



Full wwPDB EM Validation Report ⓘ

Feb 9, 2026 – 01:19 PM EST

PDB ID : 9Y4G / pdb_00009y4g
EMDB ID : EMD-72482
Title : Structure of tuco-tuco ribosome (rotated, tRNAs, and mRNA)
Authors : Gutierrez-Vargas, C.; De, S.; Maji, S.; Liu, Z.; Nieb, M.; Seluanov, A.; Gorbunova, V.; Frank, J.
Deposited on : 2025-09-03
Resolution : 3.30 Å(reported)
Based on initial model : 4v6x

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:

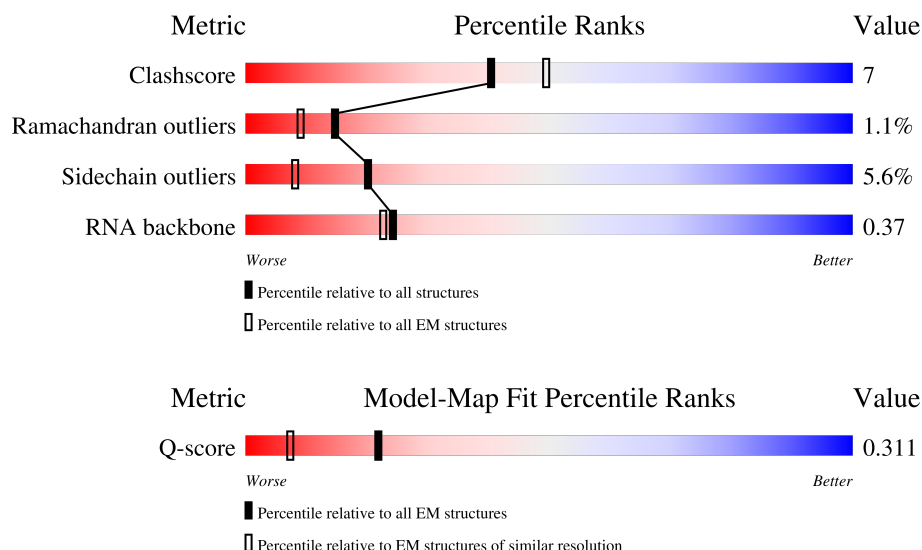
EMDB validation analysis : 0.0.1.dev131
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20231227.v01 (using entries in the PDB archive December 27th 2023)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.48

1 Overall quality at a glance

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

The reported resolution of this entry is 3.30 Å.

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



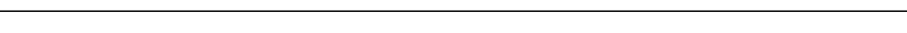
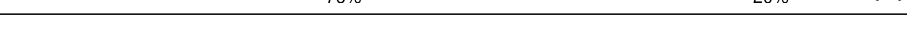
Metric	Whole archive (#Entries)	EM structures (#Entries)	Similar EM resolution (#Entries, resolution range(Å))
Clashscore	210492	15764	-
Ramachandran outliers	207382	16835	-
Sidechain outliers	206894	16415	-
RNA backbone	6643	2191	-
Q-score	-	25397	15087 (2.80 - 3.80)

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	Ag	313	
2	AU	104	
3	AK	98	

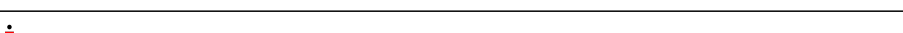
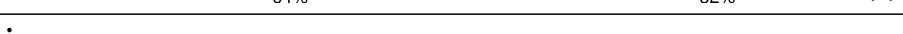
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Mol	Chain	Length	Quality of chain
4	AM	124	
5	AS	137	
6	Ad	53	
7	AR	126	
8	AP	127	
9	AT	141	
10	AZ	75	
11	Ac	64	
12	AD	227	
13	Af	71	
14	AF	191	
15	AQ	141	
16	B2	1796	
17	AO	136	
18	AX	142	
19	AN	150	
20	AL	158	
21	AB	215	
22	AA	208	
23	AV	82	
24	AY	126	
25	Aa	107	
26	Ab	84	
27	Ae	59	
28	AJ	182	

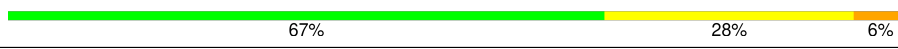
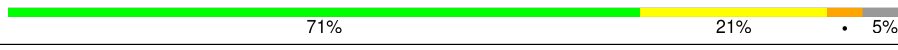
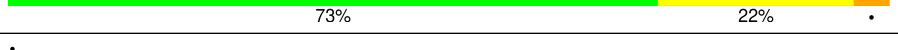
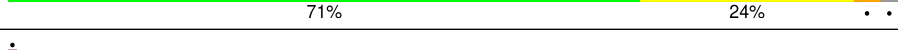
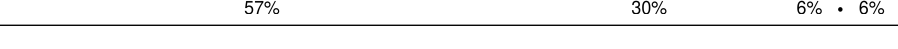
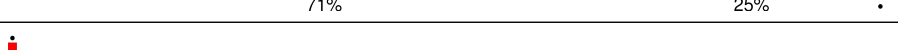
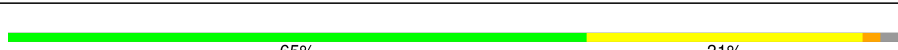
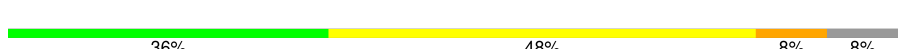
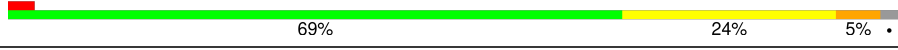
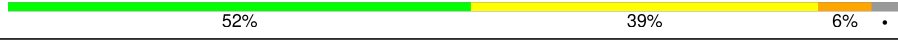
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Mol	Chain	Length	Quality of chain
29	AE	263	
30	AC	226	
31	AG	237	
32	AH	190	
33	AW	129	
34	AI	206	
35	CR	189	
36	CW	124	
37	Cz	217	
38	CO	202	
39	CL	210	
40	CV	133	
41	CM	139	
42	Ca	147	
43	CN	203	
44	CI	213	
45	CD	289	
46	CQ	188	
47	CA	255	
48	CS	175	
49	CT	159	
50	CP	152	
51	CU	112	
52	CX	121	
53	CY	133	

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Mol	Chain	Length	Quality of chain
54	CZ	135	
55	Cr	137	
56	Ch	123	
57	Cb	78	
58	CB	397	
59	CF	229	
60	Cd	113	
61	Ce	133	
62	Cf	109	
63	Cg	114	
64	Ci	103	
65	Cj	90	
66	Ck	69	
67	Cl	50	
68	CC	368	
69	Cm	52	
70	Cn	25	
71	Cp	90	
72	Co	105	
73	CJ	168	
74	CH	191	
75	CE	262	
76	CG	246	
77	A5	1778	
78	A7	121	

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Mol	Chain	Length	Quality of chain
79	A8	157	57% 38%
80	Cc	77	62% 35%
81	Bb	76	47% 34% 14%
82	Dd	13	77% 23%
83	A6	2108	57% 36% 6%

2 Entry composition [i](#)

There are 85 unique types of molecules in this entry. The entry contains 219326 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 Guanine nucleotide-binding protein subunit beta-2-like 1.

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

- Molecule 2 is a protein called 40S ribosomal protein S20.

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

- Molecule 3 is a protein called 40S ribosomal protein S10.

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

- Molecule 4 is a protein called 40S ribosomal protein S12.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	AM	106	Total	C	N	O	S	0	0
			818	512	145	155	6		

- Molecule 5 is a protein called 40S ribosomal protein S18.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	AS	137	Total	C	N	O	S	0	0
			1139	714	231	193	1		

- Molecule 6 is a protein called 40S ribosomal protein S29.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	Ad	53	Total	C	N	O	S	0	0
			445	278	90	72	5		

- Molecule 7 is a protein called 40S ribosomal protein S17.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	AR	126	Total	C	N	O	S	0	0
			1019	639	188	187	5		

- Molecule 8 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	AP	117	Total	C	N	O	S	0	0
			970	616	182	165	7		

- Molecule 9 is a protein called 40S ribosomal protein S19.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	AT	141	Total	C	N	O	S	0	0
			1101	690	212	196	3		

- Molecule 10 is a protein called 40S ribosomal protein S25.

Mol	Chain	Residues	Atoms					AltConf	Trace
10	AZ	74	Total	C	N	O	S	0	0
			594	380	110	103	1		

- Molecule 11 is a protein called 40S ribosomal protein S28.

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

- Molecule 12 is a protein called 40S ribosomal protein S3.

Mol	Chain	Residues	Atoms					AltConf	Trace
12	AD	226	Total	C	N	O	S	0	0
			1757	1120	316	314	7		

- Molecule 13 is a protein called 40S ribosomal protein S27a.

Mol	Chain	Residues	Atoms					AltConf	Trace
13	Af	71	Total	C	N	O	S	0	0
			581	367	109	98	7		

- Molecule 14 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	AF	191	Total	C	N	O	S	0	0
			1509	943	286	273	7		

- Molecule 15 is a protein called 40S ribosomal protein S16.

Mol	Chain	Residues	Atoms					AltConf	Trace
15	AQ	141	Total	C	N	O	S	0	0
			1124	715	212	194	3		

- Molecule 16 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
16	B2	1778	Total	C	N	O	P	0	0
			37608	16773	6715	12343	1777		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
17	AO	130	Total	C	N	O	S	0	0
			975	595	192	182	6		

- Molecule 18 is a protein called 40S ribosomal protein S23.

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

- Molecule 19 is a protein called 40S ribosomal protein S13.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	AN	149	Total	C	N	O	S	0	0
			1202	770	228	203	1		

- Molecule 20 is a protein called 40S ribosomal protein S11.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	AL	157	Total	C	N	O	S	0	0
			1288	822	240	220	6		

- Molecule 21 is a protein called 40S ribosomal protein S3a.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	AB	215	Total	C	N	O	S	0	0
			1747	1110	313	310	14		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
22	AA	203	Total	C	N	O	S	0	0
			1611	1027	284	292	8		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
23	AV	82	Total	C	N	O	S	0	0
			625	384	116	120	5		

- Molecule 24 is a protein called 40S ribosomal protein S24.

Mol	Chain	Residues	Atoms					AltConf	Trace
24	AY	126	Total	C	N	O	S	0	0
			1023	646	200	172	5		

- Molecule 25 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
25	Aa	107	Total	C	N	O	S	0	0
			847	528	176	138	5		

- Molecule 26 is a protein called 40S ribosomal protein S27.

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

- Molecule 27 is a protein called 40S ribosomal protein S30.

Mol	Chain	Residues	Atoms					AltConf	Trace
27	Ae	52	Total	C	N	O	S	0	0
			419	259	92	67	1		

- Molecule 28 is a protein called 40S ribosomal protein S9.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	AJ	175	Total	C	N	O	S	0	0
			1463	933	292	236	2		

- Molecule 29 is a protein called 40S ribosomal protein S4, X isoform.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	AE	261	Total	C	N	O	S	0	0
			2073	1324	385	355	9		

- Molecule 30 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	AC	223	Total	C	N	O	S	0	0
			1727	1116	296	305	10		

- Molecule 31 is a protein called 40S ribosomal protein S6.

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

- Molecule 32 is a protein called 40S ribosomal protein S7.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	AH	189	Total	C	N	O	S	0	0
			1521	969	280	271	1		

- Molecule 33 is a protein called 40S ribosomal protein S15a.

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

- Molecule 34 is a protein called 40S ribosomal protein S8.

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

- Molecule 35 is a protein called 60S ribosomal protein L19.

Mol	Chain	Residues	Atoms					AltConf	Trace
35	CR	188	Total	C	N	O	S	0	0
			1574	976	337	251	10		

- Molecule 36 is a protein called 60S ribosomal protein L24.

Mol	Chain	Residues	Atoms					AltConf	Trace
36	CW	124	Total	C	N	O	S	0	0
			1015	634	207	170	4		

- Molecule 37 is a protein called 60S ribosomal protein L10a.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	Cz	131	Total	C	N	O	S	0	0
			1043	668	182	187	6		

- Molecule 38 is a protein called 60S ribosomal protein L13a.

Mol	Chain	Residues	Atoms					AltConf	Trace
38	CO	199	Total	C	N	O	S	0	0
			1634	1053	319	257	5		

- Molecule 39 is a protein called 60S ribosomal protein L13.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	CL	208	Total	C	N	O	S	0	0
			1682	1052	348	278	4		

- Molecule 40 is a protein called 60S ribosomal protein L23.

Mol	Chain	Residues	Atoms					AltConf	Trace
40	CV	130	Total	C	N	O	S	0	0
			973	615	183	170	5		

- Molecule 41 is a protein called 60S ribosomal protein L14.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	CM	139	Total	C	N	O	S	0	0
			1139	730	218	183	8		

- Molecule 42 is a protein called 60S ribosomal protein L27a.

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

- Molecule 43 is a protein called 60S ribosomal protein L15.

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

- Molecule 44 is a protein called 60S ribosomal protein L10-like.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	CI	213	Total	C	N	O	S	0	0
			1711	1082	329	285	15		

- Molecule 45 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
45	CD	289	Total	C	N	O	S	0	0
			2353	1483	429	427	14		

- Molecule 46 is a protein called 60S ribosomal protein L18.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	CQ	181	Total	C	N	O	S	0	0
			1465	915	303	242	5		

- Molecule 47 is a protein called 60S ribosomal protein L8.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	CA	254	Total	C	N	O	S	0	0
			1948	1220	398	324	6		

- Molecule 48 is a protein called 60S ribosomal protein L18a.

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

- Molecule 49 is a protein called 60S ribosomal protein L21.

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

- Molecule 50 is a protein called 60S ribosomal protein L17.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	CP	152	Total	C	N	O	S	0	0
			1233	771	240	213	9		

- Molecule 51 is a protein called 60S ribosomal protein L22.

Mol	Chain	Residues	Atoms					AltConf	Trace
51	CU	105	Total	C	N	O	S	0	0
			884	562	151	169	2		

- Molecule 52 is a protein called 60S ribosomal protein L23a.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	CX	121	Total	C	N	O	S	0	0
			994	636	187	170	1		

- Molecule 53 is a protein called 60S ribosomal protein L26.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	CY	133	Total	C	N	O	S	0	0
			1107	695	225	185	2		

- Molecule 54 is a protein called 60S ribosomal protein L27.

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

- Molecule 55 is a protein called 60S ribosomal protein L28.

Mol	Chain	Residues	Atoms					AltConf	Trace
55	Cr	137	Total	C	N	O	S	0	0
			1104	682	231	185	6		

- Molecule 56 is a protein called 60S ribosomal protein L35.

Mol	Chain	Residues	Atoms					AltConf	Trace
56	Ch	123	Total	C	N	O	S	0	0
			1023	646	206	169	2		

- Molecule 57 is a protein called 60S ribosomal protein L29.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	Cb	74	Total	C	N	O	S	0	0
			603	373	129	98	3		

- Molecule 58 is a protein called 60S ribosomal protein L3.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	CB	394	Total	C	N	O	S	0	0
			3178	2024	596	544	14		

- Molecule 59 is a protein called 60S ribosomal protein L7.

Mol	Chain	Residues	Atoms					AltConf	Trace
59	CF	229	Total	C	N	O	S	0	0
			1910	1226	370	305	9		

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

Mol	Chain	Residues	Atoms					AltConf	Trace
60	Cd	113	Total	C	N	O	S	0	0
			931	586	181	162	2		

- Molecule 61 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	Ce	131	Total	C	N	O	S	0	0
			1078	681	222	169	6		

- Molecule 62 is a protein called 60S ribosomal protein L35a.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	Cf	103	Total	C	N	O	S	0	0
			838	531	167	137	3		

- Molecule 63 is a protein called 60S ribosomal protein L34.

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

- Molecule 64 is a protein called 60S ribosomal protein L36.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	Ci	103	Total	C	N	O	S	0	0
			840	526	178	130	6		

- Molecule 65 is a protein called 60S ribosomal protein L37.

Mol	Chain	Residues	Atoms					AltConf	Trace
65	Cj	89	Total	C	N	O	S	0	0
			726	446	161	114	5		

- Molecule 66 is a protein called 60S ribosomal protein L38.

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

- Molecule 67 is a protein called 60S ribosomal protein L39.

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

- Molecule 68 is a protein called 60S ribosomal protein L4.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	CC	362	Total	C	N	O	S	0	0
			2882	1814	576	479	13		

- Molecule 69 is a protein called 60S ribosomal protein L40.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	Cm	51	Total	C	N	O	S	0	0
			421	260	89	66	6		

- Molecule 70 is a protein called 60S ribosomal protein L41.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	Cn	23	Total	C	N	O	S	0	0
			222	134	61	25	2		

- Molecule 71 is a protein called 60S ribosomal protein L37a.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	Cp	89	Total	C	N	O	S	0	0
			693	437	133	116	7		

- Molecule 72 is a protein called 60S ribosomal protein L36a.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	Co	104	Total	C	N	O	S	0	0
			851	533	174	138	6		

- Molecule 73 is a protein called 60S ribosomal protein L11.

