610:A:H2'	4:L5:3611:A:C8	2.52	0.44
4:L5:4723:A:H2'	4:L5:4724:A:C8	2.52	0.44
13:LG:155:VAL:O	13:LG:181:TYR:HA	2.16	0.44
17:LL:180:ALA:O	17:LL:184:MET:HG2	2.17	0.44
53:S2:12:U:H2'	53:S2:13:C:C6	2.53	0.44
53:S2:549:C:C4	53:S2:550:C:N4	2.86	0.44
53:S2:866:U:H2'	53:S2:867:G:C8	2.51	0.44
53:S2:1010:G:H2'	53:S2:1011:A:H8	1.82	0.44
82:Sc:56:LEU:HD22	82:Sc:57:THR:H	1.82	0.44
1:CB:285:LEU:HD12	1:CB:285:LEU:HA	1.83	0.44
4:L5:1091:C:H2'	4:L5:1092:G:H8	1.82	0.44
4:L5:1353:G:O6	22:LQ:85:THR:HG21	2.17	0.44
4:L5:3723:A:H2'	4:L5:3724:A:H8	1.83	0.44
4:L5:4219:A:H2'	4:L5:4220:A:C8	2.52	0.44
6:L8:67:U:H2'	6:L8:68:G:H8	1.81	0.44
33:Lb:117:ARG:HA	33:Lb:117:ARG:HD2	1.73	0.44
35:Ld:32:ARG:HB3	35:Ld:48:GLU:HG3	1.98	0.44
37:Lf:29:LYS:HE3	37:Lf:29:LYS:HB3	1.62	0.44
49:Lz:173:LYS:HE3	49:Lz:173:LYS:HB3	1.88	0.44
53:S2:552:G:H5'	84:Se:36:MET:HE3	1.99	0.44
53:S2:846:G:C8	58:SE:19:MET:HE1	2.53	0.44
62:SI:60:LEU:HD12	62:SI:96:LEU:HD12	1.99	0.44
65:SL:128:VAL:HG12	65:SL:140:PHE:HD2	1.82	0.44
81:Sb:33:MET:HE1	81:Sb:79:PHE:HA	1.99	0.44
4:L5:1356:U:H2'	4:L5:1357:C:C6	2.52	0.44
4:L5:1788:A:H2'	15:LI:22:PHE:CZ	2.53	0.44
4:L5:2011:C:H3'	4:L5:2012:A:H8	1.83	0.44
4:L5:2704:C:H2'	4:L5:2705:G:C8	2.52	0.44
4:L5:3897:G:H4'	8:LB:254:ILE:HG12	1.98	0.44
11:LE:190:HIS:HB3	11:LE:193:PHE:HD2	1.82	0.44
12:LF:92:VAL:HG13	12:LF:142:TRP:HB3	1.99	0.44
15:LI:35:ASP:HB3	15:LI:86:HIS:HE2	1.83	0.44
19:LN:140:LYS:HA	19:LN:143:ARG:HB3	2.00	0.44
21:LP:94:MET:HE1	21:LP:146:ILE:HB	1.99	0.44
40:Li:60:LEU:HD22	40:Li:65:LYS:HE2	2.00	0.44
43:Ll:16:LYS:HD3	43:Ll:16:LYS:HA	1.78	0.44
51:NB:102:MET:HE2	51:NB:102:MET:O	2.18	0.44
53:S2:44:U:H2'	53:S2:45:A:H2'	1.98	0.44
53:S2:1037:G:H4'	53:S2:1845:A:H4'	1.98	0.44
53:S2:1244:U:H2'	53:S2:1245:G:H8	1.81	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:SE:71:LYS:HB3	58:SE:91:SER:HB2	1.99	0.44
60:SG:64:LYS:HZ3	60:SG:82:SER:HB3	1.81	0.44
72:SS:47:LYS:HE3	72:SS:78:LYS:HE3	2.00	0.44
77:SX:73:GLN:HB3	77:SX:80:LYS:HD3	2.00	0.44
82:Sc:43:ILE:HG23	82:Sc:65:ALA:HB3	1.98	0.44
86:Sg:168:CYS:HB2	86:Sg:195:LEU:HD22	1.99	0.44
1:CB:311:GLU:HA	1:CB:314:LYS:HZ3	1.82	0.44
1:CB:781:MET:H	1:CB:781:MET:HE3	1.82	0.44
2:CC:20:U:H5	2:CC:57:C:H42	1.64	0.44
4:L5:10:A:H2'	4:L5:11:G:C8	2.53	0.44
4:L5:494:U:H2'	4:L5:495:C:C6	2.52	0.44
4:L5:710:G:H2'	4:L5:711:A:C8	2.53	0.44
4:L5:2539:C:H2'	4:L5:2540:C:C6	2.53	0.44
4:L5:4740:G:H1'	4:L5:4742:G:H5''	1.98	0.44
8:LB:185:VAL:HG23	8:LB:193:LYS:HD3	1.98	0.44
8:LB:194:LEU:HD23	8:LB:194:LEU:HA	1.87	0.44
11:LE:186:LEU:H	11:LE:250:GLN:HE21	1.65	0.44
16:LJ:33:LEU:HD23	16:LJ:33:LEU:HA	1.80	0.44
22:LQ:128:LEU:HD12	22:LQ:128:LEU:HA	1.83	0.44
30:LY:22:PRO:HD2	30:LY:25:ILE:HD11	2.00	0.44
55:SB:121:ILE:HG23	55:SB:161:VAL:HG13	1.98	0.44
57:SD:173:ARG:HH12	57:SD:184:ILE:HD12	1.82	0.44
58:SE:120:LYS:HA	58:SE:120:LYS:HD3	1.80	0.44
59:SF:122:ARG:HH22	82:Sc:63:ARG:HH22	1.65	0.44
67:SN:46:THR:HG23	67:SN:86:GLU:HG2	2.00	0.44
80:Sa:12:LYS:HG2	80:Sa:15:ARG:HB2	2.00	0.44
3:CD:284:LEU:HD22	64:SK:16:PHE:HB3	2.00	0.44
4:L5:1830:G:H5'	33:Lb:65:MET:HE1	1.99	0.44
4:L5:2274:C:H5''	9:LC:312:ARG:HB3	1.99	0.44
4:L5:3690:U:H2'	4:L5:3691:G:O4'	2.18	0.44
4:L5:3955:G:N3	4:L5:3966:A:N7	2.64	0.44
4:L5:4246:G:H2'	4:L5:4247:G:H8	1.82	0.44
4:L5:4344:U:H2'	4:L5:4345:C:C6	2.53	0.44
4:L5:4754:G:H3'	11:LE:279:ASN:HD21	1.81	0.44
13:LG:215:LEU:HD23	13:LG:215:LEU:HA	1.79	0.44
14:LH:25:VAL:HG23	14:LH:80:MET:HE1	1.99	0.44
17:LL:79:GLU:O	17:LL:83:VAL:HG23	2.18	0.44
49:Lz:179:LEU:HA	49:Lz:182:ASN:HB3	2.00	0.44
53:S2:122:G:H4'	58:SE:145:ARG:HG2	2.00	0.44
53:S2:414:A:H2'	53:S2:415:A:H8	1.82	0.44
53:S2:626:G:H5''	53:S2:627:U:H5'	1.98	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:S2:1240:A:C2	69:SP:100:LYS:HB2	2.53	0.44
53:S2:1279:C:H2'	53:S2:1280:G:H8	1.83	0.44
56:SC:261:PHE:HB2	75:SV:52:THR:HG21	1.99	0.44
59:SF:201:LYS:HZ3	59:SF:204:ARG:HH12	1.63	0.44
63:SJ:164:PRO:HB3	63:SJ:170:PRO:HA	1.98	0.44
1:CB:385:ILE:HD11	1:CB:395:MET:HG2	2.00	0.44
1:CB:425:LEU:HD23	1:CB:427:VAL:HB	1.99	0.44
4:L5:1914:C:H4'	20:LO:89:PRO:HD3	1.99	0.44
16:LJ:78:LYS:HE2	16:LJ:78:LYS:HB2	1.85	0.44
25:LT:46:GLY:HA2	25:LT:52:MET:HE1	2.00	0.44
29:LX:73:HIS:H	29:LX:73:HIS:CD2	2.36	0.44
29:LX:147:LEU:HD23	29:LX:147:LEU:HA	1.90	0.44
33:Lb:95:ARG:O	33:Lb:99:ILE:HG13	2.17	0.44
47:Lp:74:THR:O	47:Lp:78:THR:HG23	2.18	0.44
50:NA:94:VAL:HB	50:NA:106:ILE:HB	1.99	0.44
53:S2:980:A:H2'	53:S2:981:A:H8	1.83	0.44
53:S2:1523:C:H2'	53:S2:1524:G:H8	1.83	0.44
53:S2:1714:U:H2'	53:S2:1715:A:C8	2.52	0.44
63:SJ:43:VAL:HA	63:SJ:46:VAL:HG12	1.99	0.44
71:SR:104:GLU:HA	71:SR:107:LYS:HD2	1.99	0.44
1:CB:175:TYR:CE2	1:CB:287:ARG:HD2	2.53	0.44
1:CB:650:TRP:CE2	1:CB:676:LYS:HG3	2.52	0.44
4:L5:189:G:H2'	4:L5:190:G:H8	1.82	0.44
4:L5:655:C:H2'	4:L5:656:C:C6	2.53	0.44
4:L5:1368:A:H1'	30:LY:1:MET:HE2	2.00	0.44
4:L5:2495:U:H2'	4:L5:2496:G:C8	2.50	0.44
4:L5:3604:A:H5'	23:LR:71:ARG:HH21	1.82	0.44
7:LA:56:ALA:HB2	7:LA:130:SER:HB3	1.99	0.44
9:LC:37:VAL:HG12	9:LC:123:ALA:HA	2.00	0.44
16:LJ:103:GLY:HA3	16:LJ:157:ILE:HG22	2.00	0.44
45:Ln:4:LYS:HA	45:Ln:7:LYS:HG2	2.00	0.44
53:S2:527:C:H2'	53:S2:528:A:C8	2.53	0.44
53:S2:1049:A:H3'	53:S2:1050:A:H8	1.82	0.44
53:S2:1311:C:H3'	53:S2:1312:G:C8	2.53	0.44
53:S2:1842:C:H2'	53:S2:1843:G:H8	1.83	0.44
54:SA:132:GLN:O	54:SA:136:GLU:HG2	2.18	0.44
56:SC:179:THR:HA	56:SC:219:ILE:HG23	2.00	0.44
69:SP:56:LEU:HD13	69:SP:83:MET:HE2	2.00	0.44
75:SV:51:LYS:HE3	75:SV:51:LYS:HB3	1.84	0.44
4:L5:422:C:H2'	4:L5:423:G:H8	1.83	0.44
4:L5:429:A:H2'	4:L5:430:G:C8	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L5:679:C:H2'	4:L5:680:G:H8	1.83	0.44
4:L5:1705:G:H2'	4:L5:1706:A:O4'	2.18	0.44
4:L5:2461:G:H2'	4:L5:2462:C:C6	2.53	0.44
4:L5:4238:G:H2'	4:L5:4239:A:C8	2.53	0.44
8:LB:128:LYS:HE2	8:LB:128:LYS:HB3	1.81	0.44
16:LJ:12:MET:HE2	16:LJ:12:MET:HB2	1.84	0.44
17:LL:50:PRO:HG3	39:Lh:121:VAL:HG23	2.00	0.44
32:La:4:ARG:HG3	32:La:5:LEU:HD23	1.98	0.44
39:Lh:33:VAL:O	39:Lh:37:THR:HG22	2.18	0.44
53:S2:17:C:H2'	53:S2:18:C:H6	1.83	0.44
59:SF:38:TYR:CE1	59:SF:144:LEU:HB3	2.53	0.44
62:SI:52:ASN:C	62:SI:53:LYS:HE2	2.42	0.44
65:SL:153:LYS:HA	65:SL:153:LYS:HD3	1.84	0.44
78:SY:73:GLY:C	78:SY:74:MET:HE2	2.43	0.44
1:CB:561:LEU:HD22	1:CB:570:ILE:HD13	2.00	0.43
4:L5:1091:C:H2'	4:L5:1092:G:C8	2.53	0.43
4:L5:4309:G:H5'	4:L5:4338:G:H5''	1.99	0.43
10:LD:53:VAL:HG11	10:LD:159:VAL:HA	2.00	0.43
15:LI:60:LEU:HD12	15:LI:160:PRO:HD2	2.00	0.43
29:LX:37:LYS:HA	29:LX:38:LYS:HA	1.56	0.43
38:Lg:103:VAL:HA	38:Lg:106:VAL:HG22	1.99	0.43
41:Lj:25:LYS:HB3	41:Lj:25:LYS:HE3	1.82	0.43
41:Lj:54:LYS:O	41:Lj:58:THR:HB	2.18	0.43
53:S2:17:C:H2'	53:S2:18:C:C6	2.52	0.43
53:S2:89:C:H2'	53:S2:90:G:C8	2.52	0.43
53:S2:863:U:H2'	53:S2:864:A:H8	1.83	0.43
53:S2:1756:C:H41	53:S2:1757:G:H21	1.65	0.43
57:SD:185:LYS:HB2	57:SD:185:LYS:HE3	1.81	0.43
58:SE:18:TRP:HH2	58:SE:31:PRO:HD3	1.83	0.43
68:SO:12:GLU:HA	68:SO:13:GLN:HA	1.77	0.43
69:SP:64:LYS:HE3	69:SP:73:PRO:HG3	2.00	0.43
86:Sg:34:ALA:HB2	86:Sg:69:VAL:HG13	2.00	0.43
4:L5:1444:G:H22	4:L5:2103:G:H1	1.67	0.43
4:L5:1857:C:H2'	4:L5:1858:A:H8	1.83	0.43
4:L5:5055:G:H2'	4:L5:5056:A:C8	2.53	0.43
12:LF:71:MET:HG2	12:LF:74:MET:HE2	2.00	0.43
21:LP:124:LYS:HD3	21:LP:140:MET:HB3	2.00	0.43
36:Le:86:GLU:H	36:Le:86:GLU:HG2	1.62	0.43
51:NB:72:ILE:HG22	51:NB:96:THR:HA	2.00	0.43
52:NM:435:MET:O	52:NM:435:MET:HE3	2.18	0.43
53:S2:1364:U:H5	53:S2:1375:G:H21	1.65	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
53:S2:1449:G:H3'	53:S2:1450:G:H8	1.83	0.43
53:S2:1540:G:H5'	73:ST:47:PRO:HB3	1.98	0.43
59:SF:150:ALA:O	59:SF:154:LEU:HG	2.18	0.43
65:SL:58:LYS:HG3	65:SL:59:LYS:HG3	2.00	0.43
70:SQ:49:TYR:HA	70:SQ:52:LEU:HG	2.00	0.43
2:CC:59:C:H2'	2:CC:60:A:C8	2.53	0.43
3:CD:290:ILE:HG22	3:CD:293:LYS:HE2	1.99	0.43
4:L5:1339:U:H2'	4:L5:1340:C:C6	2.52	0.43
4:L5:2413:U:H2'	4:L5:2414:G:H8	1.83	0.43
4:L5:5002:U:H2'	4:L5:5003:U:C6	2.54	0.43
6:L8:6:C:H2'	6:L8:7:U:C6	2.54	0.43
12:LF:157:ARG:HE	12:LF:248:ASN:HA	1.82	0.43
13:LG:230:TYR:HA	13:LG:233:ILE:HG12	1.99	0.43
14:LH:117:PHE:HB3	14:LH:124:ARG:HH21	1.83	0.43
15:LI:206:LEU:HD12	15:LI:209:TRP:HB3	2.00	0.43
16:LJ:21:CYS:HA	16:LJ:72:CYS:O	2.17	0.43
20:LO:23:VAL:O	20:LO:27:VAL:HB	2.18	0.43
29:LX:96:LEU:HD12	29:LX:140:LEU:HD21	2.01	0.43
42:Lk:11:PHE:HA	42:Lk:14:THR:HG22	2.00	0.43
51:NB:38:THR:HA	51:NB:42:LYS:HD3	2.00	0.43
51:NB:74:PHE:HB3	51:NB:77:PRO:HB3	2.00	0.43
52:NM:282:THR:HG23	52:NM:495:LEU:HD12	2.01	0.43
53:S2:1237:C:H5'	69:SP:131:PRO:HA	2.00	0.43
53:S2:1706:G:H2'	53:S2:1707:U:H6	1.83	0.43
53:S2:1713:C:H2'	53:S2:1714:U:C6	2.53	0.43
53:S2:1777:G:H2'	53:S2:1778:C:C6	2.53	0.43
57:SD:197:LYS:H	57:SD:197:LYS:HD3	1.83	0.43
59:SF:33:ILE:HA	59:SF:36:GLN:HB2	2.00	0.43
77:SX:17:ARG:HG3	77:SX:21:LYS:NZ	2.34	0.43
86:Sg:176:VAL:HB	86:Sg:186:THR:HB	2.00	0.43
1:CB:575:PRO:HG2	1:CB:794:PHE:CZ	2.53	0.43
4:L5:513:U:H3'	4:L5:514:U:H4'	1.99	0.43
4:L5:1751:A:H2'	4:L5:1752:G:H8	1.83	0.43
4:L5:1913:C:H5''	20:LO:25:LYS:HD3	2.00	0.43
4:L5:2777:G:H5''	4:L5:2778:G:H5'	2.00	0.43
4:L5:4457:U:H1'	8:LB:252:ALA:HB3	2.00	0.43
4:L5:4537:C:H2'	4:L5:4538:G:H8	1.84	0.43
11:LE:88:VAL:HA	11:LE:89:LEU:HA	1.70	0.43
15:LI:53:VAL:HA	15:LI:134:VAL:HA	2.01	0.43
20:LO:188:LYS:HB2	20:LO:188:LYS:HE3	1.90	0.43
35:Ld:47:LYS:HE2	35:Ld:47:LYS:HB3	1.77	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
56:SC:278:THR:HA	56:SC:279:ARG:HA	1.65	0.43
4:L5:467:U:H2'	4:L5:468:U:H4'	2.00	0.43
4:L5:1281:G:N1	11:LE:128:HIS:HB2	2.33	0.43
4:L5:1468:C:H2'	4:L5:1469:C:C6	2.53	0.43
4:L5:3723:A:H2'	4:L5:3724:A:C8	2.53	0.43
4:L5:3771:C:H2'	4:L5:3772:U:C6	2.54	0.43
4:L5:3880:G:H2'	4:L5:3881:G:C8	2.53	0.43
10:LD:64:ILE:HG13	10:LD:109:LEU:HD22	2.00	0.43
16:LJ:163:MET:O	16:LJ:167:GLN:HG2	2.18	0.43
17:LL:83:VAL:HB	17:LL:114:VAL:HG11	2.00	0.43
25:LT:27:LEU:O	25:LT:31:MET:HG2	2.18	0.43
26:LU:54:GLY:C	26:LU:56:LEU:H	2.26	0.43
53:S2:388:U:H2'	53:S2:389:A:C8	2.52	0.43
53:S2:454:U:H2'	53:S2:455:A:C8	2.54	0.43
53:S2:805:U:H2'	53:S2:806:U:H6	1.84	0.43
53:S2:1004:U:H2'	53:S2:1005:G:C8	2.53	0.43
53:S2:1655:C:H2'	53:S2:1656:G:H8	1.84	0.43
55:SB:217:MET:HE1	55:SB:220:LYS:HZ3	1.83	0.43
65:SL:101:ARG:HB2	77:SX:7:LEU:O	2.18	0.43
66:SM:89:VAL:HG21	66:SM:109:VAL:HG21	2.01	0.43
73:ST:9:VAL:HG21	73:ST:138:VAL:HG13	2.00	0.43
1:CB:763:LEU:HD12	1:CB:763:LEU:HA	1.89	0.43
4:L5:300:A:H2'	4:L5:301:G:H8	1.83	0.43
4:L5:746:A:H2'	4:L5:747:A:C8	2.54	0.43
4:L5:1179:U:H3'	4:L5:1180:C:H5''	2.00	0.43
4:L5:1338:G:H4'	4:L5:1339:U:H6	1.82	0.43
4:L5:4405:G:H5'	15:LI:8:CYS:SG	2.58	0.43
6:L8:137:A:H2'	6:L8:138:C:C6	2.54	0.43
10:LD:53:VAL:HB	10:LD:159:VAL:HG12	1.99	0.43
19:LN:84:PRO:HA	19:LN:87:HIS:CG	2.53	0.43
39:Lh:26:VAL:O	39:Lh:30:GLN:HG3	2.19	0.43
46:Lo:61:LYS:HD3	46:Lo:61:LYS:HA	1.85	0.43
49:Lz:47:LYS:HE3	49:Lz:194:LEU:HD11	2.01	0.43
52:Nm:245:ILE:HB	52:Nm:281:TYR:HB3	1.99	0.43
53:S2:878:G:C6	53:S2:908:A:N1	2.86	0.43
53:S2:1213:C:H2'	53:S2:1214:A:C8	2.53	0.43
53:S2:1468:C:H2'	53:S2:1469:A:H8	1.83	0.43
60:SG:164:LYS:HB2	60:SG:167:LYS:HE2	2.00	0.43
64:SK:44:HIS:HA	64:SK:47:LYS:HE2	2.01	0.43
65:SL:80:MET:HE3	65:SL:80:MET:HB3	1.66	0.43
80:Sa:47:ALA:HA	80:Sa:50:VAL:HG23	2.00	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:CB:598:LYS:HE2	1:CB:598:LYS:HB2	1.87	0.43
4:L5:490:C:H2'	4:L5:491:G:C8	2.53	0.43
4:L5:4611:A:H2'	4:L5:4612:C:H6	1.83	0.43
15:LI:170:LYS:HA	15:LI:177:ASN:HA	1.99	0.43
17:LL:48:PRO:HB2	39:Lh:120:ALA:HB2	2.00	0.43
23:LR:78:ILE:HD13	23:LR:78:ILE:HA	1.88	0.43
27:LV:91:LYS:HD3	27:LV:91:LYS:HA	1.87	0.43
35:Ld:36:VAL:HG21	35:Ld:44:ARG:HG2	2.00	0.43
37:Lf:28:LEU:HD22	37:Lf:101:ILE:HG13	2.00	0.43
42:Lk:34:PHE:O	42:Lk:44:THR:HA	2.19	0.43
51:NB:43:LYS:HD3	51:NB:43:LYS:HA	1.80	0.43
53:S2:1562:C:H2'	53:S2:1563:G:C8	2.54	0.43
53:S2:1673:U:H5''	70:SQ:78:VAL:HG12	2.01	0.43
54:SA:198:MET:HG2	54:SA:200:ASP:HB2	2.00	0.43
58:SE:122:LYS:HE2	58:SE:162:ILE:HD11	1.99	0.43
61:SH:49:LYS:HB3	61:SH:49:LYS:HE3	1.70	0.43
62:SI:5:ARG:HG3	62:SI:28:GLU:HG3	1.99	0.43
63:SJ:94:LEU:HA	63:SJ:97:ILE:HB	2.01	0.43
70:SQ:96:TYR:HA	70:SQ:100:VAL:HG22	2.01	0.43
75:SV:74:LYS:HZ2	75:SV:74:LYS:HG3	1.66	0.43
4:L5:1992:U:H4'	4:L5:1993:C:H5''	2.00	0.43
4:L5:2029:A:H2'	4:L5:2030:A:C8	2.54	0.43
4:L5:2303:C:H5''	36:Le:104:SER:HB3	2.01	0.43
4:L5:4186:A:H2'	4:L5:4187:G:C8	2.54	0.43
4:L5:4473:A:H5''	44:Lm:95:ILE:HD12	2.01	0.43
6:L8:141:C:H2'	6:L8:142:U:C6	2.54	0.43
14:LH:14:GLU:H	14:LH:14:GLU:CD	2.26	0.43
16:LJ:86:GLY:HA3	16:LJ:130:PHE:CE1	2.54	0.43
19:LN:146:PRO:HA	19:LN:149:GLN:HG2	2.01	0.43
22:LQ:159:PRO:HA	22:LQ:160:HIS:HA	1.61	0.43
29:LX:140:LEU:HD11	29:LX:149:VAL:HG11	2.00	0.43
38:Lg:22:LEU:HA	38:Lg:22:LEU:HD13	1.85	0.43
39:Lh:52:LYS:HA	39:Lh:52:LYS:HD3	1.68	0.43
53:S2:112:U:H2'	53:S2:115:U:H5	1.83	0.43
53:S2:1049:A:N7	53:S2:1069:U:C2	2.87	0.43
55:SB:184:VAL:HG13	55:SB:187:LYS:HE3	2.01	0.43
57:SD:173:ARG:HH22	57:SD:184:ILE:HD12	1.84	0.43
59:SF:48:TYR:HB3	59:SF:49:LEU:HD12	2.00	0.43
59:SF:192:LYS:HE3	59:SF:192:LYS:HB2	1.83	0.43
66:SM:31:LEU:HD11	66:SM:111:VAL:HA	2.01	0.43
85:Sf:92:LYS:HD3	85:Sf:92:LYS:HA	1.88	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L5:86:U:H2'	4:L5:87:A:H8	1.83	0.43
4:L5:2455:G:H1'	4:L5:2471:G:C5	2.54	0.43
4:L5:2705:G:H1	4:L5:2710:C:H5	1.66	0.43
4:L5:3848:U:H2'	4:L5:3849:A:C8	2.53	0.43
4:L5:3868:G:H22	4:L5:3900:G:H1'	1.84	0.43
4:L5:4378:A:O2'	4:L5:4379:A:H2'	2.19	0.43
9:LC:236:ASN:HB3	9:LC:239:LYS:HG3	2.01	0.43
11:LE:115:TYR:HD1	48:Lr:115:SER:HB2	1.82	0.43
16:LJ:178:LYS:HE2	69:SP:70:MET:HE1	2.01	0.43
24:LS:96:GLU:HG2	24:LS:139:ARG:HG2	2.01	0.43
25:LT:53:PRO:HB3	25:LT:91:VAL:HG11	2.00	0.43
31:LZ:117:LYS:HD3	31:LZ:117:LYS:HA	1.80	0.43
35:Ld:19:GLU:HB3	35:Ld:102:LEU:HD11	2.00	0.43
50:NA:95:THR:HG22	50:NA:105:VAL:HG12	2.01	0.43
53:S2:186:C:N4	53:S2:214:U:N3	2.42	0.43
53:S2:678:U:H2'	53:S2:679:A:H8	1.84	0.43
60:SG:32:MET:HE3	60:SG:33:ALA:N	2.34	0.43
63:SJ:37:LEU:HD13	63:SJ:42:GLU:HB3	2.01	0.43
65:SL:133:PRO:HB3	65:SL:139:ARG:NH1	2.34	0.43
71:SR:31:ASN:HA	71:SR:34:VAL:HG22	2.01	0.43
4:L5:1382:G:H2'	4:L5:1383:G:H8	1.84	0.43
4:L5:1631:A:N7	7:LA:199:VAL:HG21	2.34	0.43
4:L5:4188:U:H2'	4:L5:4189:U:C6	2.53	0.43
11:LE:176:THR:HB	11:LE:186:LEU:HD23	1.99	0.43
12:LF:71:MET:HA	12:LF:74:MET:HE2	1.99	0.43
13:LG:154:LEU:HD21	13:LG:222:ILE:HD13	2.01	0.43
15:LI:48:LEU:O	15:LI:139:ARG:HA	2.19	0.43
21:LP:13:LYS:HE2	21:LP:13:LYS:HB3	1.80	0.43
23:LR:172:ARG:O	23:LR:176:ARG:HG2	2.18	0.43
53:S2:381:C:C5	62:SI:49:ARG:HD2	2.54	0.43
53:S2:609:U:H2'	53:S2:610:G:C8	2.54	0.43
53:S2:639:C:H5''	84:Se:41:ARG:HH21	1.83	0.43
53:S2:1410:C:H2'	53:S2:1411:G:C8	2.54	0.43
53:S2:1842:C:H2'	53:S2:1843:G:C8	2.54	0.43
53:S2:1854:U:H2'	53:S2:1855:G:C8	2.53	0.43
58:SE:7:LYS:HD2	58:SE:7:LYS:HA	1.70	0.43
59:SF:191:LYS:HD3	59:SF:191:LYS:HA	1.68	0.43
62:SI:145:ILE:H	62:SI:145:ILE:HG13	1.67	0.43
77:SX:115:ILE:HB	77:SX:118:VAL:HG13	2.00	0.43
78:SY:39:GLU:HA	78:SY:42:GLU:HG2	2.00	0.43
83:Sd:38:MET:HE1	83:Sd:43:PHE:HA	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
86:Sg:12:LYS:HD2	86:Sg:12:LYS:HA	1.71	0.43
1:CB:24:VAL:HG22	1:CB:126:LEU:HD12	2.01	0.42
3:CD:219:GLY:H	57:SD:116:ARG:HG3	1.84	0.42
4:L5:4991:U:H2'	4:L5:4992:G:C8	2.54	0.42
7:LA:119:LYS:HA	7:LA:119:LYS:HD2	1.90	0.42
11:LE:221:LYS:HE2	11:LE:221:LYS:HB2	1.81	0.42
14:LH:59:LYS:HD2	14:LH:59:LYS:HA	1.68	0.42
22:LQ:79:THR:HG23	22:LQ:99:LYS:HG3	2.01	0.42
23:LR:172:ARG:HA	23:LR:175:GLU:HG3	2.01	0.42