Mol	Chain	Residues	Atoms					AltConf	Trace
73	CJ	158	Total	C	N	O	S	0	0
			1271	802	240	223	6		

- Molecule 74 is a protein called 60S ribosomal protein L9.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	CH	191	Total	C	N	O	S	0	0
			1526	960	285	275	6		

- Molecule 75 is a protein called 60S ribosomal protein L6.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	CE	257	Total	C	N	O	S	0	0
			2076	1334	395	343	4		

- Molecule 76 is a protein called 60S ribosomal protein L7a.

Mol	Chain	Residues	Atoms					AltConf	Trace
76	CG	246	Total	C	N	O	S	0	0
			1973	1256	379	334	4		

- Molecule 77 is a RNA chain called LSU-alpha rRNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	A5	1733	Total	C	N	O	P	0	0
			36611	16271	6688	11920	1732		

- Molecule 78 is a RNA chain called 5S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
78	A7	121	Total	C	N	O	P	0	0
			2578	1150	458	850	120		

- Molecule 79 is a RNA chain called 5.8S rRNA (157-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
79	A8	156	Total	C	N	O	P	0	0
			3314	1480	585	1094	155		

- Molecule 80 is a RNA chain called tRNA (78-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
80	Cc	77	Total	C	N	O	P	0	0
			1644	732	298	537	77		

- Molecule 81 is a RNA chain called tRNA (77-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
81	Bb	65	Total	C	N	O	P	0	0
			1407	633	258	452	64		

- Molecule 82 is a RNA chain called RNA (5'-R(P*UP*UP*UP*UP*UP*UP*UP*UP*UP*U P*UP*UP*U*(MG))-3').

Mol	Chain	Residues	Atoms					AltConf	Trace
82	Dd	13	Total	C	N	O	P	0	0
			260	117	26	104	13		

- Molecule 83 is a RNA chain called LSU-beta rRNA (2108-MER).

Mol	Chain	Residues	Atoms					AltConf	Trace
83	A6	2103	Total	C	N	O	P	0	0
			43784	19452	7821	14408	2103		

- Molecule 84 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
84	Cc	1	Total 1	Mg 1	0
84	Bb	1	Total 1	Mg 1	0
84	Dd	1	Total 1	Mg 1	0

- Molecule 85 is water.

Mol	Chain	Residues	Atoms		AltConf
85	B2	3	Total 3	O 3	0
85	Cc	5	Total 5	O 5	0
85	Bb	5	Total 5	O 5	0
85	Dd	1	Total 1	O 1	0
85	A6	1	Total 1	O 1	0

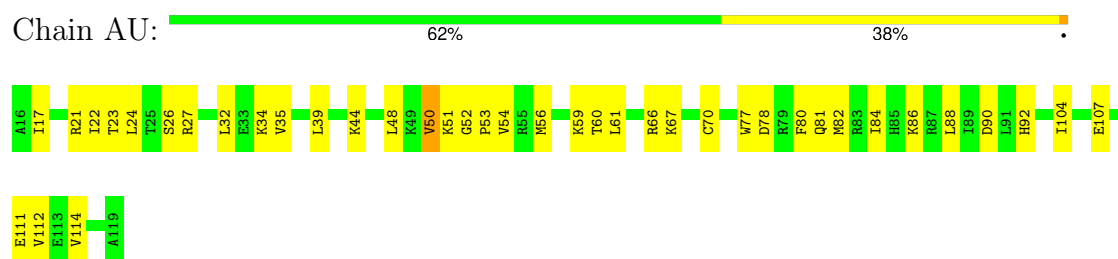
3 Residue-property plots [i](#)

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

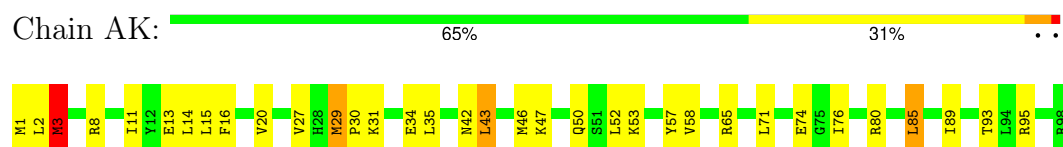
- Molecule 1: Guanine nucleotide-binding protein subunit beta-2-like 1



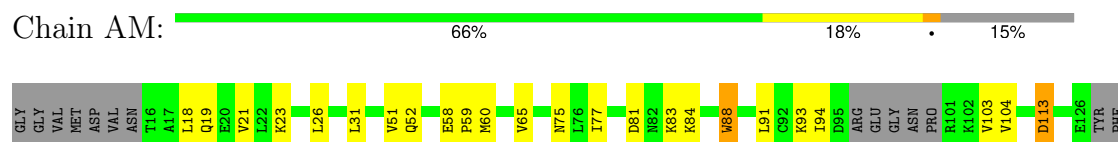
- Molecule 2: 40S ribosomal protein S20



- Molecule 3: 40S ribosomal protein S10



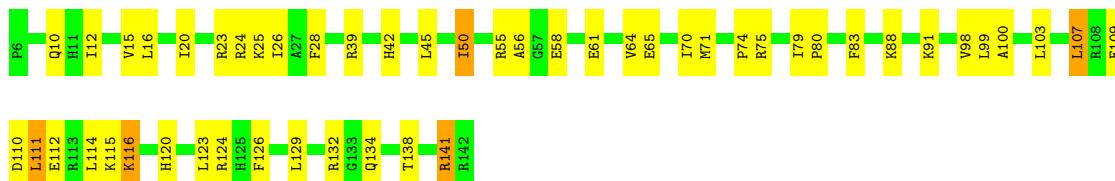
- Molecule 4: 40S ribosomal protein S12



LYS
CYS
LYS
LYS

• Molecule 5: 40S ribosomal protein S18

Chain AS:  64% 33%



• Molecule 6: 40S ribosomal protein S29

Chain Ad:  62% 36%



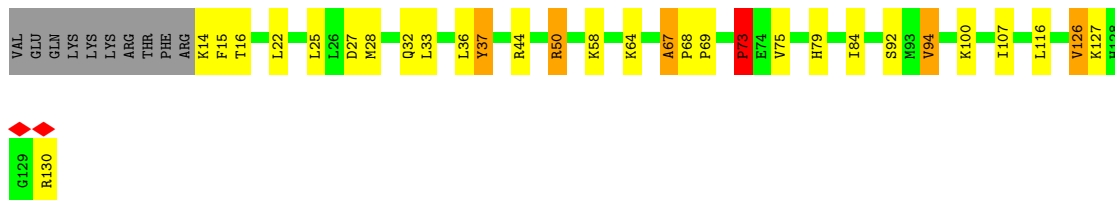
• Molecule 7: 40S ribosomal protein S17

Chain AR:  76% 18% 6%



• Molecule 8: 40S ribosomal protein S15

Chain AP:  69% 19% 8%



• Molecule 9: 40S ribosomal protein S19

Chain AT:  74% 23%



• Molecule 10: 40S ribosomal protein S25

Chain AZ:  65% 31%



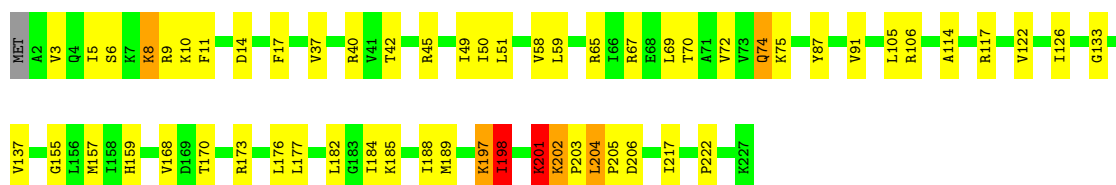
- Molecule 11: 40S ribosomal protein S28

Chain Ac: 78% 22%



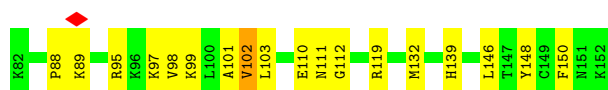
- Molecule 12: 40S ribosomal protein S3

Chain AD: 74% 22% ..



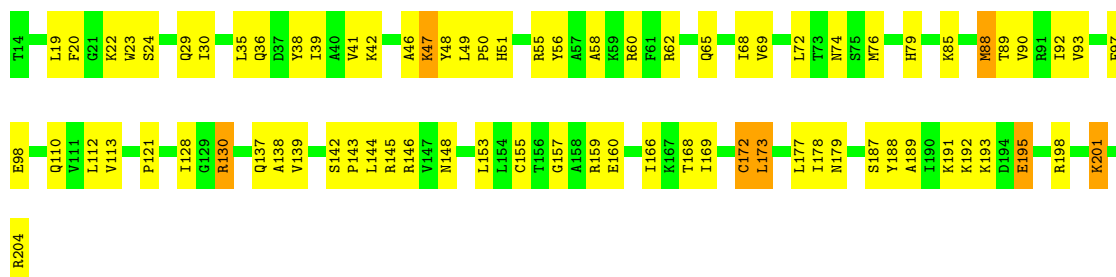
- Molecule 13: 40S ribosomal protein S27a

Chain Af: 75% 24% .



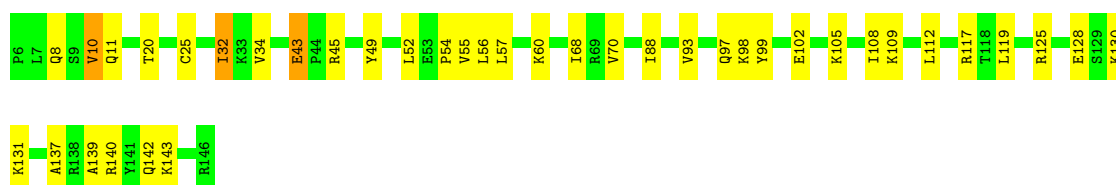
- Molecule 14: 40S ribosomal protein S5

Chain AF: 60% 37% .

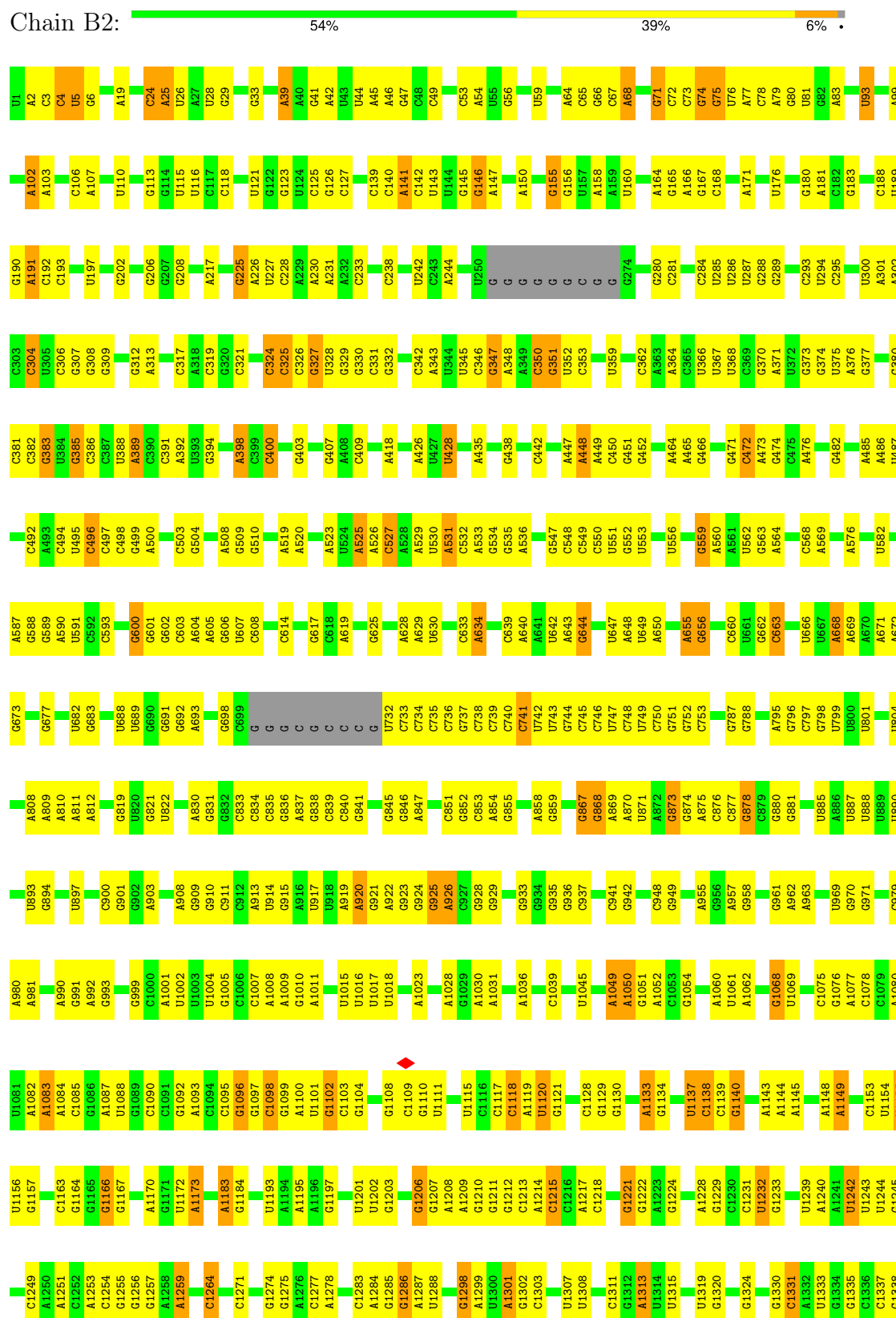


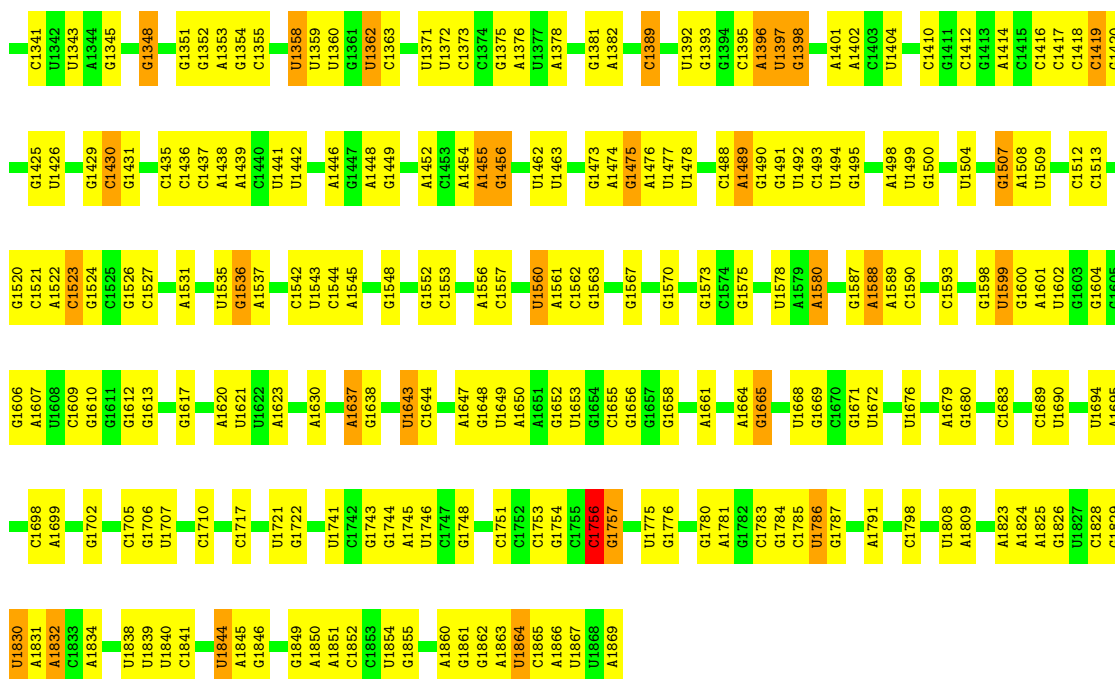
- Molecule 15: 40S ribosomal protein S16

Chain AQ: 72% 26% .

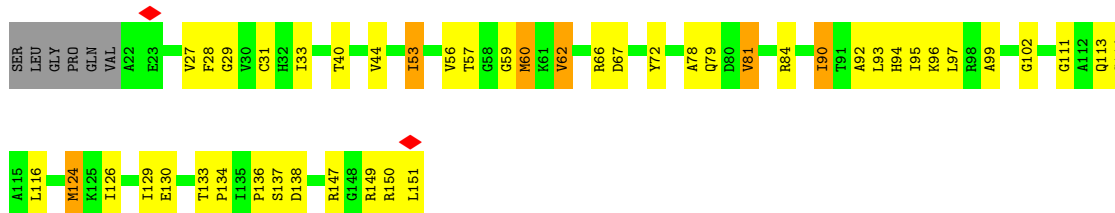


• Molecule 16: 18S ribosomal RNA

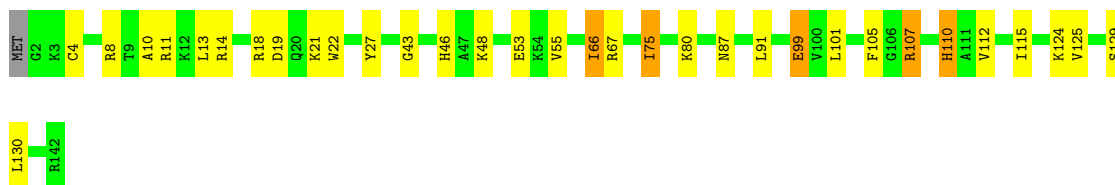
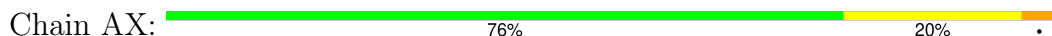




• Molecule 17: 40S ribosomal protein S14



• Molecule 18: 40S ribosomal protein S23



• Molecule 19: 40S ribosomal protein S13



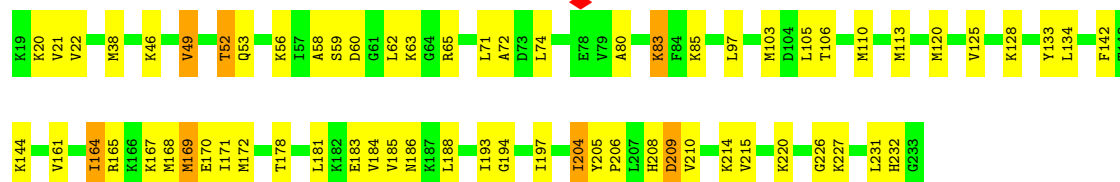
• Molecule 20: 40S ribosomal protein S11

Chain AL: 



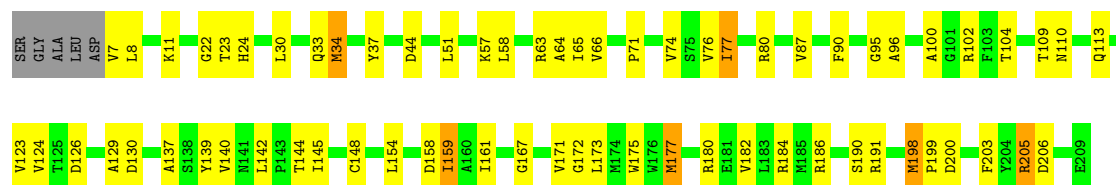
- Molecule 21: 40S ribosomal protein S3a

Chain AB: 



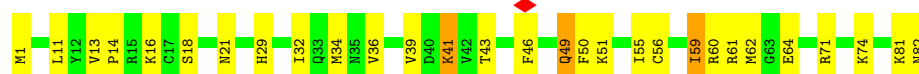
- Molecule 22: 40S ribosomal protein SA

Chain AA: 



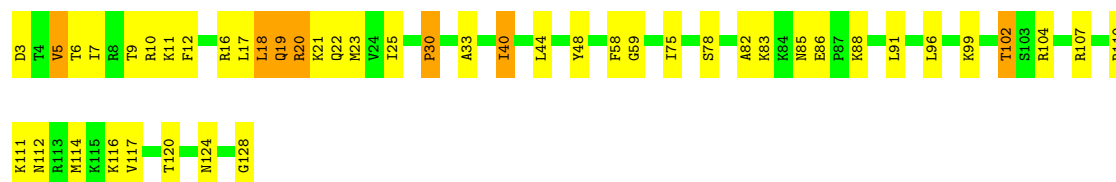
- Molecule 23: 40S ribosomal protein S21

Chain AV: 



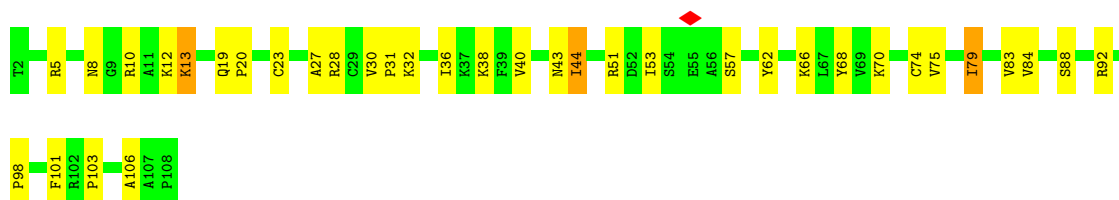
- Molecule 24: 40S ribosomal protein S24

Chain AY: 



- Molecule 25: 40S ribosomal protein S26

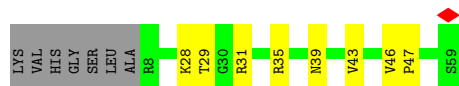
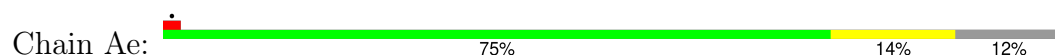
Chain Aa: 



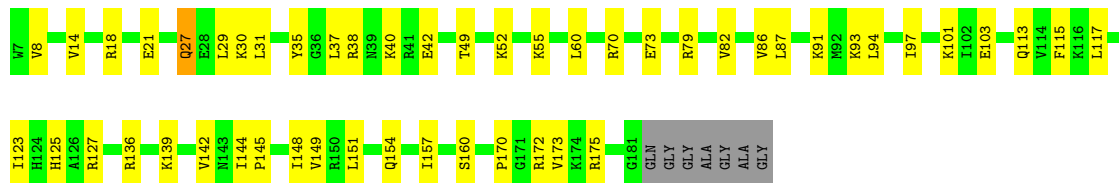
- Molecule 26: 40S ribosomal protein S27



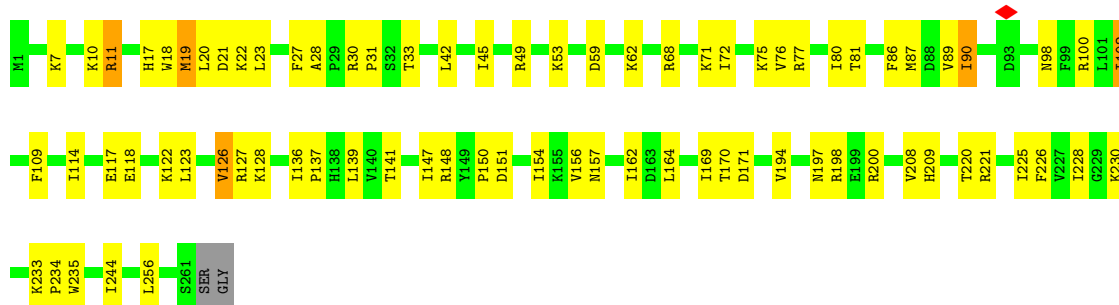
- Molecule 27: 40S ribosomal protein S30



- Molecule 28: 40S ribosomal protein S9

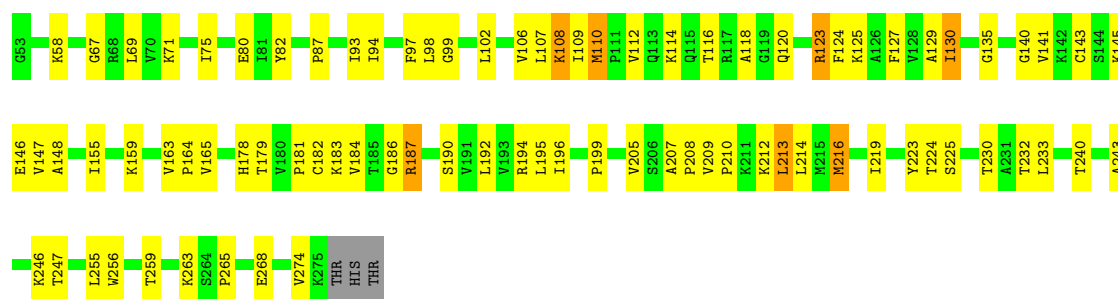


- Molecule 29: 40S ribosomal protein S4, X isoform



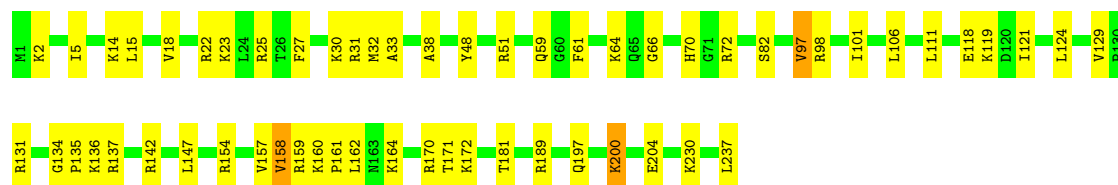
- Molecule 30: 40S ribosomal protein S2





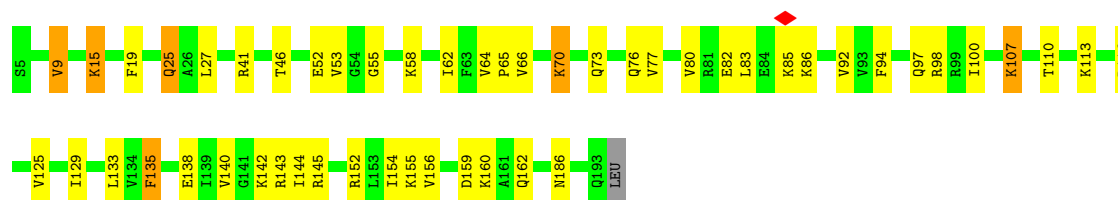
- Molecule 31: 40S ribosomal protein S6

Chain AG: 76% 23%



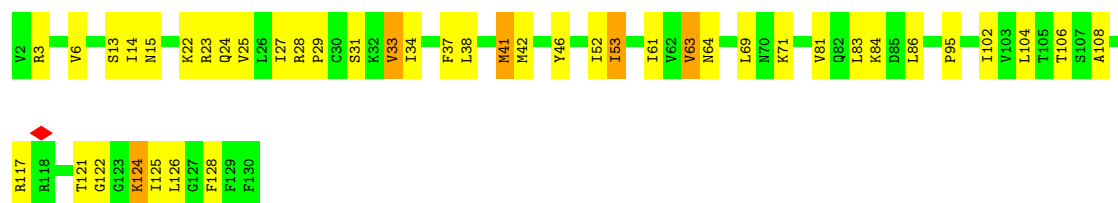
- Molecule 32: 40S ribosomal protein S7

Chain AH: 73% 24%



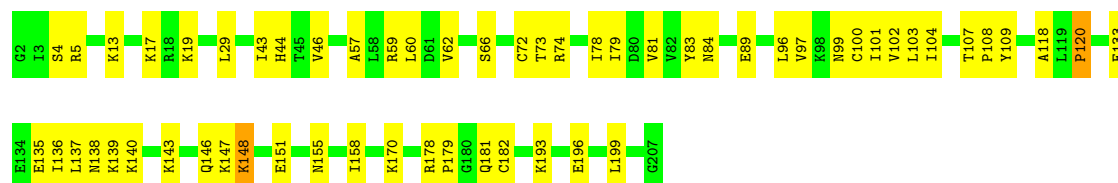
- Molecule 33: 40S ribosomal protein S15a

Chain AW: 67% 29%

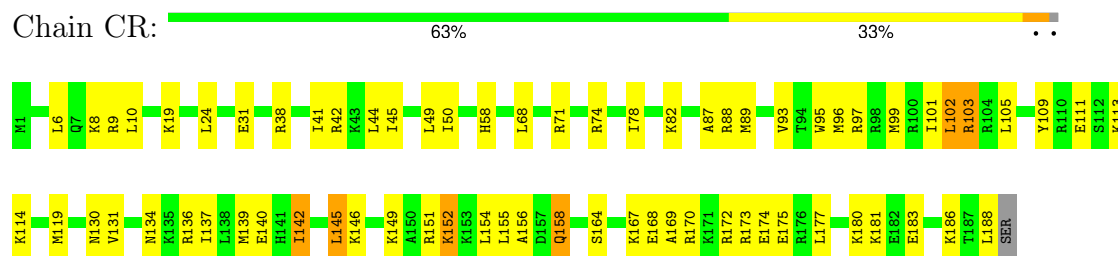


- Molecule 34: 40S ribosomal protein S8

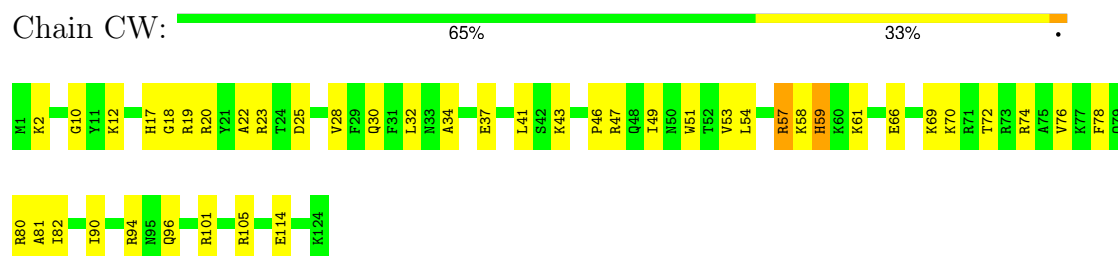
Chain AI: 72% 27%



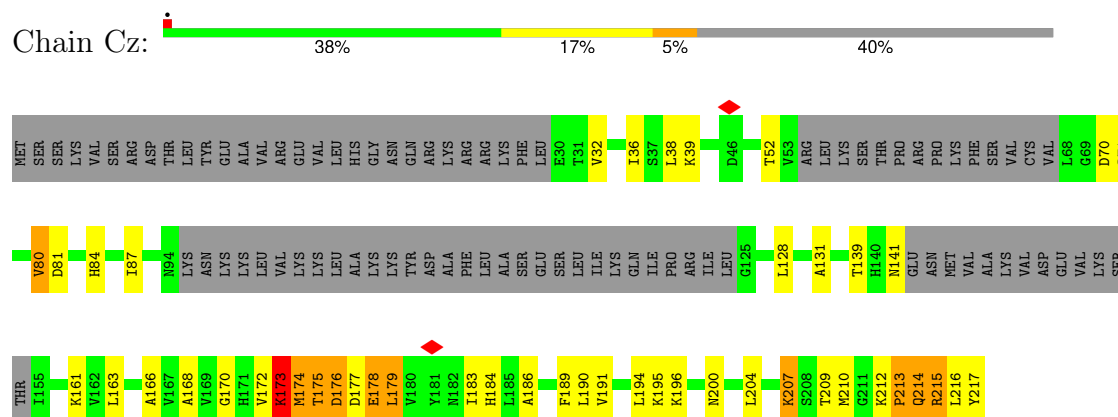
- Molecule 35: 60S ribosomal protein L19



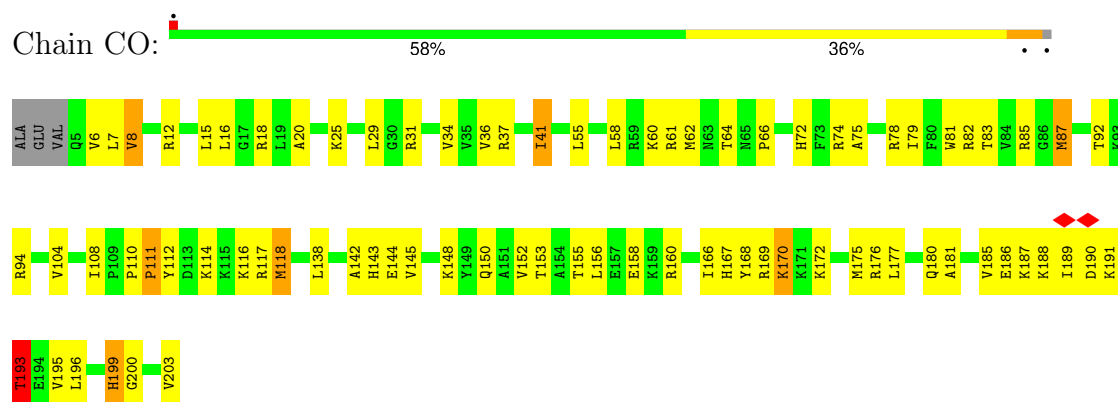
- Molecule 36: 60S ribosomal protein L24



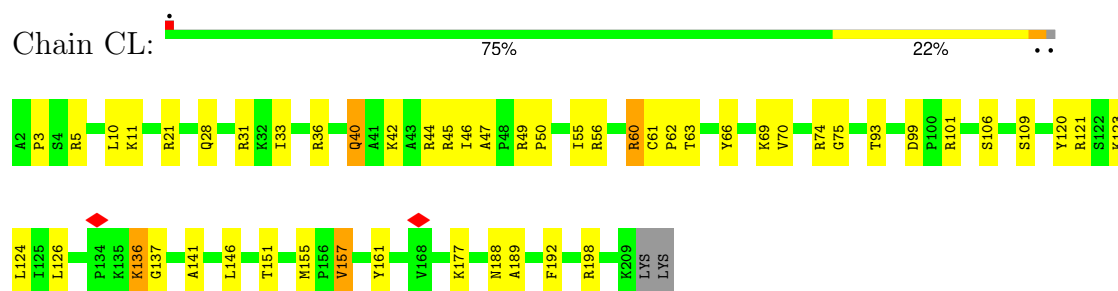
- Molecule 37: 60S ribosomal protein L10a