31:LZ:59:LYS:H	31:LZ:59:LYS:HG2	1.69	0.42
31:LZ:100:VAL:HG23	31:LZ:106:LEU:HG	2.01	0.42
49:Lz:36:ILE:HG23	49:Lz:190:LEU:HD11	1.99	0.42
53:S2:1143:A:H5'	56:SC:190:SER:HB3	2.01	0.42
53:S2:1513:C:H2'	53:S2:1514:G:H8	1.84	0.42
56:SC:152:ARG:H	56:SC:152:ARG:NE	2.17	0.42
60:SG:221:LYS:HE3	60:SG:221:LYS:HB3	1.86	0.42
64:SK:11:ILE:HD12	64:SK:11:ILE:HA	1.90	0.42
66:SM:18:LEU:HA	66:SM:21:VAL:HG22	2.01	0.42
73:ST:102:ARG:HD3	73:ST:102:ARG:HA	1.78	0.42
77:SX:68:LYS:HE3	84:Se:9:ALA:HB2	2.01	0.42
2:CC:59:C:H2'	2:CC:60:A:H8	1.83	0.42
4:L5:1726:U:H5'	12:LF:135:ILE:HD11	2.01	0.42
4:L5:2884:G:H2'	4:L5:2885:A:C8	2.54	0.42
4:L5:3855:C:H2'	4:L5:3856:A:H8	1.83	0.42
6:L8:8:U:H2'	6:L8:9:A:C8	2.54	0.42
6:L8:67:U:H2'	6:L8:68:G:C8	2.54	0.42
20:LO:175:MET:HE2	20:LO:175:MET:HB2	1.68	0.42
23:LR:152:LYS:HE2	23:LR:152:LYS:HB2	1.85	0.42
26:LU:22:THR:O	26:LU:109:SER:HA	2.19	0.42
29:LX:65:ALA:HB2	39:Lh:69:LEU:HD11	2.01	0.42
31:LZ:87:VAL:HG12	31:LZ:127:ASN:HD22	1.84	0.42
39:Lh:87:LYS:HE3	39:Lh:87:LYS:HB3	1.87	0.42
40:Li:43:MET:O	40:Li:47:VAL:HG13	2.19	0.42
49:Lz:54:ARG:HH22	49:Lz:156:LYS:HG3	1.85	0.42
50:NA:93:ARG:HE	51:NB:65:PHE:HZ	1.66	0.42
53:S2:1112:U:O2	53:S2:1121:G:O6	2.37	0.42
53:S2:1347:U:H2'	53:S2:1348:G:N3	2.34	0.42
55:SB:67:PHE:CE1	68:SO:48:SER:HB3	2.54	0.42
55:SB:112:SER:HB3	80:Sa:68:TYR:CZ	2.53	0.42
58:SE:30:ARG:HA	58:SE:30:ARG:HD2	1.77	0.42
63:SJ:80:ARG:HE	63:SJ:84:ILE:HG12	1.83	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:SL:30:LYS:HA	65:SL:30:LYS:HD2	1.76	0.42
67:SN:91:LEU:HD21	67:SN:121:ARG:HD2	2.01	0.42
73:ST:130:ASP:HA	73:ST:133:ARG:HB2	2.01	0.42
74:SU:80:PHE:HB3	83:Sd:52:PHE:HB3	2.01	0.42
83:Sd:31:ILE:HA	83:Sd:33:LYS:HZ3	1.83	0.42
1:CB:820:LEU:HD23	1:CB:821:PRO:HD2	2.00	0.42
3:CD:284:LEU:HA	3:CD:284:LEU:HD12	1.90	0.42
4:L5:710:G:H2'	4:L5:711:A:H8	1.83	0.42
4:L5:1290:G:H2'	4:L5:1291:G:H8	1.83	0.42
4:L5:4525:C:H5''	8:LB:245:HIS:HB3	2.01	0.42
6:L8:153:C:H2'	6:L8:154:G:H8	1.84	0.42
12:LF:77:LYS:HE3	12:LF:77:LYS:HB2	1.89	0.42
39:Lh:57:VAL:O	39:Lh:61:ILE:HG23	2.19	0.42
47:Lp:61:MET:HE3	47:Lp:61:MET:HB3	1.78	0.42
49:Lz:12:GLU:HG2	49:Lz:216:LEU:HD12	2.00	0.42
52:NM:108:THR:HG23	52:NM:111:GLU:H	1.85	0.42
53:S2:855:G:H4'	65:SL:71:ARG:HH12	1.84	0.42
53:S2:1447:G:H2'	53:S2:1448:A:H8	1.82	0.42
53:S2:1468:C:H2'	53:S2:1469:A:C8	2.53	0.42
54:SA:161:ILE:HG12	54:SA:174:MET:HE2	2.00	0.42
56:SC:130:ILE:HG12	56:SC:159:LYS:HG2	2.00	0.42
57:SD:29:LEU:HB3	57:SD:34:TYR:HB2	2.01	0.42
67:SN:115:LEU:HD12	67:SN:118:ILE:HD11	2.00	0.42
68:SO:75:MET:H	68:SO:75:MET:HG2	1.72	0.42
75:SV:1:MET:HE3	75:SV:1:MET:HB3	1.82	0.42
85:Sf:89:LYS:HD2	85:Sf:91:ASN:H	1.84	0.42
86:Sg:40:ILE:HB	86:Sg:59:LEU:HB2	1.99	0.42
1:CB:851:LEU:HD11	1:CB:855:LEU:HD12	2.01	0.42
4:L5:68:U:H2'	4:L5:69:A:O4'	2.19	0.42
4:L5:2730:U:H2'	4:L5:2731:C:C6	2.54	0.42
4:L5:4524:G:N3	8:LB:252:ALA:HB1	2.34	0.42
10:LD:33:ARG:HH11	25:LT:27:LEU:HD23	1.84	0.42
34:Lc:47:ILE:HD13	34:Lc:72:HIS:HB3	2.01	0.42
36:Le:35:TRP:CZ2	36:Le:56:PRO:HD2	2.54	0.42
53:S2:106:C:H2'	53:S2:107:A:C8	2.53	0.42
56:SC:152:ARG:H	56:SC:152:ARG:HE	1.66	0.42
56:SC:162:ILE:HD12	56:SC:162:ILE:HA	1.94	0.42
61:SH:95:ILE:HD12	61:SH:96:ALA:H	1.85	0.42
78:SY:7:ILE:HG23	78:SY:27:VAL:HG12	2.00	0.42
82:Sc:26:GLN:H	82:Sc:26:GLN:HG2	1.74	0.42
84:Se:53:LYS:HE3	84:Se:57:ALA:HA	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:CB:744:ILE:HG13	1:CB:789:PRO:HA	2.02	0.42
4:L5:433:A:C2	4:L5:3867:A:H4'	2.54	0.42
4:L5:441:G:H2'	4:L5:442:G:C8	2.55	0.42
4:L5:441:G:H2'	4:L5:442:G:H8	1.84	0.42
4:L5:1603:C:H2'	4:L5:1604:G:H8	1.84	0.42
4:L5:3861:A:H2'	4:L5:3862:A:H8	1.85	0.42
4:L5:3923:A:H2'	4:L5:3924:C:C6	2.54	0.42
4:L5:4515:G:C8	8:LB:3:HIS:HB2	2.53	0.42
7:LA:103:PRO:HA	7:LA:163:ARG:HA	2.01	0.42
8:LB:207:VAL:HA	8:LB:210:VAL:HG12	2.01	0.42
18:LM:63:LYS:HB2	18:LM:63:LYS:HE2	1.88	0.42
39:Lh:87:LYS:HG3	39:Lh:91:MET:HE2	2.02	0.42
52:NM:152:LEU:HD13	52:NM:157:THR:HA	2.00	0.42
52:NM:377:PRO:HA	52:NM:382:ILE:HG23	2.02	0.42
53:S2:747:U:O4	53:S2:796:G:O6	2.37	0.42
53:S2:1221:G:H2'	53:S2:1222:G:C8	2.54	0.42
53:S2:1628:C:H2'	53:S2:1629:C:C6	2.54	0.42
53:S2:1840:U:H2'	53:S2:1841:C:O4'	2.20	0.42
53:S2:1845:A:H2'	53:S2:1846:G:C8	2.54	0.42
55:SB:158:HIS:O	55:SB:162:ARG:HG3	2.20	0.42
62:SI:157:LYS:HB3	65:SL:23:VAL:HG12	2.02	0.42
73:ST:122:LYS:HE2	73:ST:122:LYS:HB2	1.75	0.42
79:SZ:73:VAL:HG11	79:SZ:88:LEU:HD11	2.01	0.42
79:SZ:96:LEU:HA	79:SZ:112:ASN:HD21	1.84	0.42
1:CB:654:PRO:HG3	1:CB:687:THR:HG23	2.02	0.42
1:CB:730:TYR:HB3	1:CB:854:PHE:CE1	2.54	0.42
2:CC:13:G:N2	2:CC:22:A:H62	2.11	0.42
4:L5:325:U:H2'	4:L5:326:C:C6	2.55	0.42
4:L5:1762:C:H5''	4:L5:1764:G:H22	1.84	0.42
4:L5:3911:C:H2'	4:L5:3912:U:C6	2.54	0.42
4:L5:3917:A:H2'	4:L5:3918:G:C8	2.53	0.42
4:L5:4577:U:H2'	4:L5:4578:G:C8	2.54	0.42
26:LU:100:LEU:HD23	26:LU:100:LEU:HA	1.89	0.42
30:LY:116:LYS:O	30:LY:120:GLU:HG3	2.19	0.42
38:Lg:88:ARG:HA	38:Lg:91:ILE:HD12	2.02	0.42
38:Lg:104:VAL:HA	38:Lg:107:LEU:HG	2.01	0.42
39:Lh:31:LEU:HB3	39:Lh:47:ILE:HG12	2.02	0.42
53:S2:933:G:H1'	53:S2:1001:A:O4'	2.18	0.42
53:S2:1779:G:H2'	53:S2:1780:G:H8	1.85	0.42
54:SA:55:TRP:HA	54:SA:58:LEU:HD12	2.01	0.42
55:SB:185:VAL:HA	55:SB:188:LEU:HB2	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:SF:69:VAL:HA	59:SF:72:LEU:HG	2.02	0.42
66:SM:52:LEU:HD21	66:SM:65:VAL:HG21	2.02	0.42
70:SQ:85:ARG:HA	70:SQ:88:ILE:HG12	2.01	0.42
74:SU:30:LYS:HD3	74:SU:30:LYS:HA	1.70	0.42
74:SU:61:LEU:HD22	83:Sd:34:TYR:HE2	1.84	0.42
77:SX:98:ASP:HB3	77:SX:126:ALA:HB2	2.01	0.42
78:SY:100:LYS:HD2	78:SY:100:LYS:HA	1.82	0.42
79:SZ:91:LEU:HD22	79:SZ:97:ILE:HB	2.01	0.42
81:Sb:36:LYS:HZ1	81:Sb:40:CYS:C	2.28	0.42
86:Sg:173:LEU:HD11	86:Sg:175:LYS:HG2	2.01	0.42
1:CB:593:SER:O	1:CB:601:ARG:HA	2.19	0.42
1:CB:609:PHE:CZ	1:CB:661:ILE:HG12	2.55	0.42
4:L5:28:C:OP1	19:LN:190:ALA:HB2	2.19	0.42
4:L5:1346:C:H2'	4:L5:1347:G:H8	1.84	0.42
4:L5:2538:U:H2'	4:L5:2539:C:C6	2.55	0.42
6:L8:141:C:H5''	19:LN:60:VAL:HG11	2.02	0.42
8:LB:288:GLY:HA3	8:LB:330:PHE:CE1	2.55	0.42
9:LC:138:MET:SD	9:LC:144:ILE:HG13	2.60	0.42
11:LE:177:GLY:HA3	11:LE:184:VAL:HB	2.02	0.42
14:LH:86:LEU:HD23	14:LH:186:THR:HG21	2.02	0.42
20:LO:158:GLU:O	20:LO:162:GLU:HG2	2.20	0.42
38:Lg:41:ALA:HB3	38:Lg:52:ARG:HB3	2.02	0.42
38:Lg:70:THR:HA	38:Lg:73:HIS:CD2	2.55	0.42
53:S2:28:U:H2'	53:S2:29:G:C8	2.55	0.42
53:S2:373:G:H4'	65:SL:85:THR:HG21	2.02	0.42
53:S2:1093:A:H2'	53:S2:1094:C:C6	2.55	0.42
53:S2:1199:A:H2'	53:S2:1200:A:C8	2.55	0.42
53:S2:1380:C:H2'	53:S2:1381:G:C8	2.55	0.42
54:SA:40:LYS:NZ	54:SA:41:ARG:H	2.18	0.42
54:SA:42:LYS:HB3	54:SA:46:ILE:H	1.84	0.42
58:SE:9:LEU:HB2	58:SE:30:ARG:HH11	1.85	0.42
59:SF:102:LEU:HD22	79:SZ:110:THR:HG22	2.02	0.42
62:SI:201:LYS:HA	62:SI:201:LYS:HD2	1.87	0.42
63:SJ:33:GLY:HA3	84:Se:38:TYR:CG	2.55	0.42
65:SL:107:LYS:HD3	65:SL:107:LYS:HA	1.73	0.42
70:SQ:86:GLN:HG2	70:SQ:90:LYS:HE2	2.01	0.42
74:SU:61:LEU:HD12	74:SU:82:MET:HB3	2.01	0.42
74:SU:94:PRO:HB2	74:SU:97:ILE:HG12	2.00	0.42
86:Sg:230:LEU:HD11	86:Sg:259:TRP:CZ3	2.54	0.42
4:L5:1086:C:H2'	4:L5:1087:A:H8	1.85	0.42
4:L5:1468:C:H2'	4:L5:1469:C:H6	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L5:4260:U:H2'	4:L5:4261:C:H6	1.84	0.42
4:L5:4750:G:H2'	4:L5:4751:G:H8	1.85	0.42
6:L8:75:G:C8	43:L1:30:LYS:HD3	2.55	0.42
15:LI:47:PRO:HB3	15:LI:171:TRP:CZ2	2.54	0.42
17:LL:177:LYS:H	17:LL:177:LYS:HG2	1.71	0.42
18:LM:97:ALA:HA	18:LM:100:ARG:HG2	2.02	0.42
19:LN:135:ILE:HG21	19:LN:135:ILE:HD13	1.83	0.42
52:NM:119:PHE:HB2	52:NM:258:ARG:HH22	1.85	0.42
52:NM:353:LEU:HB3	52:NM:397:PHE:HZ	1.84	0.42
53:S2:71:G:H2'	53:S2:72:C:H4'	2.02	0.42
53:S2:186:C:N3	53:S2:214:U:O2	2.53	0.42
56:SC:165:VAL:HG21	56:SC:217:ALA:HB1	2.01	0.42
68:SO:14:VAL:H	68:SO:15:ILE:HA	1.85	0.42
68:SO:33:ILE:HB	68:SO:97:LEU:HD22	2.01	0.42
3:CD:220:THR:HG22	3:CD:222:LYS:H	1.84	0.42
4:L5:1867:A:H2'	4:L5:1868:A:C8	2.55	0.42
4:L5:2102:G:H1'	4:L5:2103:G:C8	2.55	0.42
4:L5:2396:A:H5''	4:L5:2806:A:C6	2.55	0.42
4:L5:2558:C:H2'	4:L5:2559:G:C8	2.55	0.42
5:L7:15:C:H2'	5:L7:16:A:C8	2.55	0.42
8:LB:144:LYS:HE2	8:LB:144:LYS:HB2	1.73	0.42
10:LD:164:LYS:HD2	10:LD:164:LYS:HA	1.89	0.42
11:LE:118:THR:HG21	36:Le:92:ASN:OD1	2.19	0.42
11:LE:158:ARG:HD3	37:Lf:5:LEU:HD11	2.00	0.42
12:LF:90:ALA:HB2	12:LF:125:LEU:HD11	2.02	0.42
45:Ln:20:MET:HE2	45:Ln:20:MET:HB2	1.80	0.42
49:Lz:105:LYS:HE2	49:Lz:105:LYS:HB2	1.77	0.42
49:Lz:195:LYS:HD2	49:Lz:195:LYS:HA	1.82	0.42
53:S2:382:C:H2'	53:S2:383:G:C8	2.55	0.42
53:S2:550:C:H2'	53:S2:551:U:C6	2.55	0.42
53:S2:1128:C:H2'	53:S2:1129:G:H8	1.84	0.42
53:S2:1373:C:H2'	53:S2:1374:C:C6	2.54	0.42
53:S2:1587:G:H5''	73:ST:77:LYS:HE3	2.02	0.42
53:S2:1756:C:C2	53:S2:1776:G:N1	2.88	0.42
69:SP:28:MET:HE3	69:SP:33:LEU:HG	2.02	0.42
78:SY:99:LYS:HB3	78:SY:99:LYS:HE2	1.82	0.42
1:CB:144:ARG:HD3	1:CB:192:TYR:CE2	2.55	0.42
1:CB:592:LEU:H	1:CB:855:LEU:HD22	1.85	0.42
1:CB:722:ILE:HG13	1:CB:723:PRO:HD3	2.01	0.42
4:L5:905:C:H2'	4:L5:906:C:C6	2.55	0.42
4:L5:1195:G:H2'	4:L5:1196:G:C8	2.55	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L5:2884:G:H2'	4:L5:2885:A:H8	1.85	0.42
4:L5:4896:G:H2'	4:L5:4897:G:C8	2.54	0.42
4:L5:4897:G:H2'	4:L5:4898:G:C8	2.55	0.42
4:L5:4993:G:H22	4:L5:5058:A:H2	1.68	0.42
5:L7:55:A:H4'	16:LJ:155:HIS:HB2	2.02	0.42
9:LC:105:THR:HG22	9:LC:109:ARG:HH22	1.84	0.42
17:LL:59:VAL:HG21	17:LL:73:GLY:HA3	2.01	0.42
20:LO:20:ALA:C	20:LO:87:MET:HE1	2.44	0.42
22:LQ:28:LEU:HD22	22:LQ:123:PHE:HB2	2.00	0.42
24:LS:43:ARG:HA	24:LS:43:ARG:HD2	1.83	0.42
49:Lz:69:GLY:HA3	49:Lz:73:HIS:CE1	2.55	0.42
51:NB:17:GLN:HE21	51:NB:17:GLN:HB2	1.71	0.42
51:NB:48:LEU:HD13	51:NB:80:GLN:HG3	2.01	0.42
53:S2:526:A:H2'	53:S2:527:C:C6	2.55	0.42
53:S2:1402:A:H1'	74:SU:54:VAL:HG13	2.02	0.42
66:SM:18:LEU:HA	66:SM:18:LEU:HD23	1.90	0.42
69:SP:127:LYS:HE3	69:SP:128:HIS:H	1.85	0.42
73:ST:18:LEU:HB2	73:ST:58:ALA:HB1	2.02	0.42
78:SY:62:THR:HA	78:SY:69:THR:HA	2.02	0.42
4:L5:1100:U:O4	4:L5:1194:G:O6	2.38	0.41
4:L5:1738:A:H2'	4:L5:1739:G:C8	2.55	0.41
4:L5:2413:U:H2'	4:L5:2414:G:C8	2.55	0.41
4:L5:3944:G:H1	4:L5:4069:U:H3	1.68	0.41
4:L5:3972:A:H1'	4:L5:4050:A:H61	1.86	0.41
13:LG:214:ALA:HA	13:LG:217:LYS:HG2	2.02	0.41
21:LP:94:MET:HE3	21:LP:94:MET:HB2	1.90	0.41
21:LP:137:ASN:HD22	21:LP:137:ASN:HA	1.64	0.41
22:LQ:97:LYS:HE3	22:LQ:97:LYS:HB2	1.75	0.41
52:NM:310:LYS:HA	52:NM:310:LYS:HD3	1.92	0.41
53:S2:291:G:H2'	53:S2:292:A:C8	2.55	0.41
60:SG:116:LYS:HE2	60:SG:116:LYS:HB2	1.88	0.41
67:SN:84:LEU:HD12	67:SN:85:PRO:HD2	2.02	0.41
78:SY:8:ARG:HA	78:SY:8:ARG:HD3	1.89	0.41
1:CB:45:ILE:HD13	1:CB:46:ILE:HD12	2.01	0.41
4:L5:29:G:H5''	19:LN:172:ARG:HG2	2.01	0.41
4:L5:1252:C:H2'	4:L5:1254:A:H62	1.84	0.41
4:L5:1278:C:H2'	4:L5:1279:A:O4'	2.20	0.41
4:L5:1628:C:N4	7:LA:3:ARG:HD2	2.34	0.41
4:L5:2343:G:C2	9:LC:101:MET:HG3	2.55	0.41
4:L5:4680:G:H2'	4:L5:4681:A:C8	2.56	0.41
4:L5:4736:C:H2'	4:L5:4737:G:H8	1.84	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:LD:155:THR:HG22	10:LD:179:ARG:HA	2.01	0.41
10:LD:228:LYS:HB3	10:LD:228:LYS:HE2	1.76	0.41
22:LQ:173:LYS:HB2	22:LQ:173:LYS:HE3	1.87	0.41
31:LZ:23:ALA:HA	31:LZ:45:GLY:HA2	2.02	0.41
36:Le:90:MET:HE2	36:Le:90:MET:HA	2.00	0.41
49:Lz:67:VAL:HA	49:Lz:68:LEU:HA	1.55	0.41
49:Lz:116:LEU:O	49:Lz:120:ILE:HG12	2.20	0.41
53:S2:551:U:H2'	53:S2:552:G:C4	2.55	0.41
54:SA:115:ALA:HB1	54:SA:117:ARG:HH22	1.85	0.41
56:SC:78:LEU:HB2	56:SC:97:PHE:CD2	2.55	0.41
64:SK:35:LEU:HB3	64:SK:38:LYS:NZ	2.35	0.41
70:SQ:11:GLN:HA	70:SQ:23:ALA:O	2.19	0.41
83:Sd:31:ILE:HA	83:Sd:33:LYS:NZ	2.35	0.41
1:CB:19:ILE:HD12	1:CB:361:PRO:HD2	2.02	0.41
1:CB:504:VAL:HG21	1:CB:810:PRO:HG2	2.02	0.41
4:L5:1346:C:H2'	4:L5:1347:G:C8	2.55	0.41
4:L5:4918:C:H2'	4:L5:4919:G:C8	2.56	0.41
7:LA:186:TYR:HB2	7:LA:196:TRP:CZ3	2.56	0.41
9:LC:80:ARG:H	9:LC:80:ARG:HG2	1.61	0.41
13:LG:185:LYS:HZ2	13:LG:185:LYS:HG2	1.76	0.41
17:LL:129:ARG:HD2	17:LL:129:ARG:HA	1.73	0.41
24:LS:96:GLU:HB2	24:LS:142:VAL:HG21	2.02	0.41
34:Lc:12:GLU:HB3	53:S2:1007:C:OP1	2.19	0.41
53:S2:1051:G:H2'	53:S2:1052:A:C8	2.54	0.41
54:SA:11:LYS:HA	54:SA:11:LYS:HD3	1.87	0.41
54:SA:220:LYS:HD3	54:SA:220:LYS:HA	1.78	0.41
60:SG:39:ASP:HB3	60:SG:46:LYS:HG3	2.03	0.41
63:SJ:29:LEU:HD12	63:SJ:29:LEU:HA	1.87	0.41
63:SJ:115:PHE:CD2	63:SJ:123:ILE:HG22	2.56	0.41
70:SQ:89:SER:HA	70:SQ:92:LEU:HG	2.02	0.41
86:Sg:299:PHE:HD1	86:Sg:309:VAL:HG22	1.86	0.41
4:L5:163:A:H2'	4:L5:164:G:C8	2.56	0.41
4:L5:2326:G:H5''	36:Le:127:ALA:HB1	2.02	0.41
4:L5:3856:A:H5''	21:LP:83:TRP:O	2.19	0.41
4:L5:4064:C:H2'	4:L5:4065:G:H8	1.85	0.41
5:L7:92:C:H2'	5:L7:93:G:C8	2.55	0.41
13:LG:189:ARG:H	13:LG:189:ARG:HG2	1.60	0.41
31:LZ:46:ILE:HD11	31:LZ:49:TYR:CD2	2.55	0.41
33:Lb:91:ARG:HG3	33:Lb:94:ASP:HB2	2.02	0.41
35:Ld:39:LYS:HD3	35:Ld:39:LYS:HA	1.71	0.41
49:Lz:86:ASP:H	49:Lz:89:ALA:HB3	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:Lz:145:VAL:HG23	49:Lz:146:ALA:H	1.86	0.41
50:NA:96:ILE:HB	50:NA:104:PHE:HB2	2.02	0.41
53:S2:662:G:H5'	53:S2:1156:U:C2	2.55	0.41
53:S2:1189:A:H2'	53:S2:1190:A:H8	1.86	0.41
53:S2:1373:C:H2'	53:S2:1374:C:H6	1.86	0.41
53:S2:1649:U:H2'	53:S2:1650:A:H8	1.86	0.41
54:SA:4:ALA:HB2	75:SV:79:VAL:HA	2.03	0.41
57:SD:113:LEU:HD22	57:SD:114:ALA:H	1.85	0.41
59:SF:76:MET:HA	59:SF:155:CYS:SG	2.60	0.41
64:SK:80:ARG:HG2	64:SK:85:LEU:HD23	2.02	0.41
77:SX:90:CYS:SG	77:SX:130:LEU:HD11	2.61	0.41
86:Sg:18:VAL:HG21	86:Sg:307:VAL:HG22	2.02	0.41
1:CB:66:ARG:HB3	1:CB:68:ILE:HG12	2.02	0.41
1:CB:204:MET:HE2	1:CB:204:MET:HA	2.01	0.41
1:CB:813:VAL:HG23	1:CB:814:PHE:H	1.86	0.41
1:CB:832:SER:HA	1:CB:835:VAL:HG12	2.02	0.41
4:L5:256:G:H2'	4:L5:257:C:C6	2.56	0.41
4:L5:2765:A:H2'	4:L5:2766:A:C8	2.55	0.41
4:L5:4710:C:H2'	4:L5:4711:C:C6	2.56	0.41
9:LC:205:ARG:HA	9:LC:205:ARG:HD2	1.82	0.41
11:LE:162:VAL:HG11	11:LE:184:VAL:HG11	2.02	0.41
15:LI:47:PRO:HD2	15:LI:141:LYS:HA	2.03	0.41
15:LI:61:SER:HA	15:LI:126:VAL:HG12	2.03	0.41
19:LN:96:ARG:HH21	19:LN:101:VAL:HG12	1.86	0.41
30:LY:52:ASP:HB2	30:LY:69:LYS:HD2	2.01	0.41
32:La:26:ARG:HB2	32:La:29:PRO:HG3	2.02	0.41
34:Lc:48:LEU:HD21	34:Lc:57:LYS:HA	2.02	0.41
52:NM:254:LEU:HG	52:NM:259:VAL:HG21	2.03	0.41
53:S2:95:G:H22	53:S2:435:A:H2	1.69	0.41
53:S2:1565:C:H2'	53:S2:1566:G:C8	2.56	0.41
53:S2:1651:A:H2'	53:S2:1652:G:H8	1.86	0.41
53:S2:1706:G:H2'	53:S2:1707:U:C6	2.56	0.41
54:SA:17:LYS:HE3	54:SA:17:LYS:HB3	1.94	0.41
59:SF:85:LYS:HB3	59:SF:88:MET:HE3	2.03	0.41
62:SI:175:ILE:HD11	62:SI:177:SER:HB3	2.03	0.41
72:SS:101:ASN:HA	72:SS:104:ASP:HB2	2.03	0.41
1:CB:745:TYR:CE2	1:CB:790:VAL:HG22	2.56	0.41
4:L5:1348:U:H2'	4:L5:1349:G:C8	2.56	0.41
4:L5:2061:U:O2	24:LS:111:ARG:HD2	2.20	0.41
6:L8:36:G:C5	39:Lh:89:ARG:HD3	2.55	0.41
8:LB:238:LYS:HB2	8:LB:238:LYS:HE2	1.79	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:LG:164:ILE:HG12	13:LG:168:VAL:HG13	2.03	0.41
13:LG:184:ILE:HD12	13:LG:184:ILE:HA	1.90	0.41
15:LI:144:ASN:HD22	15:LI:144:ASN:HA	1.67	0.41
17:LL:54:PRO:HG2	17:LL:97:SER:HB3	2.03	0.41
24:LS:157:ARG:HA	24:LS:157:ARG:HD2	1.85	0.41
25:LT:71:ALA:HA	25:LT:92:ARG:HA	2.02	0.41
36:Le:118:LEU:HD23	36:Le:118:LEU:HA	1.95	0.41
53:S2:24:C:H4'	53:S2:415:A:H4'	2.01	0.41
53:S2:1128:C:H2'	53:S2:1129:G:C8	2.55	0.41
68:SO:133:THR:HA	68:SO:134:PRO:HD3	1.94	0.41
1:CB:358:LEU:HA	1:CB:359:PRO:HD3	1.90	0.41
4:L5:1186:U:H2'	4:L5:1187:G:C4	2.55	0.41
4:L5:1695:U:H2'	4:L5:1696:C:C6	2.54	0.41
4:L5:2780:C:H2'	4:L5:2781:G:H8	1.85	0.41
4:L5:2844:A:O2'	4:L5:4631:G:H4'	2.20	0.41
4:L5:3932:U:H2'	4:L5:3933:G:H8	1.86	0.41
4:L5:5004:C:H2'	4:L5:5005:G:O4'	2.20	0.41
10:LD:65:ALA:HB2	10:LD:74:ILE:HG22	2.02	0.41
11:LE:118:THR:H	11:LE:118:THR:HG22	1.56	0.41
18:LM:4:ARG:HE	18:LM:4:ARG:HB2	1.69	0.41
19:LN:15:GLN:HG2	40:Li:52:PRO:HD2	2.02	0.41
21:LP:48:LEU:HD23	21:LP:48:LEU:HA	1.88	0.41
22:LQ:63:LEU:HB2	22:LQ:88:ASP:HA	2.01	0.41
32:La:131:ARG:O	32:La:135:GLU:HG2	2.21	0.41
35:Ld:24:GLU:HB3	35:Ld:120:VAL:HG22	2.03	0.41
48:Lr:107:ARG:O	48:Lr:111:ILE:HG12	2.21	0.41
53:S2:874:G:H2'	53:S2:875:A:C8	2.53	0.41
53:S2:1562:C:H2'	53:S2:1563:G:H8	1.84	0.41
56:SC:253:PRO:HA	56:SC:256:TRP:CG	2.56	0.41
67:SN:95:ALA:HA	67:SN:118:ILE:HD13	2.01	0.41
77:SX:115:ILE:HA	77:SX:116:PRO:HD3	1.93	0.41
79:SZ:47:LEU:HD22	79:SZ:78:LYS:HB3	2.01	0.41
86:Sg:243:PRO:HD3	86:Sg:291:TRP:CG	2.56	0.41
4:L5:162:A:H2'	4:L5:163:A:C8	2.56	0.41
4:L5:2020:U:H2'	4:L5:2021:G:C8	2.50	0.41
4:L5:2892:C:H5	23:LR:74:ARG:HH21	1.69	0.41
4:L5:3933:G:H2'	4:L5:3934:G:H8	1.86	0.41
4:L5:4441:A:H5''	15:LI:114:GLY:HA2	2.03	0.41
4:L5:4742:G:H2'	4:L5:4743:G:C8	2.56	0.41
4:L5:4954:G:H2'	4:L5:4955:A:C8	2.56	0.41
5:L7:92:C:H2'	5:L7:93:G:H8	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:LB:167:GLN:H	8:LB:167:GLN:HG2	1.68	0.41
16:LJ:56:THR:HG22	16:LJ:63:ARG:HA	2.02	0.41
21:LP:122:ALA:HB3	21:LP:143:PRO:HG2	2.02	0.41
30:LY:13:LYS:O	30:LY:17:ARG:HD3	2.21	0.41
39:Lh:99:GLU:HA	39:Lh:102:LEU:HG	2.03	0.41
48:Lr:67:ARG:HA	48:Lr:70:GLN:HE22	1.85	0.41
53:S2:89:C:H2'	53:S2:90:G:H8	1.86	0.41
53:S2:921:G:C6	76:SW:28:ARG:HD3	2.56	0.41
55:SB:90:ASP:HB3	55:SB:97:LEU:HD11	2.03	0.41
58:SE:185:GLY:HA3	58:SE:224:ASN:HD22	1.85	0.41
59:SF:144:LEU:HD11	82:Sc:49:PRO:HG2	2.03	0.41
60:SG:23:LYS:HA	60:SG:23:LYS:HD2	1.68	0.41
66:SM:34:GLY:HA3	66:SM:36:ARG:NH2	2.36	0.41
69:SP:22:LEU:O	69:SP:26:LEU:HD22	2.20	0.41
73:ST:34:VAL:HG13	73:ST:53:PHE:HD2	1.85	0.41
73:ST:43:LYS:HB3	73:ST:43:LYS:HE2	1.86	0.41
85:Sf:141:CYS:HB3	85:Sf:146:LEU:HG	2.01	0.41
1:CB:224:THR:HG23	1:CB:226:LYS:H	1.86	0.41
4:L5:21:G:H1'	6:L8:103:A:N3	2.36	0.41
4:L5:495:C:H2'	4:L5:496:G:C8	2.55	0.41
4:L5:663:G:H2'	4:L5:664:G:C8	2.55	0.41
4:L5:1603:C:H2'	4:L5:1604:G:C8	2.56	0.41
4:L5:1846:G:H2'	4:L5:1847:C:C6	2.55	0.41
4:L5:1942:A:H2'	4:L5:1943:A:H8	1.86	0.41
4:L5:3732:A:H2'	4:L5:3733:A:C8	2.56	0.41
4:L5:4585:U:H2'	4:L5:4586:G:C8	2.55	0.41
4:L5:4638:U:H2'	4:L5:4639:G:N3	2.36	0.41
4:L5:4935:C:H2'	4:L5:4936:G:C8	2.56	0.41
5:L7:15:C:H2'	5:L7:16:A:H8	1.85	0.41
9:LC:165:LYS:HD2	9:LC:165:LYS:HA	1.80	0.41
9:LC:345:ARG:O	9:LC:349:LEU:HG	2.21	0.41
13:LG:222:ILE:HD13	13:LG:222:ILE:HG21	1.70	0.41
15:LI:145:GLU:O	15:LI:149:ILE:HG12	2.21	0.41
17:LL:69:LYS:HE2	17:LL:69:LYS:HB3	1.73	0.41
18:LM:15:VAL:HA	18:LM:55:MET:HA	2.03	0.41
19:LN:124:ASP:HB3	19:LN:127:TYR:H	1.86	0.41
19:LN:200:LEU:HD22	19:LN:204:ARG:HD3	2.02	0.41
28:LW:45:ASN:HD21	28:LW:47:ARG:HB2	1.86	0.41
39:Lh:43:LYS:H	39:Lh:43:LYS:HG2	1.66	0.41
48:Lr:90:LEU:HG	48:Lr:111:ILE:HG23	2.03	0.41
51:NB:80:GLN:HE22	51:NB:82:SER:HB2	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:NM:421:SER:HB3	52:NM:450:PHE:HE1	1.86	0.41
53:S2:215:G:H2'	53:S2:216:C:H6	1.86	0.41
53:S2:529:A:H2'	53:S2:530:U:C6	2.56	0.41
53:S2:878:G:N1	53:S2:908:A:C2	2.69	0.41
53:S2:906:U:H2'	53:S2:907:G:C8	2.56	0.41
53:S2:931:C:H2'	53:S2:932:G:C8	2.56	0.41
53:S2:1633:A:H2'	53:S2:1634:A:C8	2.56	0.41
53:S2:1795:G:H2'	53:S2:1796:G:H8	1.85	0.41
55:SB:180:ASP:O	55:SB:184:VAL:HG23	2.21	0.41
58:SE:168:LYS:HA	58:SE:168:LYS:HD2	1.93	0.41
59:SF:33:ILE:HD13	82:Sc:55:VAL:HG21	2.01	0.41
60:SG:6:SER:O	60:SG:112:VAL:HA	2.21	0.41
61:SH:58:LYS:O	61:SH:90:LYS:HA	2.21	0.41
64:SK:32:HIS:HA	64:SK:33:PRO:HD3	1.93	0.41
64:SK:64:TRP:NE1	83:Sd:23:VAL:HG22	2.35	0.41
70:SQ:58:LEU:HD12	70:SQ:62:ARG:HD3	2.03	0.41
71:SR:33:ARG:HD2	86:Sg:125:ARG:HH11	1.85	0.41
75:SV:78:ILE:O	75:SV:81:LYS:HE3	2.20	0.41
77:SX:124:LYS:H	77:SX:130:LEU:HB2	1.85	0.41
78:SY:111:LYS:HE3	78:SY:111:LYS:HB3	1.68	0.41
82:Sc:59:LEU:HD12	82:Sc:60:GLU:HB2	2.02	0.41
83:Sd:33:LYS:HE2	83:Sd:33:LYS:HB2	1.90	0.41
1:CB:179:GLN:HA	1:CB:182:VAL:HG22	2.02	0.41
1:CB:481:LYS:HD2	1:CB:481:LYS:HA	1.81	0.41
4:L5:1238:A:H5''	11:LE:60:SER:HB3	2.03	0.41
4:L5:2276:A:H2'	4:L5:2277:C:O4'	2.22	0.41
4:L5:2277:C:H5''	22:LQ:3:VAL:HG11	2.02	0.41
4:L5:2302:C:O2'	36:Le:102:ASN:HB3	2.21	0.41
4:L5:2568:C:H2'	4:L5:2569:G:C8	2.56	0.41
4:L5:2870:A:H2'	4:L5:2871:A:C8	2.56	0.41
5:L7:58:A:H2'	5:L7:59:G:C8	2.55	0.41
9:LC:40:VAL:O	9:LC:44:LEU:HB2	2.20	0.41
20:LO:126:VAL:HG13	20:LO:127:VAL:HG13	2.03	0.41
32:La:23:GLY:HA3	32:La:24:LYS:HA	1.66	0.41
34:Lc:27:TYR:HD2	34:Lc:29:LEU:HD13	1.86	0.41
50:NA:110:ASP:O	50:NA:122:VAL:HA	2.20	0.41
53:S2:124:U:H5'	58:SE:148:ARG:NE	2.36	0.41
53:S2:414:A:H2'	53:S2:415:A:C8	2.55	0.41
53:S2:1189:A:H2'	53:S2:1190:A:C8	2.56	0.41
53:S2:1248:U:H2'	53:S2:1249:C:C6	2.56	0.41
53:S2:1846:G:H2'	53:S2:1847:G:C8	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:SA:212:LYS:HA	54:SA:212:LYS:HD3	1.90	0.41
56:SC:168:GLY:HA3	56:SC:181:PRO:HB3	2.03	0.41
60:SG:4:ASN:HB2	60:SG:110:ASN:HA	2.02	0.41
60:SG:201:LYS:HB3	60:SG:201:LYS:HE3	1.89	0.41
60:SG:216:ARG:C	60:SG:218:LYS:H	2.29	0.41
62:SI:74:ARG:HH21	62:SI:112:TRP:CD1	2.39	0.41
70:SQ:58:LEU:HD13	70:SQ:58:LEU:HA	1.94	0.41
71:SR:7:LYS:H	71:SR:7:LYS:HE2	1.85	0.41
71:SR:33:ARG:NE	86:Sg:83:TRP:HE1	2.19	0.41
79:SZ:47:LEU:HB2	79:SZ:78:LYS:HG3	2.02	0.41
1:CB:18:ASN:HA	1:CB:20:ARG:HH12	1.86	0.40
1:CB:19:ILE:HG22	1:CB:99:LEU:HB3	2.03	0.40
4:L5:418:A:C2	6:L8:17:A:H1'	2.55	0.40
4:L5:3604:A:H5'	23:LR:71:ARG:NH2	2.36	0.40
4:L5:4372:U:OP2	46:Lo:61:LYS:HG2	2.21	0.40
9:LC:28:PHE:HA	9:LC:129:ALA:HA	2.02	0.40
13:LG:105:GLU:HB2	13:LG:109:GLU:HG3	2.03	0.40
13:LG:257:LYS:HA	13:LG:257:LYS:HD3	1.74	0.40
23:LR:171:LYS:HD2	23:LR:171:LYS:HA	1.88	0.40
26:LU:20:LYS:H	26:LU:73:THR:HG22	1.85	0.40
29:LX:124:VAL:HG13	29:LX:138:VAL:HG12	2.02	0.40
31:LZ:89:ILE:HA	31:LZ:90:PRO:HD3	1.91	0.40
34:Lc:22:MET:O	34:Lc:23:LYS:HG3	2.22	0.40
49:Lz:73:HIS:HB2	49:Lz:76:GLU:HB3	2.02	0.40
53:S2:1692:U:H2'	53:S2:1693:G:H8	1.87	0.40
53:S2:1756:C:O2	53:S2:1776:G:C6	2.74	0.40
55:SB:105:LEU:HD13	55:SB:105:LEU:HA	1.93	0.40
61:SH:160:LYS:HB3	61:SH:160:LYS:HE2	1.79	0.40
68:SO:62:VAL:HG22	68:SO:64:ALA:H	1.87	0.40
72:SS:114:LEU:HA	72:SS:117:ILE:HD12	2.03	0.40
75:SV:16:LYS:HA	75:SV:23:ILE:HA	2.03	0.40
78:SY:25:ILE:HD11	78:SY:73:GLY:HA3	2.03	0.40
80:Sa:4:LYS:HD3	80:Sa:5:ARG:HH12	1.86	0.40
85:Sf:119:ARG:HB3	85:Sf:132:MET:SD	2.61	0.40
1:CB:453:MET:H	1:CB:453:MET:HE3	1.85	0.40
1:CB:580:ARG:HA	1:CB:580:ARG:HD3	1.83	0.40
4:L5:151:G:H3'	19:LN:49:ARG:HH12	1.86	0.40
4:L5:926:G:H2'	4:L5:927:G:C8	2.56	0.40
4:L5:3599:A:H2'	4:L5:3600:G:C8	2.56	0.40
4:L5:3717:A:H2'	4:L5:3718:A:H8	1.86	0.40
4:L5:3893:C:H2'	4:L5:3894:A:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
4:L5:4591:U:H2'	4:L5:4592:C:C6	2.56	0.40
5:L7:28:C:H1'	5:L7:54:A:H61	1.86	0.40
9:LC:336:ARG:HA	9:LC:339:THR:HG22	2.03	0.40
10:LD:235:MET:HE2	10:LD:235:MET:O	2.20	0.40
13:LG:157:ILE:O	13:LG:183:ILE:HA	2.21	0.40
25:LT:100:LYS:HB2	25:LT:100:LYS:HE2	1.90	0.40
35:Ld:57:MET:HE2	35:Ld:90:ARG:HB2	2.03	0.40
52:Nm:179:ASN:ND2	52:Nm:179:ASN:N	2.70	0.40
52:Nm:456:MET:HB3	52:Nm:457:GLU:H	1.49	0.40
53:S2:110:U:O2	53:S2:351:G:N2	2.48	0.40
53:S2:1279:C:H2'	53:S2:1280:G:C8	2.56	0.40
53:S2:1705:C:H2'	53:S2:1706:G:H8	1.84	0.40
60:SG:55:GLY:H	60:SG:63:MET:HB2	1.85	0.40
66:SM:97:GLU:H	66:SM:97:GLU:HG3	1.74	0.40
70:SQ:33:LYS:HB3	70:SQ:33:LYS:HE2	1.83	0.40
76:SW:104:LEU:HD13	76:SW:125:ILE:HA	2.04	0.40
77:SX:60:LYS:HE3	77:SX:114:ASP:HB3	2.03	0.40
85:Sf:132:MET:HG3	85:Sf:139:HIS:HB3	2.01	0.40
86:Sg:174:VAL:HB	86:Sg:188:HIS:HB2	2.02	0.40
2:CC:23:G:H2'	2:CC:24:G:H8	1.86	0.40
4:L5:40:G:N2	4:L5:4380:A:H62	2.20	0.40
4:L5:281:U:H2'	4:L5:282:C:H6	1.87	0.40
4:L5:651:C:H2'	4:L5:652:G:C8	2.55	0.40
4:L5:727:C:H5''	12:LF:69:ILE:HG21	2.02	0.40
4:L5:1199:G:H2'	4:L5:1200:G:C8	2.56	0.40
4:L5:1338:G:H4'	4:L5:1339:U:C6	2.56	0.40
4:L5:1415:G:H2'	4:L5:1416:G:C8	2.57	0.40
4:L5:1921:C:O3'	24:LS:160:ARG:HG3	2.21	0.40
4:L5:3607:U:H2'	4:L5:3608:A:C8	2.56	0.40
4:L5:3656:A:H2'	4:L5:3657:U:H6	1.87	0.40
4:L5:3770:U:H2'	4:L5:3771:C:C6	2.55	0.40
7:LA:145:LYS:HD3	7:LA:145:LYS:HA	1.88	0.40
7:LA:149:LYS:HG3	7:LA:155:LYS:HE2	2.03	0.40
8:LB:230:GLY:O	8:LB:234:ARG:HB2	2.21	0.40
13:LG:31:LEU:HD12	13:LG:31:LEU:HA	1.90	0.40
14:LH:53:LYS:HA	14:LH:53:LYS:HD2	1.87	0.40
15:LI:19:LYS:HD3	15:LI:26:VAL:HB	2.03	0.40
27:LV:24:ALA:HB3	27:LV:39:ILE:HD12	2.04	0.40
29:LX:72:ASP:O	29:LX:76:ILE:HG12	2.21	0.40
30:LY:2:LYS:HE3	30:LY:2:LYS:HB3	1.64	0.40
41:Lj:67:LEU:HD12	41:Lj:67:LEU:HA	1.84	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
49:Lz:142:GLU:HG3	49:Lz:144:MET:SD	2.61	0.40
53:S2:1540:G:H2'	53:S2:1541:G:H8	1.86	0.40
53:S2:1595:U:H2'	53:S2:1596:U:C6	2.57	0.40
54:SA:11:LYS:O	54:SA:15:VAL:HG23	2.21	0.40
58:SE:10:LYS:HA	58:SE:10:LYS:HD3	1.86	0.40
58:SE:63:LYS:HA	58:SE:66:MET:HG2	2.02	0.40
62:SI:67:TRP:CE3	62:SI:189:VAL:HG11	2.57	0.40
66:SM:31:LEU:HD11	66:SM:111:VAL:HG23	2.03	0.40
66:SM:120:ALA:HA	66:SM:123:VAL:HG22	2.03	0.40
67:SN:47:PRO:HB3	67:SN:71:ILE:HG21	2.04	0.40
71:SR:50:ILE:HA	71:SR:50:ILE:HD13	1.80	0.40
77:SX:85:VAL:HA	77:SX:86:PRO:HD3	1.86	0.40
80:Sa:15:ARG:HH11	80:Sa:18:VAL:HG12	1.87	0.40
82:Sc:17:VAL:HG12	82:Sc:19:GLY:H	1.85	0.40
1:CB:215:GLY:HA3	1:CB:222:ALA:HA	2.02	0.40
2:CC:2:U:H2'	2:CC:3:A:H8	1.86	0.40
4:L5:262:G:H2'	4:L5:263:G:C8	2.56	0.40
4:L5:509:A:C4	32:La:82:VAL:HG12	2.56	0.40
4:L5:1290:G:H2'	4:L5:1291:G:C8	2.56	0.40
4:L5:1340:C:H2'	4:L5:1341:U:C6	2.57	0.40
4:L5:4088:C:H2'	4:L5:4089:G:C8	2.57	0.40
4:L5:4504:C:H2'	4:L5:4505:C:C6	2.56	0.40
6:L8:140:C:H2'	6:L8:141:C:C6	2.57	0.40
10:LD:181:PRO:HD2	10:LD:195:HIS:CD2	2.56	0.40
16:LJ:115:LEU:HA	16:LJ:116:GLY:HA2	1.85	0.40
23:LR:177:LEU:O	23:LR:181:LYS:HG2	2.21	0.40
26:LU:24:ASP:O	26:LU:111:GLU:HA	2.21	0.40
29:LX:156:ILE:HG21	52:NM:326:LEU:HD11	2.04	0.40
31:LZ:29:ILE:HD13	31:LZ:40:HIS:CD2	2.56	0.40
40:Li:4:ARG:HA	40:Li:4:ARG:HD3	1.92	0.40
51:NB:44:LEU:O	51:NB:48:LEU:HG	2.21	0.40
53:S2:1568:C:H2'	53:S2:1569:A:C8	2.57	0.40
58:SE:106:LYS:HG2	58:SE:108:ARG:NH1	2.37	0.40
73:ST:131:LEU:HD23	73:ST:131:LEU:HA	1.94	0.40
82:Sc:7:GLN:HA	82:Sc:8:PRO:HD3	1.91	0.40
86:Sg:114:SER:HB3	86:Sg:119:GLN:HB2	2.04	0.40
1:CB:5:THR:HG23	1:CB:8:GLN:H	1.87	0.40
1:CB:597:ASN:HD22	53:S2:1825:A:H61	1.68	0.40
4:L5:2519:U:H1'	4:L5:2520:C:C6	2.56	0.40
12:LF:208:LEU:HD12	12:LF:208:LEU:HA	1.97	0.40
14:LH:129:ARG:HH21	14:LH:160:LEU:HD11	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:LI:115:MET:HE3	15:LI:115:MET:HB3	1.99	0.40
19:LN:13:LYS:HD3	19:LN:13:LYS:HA	1.83	0.40
25:LT:150:LEU:HD12	25:LT:150:LEU:HA	1.93	0.40
33:Lb:96:LEU:HD23	33:Lb:96:LEU:HA	1.89	0.40
49:Lz:119:GLN:HA	49:Lz:122:ARG:HE	1.86	0.40
53:S2:432:G:H2'	53:S2:433:A:H8	1.87	0.40
53:S2:954:U:H2'	53:S2:955:A:C8	2.56	0.40
53:S2:1496:U:H2'	53:S2:1498:A:H5'	2.03	0.40
53:S2:1545:A:H2	53:S2:1671:G:H1'	1.86	0.40
54:SA:77:ILE:HA	54:SA:99:ILE:O	2.22	0.40
56:SC:230:THR:HG23	56:SC:236:PHE:HE2	1.86	0.40
62:SI:143:LYS:HA	62:SI:146:GLN:HB2	2.03	0.40
63:SJ:155:LYS:HE2	63:SJ:155:LYS:HB2	1.95	0.40
67:SN:88:LEU:HD12	67:SN:88:LEU:HA	1.93	0.40
68:SO:146:ARG:HB3	68:SO:147:ARG:NH1	2.37	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	CB	842/858 (98%)	791 (94%)	51 (6%)	0	100	100
3	CD	51/402 (13%)	50 (98%)	1 (2%)	0	100	100
7	LA	246/257 (96%)	223 (91%)	22 (9%)	1 (0%)	30	54
8	LB	400/403 (99%)	375 (94%)	25 (6%)	0	100	100
9	LC	366/427 (86%)	343 (94%)	23 (6%)	0	100	100
10	LD	291/297 (98%)	274 (94%)	17 (6%)	0	100	100
11	LE	232/288 (81%)	210 (90%)	22 (10%)	0	100	100
12	LF	223/248 (90%)	215 (96%)	8 (4%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
13	LG	239/266 (90%)	224 (94%)	15 (6%)	0	100	100
14	LH	188/192 (98%)	173 (92%)	15 (8%)	0	100	100
15	LI	198/214 (92%)	184 (93%)	14 (7%)	0	100	100
16	LJ	174/178 (98%)	153 (88%)	21 (12%)	0	100	100
17	LL	208/211 (99%)	195 (94%)	13 (6%)	0	100	100
18	LM	137/215 (64%)	125 (91%)	11 (8%)	1 (1%)	19	41
19	LN	201/204 (98%)	193 (96%)	7 (4%)	1 (0%)	25	50
20	LO	199/203 (98%)	191 (96%)	8 (4%)	0	100	100
21	LP	151/184 (82%)	143 (95%)	8 (5%)	0	100	100
22	LQ	185/188 (98%)	178 (96%)	7 (4%)	0	100	100
23	LR	185/196 (94%)	181 (98%)	3 (2%)	1 (0%)	25	50
24	LS	173/176 (98%)	163 (94%)	10 (6%)	0	100	100
25	LT	157/160 (98%)	146 (93%)	11 (7%)	0	100	100
26	LU	99/128 (77%)	94 (95%)	5 (5%)	0	100	100
27	LV	129/140 (92%)	122 (95%)	7 (5%)	0	100	100
28	LW	114/157 (73%)	111 (97%)	3 (3%)	0	100	100
29	LX	118/156 (76%)	113 (96%)	5 (4%)	0	100	100
30	LY	132/145 (91%)	127 (96%)	5 (4%)	0	100	100
31	LZ	133/136 (98%)	121 (91%)	12 (9%)	0	100	100
32	La	145/148 (98%)	135 (93%)	10 (7%)	0	100	100
33	Lb	105/159 (66%)	99 (94%)	6 (6%)	0	100	100
34	Lc	96/115 (84%)	92 (96%)	4 (4%)	0	100	100
35	Ld	105/125 (84%)	102 (97%)	3 (3%)	0	100	100
36	Le	126/135 (93%)	121 (96%)	5 (4%)	0	100	100
37	Lf	107/110 (97%)	99 (92%)	7 (6%)	1 (1%)	14	35
38	Lg	112/117 (96%)	111 (99%)	1 (1%)	0	100	100
39	Lh	120/123 (98%)	118 (98%)	2 (2%)	0	100	100
40	Li	100/105 (95%)	97 (97%)	3 (3%)	0	100	100
41	Lj	84/97 (87%)	79 (94%)	5 (6%)	0	100	100
42	Lk	67/70 (96%)	66 (98%)	1 (2%)	0	100	100
43	Ll	48/51 (94%)	44 (92%)	4 (8%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
44	Lm	50/128 (39%)	48 (96%)	2 (4%)	0	100	100
45	Ln	22/25 (88%)	22 (100%)	0	0	100	100
46	Lo	103/106 (97%)	99 (96%)	4 (4%)	0	100	100
47	Lp	89/92 (97%)	87 (98%)	2 (2%)	0	100	100
48	Lr	123/137 (90%)	117 (95%)	6 (5%)	0	100	100
49	Lz	215/217 (99%)	161 (75%)	54 (25%)	0	100	100
50	NA	65/215 (30%)	59 (91%)	6 (9%)	0	100	100
51	NB	120/162 (74%)	113 (94%)	7 (6%)	0	100	100
52	NM	394/496 (79%)	382 (97%)	12 (3%)	0	100	100
54	SA	219/295 (74%)	198 (90%)	21 (10%)	0	100	100
55	SB	212/264 (80%)	204 (96%)	8 (4%)	0	100	100
56	SC	220/293 (75%)	207 (94%)	13 (6%)	0	100	100
57	SD	225/243 (93%)	200 (89%)	25 (11%)	0	100	100
58	SE	260/263 (99%)	238 (92%)	22 (8%)	0	100	100
59	SF	187/204 (92%)	167 (89%)	20 (11%)	0	100	100
60	SG	235/249 (94%)	221 (94%)	14 (6%)	0	100	100
61	SH	182/194 (94%)	161 (88%)	21 (12%)	0	100	100
62	SI	204/208 (98%)	190 (93%)	14 (7%)	0	100	100
63	SJ	183/194 (94%)	170 (93%)	13 (7%)	0	100	100
64	SK	96/165 (58%)	80 (83%)	16 (17%)	0	100	100
65	SL	151/158 (96%)	137 (91%)	14 (9%)	0	100	100
66	SM	120/132 (91%)	115 (96%)	5 (4%)	0	100	100
67	SN	148/151 (98%)	144 (97%)	4 (3%)	0	100	100
68	SO	138/151 (91%)	128 (93%)	10 (7%)	0	100	100
69	SP	119/145 (82%)	110 (92%)	9 (8%)	0	100	100
70	SQ	142/146 (97%)	129 (91%)	13 (9%)	0	100	100
71	SR	133/135 (98%)	121 (91%)	12 (9%)	0	100	100
72	SS	143/152 (94%)	131 (92%)	12 (8%)	0	100	100
73	ST	141/145 (97%)	128 (91%)	13 (9%)	0	100	100
74	SU	102/119 (86%)	95 (93%)	7 (7%)	0	100	100
75	SV	81/83 (98%)	75 (93%)	6 (7%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
76	SW	127/130 (98%)	121 (95%)	6 (5%)	0	100	100
77	SX	139/143 (97%)	128 (92%)	11 (8%)	0	100	100
78	SY	129/133 (97%)	121 (94%)	8 (6%)	0	100	100
79	SZ	73/125 (58%)	56 (77%)	17 (23%)	0	100	100
80	Sa	100/115 (87%)	90 (90%)	10 (10%)	0	100	100
81	Sb	81/84 (96%)	72 (89%)	9 (11%)	0	100	100
82	Sc	62/69 (90%)	53 (86%)	9 (14%)	0	100	100
83	Sd	53/56 (95%)	49 (92%)	4 (8%)	0	100	100
84	Se	56/133 (42%)	48 (86%)	8 (14%)	0	100	100
85	Sf	65/156 (42%)	55 (85%)	10 (15%)	0	100	100
86	Sg	311/317 (98%)	273 (88%)	38 (12%)	0	100	100
All	All	13004/15112 (86%)	12084 (93%)	915 (7%)	5 (0%)	100	100