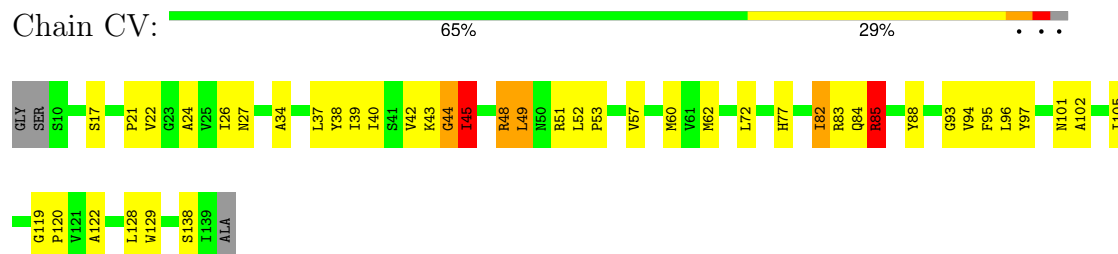
- Molecule 38: 60S ribosomal protein L13a



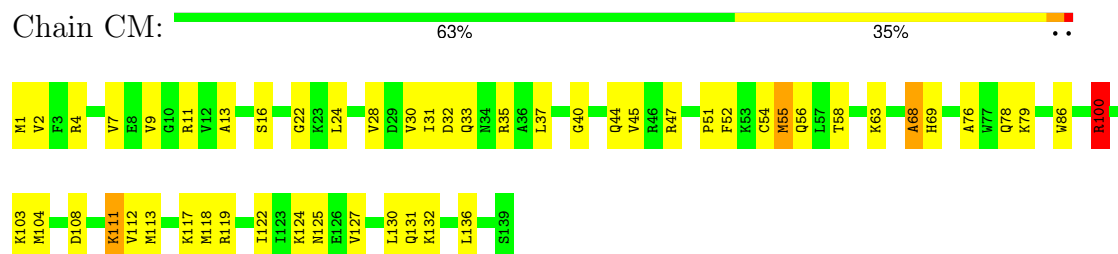
- Molecule 39: 60S ribosomal protein L13



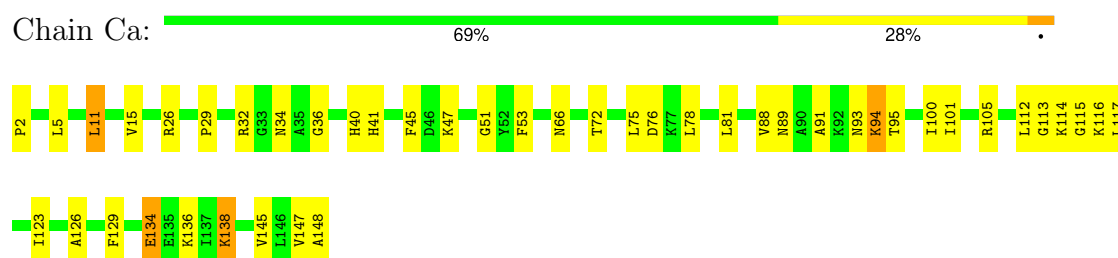
- Molecule 40: 60S ribosomal protein L23



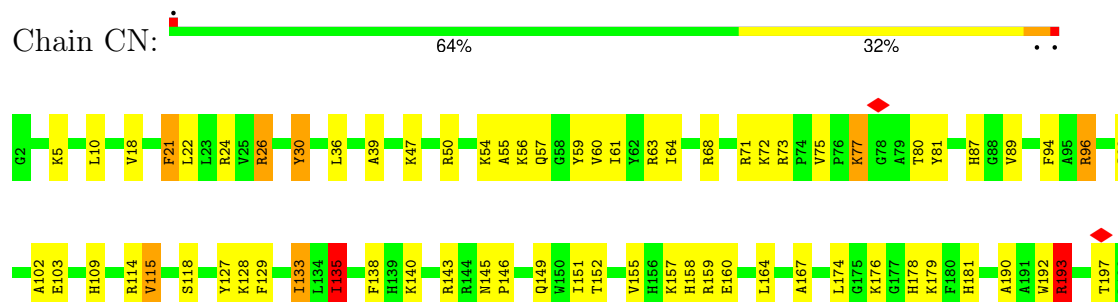
- Molecule 41: 60S ribosomal protein L14



- Molecule 42: 60S ribosomal protein L27a

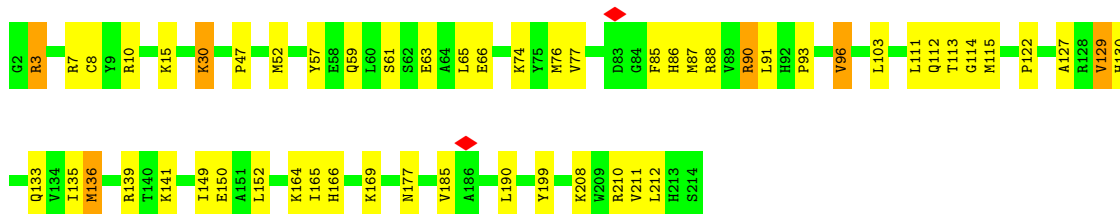
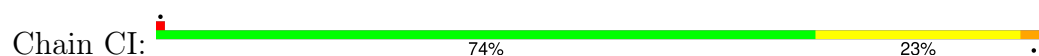


- Molecule 43: 60S ribosomal protein L15

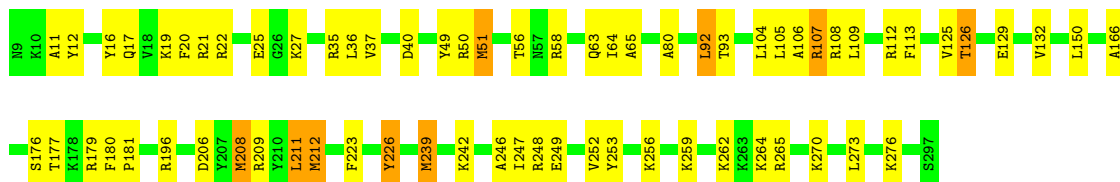
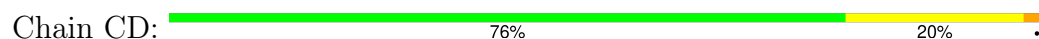




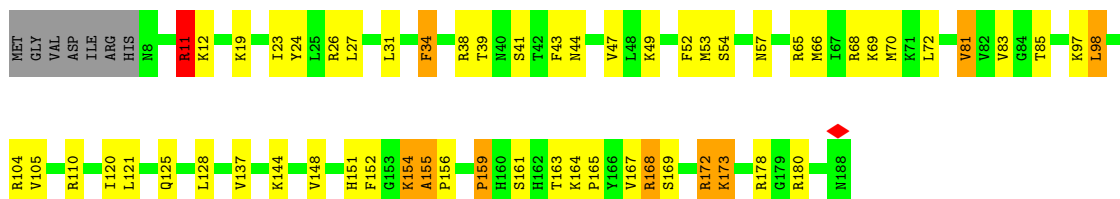
- Molecule 44: 60S ribosomal protein L10-like



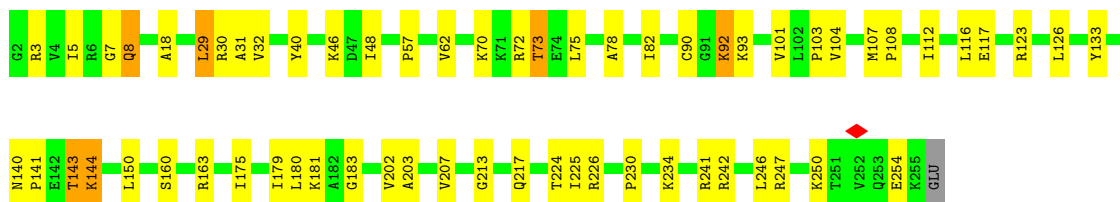
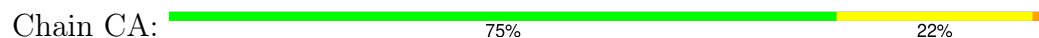
- Molecule 45: 60S ribosomal protein L5



- Molecule 46: 60S ribosomal protein L18

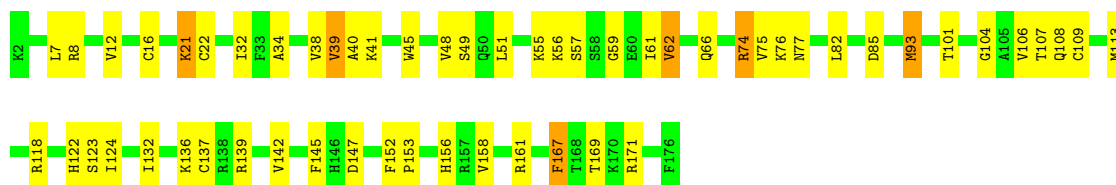


- Molecule 47: 60S ribosomal protein L8



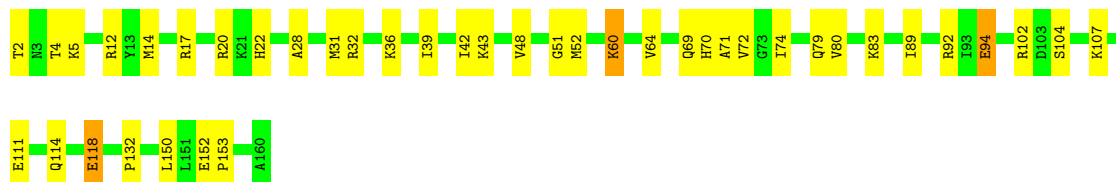
- Molecule 48: 60S ribosomal protein L18a





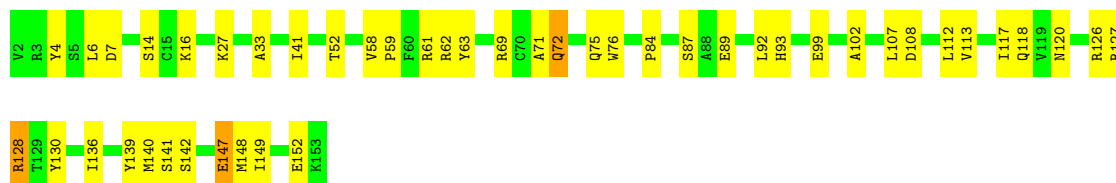
- Molecule 49: 60S ribosomal protein L21

Chain CT: 74% 24% •



- Molecule 50: 60S ribosomal protein L17

Chain CP: 70% 28% •



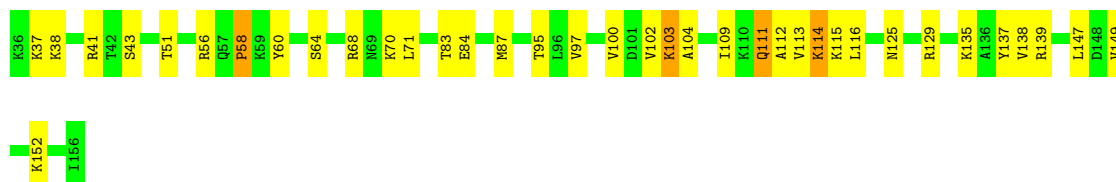
- Molecule 51: 60S ribosomal protein L22

Chain CU: 6% 79% 14% 6% •



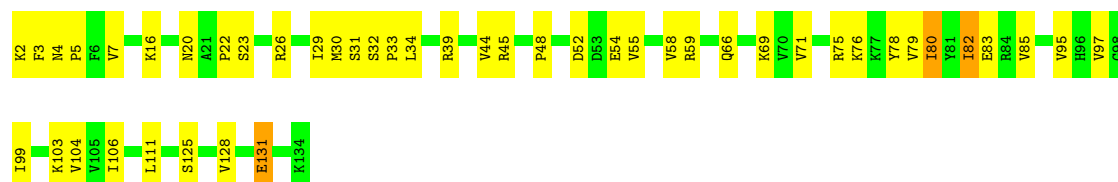
- Molecule 52: 60S ribosomal protein L23a

Chain CX: 69% 27% •

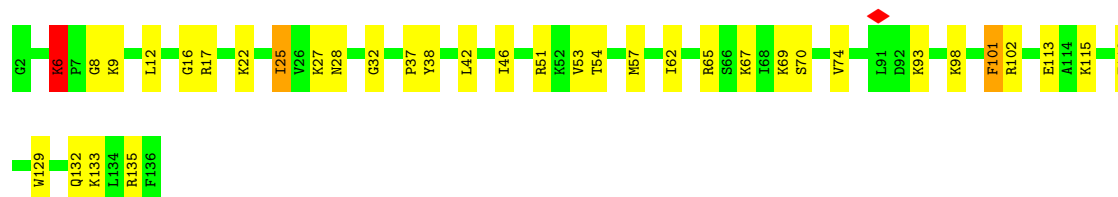
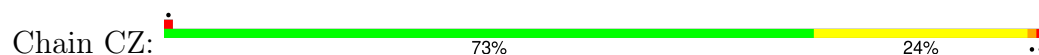


- Molecule 53: 60S ribosomal protein L26

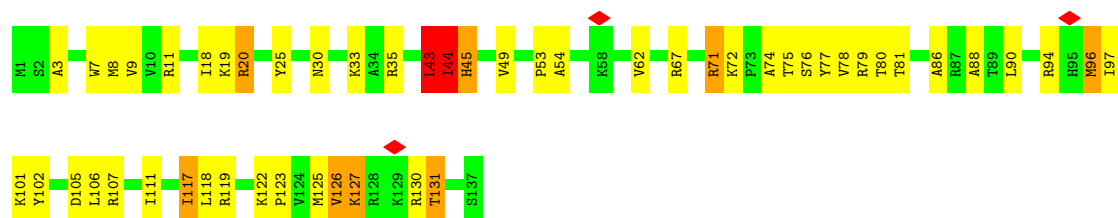
Chain CY: 65% 32% •



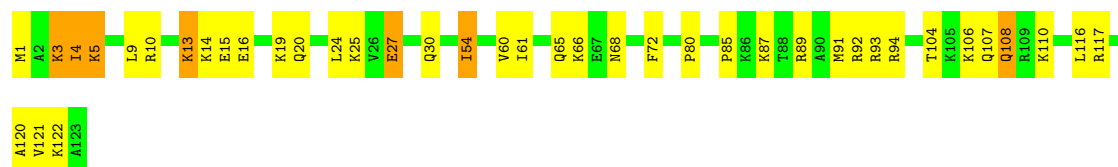
- Molecule 54: 60S ribosomal protein L27



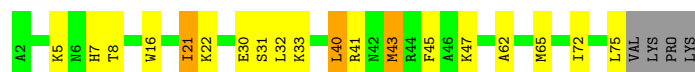
- Molecule 55: 60S ribosomal protein L28



- Molecule 56: 60S ribosomal protein L35

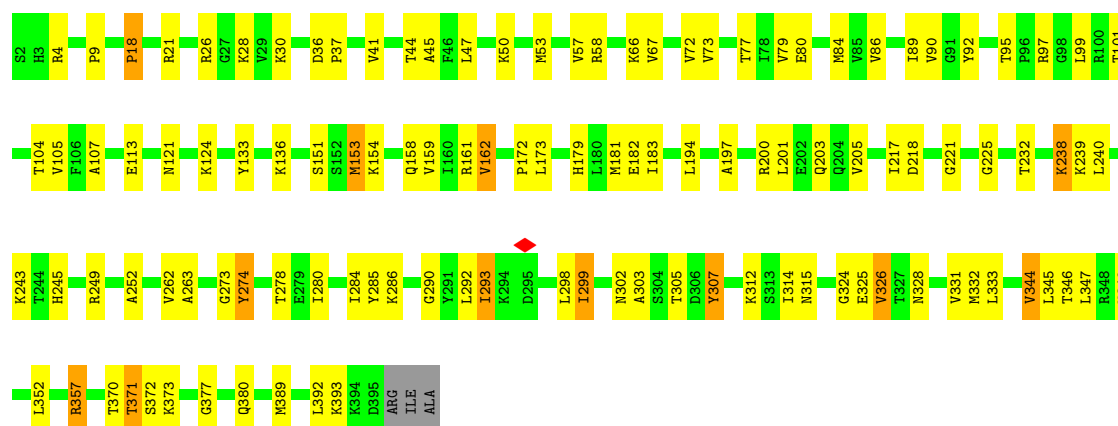


- Molecule 57: 60S ribosomal protein L29



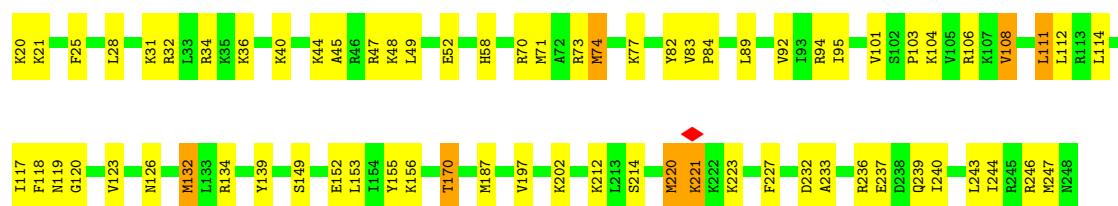
- Molecule 58: 60S ribosomal protein L3





• Molecule 59: 60S ribosomal protein L7

Chain CF: 69% 28% .