All (5) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
23	LR	39	GLN
19	LN	124	ASP
18	LM	88	ALA
37	Lf	107	PRO
7	LA	55	GLY

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	
1	CB	722/730 (99%)	688 (95%)	34 (5%)	22	46
3	CD	46/322 (14%)	45 (98%)	1 (2%)	47	69
7	LA	190/199 (96%)	176 (93%)	14 (7%)	11	28
8	LB	348/349 (100%)	334 (96%)	14 (4%)	27	51

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
9	LC	306/348 (88%)	290 (95%)	16 (5%)	19	42
10	LD	246/250 (98%)	238 (97%)	8 (3%)	33	58
11	LE	209/252 (83%)	195 (93%)	14 (7%)	13	32
12	LF	194/215 (90%)	186 (96%)	8 (4%)	26	51
13	LG	203/223 (91%)	194 (96%)	9 (4%)	24	49
14	LH	169/171 (99%)	155 (92%)	14 (8%)	9	24
15	LI	172/181 (95%)	163 (95%)	9 (5%)	19	42
16	LJ	148/149 (99%)	138 (93%)	10 (7%)	13	32
17	LL	176/177 (99%)	165 (94%)	11 (6%)	15	35
18	LM	118/161 (73%)	110 (93%)	8 (7%)	13	32
19	LN	171/172 (99%)	157 (92%)	14 (8%)	9	24
20	LO	173/174 (99%)	165 (95%)	8 (5%)	23	47
21	LP	134/163 (82%)	127 (95%)	7 (5%)	19	42
22	LQ	164/165 (99%)	158 (96%)	6 (4%)	29	54
23	LR	166/175 (95%)	158 (95%)	8 (5%)	21	46
24	LS	156/157 (99%)	148 (95%)	8 (5%)	20	43
25	LT	139/140 (99%)	131 (94%)	8 (6%)	17	38
26	LU	91/115 (79%)	84 (92%)	7 (8%)	10	27
27	LV	101/107 (94%)	94 (93%)	7 (7%)	13	32
28	LW	97/126 (77%)	94 (97%)	3 (3%)	35	59
29	LX	108/133 (81%)	105 (97%)	3 (3%)	38	63
30	LY	124/135 (92%)	118 (95%)	6 (5%)	21	46
31	LZ	117/118 (99%)	109 (93%)	8 (7%)	13	32
32	La	120/121 (99%)	116 (97%)	4 (3%)	33	58
33	Lb	88/126 (70%)	87 (99%)	1 (1%)	70	83
34	Lc	83/97 (86%)	77 (93%)	6 (7%)	12	30
35	Ld	98/110 (89%)	89 (91%)	9 (9%)	7	20
36	Le	114/121 (94%)	106 (93%)	8 (7%)	12	31
37	Lf	88/89 (99%)	81 (92%)	7 (8%)	10	25
38	Lg	98/100 (98%)	89 (91%)	9 (9%)	7	20
39	Lh	109/110 (99%)	104 (95%)	5 (5%)	23	47

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
40	Li	86/89 (97%)	85 (99%)	1 (1%)	67	82
41	Lj	73/80 (91%)	71 (97%)	2 (3%)	40	64
42	Lk	64/65 (98%)	58 (91%)	6 (9%)	7	20
43	Ll	47/48 (98%)	44 (94%)	3 (6%)	14	34
44	Lm	48/116 (41%)	42 (88%)	6 (12%)	3	11
45	Ln	23/24 (96%)	21 (91%)	2 (9%)	8	22
46	Lo	93/94 (99%)	89 (96%)	4 (4%)	25	49
47	Lp	74/75 (99%)	71 (96%)	3 (4%)	26	51
48	Lr	109/121 (90%)	99 (91%)	10 (9%)	7	20
49	Lz	195/196 (100%)	190 (97%)	5 (3%)	41	65
50	NA	60/183 (33%)	60 (100%)	0	100	100
51	NB	106/136 (78%)	98 (92%)	8 (8%)	11	27
52	NM	353/443 (80%)	349 (99%)	4 (1%)	70	83
54	SA	183/243 (75%)	177 (97%)	6 (3%)	33	58
55	SB	195/231 (84%)	191 (98%)	4 (2%)	48	70
56	SC	188/225 (84%)	178 (95%)	10 (5%)	19	42
57	SD	190/202 (94%)	178 (94%)	12 (6%)	15	35
58	SE	224/225 (100%)	212 (95%)	12 (5%)	18	41
59	SF	159/170 (94%)	156 (98%)	3 (2%)	52	73
60	SG	207/218 (95%)	197 (95%)	10 (5%)	21	46
61	SH	166/174 (95%)	164 (99%)	2 (1%)	67	82
62	SI	178/180 (99%)	172 (97%)	6 (3%)	32	57
63	SJ	161/168 (96%)	155 (96%)	6 (4%)	29	54
64	SK	89/136 (65%)	84 (94%)	5 (6%)	17	40
65	SL	137/142 (96%)	127 (93%)	10 (7%)	11	29
66	SM	102/108 (94%)	100 (98%)	2 (2%)	50	72
67	SN	130/131 (99%)	129 (99%)	1 (1%)	79	88
68	SO	110/119 (92%)	104 (94%)	6 (6%)	18	41
69	SP	107/130 (82%)	105 (98%)	2 (2%)	52	73
70	SQ	119/121 (98%)	112 (94%)	7 (6%)	16	37
71	SR	122/122 (100%)	115 (94%)	7 (6%)	17	39

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
72	SS	126/132 (96%)	125 (99%)	1 (1%)	79	88
73	ST	113/115 (98%)	109 (96%)	4 (4%)	31	56
74	SU	94/107 (88%)	93 (99%)	1 (1%)	70	83
75	SV	67/67 (100%)	63 (94%)	4 (6%)	16	37
76	SW	112/113 (99%)	103 (92%)	9 (8%)	10	25
77	SX	113/115 (98%)	104 (92%)	9 (8%)	10	25
78	SY	113/115 (98%)	111 (98%)	2 (2%)	54	75
79	SZ	66/103 (64%)	64 (97%)	2 (3%)	36	60
80	Sa	89/98 (91%)	86 (97%)	3 (3%)	32	57
81	Sb	75/76 (99%)	73 (97%)	2 (3%)	40	64
82	Sc	57/62 (92%)	57 (100%)	0	100	100
83	Sd	48/49 (98%)	47 (98%)	1 (2%)	48	70
84	Se	47/104 (45%)	46 (98%)	1 (2%)	48	70
85	Sf	60/140 (43%)	58 (97%)	2 (3%)	33	58
86	Sg	272/275 (99%)	264 (97%)	8 (3%)	37	61
All	All	11336/12867 (88%)	10810 (95%)	526 (5%)	25	47

All (526) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	CB	57	THR
1	CB	102	LEU
1	CB	126	LEU
1	CB	127	VAL
1	CB	135	VAL
1	CB	160	MET
1	CB	164	LEU
1	CB	188	ILE
1	CB	228	PHE
1	CB	356	ILE
1	CB	401	MET
1	CB	410	PHE
1	CB	413	PHE
1	CB	429	ILE
1	CB	447	ILE
1	CB	458	VAL
1	CB	470	VAL

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Mol	Chain	Res	Type
1	CB	504	VAL
1	CB	505	VAL
1	CB	507	VAL
1	CB	526	ARG
1	CB	539	GLU
1	CB	622	VAL
1	CB	704	VAL
1	CB	728	CYS
1	CB	734	LEU
1	CB	756	VAL
1	CB	770	VAL
1	CB	771	PHE
1	CB	782	PHE
1	CB	797	THR
1	CB	848	ILE
1	CB	851	LEU
1	CB	854	PHE
3	CD	204	LEU
7	LA	4	VAL
7	LA	15	VAL
7	LA	28	ARG
7	LA	32	VAL
7	LA	44	ILE
7	LA	45	VAL
7	LA	75	LEU
7	LA	77	ILE
7	LA	96	LEU
7	LA	147	ARG
7	LA	169	VAL
7	LA	204	MET
7	LA	208	GLU
7	LA	246	LEU
8	LB	17	LEU
8	LB	34	LYS
8	LB	73	VAL
8	LB	74	GLU
8	LB	93	VAL
8	LB	159	VAL
8	LB	216	MET
8	LB	258	HIS
8	LB	278	THR
8	LB	292	LEU

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Mol	Chain	Res	Type
8	LB	337	VAL
8	LB	351	LEU
8	LB	364	ASP
8	LB	384	GLU
9	LC	23	THR
9	LC	37	VAL
9	LC	44	LEU
9	LC	54	VAL
9	LC	61	GLN
9	LC	71	ARG
9	LC	80	ARG
9	LC	94	ASN
9	LC	155	GLU
9	LC	158	VAL
9	LC	169	LEU
9	LC	230	LEU
9	LC	235	LEU
9	LC	319	LEU
9	LC	322	LEU
9	LC	328	LEU
10	LD	4	VAL
10	LD	7	VAL
10	LD	37	VAL
10	LD	76	CYS
10	LD	88	VAL
10	LD	185	SER
10	LD	271	MET
10	LD	272	SER
11	LE	44	CYS
11	LE	118	THR
11	LE	128	HIS
11	LE	135	GLN
11	LE	140	LEU
11	LE	152	ILE
11	LE	153	LEU
11	LE	163	VAL
11	LE	174	LEU
11	LE	192	LYS
11	LE	197	THR
11	LE	212	LEU
11	LE	237	LYS
11	LE	250	GLN

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Mol	Chain	Res	Type
12	LF	44	LYS
12	LF	83	VAL
12	LF	93	ILE
12	LF	130	ILE
12	LF	196	THR
12	LF	208	LEU
12	LF	221	LYS
12	LF	248	ASN
13	LG	100	HIS
13	LG	105	GLU
13	LG	135	VAL
13	LG	153	GLN
13	LG	161	VAL
13	LG	175	ARG
13	LG	223	ARG
13	LG	241	VAL
13	LG	255	LYS
14	LH	16	VAL
14	LH	35	ARG
14	LH	50	LYS
14	LH	66	GLU
14	LH	95	VAL
14	LH	104	VAL
14	LH	111	LEU
14	LH	112	VAL
14	LH	120	GLU
14	LH	163	GLN
14	LH	167	VAL
14	LH	172	ILE
14	LH	181	VAL
14	LH	187	VAL
15	LI	31	ILE
15	LI	43	VAL
15	LI	53	VAL
15	LI	60	LEU
15	LI	89	VAL
15	LI	140	THR
15	LI	144	ASN
15	LI	145	GLU
15	LI	212	LEU
16	LJ	17	ILE
16	LJ	26	VAL

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Mol	Chain	Res	Type
16	LJ	47	THR
16	LJ	55	TYR
16	LJ	94	LEU
16	LJ	102	THR
16	LJ	122	SER
16	LJ	130	PHE
16	LJ	132	VAL
16	LJ	133	VAL
17	LL	8	MET
17	LL	21	ARG
17	LL	59	VAL
17	LL	69	LYS
17	LL	86	ILE
17	LL	110	LEU
17	LL	125	ILE
17	LL	146	LEU
17	LL	149	GLN
17	LL	154	VAL
17	LL	170	THR
18	LM	15	VAL
18	LM	37	LEU
18	LM	50	MET
18	LM	69	HIS
18	LM	79	LYS
18	LM	90	ARG
18	LM	99	GLU
18	LM	105	THR
19	LN	8	GLN
19	LN	15	GLN
19	LN	18	VAL
19	LN	24	ARG
19	LN	36	LEU
19	LN	60	VAL
19	LN	85	VAL
19	LN	117	ASN
19	LN	124	ASP
19	LN	140	LYS
19	LN	142	ILE
19	LN	148	THR
19	LN	155	VAL
19	LN	171	SER
20	LO	27	VAL

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Mol	Chain	Res	Type
20	LO	124	LEU
20	LO	144	GLU
20	LO	145	VAL
20	LO	173	GLN
20	LO	175	MET
20	LO	179	LYS
20	LO	189	ILE
21	LP	5	SER
21	LP	13	LYS
21	LP	53	LEU
21	LP	58	VAL
21	LP	75	GLN
21	LP	76	TRP
21	LP	114	ILE
22	LQ	3	VAL
22	LQ	29	VAL
22	LQ	42	THR
22	LQ	81	VAL
22	LQ	85	THR
22	LQ	167	VAL
23	LR	2	SER
23	LR	60	ARG
23	LR	76	MET
23	LR	89	MET
23	LR	93	VAL
23	LR	105	LEU
23	LR	151	ARG
23	LR	153	LYS
24	LS	13	VAL
24	LS	17	LEU
24	LS	24	THR
24	LS	51	LEU
24	LS	90	THR
24	LS	132	ILE
24	LS	135	SER
24	LS	169	THR
25	LT	33	ILE
25	LT	48	VAL
25	LT	61	THR
25	LT	69	GLN
25	LT	70	HIS
25	LT	72	VAL

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Mol	Chain	Res	Type
25	LT	96	ILE
25	LT	104	SER
26	LU	19	LEU
26	LU	49	VAL
26	LU	60	VAL
26	LU	62	THR
26	LU	68	SER
26	LU	72	VAL
26	LU	83	LEU
27	LV	22	VAL
27	LV	65	VAL
27	LV	77	HIS
27	LV	92	ASP
27	LV	94	VAL
27	LV	118	THR
27	LV	139	ILE
28	LW	48	GLN
28	LW	76	VAL
28	LW	101	ARG
29	LX	91	GLU
29	LX	97	VAL
29	LX	116	LEU
30	LY	23	SER
30	LY	46	SER
30	LY	49	ILE
30	LY	54	GLU
30	LY	55	VAL
30	LY	66	GLN
31	LZ	11	VAL
31	LZ	13	VAL
31	LZ	14	LEU
31	LZ	25	ILE
31	LZ	39	SER
31	LZ	80	LEU
31	LZ	100	VAL
31	LZ	134	LEU
32	La	12	ARG
32	La	86	THR
32	La	95	THR
32	La	101	ILE
33	Lb	58	GLN
34	Lc	26	LYS

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Mol	Chain	Res	Type
34	Lc	28	VAL
34	Lc	46	VAL
34	Lc	60	ILE
34	Lc	91	VAL
34	Lc	94	LEU
35	Ld	21	VAL
35	Ld	28	ASN
35	Ld	33	ILE
35	Ld	57	MET
35	Ld	89	SER
35	Ld	100	ASN
35	Ld	104	THR
35	Ld	106	VAL
35	Ld	107	THR
36	Le	13	VAL
36	Le	26	ASP
36	Le	45	VAL
36	Le	53	ILE
36	Le	87	VAL
36	Le	90	MET
36	Le	92	ASN
36	Le	105	SER
37	Lf	7	SER
37	Lf	25	THR
37	Lf	28	LEU
37	Lf	33	VAL
37	Lf	43	LEU
37	Lf	85	ARG
37	Lf	110	ILE
38	Lg	6	THR
38	Lg	30	ILE
38	Lg	31	VAL
38	Lg	44	SER
38	Lg	59	VAL
38	Lg	63	VAL
38	Lg	65	MET
38	Lg	74	VAL
38	Lg	86	CYS
39	Lh	29	SER
39	Lh	36	VAL
39	Lh	46	LYS
39	Lh	87	LYS

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Mol	Chain	Res	Type
39	Lh	98	HIS
40	Li	34	THR
41	Lj	22	CYS
41	Lj	65	ARG
42	Lk	6	GLU
42	Lk	12	LEU
42	Lk	27	LYS
42	Lk	45	LEU
42	Lk	47	ILE
42	Lk	60	LEU
43	Ll	6	THR
43	Ll	35	ILE
43	Ll	51	LEU
44	Lm	78	ILE
44	Lm	81	SER
44	Lm	88	LYS
44	Lm	97	ARG
44	Lm	108	VAL
44	Lm	127	VAL
45	Ln	1	MET
45	Ln	20	MET
46	Lo	3	ASN
46	Lo	15	CYS
46	Lo	23	VAL
46	Lo	79	SER
47	Lp	64	VAL
47	Lp	70	THR
47	Lp	83	ILE
48	Lr	21	ASN
48	Lr	27	THR
48	Lr	43	LEU
48	Lr	49	VAL
48	Lr	52	GLU
48	Lr	61	VAL
48	Lr	62	VAL
48	Lr	68	SER
48	Lr	78	VAL
48	Lr	118	LEU
49	Lz	72	GLN
49	Lz	96	ASN
49	Lz	119	GLN
49	Lz	144	MET

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Mol	Chain	Res	Type
49	Lz	172	VAL
51	NB	17	GLN
51	NB	33	VAL
51	NB	53	VAL
51	NB	75	ASN
51	NB	79	VAL
51	NB	91	THR
51	NB	93	HIS
51	NB	103	LEU
52	NM	179	ASN
52	NM	235	ILE
52	NM	406	THR
52	NM	455	LEU
54	SA	18	PHE
54	SA	68	ILE
54	SA	76	VAL
54	SA	121	LEU
54	SA	163	CYS
54	SA	197	VAL
55	SB	49	VAL
55	SB	57	ILE
55	SB	88	THR
55	SB	105	LEU
56	SC	83	LEU
56	SC	84	PHE
56	SC	112	VAL
56	SC	157	LEU
56	SC	182	CYS
56	SC	184	VAL
56	SC	200	ARG
56	SC	227	ARG
56	SC	248	TYR
56	SC	250	TYR
57	SD	9	ARG
57	SD	25	LEU
57	SD	39	VAL
57	SD	51	LEU
57	SD	70	THR
57	SD	91	VAL
57	SD	136	VAL
57	SD	151	LYS
57	SD	153	VAL

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Mol	Chain	Res	Type
57	SD	167	TYR
57	SD	186	VAL
57	SD	211	VAL
58	SE	23	LEU
58	SE	48	LEU
58	SE	67	GLN
58	SE	68	ARG
58	SE	80	ILE
58	SE	102	ILE
58	SE	129	ILE
58	SE	183	VAL
58	SE	210	VAL
58	SE	227	VAL
58	SE	242	LYS
58	SE	256	LEU
59	SF	23	TRP
59	SF	25	THR
59	SF	111	VAL
60	SG	5	ILE
60	SG	24	LEU
60	SG	69	THR
60	SG	76	LEU
60	SG	89	THR
60	SG	108	VAL
60	SG	112	VAL
60	SG	129	VAL
60	SG	196	LYS
60	SG	217	MET
61	SH	93	VAL
61	SH	180	LEU
62	SI	65	PHE
62	SI	102	VAL
62	SI	119	LEU
62	SI	130	THR
62	SI	136	ILE
62	SI	162	LEU
63	SJ	3	VAL
63	SJ	15	THR
63	SJ	18	ARG
63	SJ	60	LEU
63	SJ	123	ILE
63	SJ	157	ILE

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Mol	Chain	Res	Type
64	SK	15	LEU
64	SK	44	HIS
64	SK	49	MET
64	SK	58	VAL
64	SK	64	TRP
65	SL	16	ILE
65	SL	18	GLN
65	SL	22	ARG
65	SL	23	VAL
65	SL	40	ILE
65	SL	77	VAL
65	SL	85	THR
65	SL	87	VAL
65	SL	95	TYR
65	SL	124	ASP
66	SM	14	VAL
66	SM	42	LEU
67	SN	60	VAL
68	SO	44	VAL
68	SO	62	VAL
68	SO	80	ASP
68	SO	142	ARG
68	SO	147	ARG
68	SO	150	ARG
69	SP	22	LEU
69	SP	126	VAL
70	SQ	22	VAL
70	SQ	43	GLU
70	SQ	47	LEU
70	SQ	55	VAL
70	SQ	58	LEU
70	SQ	70	VAL
70	SQ	115	TYR
71	SR	50	ILE
71	SR	72	LYS
71	SR	85	VAL
71	SR	88	VAL
71	SR	98	VAL
71	SR	126	MET
71	SR	130	THR
72	SS	11	HIS
73	ST	56	ARG

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Mol	Chain	Res	Type
73	ST	66	LEU
73	ST	87	VAL
73	ST	124	THR
74	SU	62	ARG
75	SV	1	MET
75	SV	9	VAL
75	SV	23	ILE
75	SV	72	LEU
76	SW	6	VAL
76	SW	33	VAL
76	SW	37	PHE
76	SW	51	GLU
76	SW	62	VAL
76	SW	68	ARG
76	SW	69	LEU
76	SW	107	SER
76	SW	111	MET
77	SX	9	THR
77	SX	55	VAL
77	SX	72	VAL
77	SX	74	LEU
77	SX	105	PHE
77	SX	112	VAL
77	SX	115	ILE
77	SX	118	VAL
77	SX	119	ARG
78	SY	23	MET
78	SY	86	GLU
79	SZ	69	THR
79	SZ	99	LEU
80	Sa	2	THR
80	Sa	29	CYS
80	Sa	41	ILE
81	Sb	36	LYS
81	Sb	84	HIS
83	Sd	42	CYS
84	Se	36	MET
85	Sf	89	LYS
85	Sf	144	CYS
86	Sg	18	VAL
86	Sg	23	THR
86	Sg	26	GLN

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Mol	Chain	Res	Type
86	Sg	66	VAL
86	Sg	166	VAL
86	Sg	174	VAL
86	Sg	246	TYR
86	Sg	266	ILE

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (119) such sidechains are listed below:

Mol	Chain	Res	Type
1	CB	27	HIS
1	CB	91	GLN
1	CB	101	ASN
1	CB	270	ASN
1	CB	803	ASN
1	CB	827	ASN
7	LA	140	ASN
8	LB	121	ASN
8	LB	167	GLN
8	LB	204	GLN
9	LC	89	GLN
9	LC	119	GLN
9	LC	212	ASN
10	LD	202	GLN
10	LD	282	GLN
11	LE	245	GLN
11	LE	250	GLN
13	LG	108	GLN
14	LH	138	GLN
14	LH	163	GLN
15	LI	144	ASN
15	LI	166	HIS
15	LI	203	HIS
16	LJ	23	ASN
16	LJ	65	ASN
16	LJ	98	ASN
17	LL	67	HIS
17	LL	115	GLN
18	LM	78	GLN
18	LM	131	GLN
19	LN	182	HIS
20	LO	180	GLN
21	LP	21	ASN

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Mol	Chain	Res	Type
22	LQ	7	HIS
22	LQ	21	GLN
22	LQ	57	ASN
22	LQ	162	HIS
23	LR	39	GLN
24	LS	50	GLN
24	LS	125	GLN
25	LT	90	ASN
27	LV	27	ASN
27	LV	84	GLN
27	LV	107	ASN
27	LV	135	ASN
28	LW	104	GLN
29	LX	57	GLN
29	LX	73	HIS
29	LX	108	GLN
30	LY	61	HIS
30	LY	96	HIS
31	LZ	127	ASN
32	La	44	ASN
32	La	60	HIS
33	Lb	6	ASN
33	Lb	17	HIS
33	Lb	27	GLN
36	Le	101	HIS
39	Lh	96	ASN
39	Lh	108	GLN
40	Li	15	HIS
42	Lk	58	GLN
44	Lm	109	ASN
46	Lo	19	GLN
46	Lo	25	GLN
46	Lo	102	GLN
46	Lo	105	GLN
49	Lz	94	ASN
49	Lz	96	ASN
49	Lz	197	ASN
49	Lz	214	GLN
50	NA	69	GLN
50	NA	134	GLN
51	NB	75	ASN
52	NM	147	GLN

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Mol	Chain	Res	Type
54	SA	24	HIS
54	SA	50	ASN
55	SB	118	GLN
55	SB	179	ASN
57	SD	226	GLN
58	SE	50	ASN
58	SE	67	GLN
60	SG	225	GLN
61	SH	114	GLN
62	SI	22	HIS
62	SI	35	ASN
62	SI	155	ASN
63	SJ	140	GLN
64	SK	28	HIS
64	SK	32	HIS
64	SK	73	ASN
65	SL	83	GLN
65	SL	108	ASN
66	SM	19	GLN
66	SM	28	HIS
67	SN	138	ASN
68	SO	94	HIS
69	SP	35	GLN
69	SP	103	ASN
69	SP	128	HIS
70	SQ	29	ASN
71	SR	56	HIS
71	SR	93	GLN
72	SS	125	HIS
72	SS	135	HIS
73	ST	10	ASN
74	SU	85	HIS
75	SV	49	GLN
75	SV	82	ASN
77	SX	92	ASN
77	SX	127	ASN
78	SY	85	ASN
78	SY	112	ASN
81	Sb	51	GLN
84	Se	3	HIS
85	Sf	135	HIS
86	Sg	14	HIS

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Mol	Chain	Res	Type
86	Sg	20	GLN
86	Sg	181	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
2	CC	84/85 (98%)	22 (26%)	1 (1%)
4	L5	3704/5070 (73%)	977 (26%)	15 (0%)
5	L7	119/121 (98%)	17 (14%)	0
53	S2	1715/1869 (91%)	474 (27%)	4 (0%)
6	L8	155/157 (98%)	38 (24%)	0
All	All	5777/7302 (79%)	1528 (26%)	20 (0%)

All (1528) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
2	CC	7	G
2	CC	8	U
2	CC	9	G
2	CC	10	G
2	CC	14	A
2	CC	16	U
2	CC	17	G
2	CC	18	G
2	CC	19	U
2	CC	20	U
2	CC	21	A
2	CC	22	A
2	CC	26	G
2	CC	41	C
2	CC	45	G
2	CC	48	G
2	CC	49	U
2	CC	50	C
2	CC	56	G
2	CC	57	C
2	CC	70	C
2	CC	85	A
4	L5	2	G
4	L5	15	A
4	L5	17	A

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Mol	Chain	Res	Type
4	L5	20	U
4	L5	25	A
4	L5	26	C
4	L5	30	C
4	L5	39	A
4	L5	42	A
4	L5	48	G
4	L5	49	U
4	L5	56	A
4	L5	59	A
4	L5	64	A
4	L5	65	A
4	L5	66	A
4	L5	69	A
4	L5	72	C
4	L5	73	A
4	L5	74	G
4	L5	84	A
4	L5	91	G
4	L5	104	G
4	L5	108	A
4	L5	109	G
4	L5	110	C
4	L5	119	G
4	L5	120	A
4	L5	122	U
4	L5	132	G
4	L5	133	C
4	L5	134	G
4	L5	135	G
4	L5	137	G
4	L5	151	G
4	L5	152	U
4	L5	159	C
4	L5	165	A
4	L5	166	C
4	L5	172	C
4	L5	181	C
4	L5	182	G
4	L5	183	C
4	L5	184	U
4	L5	185	C

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Mol	Chain	Res	Type
4	L5	187	U
4	L5	188	G
4	L5	189	G
4	L5	200	U
4	L5	209	U
4	L5	211	G
4	L5	216	C
4	L5	218	A
4	L5	219	G
4	L5	220	C
4	L5	233	U
4	L5	234	G
4	L5	251	C
4	L5	255	C
4	L5	256	G
4	L5	261	G
4	L5	263	G
4	L5	265	C
4	L5	266	C
4	L5	267	G
4	L5	275	C
4	L5	280	G
4	L5	281	U
4	L5	292	G
4	L5	297	U
4	L5	306	A
4	L5	315	G
4	L5	316	U
4	L5	326	C
4	L5	340	C
4	L5	350	C
4	L5	353	A
4	L5	360	A
4	L5	362	A
4	L5	363	A
4	L5	373	G
4	L5	385	A
4	L5	387	G
4	L5	388	A
4	L5	399	G
4	L5	401	G
4	L5	407	A

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Mol	Chain	Res	Type
4	L5	408	A
4	L5	409	G
4	L5	410	A
4	L5	411	G
4	L5	412	G
4	L5	413	G
4	L5	431	G
4	L5	432	U
4	L5	437	G
4	L5	438	G
4	L5	441	G
4	L5	449	C
4	L5	450	G
4	L5	452	A
4	L5	453	G
4	L5	454	U
4	L5	456	C
4	L5	457	G
4	L5	465	G
4	L5	467	U
4	L5	468	U
4	L5	473	C
4	L5	484	U
4	L5	485	C
4	L5	486	C
4	L5	489	C
4	L5	493	G
4	L5	494	U
4	L5	495	C
4	L5	497	G
4	L5	498	C
4	L5	499	G
4	L5	500	G
4	L5	501	C
4	L5	502	C
4	L5	503	C
4	L5	504	G
4	L5	505	G
4	L5	509	A
4	L5	510	U
4	L5	512	U
4	L5	513	U

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Mol	Chain	Res	Type
4	L5	514	U
4	L5	517	C
4	L5	518	G
4	L5	643	C
4	L5	646	G
4	L5	654	C
4	L5	655	C
4	L5	657	C
4	L5	658	C
4	L5	659	G
4	L5	665	C
4	L5	666	G
4	L5	667	A
4	L5	668	C
4	L5	669	C
4	L5	672	C
4	L5	673	C
4	L5	674	G
4	L5	685	C
4	L5	686	A
4	L5	688	U
4	L5	696	C
4	L5	703	G
4	L5	704	C
4	L5	706	C
4	L5	708	G
4	L5	730	G
4	L5	731	G
4	L5	738	C
4	L5	739	G
4	L5	742	G
4	L5	753	C
4	L5	758	G
4	L5	759	G
4	L5	904	C
4	L5	907	C
4	L5	910	G
4	L5	912	G
4	L5	913	U
4	L5	914	U
4	L5	915	A
4	L5	917	A

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Mol	Chain	Res	Type
4	L5	918	G
4	L5	923	C
4	L5	924	C
4	L5	926	G
4	L5	932	A
4	L5	933	G
4	L5	935	A
4	L5	936	C
4	L5	937	U
4	L5	941	C
4	L5	943	A
4	L5	945	U
4	L5	946	C
4	L5	958	G
4	L5	959	G
4	L5	960	A
4	L5	961	G
4	L5	962	C
4	L5	964	A
4	L5	965	G
4	L5	966	A
4	L5	967	C
4	L5	968	C
4	L5	969	C
4	L5	970	G
4	L5	977	C
4	L5	978	G
4	L5	982	U
4	L5	985	C
4	L5	989	U
4	L5	990	C
4	L5	992	C
4	L5	993	G
4	L5	995	C
4	L5	996	G
4	L5	1048	G
4	L5	1049	C
4	L5	1050	C
4	L5	1051	G
4	L5	1066	G
4	L5	1070	G
4	L5	1072	C

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Mol	Chain	Res	Type
4	L5	1074	G
4	L5	1075	G
4	L5	1077	C
4	L5	1082	C
4	L5	1083	U
4	L5	1095	A
4	L5	1168	G
4	L5	1171	G
4	L5	1172	C
4	L5	1173	G
4	L5	1175	A
4	L5	1178	G
4	L5	1179	U
4	L5	1180	C
4	L5	1181	C
4	L5	1182	C
4	L5	1183	C
4	L5	1202	C
4	L5	1203	G
4	L5	1204	C
4	L5	1210	C
4	L5	1211	G
4	L5	1214	C
4	L5	1215	C
4	L5	1216	C
4	L5	1217	G
4	L5	1218	G
4	L5	1219	G
4	L5	1222	A
4	L5	1241	C
4	L5	1246	G
4	L5	1253	G
4	L5	1254	A
4	L5	1257	A
4	L5	1258	G
4	L5	1262	G
4	L5	1266	G
4	L5	1267	C
4	L5	1269	G
4	L5	1270	A
4	L5	1271	G
4	L5	1272	C

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Mol	Chain	Res	Type
4	L5	1273	G
4	L5	1274	A
4	L5	1275	G
4	L5	1280	C
4	L5	1284	G
4	L5	1285	U
4	L5	1287	G
4	L5	1293	G
4	L5	1294	A
4	L5	1295	C
4	L5	1296	G
4	L5	1301	C
4	L5	1312	A
4	L5	1313	C
4	L5	1314	C
4	L5	1317	U
4	L5	1326	A
4	L5	1331	C
4	L5	1337	A
4	L5	1339	U
4	L5	1354	A
4	L5	1358	G
4	L5	1359	G
4	L5	1360	G
4	L5	1365	C
4	L5	1367	C
4	L5	1370	G
4	L5	1378	C
4	L5	1379	C
4	L5	1381	U
4	L5	1387	A
4	L5	1394	G
4	L5	1397	A
4	L5	1398	A
4	L5	1404	G
4	L5	1405	C
4	L5	1407	C
4	L5	1409	C
4	L5	1410	U
4	L5	1411	C
4	L5	1412	G
4	L5	1414	C

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Mol	Chain	Res	Type
4	L5	1415	G
4	L5	1416	G
4	L5	1417	C
4	L5	1420	A
4	L5	1421	G
4	L5	1435	G
4	L5	1437	C
4	L5	1439	C
4	L5	1441	C
4	L5	1443	A
4	L5	1444	G
4	L5	1446	C
4	L5	1447	C
4	L5	1457	G
4	L5	1482	G
4	L5	1483	C
4	L5	1497	A
4	L5	1498	G
4	L5	1502	G
4	L5	1516	G
4	L5	1517	G
4	L5	1518	A
4	L5	1519	C
4	L5	1534	A
4	L5	1535	C
4	L5	1542	U
4	L5	1547	A
4	L5	1562	G
4	L5	1565	A
4	L5	1566	C
4	L5	1574	G
4	L5	1577	G
4	L5	1578	U
4	L5	1582	U
4	L5	1591	U
4	L5	1596	U
4	L5	1613	A
4	L5	1621	A
4	L5	1624	G
4	L5	1625	G
4	L5	1631	A
4	L5	1633	G