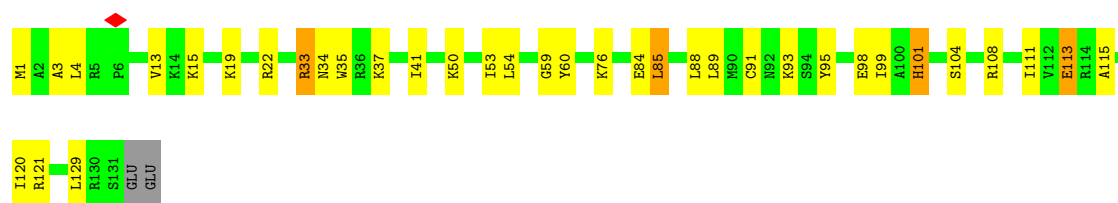
• Molecule 60: 60S ribosomal protein L31

Chain Cd: 73% 22% .



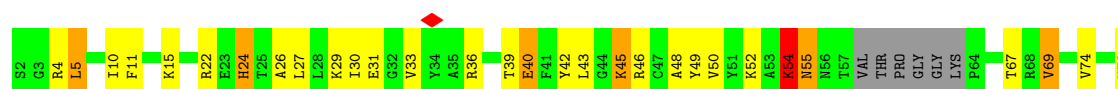
• Molecule 61: 60S ribosomal protein L32

Chain Ce: 71% 24% . .



• Molecule 62: 60S ribosomal protein L35a

Chain Cf: 57% 30% 6% . 6%





- Molecule 63: 60S ribosomal protein L34

Chain Cg: 71% 25% .



- Molecule 64: 60S ribosomal protein L36

Chain Ci: 69% 28% .



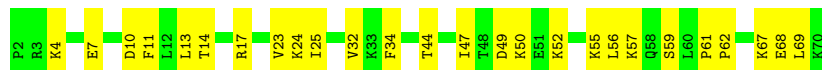
- Molecule 65: 60S ribosomal protein L37

Chain Cj: 86% 12% ..



- Molecule 66: 60S ribosomal protein L38

Chain Ck: 62% 38%



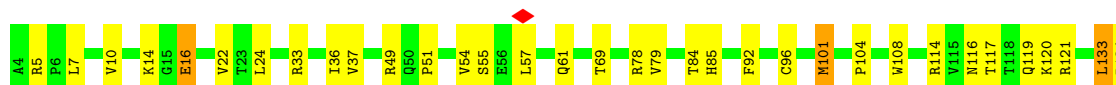
- Molecule 67: 60S ribosomal protein L39

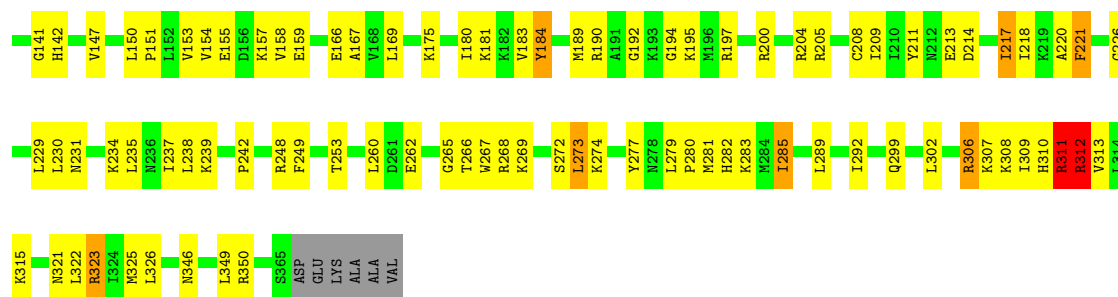
Chain Cl: 68% 28% .



- Molecule 68: 60S ribosomal protein L4

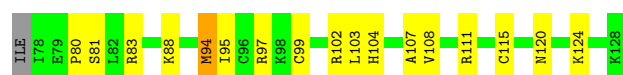
Chain CC: 65% 30% . . .





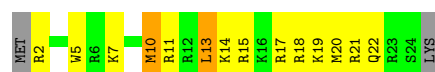
- Molecule 69: 60S ribosomal protein L40

Chain Cm: 65% 31% ..



- Molecule 70: 60S ribosomal protein L41

Chain Cn: 36% 48% 8% 8%



- Molecule 71: 60S ribosomal protein L37a

Chain Cp: 74% 21% ..



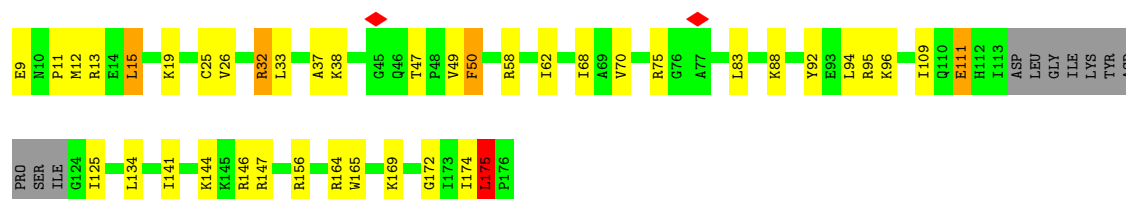
- Molecule 72: 60S ribosomal protein L36a

Chain Co: 70% 21% 9%



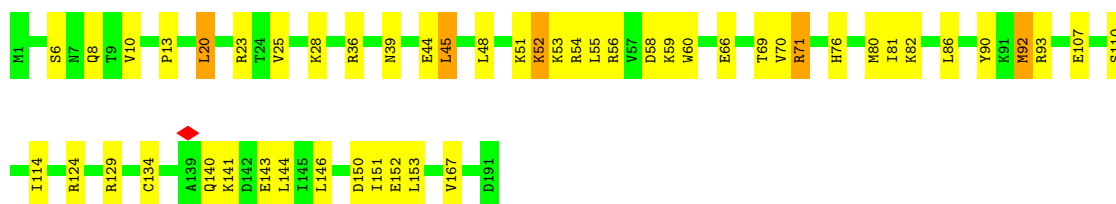
- Molecule 73: 60S ribosomal protein L11

Chain CJ: 70% 21% .. 6%



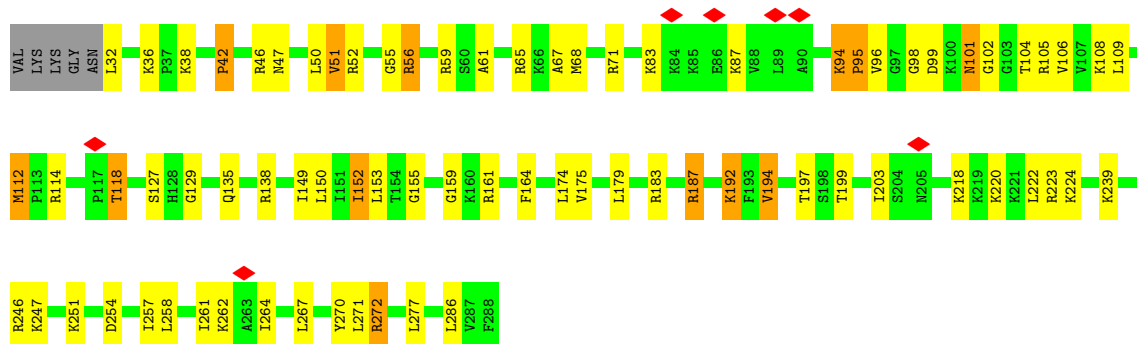
- Molecule 74: 60S ribosomal protein L9

Chain CH:  74% 24% .



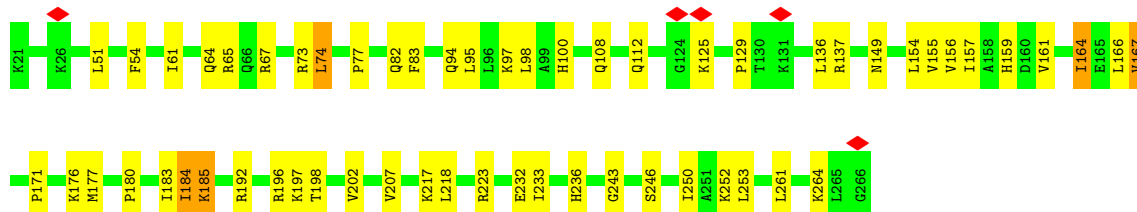
- Molecule 75: 60S ribosomal protein L6

Chain CE:  69% 24% 5% .



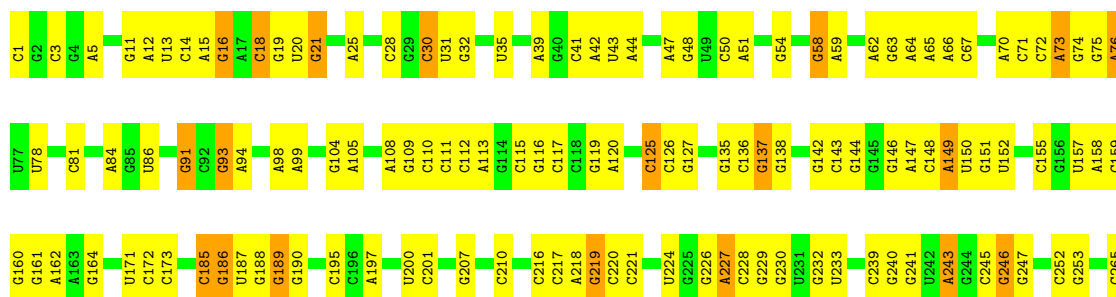
- Molecule 76: 60S ribosomal protein L7a

Chain CG:  76% 22% .

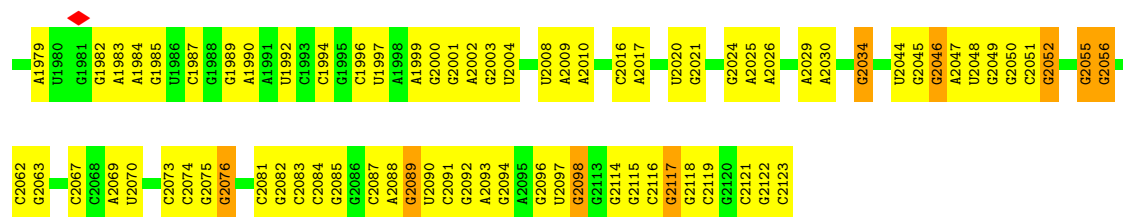


- Molecule 77: LSU-alpha rRNA

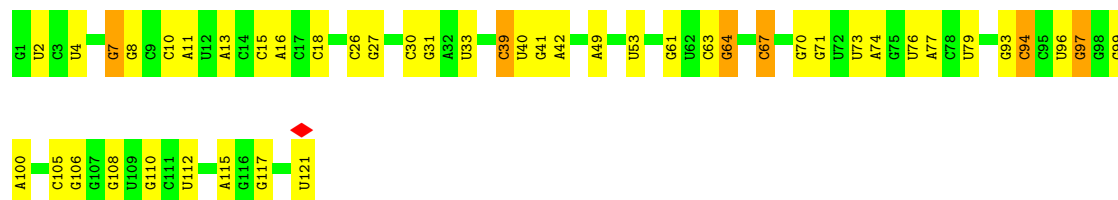
Chain A5:  52% 39% 6% .



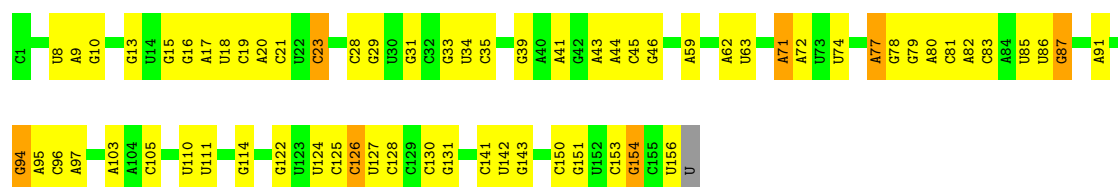




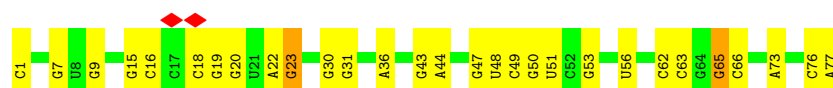
• Molecule 78: 5S ribosomal RNA



• Molecule 79: 5.8S rRNA (157-MER)



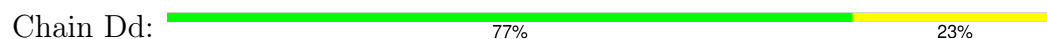
• Molecule 80: tRNA (78-MER)



• Molecule 81: tRNA (77-MER)



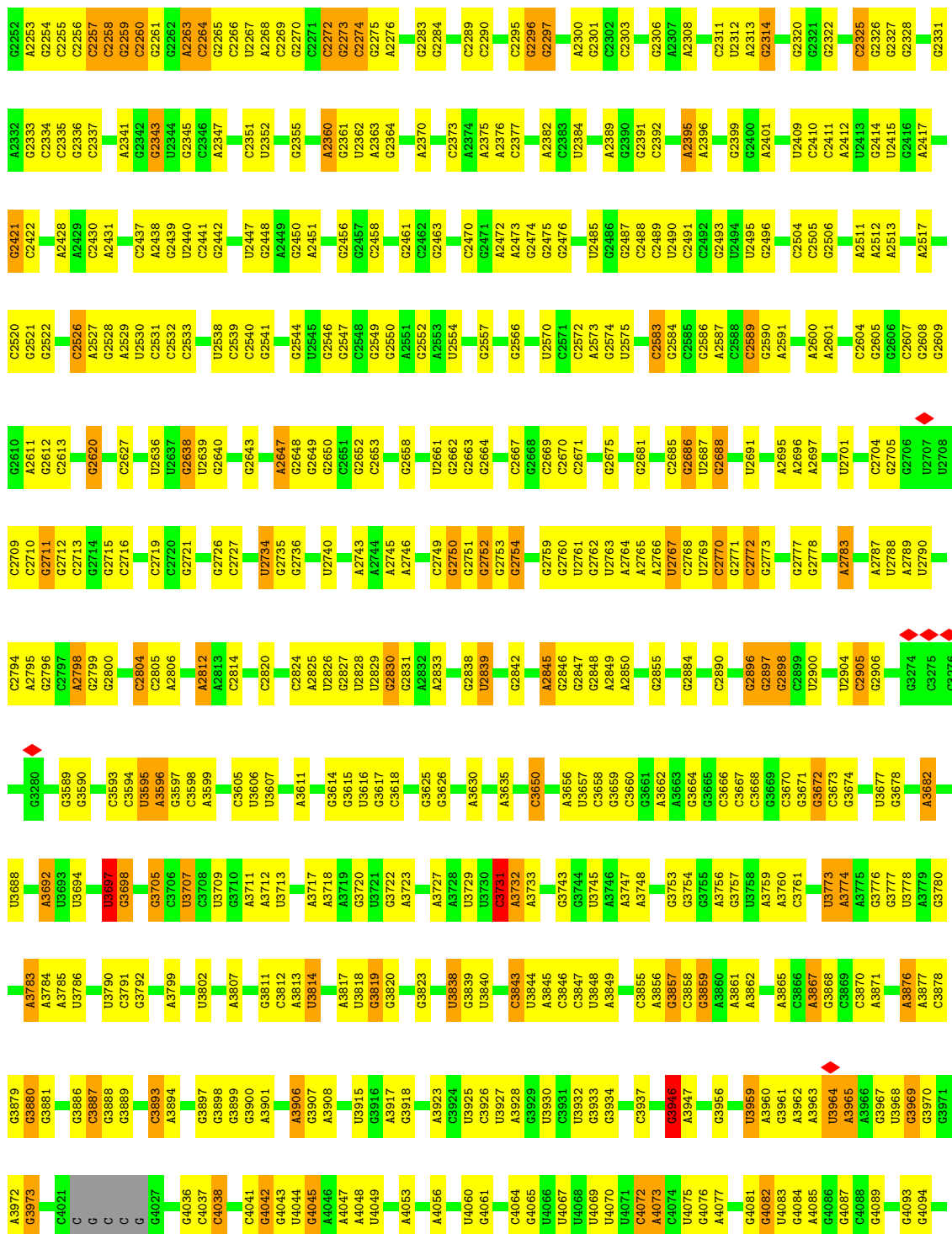
• Molecule 82: RNA (5'-R(P*UP*UP*UP*UP*UP*UP*UP*UP*UP*UP*UP*UP*U*(MG))-3')





● Molecule 83: LSU-beta rRNA (2108-MER)

Chain A6:



G5023	C4935	A4762	G4680	A4590	U4500	G4392	A4304	U4208	G4099
G5024	G4936	U4763	G4691	C4593	U4500	G4393	G4305	G4209	G4104
G5025	C4937	A4764	G4692	U4594	C4504	A4394	U4306	G4210	A4105
U5026	A4938	G4765	G4693	G4595	U4505	U4395	U4307	G4211	G4106
G5027	C4939	G4766	G4694	G4596	U4512	A4396	U4312	A4212	G4107
G5028	C4940	G4767	G4695	G4597	A4513	G4397	C4314	A4213	G4108
G5031	G4941	G4768	G4696	A4599	U4514	G4405	U4315	A4214	G4109
G5032	C4942	G4769	U4697	G4600	G4515	C4413	A4317	U4218	C4114
G5033	A4943	G4770	C4698	A4601	U4516	U4414	C4318	G4225	G4115
U5035	C4944	G4771	U4699	A4602	A4517	A4415	C4319	G4226	G4116
G5041	G4945	G4772	A4700	G4617	A4518	U4419	G4320	G4227	U4117
A5042	U4946	G4773	C4704	U4618	A4519	U4420	U4321	G4228	U4118
C4948	A4947	G4774	A4705	U4619	G4520	U4421	G4322	U4229	U4119
G4949	C4948	G4775	A4706	C4621	G4521	A4422	A4323	U4230	G4120
G4950	U4949	G4776	A4707	A4622	C4522	U4423	G4324	A4231	G4121
G4951	G4950	G4777	U4708	G4623	G4523	U4424	G4325	A4232	G4122
G4952	C4951	G4778	A4709	G4624	G4524	U4425	U4326	A4233	C4123
G4953	G4952	G4779	C4710	U4625	G4525	G4426	G4327	A4234	C4124
G4954	A4953	G4780	G4713	U4626	U4526	U4427	G4328	A4235	C4125
G4955	C4954	G4781	C4714	G4627	U4527	U4428	G4329	G4236	C4126
G4956	A4955	G4782	C4715	U4628	U4528	U4429	G4330	A4237	A4127
A4966	G4956	G4783	U4716	G4629	G4529	U4430	G4331	A4238	G4128
A4967	C4957	G4784	C4717	U4630	U4530	U4431	C4332	A4239	G4129
A4968	A4967	G4785	G4718	U4631	U4531	U4432	C4333	G4240	C4130
C4969	U4968	G4786	C4719	U4632	G4532	U4433	U4334	A4241	G4131
C4970	G4969	G4787	A4720	G4633	A4533	U4434	C4335	A4242	G4132
C4971	A4970	G4788	G4721	U4634	C4534	U4435	A4336	A4243	C4133
U4972	C4971	G4789	U4722	A4635	C4535	U4436	U4337	C4244	C4134
U4973	G4972	G4790	G4723	U4636	C4536	U4437	A4338	G4245	C4135
C4974	A4973	G4791	A4724	U4637	G4537	U4438	A4339	A4246	C4136
G4975	U4974	G4792	C4725	U4638	A4538	U4439	G4340	A4247	G4137
U4976	C4975	G4793	G4726	U4639	U4539	U4440	U4341	A4248	G4138
G4981	A4976	G4794	C4727	G4640	U4540	U4441	U4342	A4249	G4139
U4985	G4981	G4795	G4728	U4641	A4541	U4442	U4343	A4250	G4140
U4988	U4988	G4796	C4729	U4642	C4542	U4443	U4344	A4251	C4141
U4989	C4989	G4797	U4730	C4643	A4543	U4444	U4345	A4252	G4142
C4990	U4990	G4798	G4731	U4644	U4544	U4445	U4346	A4253	G4143
U4991	G4991	G4799	C4732	G4645	A4545	U4446	G4347	A4254	G4144
C4992	C4992	G4800	G4733	C4646	U4546	U4447	A4348	A4255	C4145
G4993	U4993	G4801	U4734	U4647	U4547	U4448	C4349	A4256	G4146
G4997	G4997	G4802	G4735	U4648	U4548	U4449	C4350	A4257	C4147
G4998	C4998	G4803	G4736	U4649	U4549	U4450	U4351	A4258	G4148
U5002	U5002	G4804	C4737	U4650	C4550	U4451	G4352	A4259	G4149
U5003	C5004	G4805	U4738	C4651	U4551	U4452	U4353	A4260	G4150
G5005	G5005	G4806	G4739	U4652	C4552	U4453	A4354	A4261	G4151
U5006	U5006	G4807	C4740	C4653	U4553	U4454	G4355	A4262	G4152
A5007	A5007	G4808	G4741	U4654	U4554	U4455	U4356	A4263	G4153
C5013	C5013	G4809	U4742	A4655	U4555	U4456	A4357	A4264	G4154
A5014	A5014	G4810	G4743	U4656	U4556	U4457	U4358	A4265	G4155
G5017	G5017	G4811	A4744	U4657	U4557	U4458	G4359	A4266	G4156
U5022	U5022	G4812	G4745	U4658	U4558	U4459	U4360	A4267	G4157
		G4813	U4746	A4659	C4559	U4460	U4361	A4268	G4158
		U4814	G4747	C4660	C4560	U4461	A4362	A4269	G4159
		G4815	C4748	U4661	C4561	U4462	G4363	A4270	G4160
		C4816	G4749	C4662	C4562	U4463	A4364	A4271	G4161
		G4817	U4750	U4663	U4563	U4464	U4365	A4272	G4162
		U4818	G4751	A4664	U4564	U4465	A4366	A4273	G4163
		C4819	U4752	U4665	U4565	U4466	U4367	G4274	G4164
		G4820	U4753	U4666	U4566	U4467	U4368	G4275	G4165
		U4821	G4754	U4667	U4567	U4468	A4369	G4276	G4166
		C4822	U4755	G4668	U4568	U4469	U4370	A4277	G4167
		G4823	G4756	U4669	U4569	U4470	U4371	G4278	G4168
		U4824	U4757	A4669	U4570	U4471	A4372	A4279	G4169
		C4825	G4758	C4670	U4571	U4472	U4373	A4280	G4170
		G4826	U4759	U4671	U4572	U4473	A4374	A4281	G4171
		U4827	C4760	U4672	U4573	U4474	U4375	A4282	G4172
		C4828	G4761	U4673	U4574	U4475	A4376	A4283	G4173
		G4829	U4762	U4674	U4575	U4476	G4377	A4284	G4174
		U4830	C4763	U4675	U4576	U4477	A4378	U4285	G4175
		C4831	G4764	G4676	U4577	U4478	A4379	U4286	G4176
		U4832	U4765	U4677	U4578	U4479	A4380	G4291	G4177
		G4833	G4766	U4678	U4579	U4480	U4381	A4292	G4178
		U4834	C4767	G4679	C4580	U4481	C4382	A4293	G4179
		C4835	U4768	U4680	U4581	U4482	A4383	U4294	G4180
		G4836	G4769	G4681	C4582	U4483	U4384	A4295	G4181
		U4837	U4770	U4682	U4583	U4484	A4385	A4296	G4182
		C4838	C4771	U4683	U4584	U4485	A4386	U4297	G4183
		G4839	U4772	U4684	U4585	U4486	A4387	A4298	G4184
		U4840	G4773	U4685	U4586	U4487	U4388	A4299	G4185
		C4841	U4774	U4686	U4587	U4488	A4389	A4300	G4186
		G4842	C4775	U4687	U4588	U4489	U4390	A4301	G4187
		U4843	G4776	U4688	U4589	U4490	A4391	A4302	G4188
		C4844	U4777	U4689	U4590	U4491	C4392	A4303	G4189
		G4845	G4778	U4690	U4591	U4492	A4393	A4304	G4190
		U4846	U4779	U4691	U4592	U4493	A4394	A4305	G4191
		C4847	C4780	U4692	U4593	U4494	A4395	A4306	G4192
		G4848	G4781	U4693	U4594	U4495	A4396	A4307	G4193
		U4849	U4782	U4694	U4595	U4496	A4397	A4308	G4194
		C4850	C4783	U4695	U4596	U4497	A4398	A4309	G4195
		G4851	G4784	U4696	U4597	U4498	A4399	A4310	G4196
		U4852	U4785	U4697	U4598	U4499	A4400	A4311	G4197
		C4853	C4786	U4698	U4599	U4500	A4401	A4312	G4198
		G4854	G4787	U4699	U4600	U4501	A4402	A4313	G4199
		U4855	U4788	U4700	U4601	U4502	A4403	A4314	G4200
		C4856	C4789	U4701	U4602	U4503	A4404	A4315	G4201
		G4857	G4790	U4702	U4603	U4504	A4405	A4316	G4202
		U4858	U4791	U4703	U4604	U4505	A4406	A4317	G4203
		C4859	C4792	U4704	U4605	U4506	A4407	A4318	G4204
		G4860	G4793	U4705	U4606	U4507	A4408	A4319	G4205
		U4861	U4794	U4706	U4607	U4508	A4409	A4320	G4206
		C4862	C4795	U4707	U4608	U4509	A4410	A4321	G4207
		G4863	G4796	U4708	U4609	U4510	A4411	A4322	G4208
		U4864	U4797	U4709	U4610	U4511	A4412	A4323	G4209
		C4865	C4798	U4710	U4611	U4512	A4413	A4324	G4210
		G4866	G4799	U4711	U4612	U4513	A4414	A4325	G4211
		U4867	U4800	U4712	U4613	U4514	A4415	A4326	G4212
		C4868	C4801	U4713	U4614	U4515	A4416	A4327	G4213
		G4869	G4802	U4714	U4615	U4516	A4417	A4328	G4214
		U4870	U4803	U4715	U4616	U4517	A4418	A4329	G4215
		C4871	C4804	U4716	U4617	U4518	A4419	A4330	G4216
		G4872	U4805	U4717	U4618	U4519	A4420	A4331	G4217
		U4873	C4806	U4718	U4619	U4520	A4421	A4332	G4218
		C4874	G4807	U4719	U4620	U4521	A4422	A4333	G4219
		G4875	U4808	U4720	U4621	U4522	A4423	A4334	G4220
		U4876	C4809	U4721	U4622	U4523	A4424	A4335	G4221
		C4877	G4810	U4722	U4623	U4524	A4425	A4336	G4222
		G4878	U4811	U4723	U4624	U4525	A4426	A4337	G4223
		U4879	C4812	U4724	U4625	U4526	A4427	A4338	G4224
		C4880	G4813	U4725	U4626	U4527	A4428	A4339	G4225
		U4881	U4814	U4726	U4627	U4528	A4429	A4340	G4226
		C4882	C4815	U4727	U4628	U4529	A4430	A4341	G4227
		G4883	G4816	U4728	U4629	U4530	A4431	A4342	G4228
		U4884	U4817	U4729	U4630	U4531	A4432	A4343	G4229
		C4885	C4818	U4730	U4631	U4532	A4433	A4344	G4230
		G4886	G4819	U4731	U4632	U4533	A4434	A4345	G4231
		U4887	U4820	U4732	U4633	U4534	A4435	A4346	G4232
		C4888	C4821	U4733	U4634	U4535	A4436	A4347	G4233
		G4889	U4822	U4734	U4635	U4536	A4437	A4348	G4234
		U4890	G4823	U4735	U4636	U4537	A4438	A4349	G4235
		C4891	C4824	U4736	U4637	U4538	A4439	A4350	G4236
		G4892	U4825	U4737	U4638	U4539	A4440	A4351	G4237
		U489							

4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	232230	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 ($e^-/\text{\AA}^2$)	30	Depositor
Minimum defocus (nm)	1000	Depositor
Maximum defocus (nm)	3000	Depositor
Magnification	Not provided	
Image detector	FEI FALCON II (4k x 4k)	Depositor
Maximum map value	0.043	Depositor
Minimum map value	-0.014	Depositor
Average map value	0.000	Depositor
Map value standard deviation	0.003	Depositor
Recommended contour level	0.002	Depositor
Map size (Å)	417.99997, 417.99997, 417.99997	wwPDB
Map dimensions	400, 400, 400	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	1.045, 1.045, 1.045	Depositor

5 Model quality

5.1 Standard geometry

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

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	Ag	0.26	0/2493	0.75	4/3394 (0.1%)
2	AU	0.39	0/832	1.06	2/1117 (0.2%)
3	AK	0.44	0/851	1.22	9/1147 (0.8%)
4	AM	0.33	0/824	0.94	6/1106 (0.5%)
5	AS	0.37	0/1157	1.15	16/1548 (1.0%)
6	Ad	0.30	0/455	0.81	1/603 (0.2%)
7	AR	0.38	0/1031	1.16	9/1383 (0.7%)
8	AP	0.37	0/988	1.05	2/1319 (0.2%)
9	AT	0.30	0/1119	0.85	5/1499 (0.3%)
10	AZ	0.30	0/600	0.78	2/805 (0.2%)
11	Ac	0.28	0/508	0.78	0/680
12	AD	0.35	0/1785	0.98	7/2404 (0.3%)
13	Af	0.33	0/593	0.87	2/786 (0.3%)
14	AF	0.36	0/1531	0.98	11/2059 (0.5%)
15	AQ	0.30	0/1142	0.82	2/1528 (0.1%)
16	B2	0.19	0/42028	0.44	6/65468 (0.0%)
17	AO	0.38	0/987	1.04	6/1322 (0.5%)
18	AX	0.33	0/1116	0.87	4/1490 (0.3%)
19	AN	0.37	0/1226	1.04	8/1649 (0.5%)
20	AL	0.36	0/1311	0.92	3/1751 (0.2%)
21	AB	0.36	0/1774	1.02	17/2372 (0.7%)
22	AA	0.37	0/1648	1.01	8/2241 (0.4%)
23	AV	0.38	0/631	1.05	5/844 (0.6%)
24	AY	0.34	0/1040	1.02	7/1382 (0.5%)
25	Aa	0.33	0/863	0.86	1/1159 (0.1%)
26	Ab	0.30	0/665	0.99	6/891 (0.7%)
27	Ae	0.28	0/424	0.89	0/556
28	AJ	0.32	0/1487	0.92	3/1985 (0.2%)
29	AE	0.29	0/2115	0.84	7/2846 (0.2%)
30	AC	0.35	0/1763	0.89	5/2379 (0.2%)
31	AG	0.28	0/1946	0.75	4/2590 (0.2%)
32	AH	0.32	0/1544	0.92	4/2068 (0.2%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	AW	0.38	0/1051	1.02	2/1406 (0.1%)
34	AI	0.32	0/1715	0.91	5/2287 (0.2%)
35	CR	0.38	0/1590	1.12	12/2101 (0.6%)
36	CW	0.37	0/1030	0.95	6/1364 (0.4%)
37	Cz	0.60	1/1059 (0.1%)	1.50	25/1420 (1.8%)
38	CO	0.41	0/1666	1.10	12/2228 (0.5%)
39	CL	0.34	0/1713	0.93	7/2293 (0.3%)
40	CV	0.35	0/987	0.97	7/1325 (0.5%)
41	CM	0.43	0/1161	1.14	14/1552 (0.9%)
42	Ca	0.33	0/1191	0.94	3/1591 (0.2%)
43	CN	0.35	0/1746	0.95	3/2338 (0.1%)
44	CI	0.36	0/1751	1.06	6/2340 (0.3%)
45	CD	0.29	0/2398	0.84	5/3210 (0.2%)
46	CQ	0.35	0/1488	1.04	14/1986 (0.7%)
47	CA	0.35	0/1986	0.95	13/2662 (0.5%)
48	CS	0.35	0/1493	0.96	9/2003 (0.4%)
49	CT	0.35	0/1326	0.99	9/1770 (0.5%)
50	CP	0.33	0/1259	0.91	5/1689 (0.3%)
51	CU	0.28	0/897	0.85	6/1201 (0.5%)
52	CX	0.38	0/1011	1.00	5/1356 (0.4%)
53	CY	0.36	0/1124	0.98	4/1494 (0.3%)
54	CZ	0.29	0/1130	0.77	3/1507 (0.2%)
55	Cr	0.44	0/1120	1.24	15/1497 (1.0%)
56	Ch	0.38	0/1031	1.14	9/1361 (0.7%)
57	Cb	0.36	0/613	1.06	4/809 (0.5%)
58	CB	0.32	0/3246	0.86	7/4345 (0.2%)
59	CF	0.35	0/1945	0.91	4/2589 (0.2%)
60	Cd	0.34	0/946	0.93	5/1272 (0.4%)
61	Ce	0.33	0/1096	0.92	2/1461 (0.1%)
62	Cf	0.38	0/855	1.07	7/1141 (0.6%)
63	Cg	0.31	0/916	0.92	4/1220 (0.3%)
64	Ci	0.35	0/851	0.98	3/1125 (0.3%)
65	Cj	0.28	0/741	0.85	1/980 (0.1%)
66	Ck	0.33	0/575	0.88	1/761 (0.1%)
67	Cl	0.43	0/454	1.08	4/599 (0.7%)
68	CC	0.36	0/2936	1.01	17/3943 (0.4%)
69	Cm	0.39	0/427	0.99	2/564 (0.4%)
70	Cn	0.52	0/223	1.28	1/284 (0.4%)
71	Cp	0.39	0/703	0.90	0/934
72	Co	0.36	0/864	1.01	0/1140
73	CJ	0.31	0/1291	0.93	10/1724 (0.6%)
74	CH	0.33	0/1545	0.94	7/2077 (0.3%)
75	CE	0.38	0/2116	1.10	21/2830 (0.7%)

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
76	CG	0.37	0/2006	1.01	6/2697 (0.2%)
77	A5	0.21	0/40908	0.47	13/63750 (0.0%)
78	A7	0.19	0/2880	0.39	0/4489
79	A8	0.21	0/3701	0.47	2/5766 (0.0%)
80	Cc	0.15	0/1836	0.29	0/2859
81	Bb	0.18	0/1530	0.42	0/2382
82	Dd	0.21	0/285	0.57	0/438
83	A6	0.20	0/48889	0.45	13/76116 (0.0%)
All	All	0.27	1/235778 (0.0%)	0.69	505/346647 (0.1%)

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	Ag	0	1
2	AU	0	1
4	AM	0	1
7	AR	0	1
8	AP	0	5
13	Af	0	2
14	AF	0	3
15	AQ	0	1
17	AO	0	1
18	AX	0	1
20	AL	0	2
23	AV	0	1
24	AY	0	2
25	Aa	0	1
26	Ab	0	1
27	Ae	0	1
28	AJ	0	1
29	AE	0	4
30	AC	0	3
32	AH	0	2
33	AW	0	1
37	Cz	0	1
38	CO	0	2
39	CL	0	1
40	CV	0	1
41	CM	0	3

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Mol	Chain	#Chirality outliers	#Planarity outliers
42	Ca	0	2
43	CN	0	3
44	CI	0	2
45	CD	0	3
46	CQ	0	3
47	CA	0	2
51	CU	0	1
53	CY	0	1
55	Cr	0	4
58	CB	0	3
59	CF	0	1
61	Ce	0	1
62	Cf	0	1
65	Cj	0	1
67	Cl	0	1
68	CC	0	11
71	Cp	0	1
72	Co	0	3
73	CJ	0	1
74	CH	0	2
75	CE	0	2
76	CG	0	2
All	All	0	95

All (1) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
37	Cz	215	ARG	N-CA	5.21	1.52	1.45

All (505) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
12	AD	197	LYS	CA-C-N	9.60	138.99	121.70
12	AD	197	LYS	C-N-CA	9.60	138.99	121.70
39	CL	60	ARG	CA-C-N	9.09	134.50	120.68
39	CL	60	ARG	C-N-CA	9.09	134.50	120.68
9	AT	107	LEU	CA-CB-CG	9.02	147.87	116.30
46	CQ	154	LYS	CA-C-N	8.65	137.27	121.70
46	CQ	154	LYS	C-N-CA	8.65	137.27	121.70
5	AS	71	MET	CB-CG-SD	8.51	138.23	112.70
37	Cz	175	THR	CA-C-N	8.49	141.10	126.32
37	Cz	175	THR	C-N-CA	8.49	141.10	126.32

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
37	Cz	174	MET	N-CA-CB	-8.28	98.17	111.58
46	CQ	11	ARG	CA-C-N	8.15	135.50	121.64
46	CQ	11	ARG	C-N-CA	8.15	135.50	121.64
3	AK	34	GLU	CA-CB-CG	8.09	130.27	114.10
2	AU	82	MET	CA-CB-CG	8.06	130.22	114.10
73	CJ	111	GLU	CA-CB-CG	7.92	129.94	114.10
24	AY	19	GLN	CA-CB-CG	7.74	129.57	114.10
56	Ch	13	LYS	CA-CB-CG	7.69	129.49	114.10
55	Cr	43	LEU	CA-C-N	7.61	135.40	121.70
55	Cr	43	LEU	C-N-CA	7.61	135.40	121.70
19	AN	22	VAL	CA-CB-CG1	7.58	123.29	110.40
37	Cz	176	ASP	N-CA-C	7.52	128.85	113.20
5	AS	71	MET	CA-CB-CG	7.46	129.01	114.10
19	AN	21	SER	CA-C-N	7.42	135.87	122.13
19	AN	21	SER	C-N-CA	7.42	135.87	122.13
46	CQ	125	GLN	CA-CB-CG	7.31	128.72	114.10
37	Cz	179	LEU	CA-CB-CG	7.31	141.88	116.30
24	AY	5	VAL	CA-C-N	7.30	135.49	121.54
24	AY	5	VAL	C-N-CA	7.30	135.49	121.54
19	AN	137	PRO	CA-C-N	7.30	135.48	121.54
19	AN	137	PRO	C-N-CA	7.30	135.48	121.54
44	CI	90	ARG	CA-CB-CG	7.26	128.62	114.10
31	AG	158	VAL	N-CA-C	-7.24	106.25	113.20
51	CU	108	GLU	CA-CB-CG	7.24	128.57	114.10
7	AR	87	GLU	CA-C-N	7.21	134.95	121.97
7	AR	87	GLU	C-N-CA	7.21	134.95	121.97
68	CC	16	GLU	CA-CB-CG	7.18	128.45	114.10
47	CA	107	MET	CB-CG-SD	7.12	134.07	112.70
50	CP	6	LEU	CA-C-N	7.10	139.13	121.80
50	CP	6	LEU	C-N-CA	7.10	139.13	121.80
46	CQ	12	LYS	N-CA-C	-7.05	96.75	108.32
68	CC	312	ARG	CA-C-N	7.02	134.60	121.97
68	CC	312	ARG	C-N-CA	7.02	134.60	121.97
47	CA	250	LYS	CA-C-N	7.01	134.32	121.70
47	CA	250	LYS	C-N-CA	7.01	134.32	121.70
48	CS	147	ASP	CA-C-N	7.00	134.31	121.70
48	CS	147	ASP	C-N-CA	7.00	134.31	121.70
68	CC	285	ILE	CA-C-N	6.96	134.84	121.54
68	CC	285	ILE	C-N-CA	6.96	134.84	121.54
56	Ch	3	LYS	CA-C-N	6.90	134.39	121.97
56	Ch	3	LYS	C-N-CA	6.90	134.39	121.97
18	AX	8	ARG	CA-CB-CG	6.86	127.82	114.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
40	CV	43	LYS	CB-CG-CD	6.86	127.07	111.30
45	CD	212	MET	CA-CB-CG	6.82	127.74	114.10
53	CY	66	GLN	CA-CB-CG	6.82	127.74	114.10
38	CO	192	TYR	N-CA-CB	6.79	121.97	110.49
44	CI	136	MET	CB-CG-SD	6.79	133.07	112.70
55	Cr	127	LYS	CB-CG-CD	6.78	126.89	111.30
75	CE	95	PRO	CA-C-N	6.76	134.14	121.97
75	CE	95	PRO	C-N-CA	6.76	134.14	121.97
75	CE	106	VAL	CA-C-N	6.75	133.85	121.70
75	CE	106	VAL	C-N-CA	6.75	133.85	121.70
76	CG	184	ILE	CA-C-N	6.71	134.36	121.54
76	CG	184	ILE	C-N-CA	6.71	134.36	121.54
14	AF	112	LEU	CA-CB-CG	6.68	139.67	116.30
17	AO	79	GLN	CA-CB-CG	6.67	127.44	114.10
68	CC	213	GLU	CA-C-N	6.65	133.67	121.70
68	CC	213	GLU	C-N-CA	6.65	133.67	121.70
5	AS	109	GLU	CA-CB-CG	6.62	127.34	114.10
62	Cf	45	LYS	CB-CG-CD	6.62	126.52	111.30
47	CA	180	LEU	CA-CB-CG	6.59	139.35	116.30
56	Ch	30	GLN	CA-CB-CG	6.59	127.27	114.10
37	Cz	174	MET	CA-C-N	6.57	131.68	121.76
37	Cz	174	MET	C-N-CA	6.57	131.68	121.76
47	CA	254	GLU	CA-C-N	6.55	133.49	121.70
47	CA	254	GLU	C-N-CA	6.55	133.49	121.70
55	Cr	20	ARG	CA-C-N	6.54	134.03	121.54
55	Cr	20	ARG	C-N-CA	6.54	134.03	121.54
48	CS	93	MET	CB-CG-SD	6.50	132.20	112.70
75	CE	83	LYS	CA-C-N	6.50	133.40	121.70
75	CE	83	LYS	C-N-CA	6.50	133.40	121.70
15	AQ	60	LYS	CB-CG-CD	6.49	126.23	111.30
45	CD	212	MET	N-CA-CB	6.48	119.46	110.07
75	CE	68	MET	CA-CB-CG	6.48	127.05	114.10
44	CI	87	MET	CB-CG-SD	6.47	132.12	112.70
68	CC	310	HIS	CA-C-N	6.47	133.90	121.54
68	CC	310	HIS	C-N-CA	6.47	133.90	121.54
54	CZ	6	LYS	CA-CB-CG	6.47	127.04	114.10
75	CE	192	LYS	CA-CB-CG	6.45	127.00	114.10
39	CL	155	MET	CA-CB-CG	6.44	126.99	114.10
56	Ch	65	GLN	CA-CB-CG	6.43	126.96	114.10
63	Cg	96	LEU	CA-CB-CG	6.43	138.80	116.30
55	Cr	111	ILE	CA-CB-CG1	6.42	121.32	110.40
35	CR	111	GLU	CA-CB-CG	6.42	126.94	114.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
37	Cz	178	GLU	N-CA-C	6.42	117.98	110.41
7	AR	79	GLU	CA-CB-CG	6.41	126.92	114.10
32	AH	65	PRO	CA-C-N	6.41	133.98	122.13
32	AH	65	PRO	C-N-CA	6.41	133.98	122.13
58	CB	392	LEU	CA-C-N	6.41	133.77	121.54
58	CB	392	LEU	C-N-CA	6.41	133.77	121.54
60	Cd	54	MET	CB-CG-SD	6.40	131.90	112.70
3	AK	29	MET	CB-CG-SD	6.38	131.85	112.70
18	AX	53	GLU	CB-CG-CD	6.38	123.45	112.60
37	Cz	179	LEU	CB-CA-C	-6.36	97.76	110.42
49	CT	152	GLU	CA-CB-CG	6.36	126.82	114.10
28	AJ	27	GLN	CA-CB-CG	6.36	126.81	114.10
59	CF	47	ARG	CA-CB-CG	6.32	126.75	114.10
35	CR	145	LEU	CA-CB-CG	6.32	138.43	116.30
60	Cd	19	GLU	CA-CB-CG	6.30	126.69	114.10
12	AD	201	LYS	CA-C-N	6.29	137.16	121.80
12	AD	201	LYS	C-N-CA	6.29	137.16	121.80
37	Cz	189	PHE	CB-CA-C	6.29	117.27	109.16
37	Cz	173	LYS	CA-CB-CG	6.28	126.65	114.10
73	CJ	175	LEU	CA-CB-CG	6.27	138.23	116.30
75	CE	286	LEU	CA-C-N	6.26	132.97	121.70
75	CE	286	LEU	C-N-CA	6.26	132.97	121.70
64	Ci	65	LYS	CB-CG-CD	6.26	125.69	111.30
55	Cr	96	MET	CB-CG-SD	-6.25	93.93	112.70
76	CG	184	ILE	CA-CB-CG1	6.25	121.03	110.40
49	CT	111	GLU	CA-CB-CG	6.24	126.57	114.10
68	CC	273	LEU	CA-CB-CG	6.24	138.12	116.30
74	CH	52	LYS	CA-C-N	6.24	133.45	121.54
74	CH	52	LYS	C-N-CA	6.24	133.45	121.54
30	AC	263	LYS	CA-CB-CG	6.23	126.56	114.10
38	CO	186	GLU	N-CA-C	-6.20	104.21	110.97
75	CE	46	ARG	CA-C-N	6.18	136.88	121.80
75	CE	46	ARG	C-N-CA	6.18	136.88	121.80
16	B2	1396	A	C2'-C3'-O3'	6.18	118.76	109.50
37	Cz	214	GLN	N-CA-C	6.18	117.54	107.23
62	Cf	31	GLU	CA-CB-CG	6.17	126.44	114.10
5	AS	100	ALA	CB-CA-C	-6.16	109.48	116.63
7	AR	7	LYS	CA-CB-CG	6.16	126.42	114.10
37	Cz	178	GLU	CB-CG-CD	6.16	123.07	112.60
9	AT	33	TRP	CA-C-N	6.15	133.04	121.97
9	AT	33	TRP	C-N-CA	6.15	133.04	121.97
46	CQ	49	LYS	CA-CB-CG	6.14	126.38	114.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
37	Cz	179	LEU	N-CA-C	6.13	123.86	110.80
38	CO	87	MET	CA-C-N	6.13	136.76	121.80
38	CO	87	MET	C-N-CA	6.13	136.76	121.80
41	CM	44	GLN	CA-CB-CG	6.13	126.36	114.10
48	CS	113	MET	CB-CG-SD	6.13	131.09	112.70
22	AA	154	LEU	CA-CB-CG	6.11	137.69	116.30
35	CR	89	MET	CB-CG-SD	6.09	130.96	112.70
63	Cg	100	GLN	CA-CB-CG	6.08	126.27	114.10
22	AA	205	ARG	CA-C-N	6.07	136.60	121.80
22	AA	205	ARG	C-N-CA	6.07	136.60	121.80
83	A6	3697	U	C2'-C3'-O3'	6.07	118.60	109.50
57	Cb	30	GLU	CA-CB-CG	6.05	126.21	114.10
44	CI	3	ARG	CA-CB-CG	6.05	126.20	114.10
38	CO	118	MET	CA-CB-CG	6.04	126.18	114.10
59	CF	202	LYS	CB-CG-CD	6.04	125.20	111.30
73	CJ	38	LYS	CA-CB-CG	6.04	126.17	114.10
12	AD	198	ILE	N-CA-C	6.03	127.89	111.00
74	CH	92	MET	CB-CG-SD	6.03	130.78	112.70
29	AE	19	MET	CB-CG-SD	6.02	130.76	112.70
4	AM	60	MET	CA-CB-CG	6.00	126.11	114.10
22	AA	77	ILE	CA-CB-CG1	6.00	120.61	110.40
75	CE	101	ASN	CA-C-N	6.00	132.50	121.70
75	CE	101	ASN	C-N-CA	6.00	132.50	121.70
68	CC	155	GLU	CB-CG-CD	5.99	122.79	112.60
38	CO	191	LYS	CA-C-N	5.99	132.99	121.54
38	CO	191	LYS	C-N-CA	5.99	132.99	121.54
41	CM	124	LYS	CA-CB-CG	5.98	126.06	114.10
4	AM	58	GLU	CA-CB-CG	5.97	126.04	114.10
5	AS	91	LYS	CA-C-N	5.96	132.93	121.54
5	AS	91	LYS	C-N-CA	5.96	132.93	121.54
49	CT	52	MET	CB-CG-SD	5.96	130.59	112.70
57	Cb	33	LYS	CA-CB-CG	5.96	126.03	114.10
37	Cz	174	MET	CB-CA-C	5.96	120.59	111.95
23	AV	49	GLN	CA-CB-CG	5.95	126.00	114.10
7	AR	79	GLU	N-CA-CB	5.95	120.41	110.41
35	CR	158	GLN	CA-CB-CG	5.94	125.97	114.10
44	CI	30	LYS	CB-CG-CD	5.94	124.96	111.30
47	CA	8	GLN	CA-CB-CG	5.94	125.97	114.10
55	Cr	105	ASP	CA-CB-CG	5.94	118.54	112.60
35	CR	142	ILE	CA-CB-CG1	5.93	120.48	110.40
26	Ab	81	ARG	CA-C-N	5.93	132.37	121.70
26	Ab	81	ARG	C-N-CA	5.93	132.37	121.70

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	AF	173	LEU	CA-CB-CG	5.92	137.03	116.30
36	CW	43	LYS	CB-CG-CD	5.92	124.92	111.30
44	CI	150	GLU	CA-CB-CG	5.92	125.94	114.10
32	AH	70	LYS	CB-CG-CD	5.92	124.91	111.30
54	CZ	93	LYS	CB-CG-CD	5.92	124.91	111.30
43	CN	5	LYS	CA-CB-CG	5.91	125.92	114.10
5	AS	111	LEU	CA-CB-CG	5.90	136.96	116.30
14	AF	195	GLU	CA-CB-CG	5.89	125.89	114.10
37	Cz	213	PRO	N-CA-C	5.89	124.60	112.47
55	Cr	107	ARG	CA-C-N	-5.89	113.07	122.08
55	Cr	107	ARG	C-N-CA	-5.89	113.07	122.08
68	CC	14	LYS	CB-CG-CD	5.89	124.84	111.30
36	CW	57	ARG	CA-CB-CG	5.88	125.86	114.10
37	Cz	214	GLN	CB-CA-C	-5.86	103.74	111.42
46	CQ	159	PRO	CA-C-N	5.86	132.73	121.54
46	CQ	159	PRO	C-N-CA	5.86	132.73	121.54
3	AK	29	MET	N-CA-C	5.86	122.75	109.81
14	AF	201	LYS	CB-CG-CD	5.85	124.76	111.30
76	CG	67	ARG	CG-CD-NE	5.84	124.86	112.00
73	CJ	111	GLU	CB-CG-CD	5.84	122.53	112.60
41	CM	55	MET	CB-CG-SD	5.84	130.21	112.70
48	CS	21	LYS	CA-C-N	5.82	132.17	121.70
48	CS	21	LYS	C-N-CA	5.82	132.17	121.70
5	AS	16	LEU	CA-C-N	5.82	132.65	121.54
5	AS	16	LEU	C-N-CA	5.82	132.65	121.54
26	Ab	22	LYS	CB-CG-CD	5.80	124.65	111.30
36	CW	2	LYS	CB-CG-CD	5.80	124.64	111.30
26	Ab	3	LEU	CA-CB-CG	5.79	136.58	116.30
7	AR	94	GLU	CA-C-N	5.79	132.40	121.97
7	AR	94	GLU	C-N-CA	5.79	132.40	121.97
63	Cg	82	MET	CB-CG-SD	5.79	130.06	112.70
19	AN	36	GLN	CB-CG-CD	5.77	122.42	112.60
56	Ch	20	GLN	CA-CB-CG	5.73	125.56	114.10
45	CD	51	MET	CB-CG-SD	5.73	129.89	112.70
39	CL	136	LYS	CA-C-N	5.73	132.01	121.70
39	CL	136	LYS	C-N-CA	5.73	132.01	121.70
43	CN	193	ARG	CA-CB-CG	5.73	125.56	114.10
75	CE	174	LEU	CA-CB-CG	5.73	136.35	116.30
25	Aa	13	LYS	CA-CB-CG	5.72	125.54	114.10
14	AF	65	GLN	CA-CB-CG	5.72	125.53	114.10
21	AB	21	VAL	CA-C-N	5.72	132.26	121.97
21	AB	21	VAL	C-N-CA	5.72	132.26	121.97