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Mol	Chain	Res	Type
4	L5	1634	A
4	L5	1637	A
4	L5	1638	A
4	L5	1640	C
4	L5	1641	G
4	L5	1642	A
4	L5	1654	G
4	L5	1661	C
4	L5	1663	C
4	L5	1676	C
4	L5	1677	U
4	L5	1678	C
4	L5	1680	G
4	L5	1681	G
4	L5	1694	C
4	L5	1697	G
4	L5	1698	C
4	L5	1699	A
4	L5	1700	G
4	L5	1703	C
4	L5	1704	C
4	L5	1705	G
4	L5	1708	G
4	L5	1717	C
4	L5	1718	C
4	L5	1719	A
4	L5	1724	G
4	L5	1726	U
4	L5	1732	C
4	L5	1734	G
4	L5	1740	C
4	L5	1741	G
4	L5	1742	A
4	L5	1745	G
4	L5	1750	G
4	L5	1753	G
4	L5	1757	U
4	L5	1758	G
4	L5	1760	G
4	L5	1761	G
4	L5	1762	C
4	L5	1763	C

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Mol	Chain	Res	Type
4	L5	1764	G
4	L5	1765	A
4	L5	1766	A
4	L5	1767	A
4	L5	1768	C
4	L5	1769	G
4	L5	1770	A
4	L5	1775	A
4	L5	1787	A
4	L5	1803	G
4	L5	1804	A
4	L5	1806	G
4	L5	1810	G
4	L5	1815	G
4	L5	1820	C
4	L5	1821	G
4	L5	1822	U
4	L5	1833	G
4	L5	1834	U
4	L5	1836	G
4	L5	1837	A
4	L5	1842	G
4	L5	1855	G
4	L5	1869	G
4	L5	1881	C
4	L5	1882	U
4	L5	1888	A
4	L5	1892	A
4	L5	1893	C
4	L5	1897	A
4	L5	1917	A
4	L5	1918	U
4	L5	1919	G
4	L5	1920	C
4	L5	1921	C
4	L5	1922	G
4	L5	1925	G
4	L5	1930	U
4	L5	1931	C
4	L5	1932	A
4	L5	1935	C
4	L5	1936	C

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Mol	Chain	Res	Type
4	L5	1946	G
4	L5	1948	G
4	L5	1951	G
4	L5	1959	U
4	L5	1961	G
4	L5	1962	A
4	L5	1974	U
4	L5	1975	G
4	L5	1978	C
4	L5	1980	U
4	L5	1981	G
4	L5	1982	G
4	L5	1984	A
4	L5	1985	G
4	L5	1986	U
4	L5	1991	A
4	L5	1992	U
4	L5	1993	C
4	L5	1997	U
4	L5	2002	A
4	L5	2005	G
4	L5	2011	C
4	L5	2017	A
4	L5	2018	C
4	L5	2024	G
4	L5	2026	A
4	L5	2033	A
4	L5	2034	G
4	L5	2046	G
4	L5	2048	U
4	L5	2055	G
4	L5	2056	G
4	L5	2062	C
4	L5	2069	A
4	L5	2084	C
4	L5	2085	G
4	L5	2089	G
4	L5	2091	C
4	L5	2092	G
4	L5	2093	A
4	L5	2095	A
4	L5	2096	G

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Mol	Chain	Res	Type
4	L5	2097	U
4	L5	2098	G
4	L5	2101	C
4	L5	2102	G
4	L5	2107	C
4	L5	2110	C
4	L5	2112	G
4	L5	2250	C
4	L5	2252	G
4	L5	2253	A
4	L5	2255	C
4	L5	2256	C
4	L5	2258	C
4	L5	2259	G
4	L5	2260	C
4	L5	2262	G
4	L5	2263	A
4	L5	2269	C
4	L5	2280	G
4	L5	2289	C
4	L5	2300	A
4	L5	2301	G
4	L5	2306	G
4	L5	2313	A
4	L5	2316	G
4	L5	2331	G
4	L5	2332	A
4	L5	2333	G
4	L5	2345	G
4	L5	2348	G
4	L5	2351	C
4	L5	2360	A
4	L5	2364	G
4	L5	2369	U
4	L5	2382	A
4	L5	2383	C
4	L5	2389	A
4	L5	2395	A
4	L5	2396	A
4	L5	2397	G
4	L5	2402	G
4	L5	2417	A

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Mol	Chain	Res	Type
4	L5	2421	G
4	L5	2425	U
4	L5	2441	C
4	L5	2450	G
4	L5	2462	C
4	L5	2464	C
4	L5	2465	C
4	L5	2467	U
4	L5	2471	G
4	L5	2474	G
4	L5	2475	G
4	L5	2478	C
4	L5	2479	G
4	L5	2483	G
4	L5	2484	A
4	L5	2485	U
4	L5	2487	G
4	L5	2488	C
4	L5	2489	C
4	L5	2490	U
4	L5	2491	C
4	L5	2494	U
4	L5	2503	G
4	L5	2504	C
4	L5	2511	A
4	L5	2513	A
4	L5	2514	G
4	L5	2518	G
4	L5	2519	U
4	L5	2520	C
4	L5	2529	A
4	L5	2537	A
4	L5	2544	G
4	L5	2546	G
4	L5	2547	G
4	L5	2553	A
4	L5	2554	U
4	L5	2555	G
4	L5	2557	G
4	L5	2560	C
4	L5	2565	A
4	L5	2568	C

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Mol	Chain	Res	Type
4	L5	2583	C
4	L5	2586	G
4	L5	2587	A
4	L5	2589	C
4	L5	2606	G
4	L5	2611	A
4	L5	2624	G
4	L5	2627	C
4	L5	2652	G
4	L5	2653	C
4	L5	2662	G
4	L5	2664	G
4	L5	2669	C
4	L5	2675	G
4	L5	2676	A
4	L5	2687	U
4	L5	2695	A
4	L5	2696	A
4	L5	2700	G
4	L5	2702	C
4	L5	2703	G
4	L5	2708	U
4	L5	2709	C
4	L5	2710	C
4	L5	2711	G
4	L5	2719	C
4	L5	2721	G
4	L5	2724	G
4	L5	2725	A
4	L5	2726	G
4	L5	2738	C
4	L5	2739	C
4	L5	2742	G
4	L5	2743	A
4	L5	2746	A
4	L5	2754	G
4	L5	2756	G
4	L5	2761	U
4	L5	2763	U
4	L5	2764	A
4	L5	2769	U
4	L5	2770	C

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Mol	Chain	Res	Type
4	L5	2787	A
4	L5	2788	U
4	L5	2790	U
4	L5	2794	C
4	L5	2806	A
4	L5	2808	G
4	L5	2826	U
4	L5	2827	G
4	L5	2828	U
4	L5	2829	U
4	L5	2838	G
4	L5	2842	G
4	L5	2846	G
4	L5	2847	G
4	L5	2848	G
4	L5	2855	G
4	L5	2876	G
4	L5	2877	G
4	L5	2895	A
4	L5	2902	G
4	L5	2903	G
4	L5	2904	U
4	L5	2905	C
4	L5	2906	G
4	L5	2908	U
4	L5	3587	C
4	L5	3590	G
4	L5	3591	C
4	L5	3594	C
4	L5	3595	U
4	L5	3596	A
4	L5	3597	G
4	L5	3599	A
4	L5	3605	C
4	L5	3615	G
4	L5	3616	U
4	L5	3617	G
4	L5	3618	C
4	L5	3619	G
4	L5	3626	G
4	L5	3630	A
4	L5	3635	A

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Mol	Chain	Res	Type
4	L5	3644	U
4	L5	3646	A
4	L5	3648	A
4	L5	3650	C
4	L5	3659	G
4	L5	3662	A
4	L5	3664	G
4	L5	3670	C
4	L5	3672	G
4	L5	3673	C
4	L5	3674	G
4	L5	3692	A
4	L5	3709	U
4	L5	3710	G
4	L5	3711	A
4	L5	3713	U
4	L5	3726	A
4	L5	3727	A
4	L5	3729	U
4	L5	3739	C
4	L5	3747	A
4	L5	3750	G
4	L5	3756	A
4	L5	3759	A
4	L5	3761	C
4	L5	3766	A
4	L5	3773	U
4	L5	3774	A
4	L5	3776	G
4	L5	3777	G
4	L5	3784	A
4	L5	3786	U
4	L5	3788	C
4	L5	3791	C
4	L5	3802	U
4	L5	3810	C
4	L5	3811	G
4	L5	3814	U
4	L5	3817	A
4	L5	3818	U
4	L5	3819	G
4	L5	3823	G

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Mol	Chain	Res	Type
4	L5	3827	G
4	L5	3838	U
4	L5	3839	G
4	L5	3840	U
4	L5	3859	G
4	L5	3867	A
4	L5	3877	A
4	L5	3878	C
4	L5	3879	G
4	L5	3880	G
4	L5	3881	G
4	L5	3885	G
4	L5	3887	C
4	L5	3890	A
4	L5	3892	U
4	L5	3897	G
4	L5	3901	A
4	L5	3906	A
4	L5	3907	G
4	L5	3908	A
4	L5	3915	U
4	L5	3916	G
4	L5	3922	G
4	L5	3938	G
4	L5	3939	G
4	L5	3942	A
4	L5	3943	A
4	L5	3947	A
4	L5	3948	C
4	L5	3950	U
4	L5	3951	G
4	L5	3955	G
4	L5	3956	G
4	L5	3957	U
4	L5	3958	G
4	L5	3960	A
4	L5	3962	A
4	L5	3963	A
4	L5	3964	U
4	L5	3966	A
4	L5	3968	U
4	L5	3969	G

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Mol	Chain	Res	Type
4	L5	3970	G
4	L5	3972	A
4	L5	3973	G
4	L5	3974	G
4	L5	3975	C
4	L5	3977	C
4	L5	4036	G
4	L5	4038	C
4	L5	4039	G
4	L5	4041	C
4	L5	4042	G
4	L5	4043	G
4	L5	4044	U
4	L5	4046	A
4	L5	4048	A
4	L5	4049	U
4	L5	4051	C
4	L5	4052	C
4	L5	4053	A
4	L5	4055	U
4	L5	4056	A
4	L5	4057	C
4	L5	4059	C
4	L5	4060	U
4	L5	4062	A
4	L5	4063	U
4	L5	4064	C
4	L5	4065	G
4	L5	4069	U
4	L5	4076	G
4	L5	4084	G
4	L5	4086	G
4	L5	4093	G
4	L5	4095	G
4	L5	4096	C
4	L5	4097	G
4	L5	4099	G
4	L5	4100	C
4	L5	4101	C
4	L5	4102	C
4	L5	4103	C
4	L5	4104	G

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Mol	Chain	Res	Type
4	L5	4108	G
4	L5	4111	U
4	L5	4113	U
4	L5	4114	C
4	L5	4115	G
4	L5	4116	C
4	L5	4117	U
4	L5	4118	U
4	L5	4119	C
4	L5	4127	A
4	L5	4140	C
4	L5	4141	G
4	L5	4142	C
4	L5	4143	G
4	L5	4144	C
4	L5	4146	G
4	L5	4150	G
4	L5	4162	C
4	L5	4163	U
4	L5	4170	A
4	L5	4183	G
4	L5	4184	G
4	L5	4191	G
4	L5	4193	C
4	L5	4196	G
4	L5	4197	G
4	L5	4203	A
4	L5	4212	A
4	L5	4222	G
4	L5	4225	G
4	L5	4228	G
4	L5	4229	U
4	L5	4233	A
4	L5	4243	C
4	L5	4251	A
4	L5	4253	A
4	L5	4254	G
4	L5	4255	A
4	L5	4265	U
4	L5	4268	A
4	L5	4273	A
4	L5	4282	A

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Mol	Chain	Res	Type
4	L5	4290	U
4	L5	4295	U
4	L5	4304	A
4	L5	4305	G
4	L5	4314	C
4	L5	4319	C
4	L5	4329	G
4	L5	4330	G
4	L5	4332	C
4	L5	4338	G
4	L5	4339	A
4	L5	4349	C
4	L5	4354	U
4	L5	4371	G
4	L5	4373	G
4	L5	4376	A
4	L5	4377	G
4	L5	4378	A
4	L5	4379	A
4	L5	4380	A
4	L5	4386	C
4	L5	4387	C
4	L5	4391	G
4	L5	4394	A
4	L5	4398	C
4	L5	4404	U
4	L5	4405	G
4	L5	4420	U
4	L5	4422	A
4	L5	4426	C
4	L5	4430	G
4	L5	4438	U
4	L5	4444	C
4	L5	4448	G
4	L5	4449	A
4	L5	4452	U
4	L5	4464	A
4	L5	4466	C
4	L5	4471	U
4	L5	4475	G
4	L5	4488	A
4	L5	4491	G

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Mol	Chain	Res	Type
4	L5	4495	G
4	L5	4500	U
4	L5	4512	U
4	L5	4513	A
4	L5	4515	G
4	L5	4519	C
4	L5	4524	G
4	L5	4525	C
4	L5	4528	G
4	L5	4532	U
4	L5	4545	G
4	L5	4548	A
4	L5	4549	G
4	L5	4557	U
4	L5	4558	U
4	L5	4560	C
4	L5	4567	G
4	L5	4569	U
4	L5	4572	U
4	L5	4573	G
4	L5	4575	G
4	L5	4584	A
4	L5	4589	A
4	L5	4590	A
4	L5	4599	A
4	L5	4600	G
4	L5	4606	G
4	L5	4608	G
4	L5	4617	G
4	L5	4626	A
4	L5	4632	U
4	L5	4635	A
4	L5	4636	U
4	L5	4637	G
4	L5	4652	G
4	L5	4656	A
4	L5	4657	U
4	L5	4661	G
4	L5	4670	C
4	L5	4672	A
4	L5	4687	A
4	L5	4694	G

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Mol	Chain	Res	Type
4	L5	4695	C
4	L5	4700	A
4	L5	4703	U
4	L5	4707	A
4	L5	4708	A
4	L5	4709	U
4	L5	4719	G
4	L5	4720	C
4	L5	4730	C
4	L5	4731	G
4	L5	4733	C
4	L5	4734	A
4	L5	4740	G
4	L5	4741	C
4	L5	4742	G
4	L5	4745	G
4	L5	4754	G
4	L5	4757	C
4	L5	4759	C
4	L5	4761	G
4	L5	4765	G
4	L5	4771	C
4	L5	4772	C
4	L5	4773	C
4	L5	4775	C
4	L5	4859	C
4	L5	4863	G
4	L5	4867	G
4	L5	4870	G
4	L5	4871	C
4	L5	4873	G
4	L5	4875	G
4	L5	4880	C
4	L5	4881	U
4	L5	4882	U
4	L5	4883	C
4	L5	4888	U
4	L5	4889	G
4	L5	4895	C
4	L5	4896	G
4	L5	4900	C
4	L5	4901	G

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Mol	Chain	Res	Type
4	L5	4902	C
4	L5	4910	G
4	L5	4911	A
4	L5	4912	G
4	L5	4914	C
4	L5	4922	C
4	L5	4925	U
4	L5	4926	C
4	L5	4927	G
4	L5	4928	C
4	L5	4931	G
4	L5	4934	A
4	L5	4937	C
4	L5	4940	C
4	L5	4941	G
4	L5	4943	A
4	L5	4947	U
4	L5	4949	G
4	L5	4951	G
4	L5	4955	A
4	L5	4960	G
4	L5	4963	G
4	L5	4966	A
4	L5	4975	G
4	L5	4976	U
4	L5	4979	A
4	L5	4988	U
4	L5	4989	U
4	L5	4991	U
4	L5	5006	U
4	L5	5013	C
4	L5	5014	A
4	L5	5017	G
4	L5	5022	U
4	L5	5024	C
4	L5	5025	C
4	L5	5026	U
4	L5	5027	C
4	L5	5028	G
4	L5	5029	C
4	L5	5030	U
4	L5	5032	C

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Mol	Chain	Res	Type
4	L5	5034	A
4	L5	5040	U
4	L5	5041	G
4	L5	5050	C
4	L5	5054	C
4	L5	5055	G
4	L5	5061	A
4	L5	5069	U
5	L7	4	U
5	L7	5	A
5	L7	13	A
5	L7	22	A
5	L7	33	U
5	L7	37	G
5	L7	38	U
5	L7	41	G
5	L7	53	U
5	L7	54	A
5	L7	63	C
5	L7	64	G
5	L7	76	U
5	L7	97	G
5	L7	100	A
5	L7	111	C
5	L7	118	C
6	L8	23	C
6	L8	25	G
6	L8	26	C
6	L8	34	U
6	L8	35	C
6	L8	38	U
6	L8	39	G
6	L8	48	A
6	L8	59	A
6	L8	60	G
6	L8	61	A
6	L8	62	A
6	L8	63	U
6	L8	75	G
6	L8	82	A
6	L8	83	C
6	L8	84	A

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Mol	Chain	Res	Type
6	L8	85	U
6	L8	86	U
6	L8	87	G
6	L8	94	G
6	L8	95	A
6	L8	103	A
6	L8	105	C
6	L8	107	C
6	L8	108	A
6	L8	110	U
6	L8	111	U
6	L8	114	G
6	L8	123	U
6	L8	124	U
6	L8	125	C
6	L8	126	C
6	L8	127	U
6	L8	137	A
6	L8	150	C
6	L8	151	G
6	L8	155	C
53	S2	2	A
53	S2	3	C
53	S2	4	C
53	S2	5	U
53	S2	13	C
53	S2	14	C
53	S2	20	G
53	S2	25	A
53	S2	33	G
53	S2	37	C
53	S2	42	A
53	S2	44	U
53	S2	46	A
53	S2	56	G
53	S2	58	C
53	S2	62	G
53	S2	64	A
53	S2	65	C
53	S2	67	C
53	S2	68	A
53	S2	72	C

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Mol	Chain	Res	Type
53	S2	73	C
53	S2	74	G
53	S2	76	U
53	S2	92	A
53	S2	103	A
53	S2	113	G
53	S2	114	G
53	S2	115	U
53	S2	116	U
53	S2	126	G
53	S2	129	C
53	S2	130	G
53	S2	142	C
53	S2	143	U
53	S2	149	A
53	S2	155	G
53	S2	158	A
53	S2	159	A
53	S2	160	U
53	S2	161	U
53	S2	162	C
53	S2	163	U
53	S2	170	A
53	S2	171	A
53	S2	175	A
53	S2	179	C
53	S2	182	C
53	S2	184	G
53	S2	187	G
53	S2	190	G
53	S2	196	C
53	S2	197	U
53	S2	198	U
53	S2	199	C
53	S2	200	G
53	S2	203	G
53	S2	204	G
53	S2	206	G
53	S2	207	G
53	S2	208	G
53	S2	209	A
53	S2	212	C

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Mol	Chain	Res	Type
53	S2	214	U
53	S2	290	U
53	S2	291	G
53	S2	292	A
53	S2	293	C
53	S2	295	C
53	S2	306	C
53	S2	307	G
53	S2	308	G
53	S2	309	G
53	S2	310	C
53	S2	311	C
53	S2	312	G
53	S2	313	A
53	S2	318	A
53	S2	319	C
53	S2	322	C
53	S2	323	C
53	S2	324	C
53	S2	325	C
53	S2	326	C
53	S2	328	U
53	S2	329	G
53	S2	332	G
53	S2	335	G
53	S2	338	G
53	S2	339	A
53	S2	347	G
53	S2	351	G
53	S2	357	C
53	S2	360	A
53	S2	362	C
53	S2	363	A
53	S2	364	A
53	S2	368	U
53	S2	370	G
53	S2	373	G
53	S2	374	G
53	S2	381	C
53	S2	383	G
53	S2	385	G
53	S2	386	C

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Mol	Chain	Res	Type
53	S2	400	C
53	S2	407	G
53	S2	408	A
53	S2	409	C
53	S2	421	G
53	S2	428	U
53	S2	438	G
53	S2	448	A
53	S2	449	A
53	S2	450	C
53	S2	452	G
53	S2	463	C
53	S2	464	A
53	S2	465	A
53	S2	467	G
53	S2	471	G
53	S2	472	C
53	S2	473	A
53	S2	474	G
53	S2	476	A
53	S2	485	A
53	S2	487	U
53	S2	488	U
53	S2	492	C
53	S2	493	A
53	S2	498	C
53	S2	499	G
53	S2	502	C
53	S2	517	C
53	S2	525	A
53	S2	531	A
53	S2	532	C
53	S2	533	A
53	S2	536	A
53	S2	537	C
53	S2	540	U
53	S2	542	U
53	S2	546	G
53	S2	547	G
53	S2	549	C
53	S2	551	U
53	S2	553	U

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Mol	Chain	Res	Type
53	S2	555	A
53	S2	556	U
53	S2	557	U
53	S2	558	G
53	S2	559	G
53	S2	560	A
53	S2	563	G
53	S2	564	A
53	S2	566	U
53	S2	574	A
53	S2	576	A
53	S2	583	A
53	S2	585	C
53	S2	587	A
53	S2	589	G
53	S2	590	A
53	S2	591	U
53	S2	597	G
53	S2	600	G
53	S2	604	A
53	S2	605	A
53	S2	606	G
53	S2	607	U
53	S2	608	C
53	S2	614	C
53	S2	617	G
53	S2	623	G
53	S2	626	G
53	S2	628	A
53	S2	629	A
53	S2	641	A
53	S2	643	A
53	S2	644	G
53	S2	655	A
53	S2	660	C
53	S2	662	G
53	S2	664	A
53	S2	668	A
53	S2	669	A
53	S2	671	A
53	S2	672	A
53	S2	673	G

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Mol	Chain	Res	Type
53	S2	678	U
53	S2	681	U
53	S2	683	G
53	S2	684	G
53	S2	687	C
53	S2	688	U
53	S2	689	U
53	S2	692	G
53	S2	693	A
53	S2	696	G
53	S2	697	G
53	S2	698	G
53	S2	733	C
53	S2	736	C
53	S2	738	C
53	S2	739	C
53	S2	748	C
53	S2	749	U
53	S2	751	G
53	S2	752	G
53	S2	788	G
53	S2	791	C
53	S2	792	C
53	S2	793	G
53	S2	794	A
53	S2	798	G
53	S2	799	U
53	S2	810	A
53	S2	811	A
53	S2	821	G
53	S2	822	U
53	S2	823	U
53	S2	824	C
53	S2	830	A
53	S2	834	C
53	S2	835	C
53	S2	836	G
53	S2	837	A
53	S2	838	G
53	S2	839	C
53	S2	842	C
53	S2	847	A

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Mol	Chain	Res	Type
53	S2	861	A
53	S2	864	A
53	S2	869	A
53	S2	870	A
53	S2	871	U
53	S2	873	G
53	S2	874	G
53	S2	878	G
53	S2	882	U
53	S2	885	U
53	S2	888	U
53	S2	889	U
53	S2	891	G
53	S2	892	U
53	S2	896	U
53	S2	898	U
53	S2	899	U
53	S2	900	C
53	S2	901	G
53	S2	903	A
53	S2	913	A
53	S2	914	U
53	S2	919	A
53	S2	920	A
53	S2	921	G
53	S2	922	A
53	S2	927	C
53	S2	932	G
53	S2	933	G
53	S2	958	G
53	S2	971	G
53	S2	982	G
53	S2	990	A
53	S2	991	G
53	S2	992	A
53	S2	999	G
53	S2	1008	A
53	S2	1009	A
53	S2	1017	U
53	S2	1023	A
53	S2	1027	A
53	S2	1040	G

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Mol	Chain	Res	Type
53	S2	1045	U
53	S2	1060	A
53	S2	1061	U
53	S2	1062	A
53	S2	1083	A
53	S2	1085	C
53	S2	1088	U
53	S2	1109	C
53	S2	1114	U
53	S2	1115	U
53	S2	1116	C
53	S2	1119	A
53	S2	1121	G
53	S2	1126	G
53	S2	1132	C
53	S2	1133	A
53	S2	1138	C
53	S2	1148	A
53	S2	1150	A
53	S2	1153	C
53	S2	1154	U
53	S2	1155	U
53	S2	1158	G
53	S2	1166	G
53	S2	1170	A
53	S2	1195	A
53	S2	1203	G
53	S2	1204	A
53	S2	1207	G
53	S2	1208	A
53	S2	1215	C
53	S2	1216	C
53	S2	1217	A
53	S2	1221	G
53	S2	1224	G
53	S2	1227	G
53	S2	1242	U
53	S2	1243	U
53	S2	1251	A
53	S2	1253	A
53	S2	1255	G
53	S2	1256	G

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Mol	Chain	Res	Type
53	S2	1257	G
53	S2	1259	A
53	S2	1264	C
53	S2	1265	A
53	S2	1273	C
53	S2	1274	G
53	S2	1275	G
53	S2	1283	C
53	S2	1284	A
53	S2	1286	G
53	S2	1294	G
53	S2	1295	A
53	S2	1301	A
53	S2	1302	G
53	S2	1303	C
53	S2	1308	U
53	S2	1310	U
53	S2	1311	C
53	S2	1312	G
53	S2	1320	G
53	S2	1333	U
53	S2	1341	C
53	S2	1342	U
53	S2	1348	G
53	S2	1364	U
53	S2	1371	U
53	S2	1372	U
53	S2	1373	C
53	S2	1375	G
53	S2	1376	A
53	S2	1378	A
53	S2	1382	A
53	S2	1398	G
53	S2	1402	A
53	S2	1408	U
53	S2	1412	C
53	S2	1414	A
53	S2	1415	C
53	S2	1419	C
53	S2	1420	G
53	S2	1421	A
53	S2	1422	G

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Mol	Chain	Res	Type
53	S2	1423	C
53	S2	1424	G
53	S2	1429	G
53	S2	1433	C
53	S2	1434	C
53	S2	1435	C
53	S2	1436	C
53	S2	1438	A
53	S2	1442	U
53	S2	1446	A
53	S2	1449	G
53	S2	1450	G
53	S2	1453	C
53	S2	1454	A
53	S2	1462	U
53	S2	1463	U
53	S2	1480	A
53	S2	1486	A
53	S2	1489	A
53	S2	1490	G
53	S2	1495	G
53	S2	1497	G
53	S2	1498	A
53	S2	1505	U
53	S2	1507	G
53	S2	1509	U
53	S2	1520	G
53	S2	1521	C
53	S2	1522	A
53	S2	1533	A
53	S2	1534	C
53	S2	1536	G
53	S2	1546	G
53	S2	1551	U
53	S2	1552	G
53	S2	1556	A
53	S2	1558	C
53	S2	1570	G
53	S2	1573	G
53	S2	1575	G
53	S2	1578	U
53	S2	1580	A

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Mol	Chain	Res	Type
53	S2	1585	U
53	S2	1586	U
53	S2	1587	G
53	S2	1588	A
53	S2	1598	G
53	S2	1599	U
53	S2	1600	G
53	S2	1601	A
53	S2	1606	G
53	S2	1621	U
53	S2	1623	A
53	S2	1630	A
53	S2	1632	G
53	S2	1633	A
53	S2	1637	A
53	S2	1638	G
53	S2	1639	G
53	S2	1640	A
53	S2	1646	C
53	S2	1648	G
53	S2	1649	U
53	S2	1654	G
53	S2	1656	G
53	S2	1663	A
53	S2	1665	G
53	S2	1668	U
53	S2	1669	G
53	S2	1680	G
53	S2	1683	C
53	S2	1699	A
53	S2	1701	C
53	S2	1705	C
53	S2	1712	A
53	S2	1715	A
53	S2	1719	A
53	S2	1721	U
53	S2	1722	G
53	S2	1744	G
53	S2	1745	A
53	S2	1752	C
53	S2	1753	C
53	S2	1754	G

Continued on next page...

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Mol	Chain	Res	Type
53	S2	1756	C
53	S2	1757	G
53	S2	1758	G
53	S2	1761	U
53	S2	1772	C
53	S2	1773	C
53	S2	1774	C
53	S2	1776	G
53	S2	1777	G
53	S2	1780	G
53	S2	1782	G
53	S2	1783	C
53	S2	1785	C
53	S2	1786	U
53	S2	1787	G
53	S2	1810	U
53	S2	1812	U
53	S2	1813	A
53	S2	1820	G
53	S2	1822	A
53	S2	1823	A
53	S2	1826	G
53	S2	1829	G
53	S2	1831	A
53	S2	1832	A
53	S2	1835	A
53	S2	1849	G
53	S2	1851	A
53	S2	1852	C
53	S2	1861	G
53	S2	1862	G
53	S2	1863	A
53	S2	1865	C

All (20) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
2	CC	18	G
4	L5	406	C
4	L5	914	U
4	L5	955	G
4	L5	1082	C

Continued on next page...

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Mol	Chain	Res	Type
4	L5	1633	G
4	L5	1977	C
4	L5	2033	A
4	L5	2416	G
4	L5	2675	G
4	L5	2760	G
4	L5	2786	C
4	L5	3614	G
4	L5	3673	C
4	L5	4699	U
4	L5	4913	G
53	S2	112	U
53	S2	291	G
53	S2	688	U
53	S2	1434	C

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

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

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 264 ligands modelled in this entry, 264 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

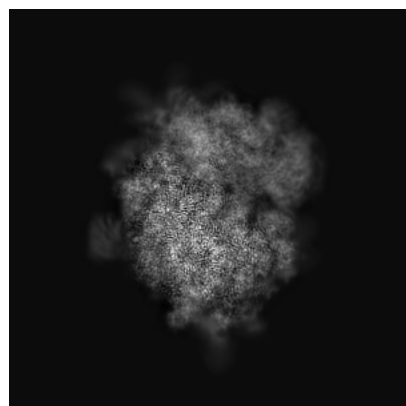
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-52582. These allow visual inspection of the internal detail of the map and identification of artifacts.

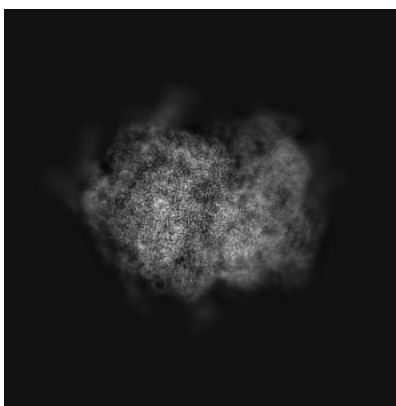
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

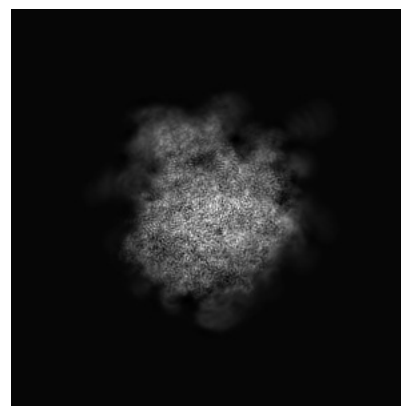
6.1.1 Primary map



X

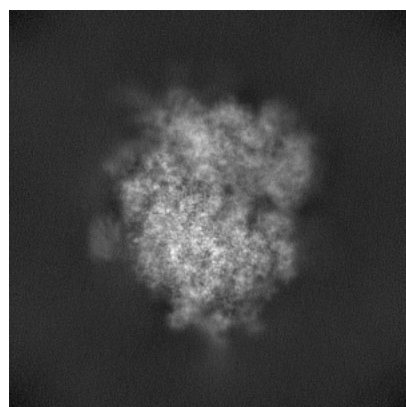


Y

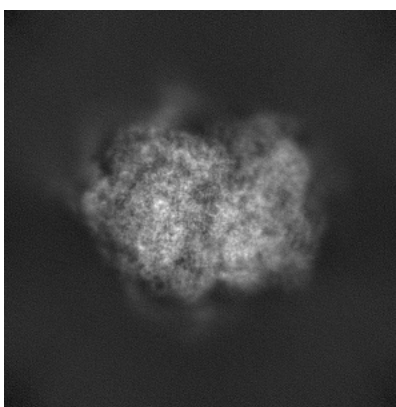


Z

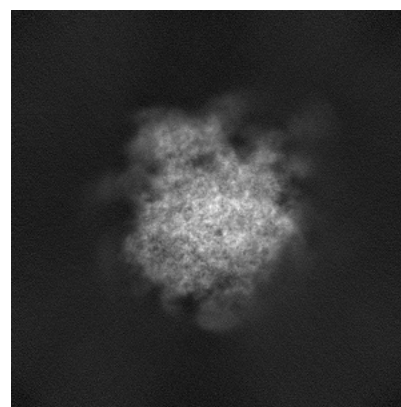
6.1.2 Raw map



X



Y

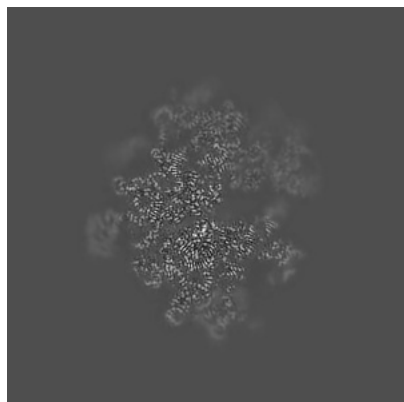


Z

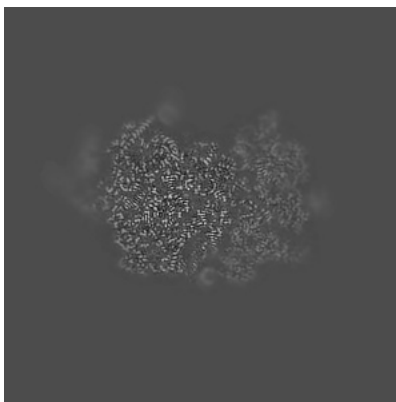
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

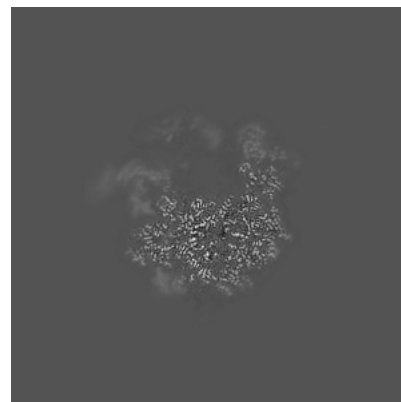
6.2.1 Primary map



X Index: 225

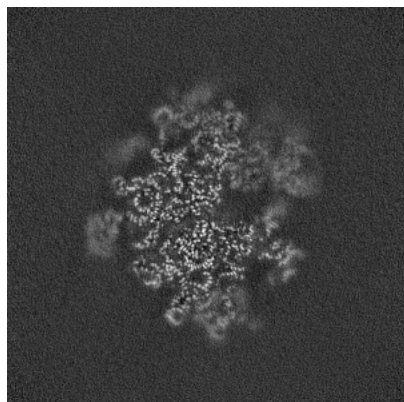


Y Index: 225

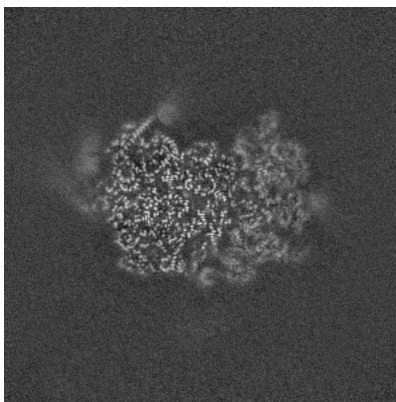


Z Index: 225

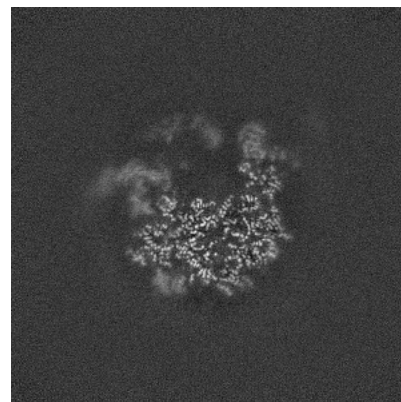
6.2.2 Raw map



X Index: 225



Y Index: 225

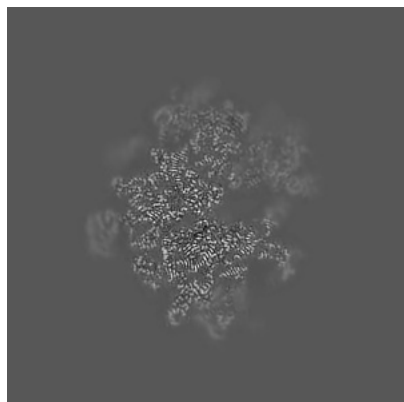


Z Index: 225

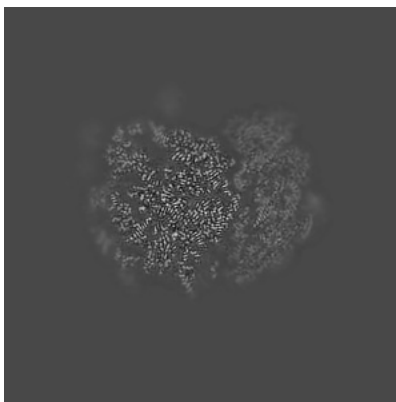
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

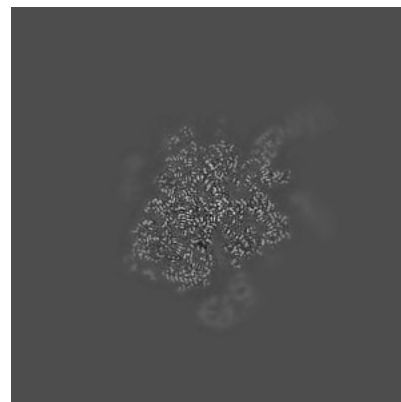
6.3.1 Primary map



X Index: 223

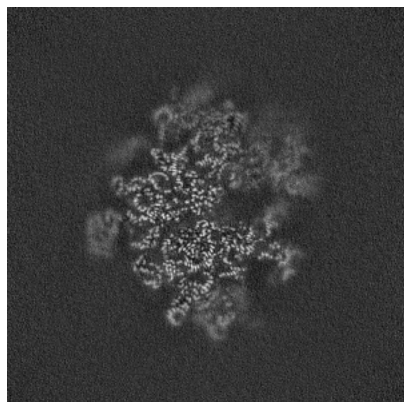


Y Index: 212

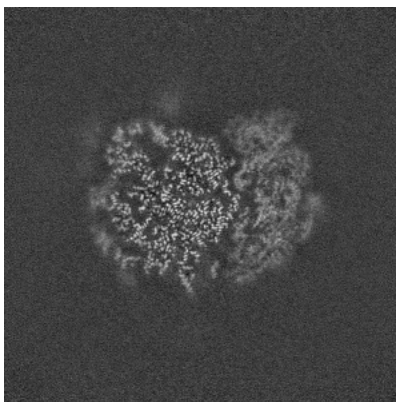


Z Index: 192

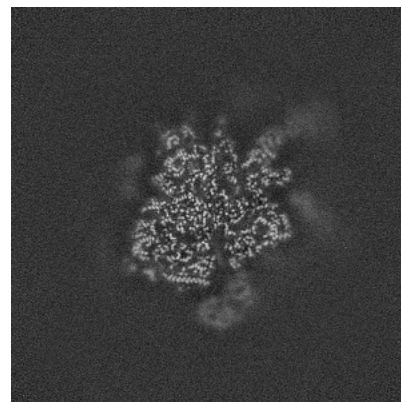
6.3.2 Raw map



X Index: 224



Y Index: 212

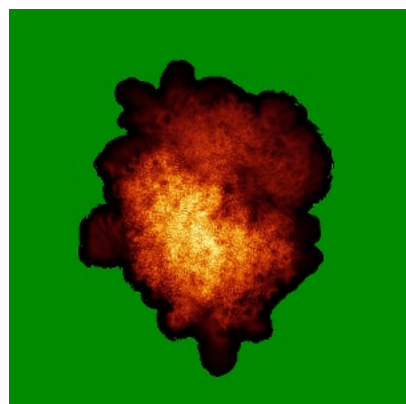


Z Index: 190

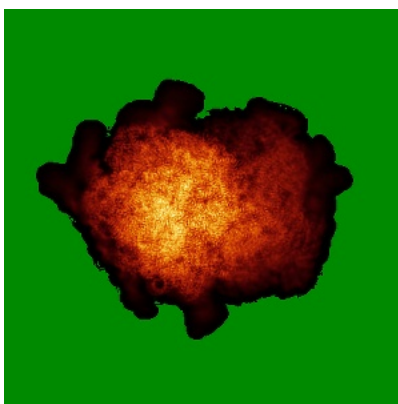
The images above show the largest variance slices of the map in three orthogonal directions.

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

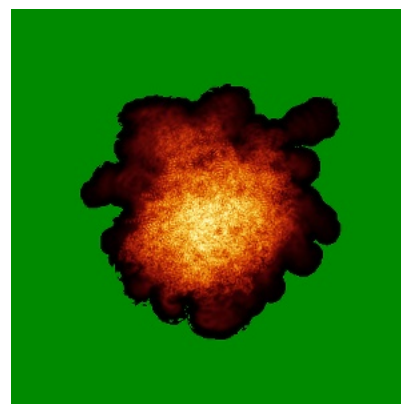
6.4.1 Primary map



X

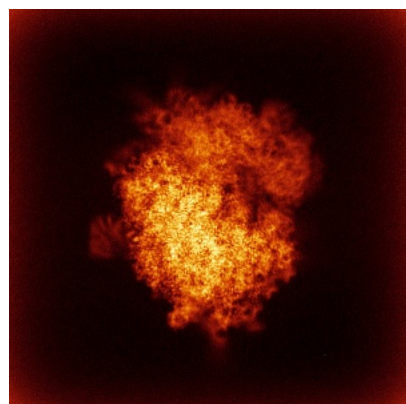


Y

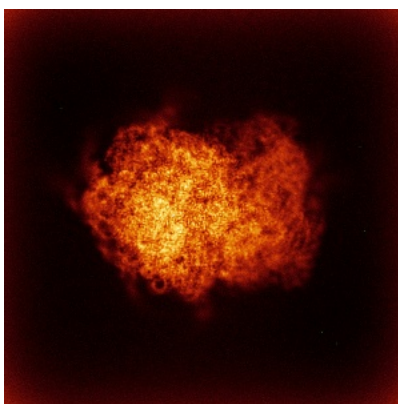


Z

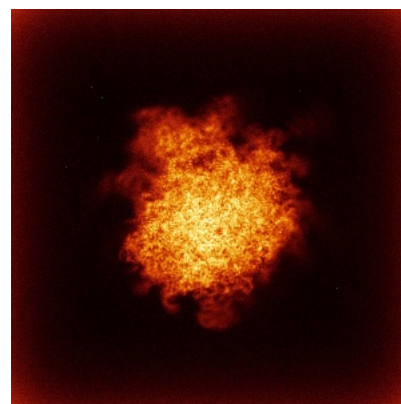
6.4.2 Raw map



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.

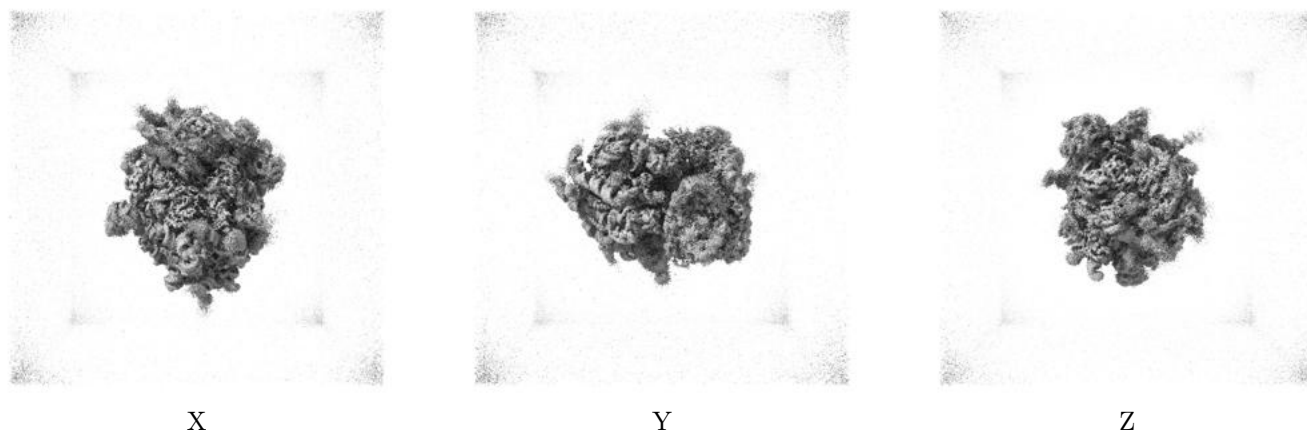
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.35. 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.

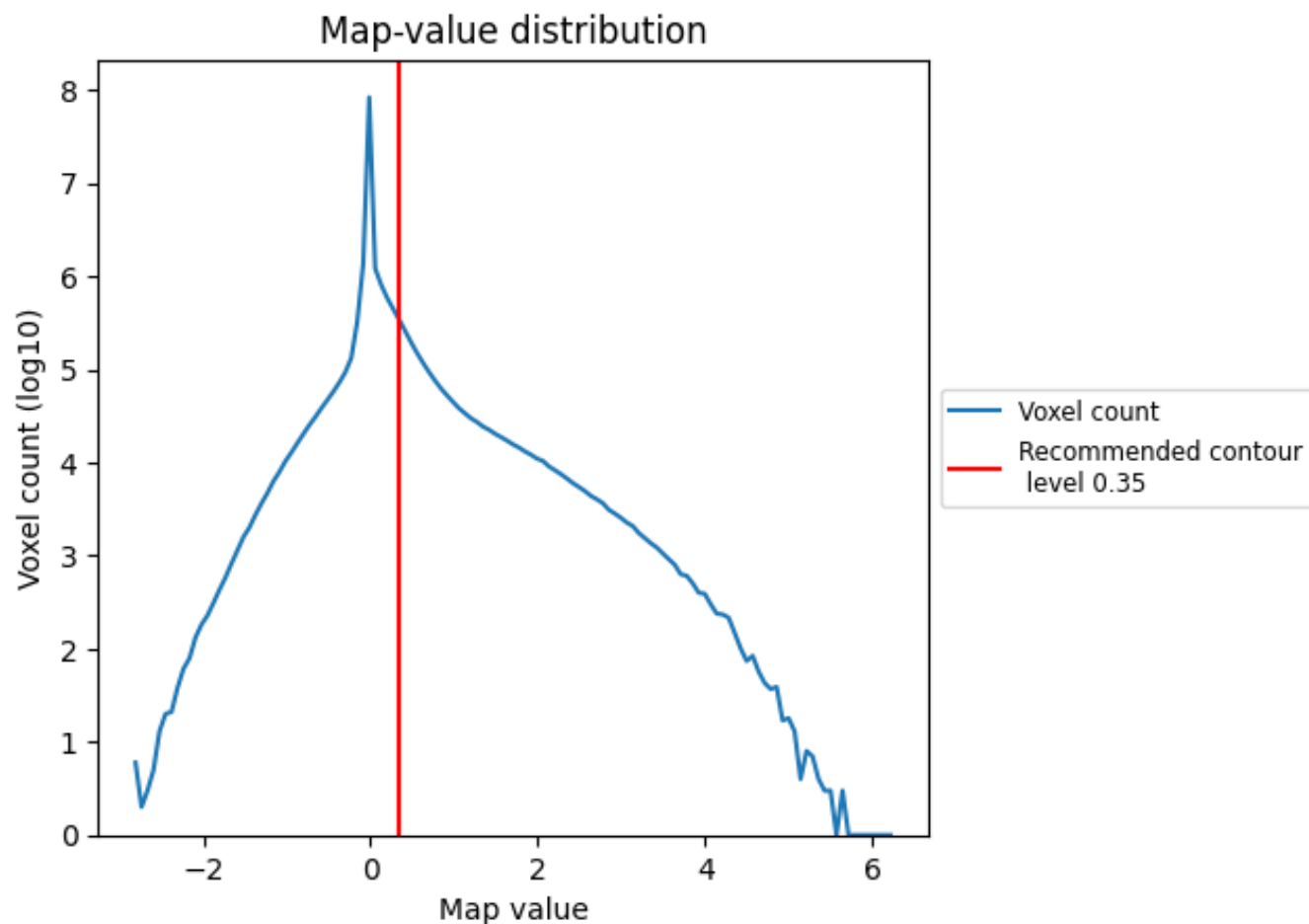
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

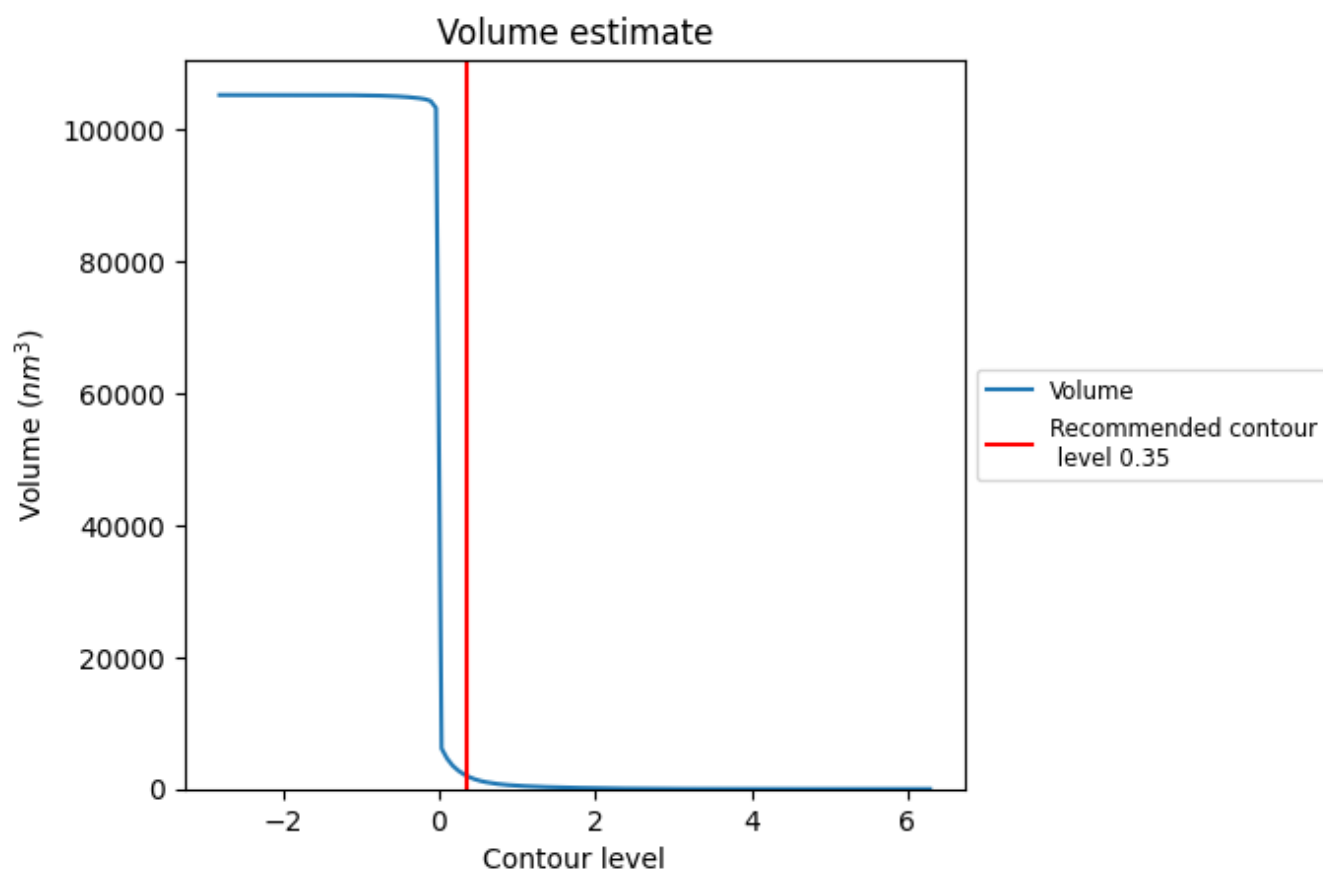
This section contains the results of statistical analysis of the map.

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.

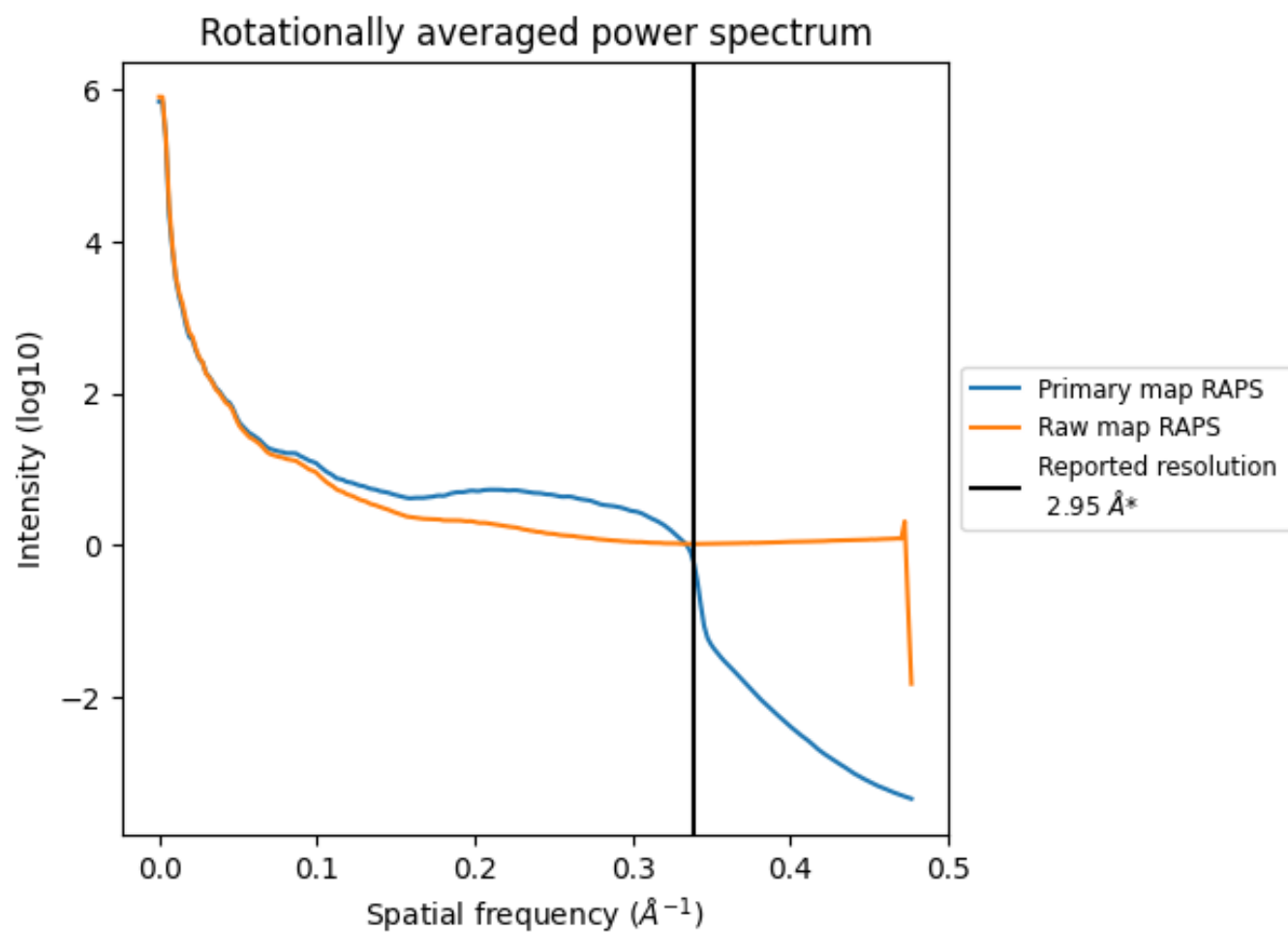
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 2031 nm^3 ; this corresponds to an approximate mass of 1834 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 ⓘ

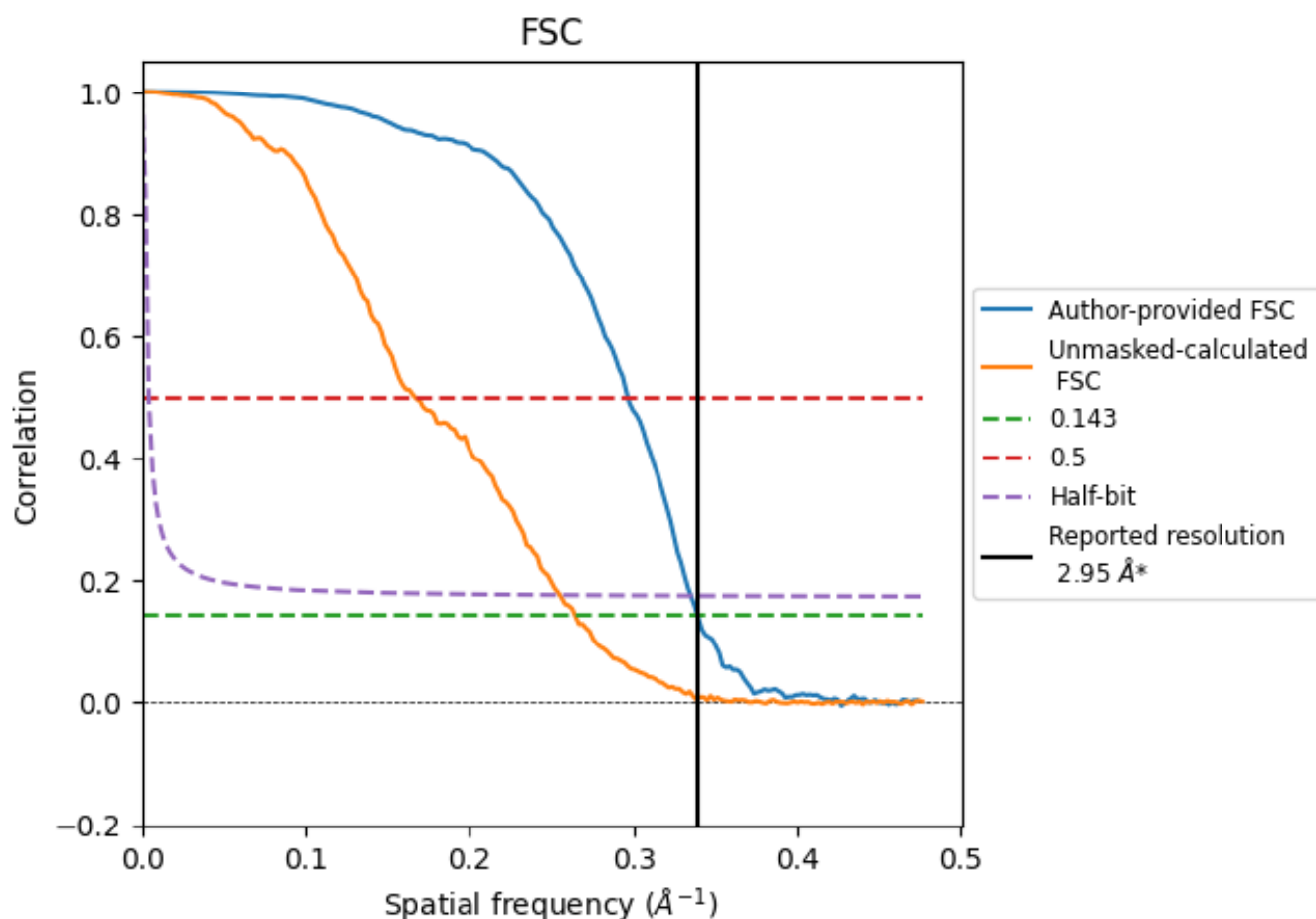


*Reported resolution corresponds to spatial frequency of 0.339 $\text{\AA}^{-1}$

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 0.339 Å⁻¹

8.2 Resolution estimates [i](#)

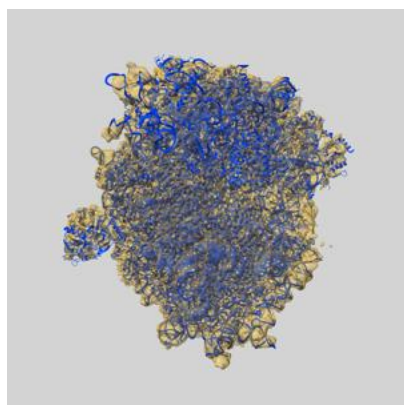
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	2.95	-	-
Author-provided FSC curve	2.95	3.37	2.98
Unmasked-calculated*	3.78	6.00	3.92

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.78 differs from the reported value 2.95 by more than 10 %

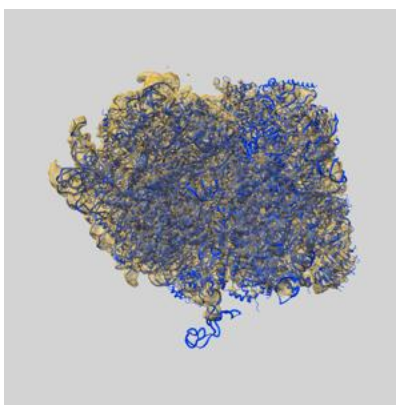
9 Map-model fit [i](#)

This section contains information regarding the fit between EMDB map EMD-52582 and PDB model 9I2E. Per-residue inclusion information can be found in section 3 on page 21.

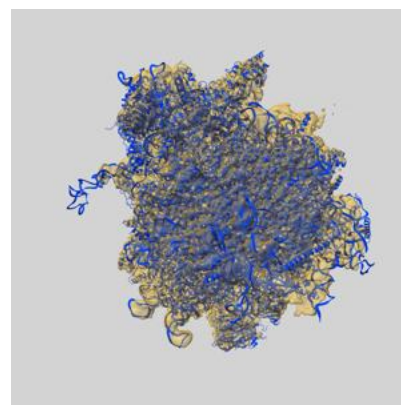
9.1 Map-model overlay [i](#)



X



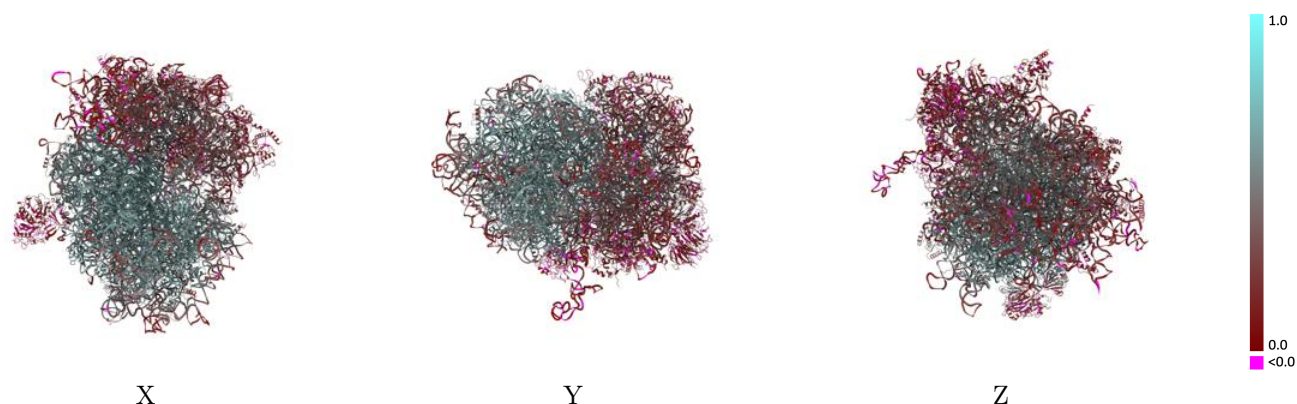
Y



Z

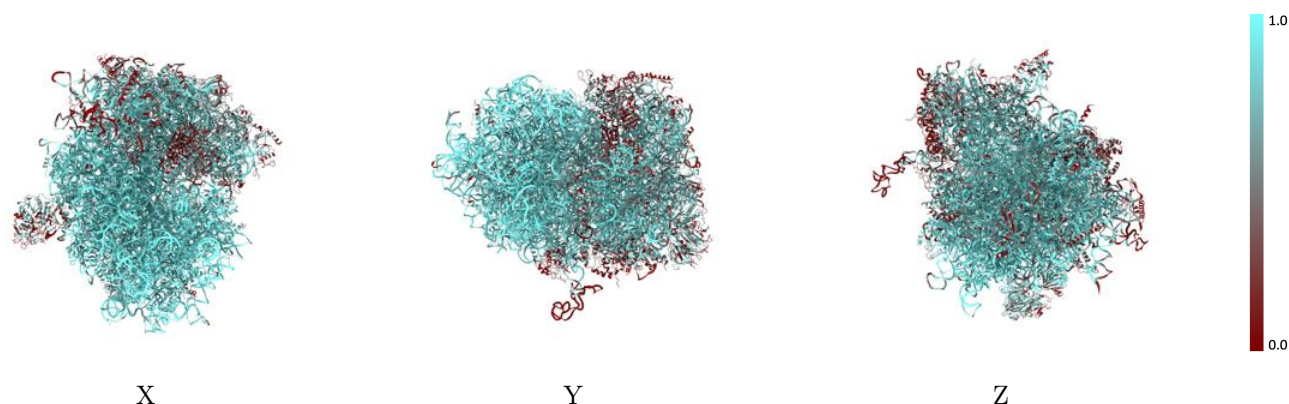
The images above show the 3D surface view of the map at the recommended contour level 0.35 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



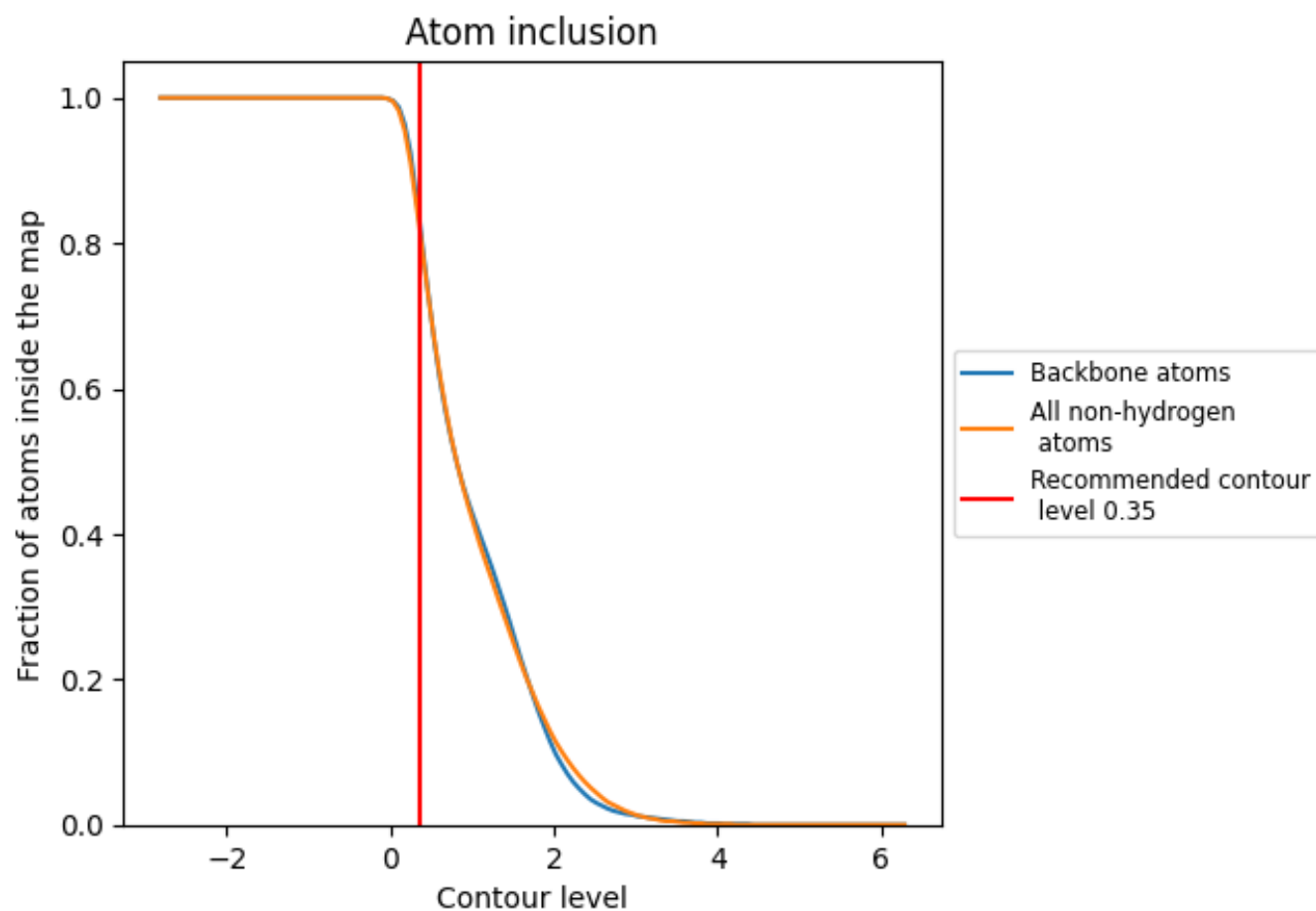
The images above show the model with each residue coloured according its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.35).

9.4 Atom inclusion ⓘ



At the recommended contour level, 84% of all backbone atoms, 83% 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 (0.35) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8270	 0.4360
CB	 0.3630	 0.3030
CC	 0.7040	 0.2800
CD	 0.4860	 0.3230
L5	 0.9510	 0.5240
L7	 0.9910	 0.5690
L8	 0.9680	 0.5590
LA	 0.9670	 0.6040
LB	 0.9370	 0.5740
LC	 0.9410	 0.5700
LD	 0.9260	 0.5050
LE	 0.8620	 0.4850
LF	 0.9640	 0.5850
LG	 0.8600	 0.4920
LH	 0.9430	 0.5540
LI	 0.9490	 0.5780
LJ	 0.8210	 0.4300
LL	 0.9030	 0.5380
LM	 0.9530	 0.5440
LN	 0.9840	 0.6140
LO	 0.9420	 0.5810
LP	 0.9680	 0.6000
LQ	 0.9700	 0.6030
LR	 0.8770	 0.5160
LS	 0.9730	 0.5970
LT	 0.9450	 0.5650
LU	 0.8900	 0.4930
LV	 0.9440	 0.5950
LW	 0.5970	 0.3920
LX	 0.9340	 0.5630
LY	 0.9300	 0.5540
LZ	 0.9400	 0.5320
La	 0.9650	 0.5970
Lb	 0.8910	 0.4970
Lc	 0.9260	 0.5300



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Chain	Atom inclusion	Q-score
Ld	 0.9250	 0.5530
Le	 0.9760	 0.6080
Lf	 0.9760	 0.6060
Lg	 0.9390	 0.5720
Lh	 0.9340	 0.5550
Li	 0.9340	 0.5530
Lj	 0.9750	 0.6070
Lk	 0.8800	 0.4860
Ll	 0.9600	 0.5920
Lm	 0.9470	 0.5820
Ln	 0.8660	 0.5090
Lo	 0.9230	 0.5710
Lp	 0.9230	 0.5790
Lr	 0.9600	 0.5740
Lz	 0.2010	 0.0730
NA	 0.2990	 0.1220
NB	 0.3500	 0.2070
NM	 0.5060	 0.1400
S2	 0.8210	 0.3350
SA	 0.7050	 0.2790
SB	 0.5830	 0.2990
SC	 0.7610	 0.3620
SD	 0.5540	 0.2410
SE	 0.6790	 0.2770
SF	 0.3580	 0.1960
SG	 0.4640	 0.2010
SH	 0.5170	 0.2060
SI	 0.6040	 0.2710
SJ	 0.7350	 0.2970
SK	 0.6210	 0.2160
SL	 0.6900	 0.3400
SM	 0.4810	 0.1290
SN	 0.6770	 0.3500
SO	 0.7100	 0.3240
SP	 0.5510	 0.2110
SQ	 0.4640	 0.1790
SR	 0.5020	 0.2070
SS	 0.4620	 0.1920
ST	 0.4880	 0.1900
SU	 0.5970	 0.2190
SV	 0.6430	 0.2760
SW	 0.7420	 0.3660

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Chain	Atom inclusion	Q-score
SX	 0.7720	 0.4400
SY	 0.4800	 0.2280
SZ	 0.1820	 0.1900
Sa	 0.7200	 0.3820
Sb	 0.6090	 0.2530
Sc	 0.1830	 0.1860
Sd	 0.8100	 0.3140
Se	 0.5450	 0.3280
Sf	 0.3150	 0.1520
Sg	 0.4630	 0.1450