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
37	Cz	80	VAL	CA-C-N	5.71	132.45	121.54
37	Cz	80	VAL	C-N-CA	5.71	132.45	121.54
9	AT	32	GLU	CA-CB-CG	5.71	125.52	114.10
21	AB	169	MET	CB-CG-SD	5.71	129.83	112.70
18	AX	99	GLU	CA-CB-CG	5.70	125.51	114.10
37	Cz	174	MET	N-CA-C	5.69	119.67	107.67
23	AV	34	MET	CB-CG-SD	5.69	129.77	112.70
24	AY	102	THR	CA-C-N	5.68	131.92	121.70
24	AY	102	THR	C-N-CA	5.68	131.92	121.70
4	AM	113	ASP	CA-C-N	5.67	132.38	121.54
4	AM	113	ASP	C-N-CA	5.67	132.38	121.54
76	CG	112	GLN	CA-CB-CG	5.66	125.42	114.10
49	CT	5	LYS	CA-CB-CG	5.66	125.41	114.10
41	CM	111	LYS	CA-CB-CG	5.65	125.41	114.10
61	Ce	89	LEU	CA-CB-CG	5.65	136.08	116.30
65	Cj	42	LYS	CB-CG-CD	5.65	124.30	111.30
37	Cz	214	GLN	CA-CB-CG	5.64	125.39	114.10
7	AR	7	LYS	CB-CG-CD	5.64	124.27	111.30
75	CE	59	ARG	CA-C-N	5.64	131.84	121.70
75	CE	59	ARG	C-N-CA	5.64	131.84	121.70
30	AC	97	PHE	N-CA-C	-5.63	103.97	111.24
17	AO	124	MET	CB-CG-SD	5.63	129.59	112.70
52	CX	111	GLN	CA-CB-CG	5.63	125.36	114.10
10	AZ	102	LYS	CA-CB-CG	5.62	125.34	114.10
53	CY	29	ILE	CA-CB-CG1	5.62	119.95	110.40
64	Ci	7	MET	CB-CG-SD	5.62	129.55	112.70
77	A5	1804	A	P-O3'-C3'	5.62	128.63	120.20
67	Cl	11	ARG	CB-CA-C	5.62	120.12	110.01
41	CM	78	GLN	CA-CB-CG	5.61	125.33	114.10
38	CO	41	ILE	CA-CB-CG1	5.61	119.94	110.40
42	Ca	11	LEU	CA-CB-CG	5.61	135.93	116.30
66	Ck	4	LYS	CB-CG-CD	5.61	124.20	111.30
4	AM	93	LYS	CA-C-N	5.61	132.06	121.97
4	AM	93	LYS	C-N-CA	5.61	132.06	121.97
21	AB	178	THR	CA-C-N	5.60	132.23	121.54
21	AB	178	THR	C-N-CA	5.60	132.23	121.54
38	CO	111	PRO	N-CA-C	5.59	123.99	112.47
7	AR	14	ARG	CA-CB-CG	5.58	125.27	114.10
41	CM	33	GLN	CA-CB-CG	5.58	125.27	114.10
17	AO	60	MET	CB-CG-SD	5.58	129.44	112.70
67	Cl	11	ARG	CA-CB-CG	5.58	125.26	114.10
75	CE	286	LEU	CA-CB-CG	5.58	135.83	116.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
23	AV	81	LYS	CB-CG-CD	5.57	124.11	111.30
77	A5	186	G	P-O3'-C3'	5.57	128.55	120.20
51	CU	44	GLN	CA-CB-CG	5.57	125.24	114.10
21	AB	120	MET	CB-CG-SD	5.56	129.38	112.70
8	AP	50	ARG	CA-CB-CG	5.55	125.20	114.10
54	CZ	6	LYS	CB-CG-CD	5.55	124.06	111.30
56	Ch	27	GLU	CA-CB-CG	5.54	125.19	114.10
16	B2	327	G	P-O3'-C3'	5.54	128.51	120.20
37	Cz	178	GLU	CA-CB-CG	5.54	125.19	114.10
5	AS	71	MET	N-CA-CB	5.54	119.15	110.46
5	AS	16	LEU	N-CA-C	5.54	118.83	110.64
83	A6	4237	C	C2'-C3'-O3'	5.53	122.00	113.70
41	CM	55	MET	CA-CB-CG	5.53	125.16	114.10
1	Ag	31	ILE	CA-CB-CG1	5.53	119.80	110.40
62	Cf	5	LEU	CA-CB-CG	5.52	135.62	116.30
33	AW	41	MET	CB-CG-SD	5.51	129.23	112.70
3	AK	1	MET	CA-C-N	5.50	132.04	121.54
3	AK	1	MET	C-N-CA	5.50	132.04	121.54
77	A5	1474	C	C2'-C3'-O3'	5.50	121.95	113.70
76	CG	94	GLN	CA-CB-CG	5.50	125.09	114.10
14	AF	160	GLU	CB-CG-CD	5.49	121.92	112.60
62	Cf	83	MET	CB-CG-SD	5.48	129.15	112.70
22	AA	177	MET	CB-CG-SD	5.48	129.13	112.70
68	CC	133	LEU	CA-CB-CG	5.48	135.47	116.30
49	CT	14	MET	CB-CG-SD	5.47	129.12	112.70
77	A5	957	G	P-O3'-C3'	5.47	128.41	120.20
29	AE	117	GLU	CA-CB-CG	5.47	125.03	114.10
69	Cm	120	ASN	CB-CA-C	5.46	118.74	109.84
40	CV	45	ILE	CA-CB-CG1	5.46	119.68	110.40
73	CJ	15	LEU	CA-CB-CG	5.46	135.41	116.30
47	CA	144	LYS	CA-CB-CG	5.45	125.01	114.10
64	Ci	89	GLU	CA-CB-CG	5.45	125.00	114.10
60	Cd	19	GLU	N-CA-CB	-5.45	107.96	114.17
58	CB	181	MET	CB-CG-SD	5.44	129.02	112.70
73	CJ	37	ALA	CA-C-N	-5.44	111.94	122.06
73	CJ	37	ALA	C-N-CA	-5.44	111.94	122.06
52	CX	115	LYS	CB-CG-CD	5.43	123.80	111.30
68	CC	272	SER	CA-C-N	5.43	134.48	124.82
68	CC	272	SER	C-N-CA	5.43	134.48	124.82
40	CV	85	ARG	CA-CB-CG	5.42	124.95	114.10
77	A5	1696	C	C2'-C3'-O3'	5.42	121.83	113.70
31	AG	200	LYS	CA-CB-CG	5.42	124.94	114.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
41	CM	104	MET	CB-CG-SD	5.42	128.94	112.70
49	CT	118	GLU	CA-CB-CG	5.42	124.93	114.10
8	AP	37	TYR	CA-CB-CG	5.41	123.64	113.90
79	A8	94	G	P-O3'-C3'	5.41	128.31	120.20
31	AG	82	SER	CA-C-N	5.41	131.04	122.61
31	AG	82	SER	C-N-CA	5.41	131.04	122.61
32	AH	25	GLN	CA-CB-CG	5.41	124.91	114.10
83	A6	2257	C	P-O3'-C3'	5.40	128.31	120.20
58	CB	238	LYS	CB-CG-CD	5.40	123.73	111.30
77	A5	2046	G	P-O3'-C3'	5.40	128.31	120.20
45	CD	208	MET	CA-CB-CG	5.40	124.90	114.10
55	Cr	105	ASP	CB-CG-OD1	5.40	130.81	118.40
28	AJ	117	LEU	CA-CB-CG	5.39	135.17	116.30
17	AO	78	ALA	CA-C-N	-5.39	112.94	122.26
17	AO	78	ALA	C-N-CA	-5.39	112.94	122.26
77	A5	931	C	P-O3'-C3'	5.39	128.28	120.20
83	A6	4232	U	P-O3'-C3'	5.39	128.28	120.20
35	CR	119	MET	CB-CG-SD	5.39	128.86	112.70
51	CU	108	GLU	N-CA-CB	-5.38	108.03	114.17
40	CV	49	LEU	CA-C-N	5.38	131.82	121.54
40	CV	49	LEU	C-N-CA	5.38	131.82	121.54
58	CB	357	ARG	CG-CD-NE	-5.38	100.16	112.00
41	CM	124	LYS	CB-CG-CD	5.38	123.68	111.30
47	CA	150	LEU	CA-CB-CG	5.37	135.11	116.30
6	Ad	38	MET	CB-CG-SD	5.37	128.81	112.70
35	CR	102	LEU	CA-CB-CG	5.37	135.09	116.30
5	AS	70	ILE	CA-C-N	-5.36	112.09	122.06
5	AS	70	ILE	C-N-CA	-5.36	112.09	122.06
21	AB	172	MET	CA-CB-CG	5.36	124.82	114.10
62	Cf	54	LYS	CA-C-N	5.36	131.77	121.54
62	Cf	54	LYS	C-N-CA	5.36	131.77	121.54
83	A6	4889	G	P-O3'-C3'	5.36	128.23	120.20
33	AW	124	LYS	CA-CB-CG	5.35	124.81	114.10
56	Ch	54	ILE	CA-CB-CG1	5.35	119.50	110.40
30	AC	263	LYS	CB-CG-CD	5.35	123.61	111.30
61	Ce	113	GLU	CA-CB-CG	5.35	124.80	114.10
47	CA	29	LEU	CA-CB-CG	5.35	135.01	116.30
53	CY	131	GLU	CA-CB-CG	5.34	124.79	114.10
48	CS	74	ARG	CA-C-N	5.34	131.58	121.97
48	CS	74	ARG	C-N-CA	5.34	131.58	121.97
34	AI	133	GLU	N-CA-C	-5.34	108.03	114.75
46	CQ	173	LYS	CA-CB-CG	5.33	124.77	114.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
57	Cb	43	MET	CA-CB-CG	5.33	124.77	114.10
21	AB	171	ILE	CA-CB-CG1	5.33	119.46	110.40
77	A5	1239	C	P-O3'-C3'	5.33	128.19	120.20
36	CW	70	LYS	CA-CB-CG	5.33	124.76	114.10
58	CB	389	MET	CB-CG-SD	5.33	128.69	112.70
58	CB	153	MET	CB-CG-SD	5.33	128.68	112.70
67	Cl	42	ARG	CA-CB-CG	5.33	124.75	114.10
10	AZ	60	LYS	CA-CB-CG	5.31	124.72	114.10
34	AI	138	ASN	CA-C-N	5.31	131.68	121.54
34	AI	138	ASN	C-N-CA	5.31	131.68	121.54
41	CM	63	LYS	CB-CG-CD	5.31	123.51	111.30
12	AD	69	LEU	CA-CB-CG	5.30	134.87	116.30
3	AK	3	MET	CA-CB-CG	5.30	124.70	114.10
63	Cg	108	LYS	CA-CB-CG	5.30	124.70	114.10
83	A6	5027	C	P-O3'-C3'	5.30	128.15	120.20
38	CO	180	GLN	CA-CB-CG	5.30	124.69	114.10
51	CU	44	GLN	CB-CG-CD	5.29	121.60	112.60
34	AI	89	GLU	CB-CG-CD	5.29	121.59	112.60
60	Cd	101	LYS	CA-CB-CG	5.29	124.68	114.10
16	B2	1830	U	P-O3'-C3'	5.29	128.13	120.20
42	Ca	94	LYS	CB-CG-CD	5.29	123.46	111.30
75	CE	67	ALA	CA-C-N	-5.29	112.22	122.06
75	CE	67	ALA	C-N-CA	-5.29	112.22	122.06
73	CJ	25	CYS	CA-C-N	-5.29	117.56	123.16
73	CJ	25	CYS	C-N-CA	-5.29	117.56	123.16
51	CU	83	LEU	CA-CB-CG	5.28	134.78	116.30
17	AO	53	ILE	CB-CG1-CD1	5.27	124.88	113.80
14	AF	178	ILE	CA-CB-CG1	5.27	119.36	110.40
23	AV	62	MET	CB-CG-SD	5.26	128.50	112.70
68	CC	189	MET	CB-CG-SD	5.26	128.49	112.70
59	CF	74	MET	CB-CG-SD	5.26	128.48	112.70
30	AC	110	MET	CB-CG-SD	5.26	128.47	112.70
34	AI	89	GLU	CA-CB-CG	5.26	124.61	114.10
60	Cd	96	GLU	CA-CB-CG	5.26	124.61	114.10
2	AU	39	LEU	CA-CB-CG	5.25	134.69	116.30
51	CU	75	GLU	CB-CG-CD	5.25	121.53	112.60
23	AV	41	LYS	CB-CG-CD	5.25	123.38	111.30
35	CR	168	GLU	CA-CB-CG	5.25	124.60	114.10
37	Cz	163	LEU	N-CA-C	5.25	118.48	111.24
21	AB	83	LYS	CB-CG-CD	5.24	123.35	111.30
35	CR	31	GLU	CA-CB-CG	5.23	124.56	114.10
37	Cz	207	LYS	CA-CB-CG	5.23	124.56	114.10

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
3	AK	35	LEU	CA-CB-CG	5.23	134.60	116.30
5	AS	116	LYS	CB-CG-CD	5.23	123.33	111.30
77	A5	666	G	C2'-C3'-O3'	5.23	121.54	113.70
1	Ag	42	MET	CB-CG-SD	5.23	128.38	112.70
52	CX	114	LYS	CA-C-N	-5.22	113.22	122.26
52	CX	114	LYS	C-N-CA	-5.22	113.22	122.26
43	CN	135	ILE	CA-CB-CG1	5.22	119.27	110.40
67	Cl	29	MET	CB-CG-SD	5.22	128.35	112.70
40	CV	44	GLY	CA-C-N	5.21	131.36	121.97
40	CV	44	GLY	C-N-CA	5.21	131.36	121.97
47	CA	75	LEU	CA-CB-CG	5.21	134.54	116.30
19	AN	22	VAL	CA-CB-CG2	5.21	119.26	110.40
5	AS	65	GLU	CA-CB-CG	5.21	124.51	114.10
75	CE	112	MET	CB-CG-SD	5.21	128.32	112.70
16	B2	1637	A	P-O3'-C3'	5.20	128.00	120.20
29	AE	200	ARG	CB-CG-CD	5.20	123.27	111.30
83	A6	3946	G	C2'-C3'-O3'	5.20	121.50	113.70
24	AY	18	LEU	CA-C-N	5.20	131.47	121.54
24	AY	18	LEU	C-N-CA	5.20	131.47	121.54
20	AL	144	LYS	CB-CG-CD	5.19	123.25	111.30
68	CC	262	GLU	CA-CB-CG	5.19	124.49	114.10
55	Cr	131	THR	CA-C-N	5.19	127.22	120.26
55	Cr	131	THR	C-N-CA	5.19	127.22	120.26
38	CO	170	LYS	CA-CB-CG	5.19	124.48	114.10
49	CT	94	GLU	CA-CB-CG	5.17	124.45	114.10
16	B2	141	A	P-O3'-C3'	5.17	127.95	120.20
21	AB	170	GLU	CA-C-N	-5.16	114.95	122.28
21	AB	170	GLU	C-N-CA	-5.16	114.95	122.28
48	CS	66	GLN	CA-CB-CG	5.16	124.43	114.10
21	AB	85	LYS	CB-CG-CD	5.16	123.17	111.30
55	Cr	126	VAL	CA-C-N	5.16	131.40	121.54
55	Cr	126	VAL	C-N-CA	5.16	131.40	121.54
14	AF	98	GLU	CA-CB-CG	5.15	124.41	114.10
36	CW	114	GLU	CB-CG-CD	5.15	121.36	112.60
42	Ca	134	GLU	CA-CB-CG	5.15	124.40	114.10
21	AB	53	GLN	CA-CB-CG	5.15	124.40	114.10
22	AA	34	MET	CA-CB-CG	5.15	124.40	114.10
41	CM	118	MET	CA-CB-CG	5.15	124.39	114.10
83	A6	5059	C	C2'-C3'-O3'	5.14	121.42	113.70
3	AK	34	GLU	CB-CG-CD	5.14	121.34	112.60
29	AE	11	ARG	CA-C-N	5.14	131.22	121.97
29	AE	11	ARG	C-N-CA	5.14	131.22	121.97

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
57	Cb	22	LYS	CB-CG-CD	5.14	123.12	111.30
46	CQ	172	ARG	CA-C-N	5.14	131.35	121.54
46	CQ	172	ARG	C-N-CA	5.14	131.35	121.54
29	AE	170	THR	CA-C-N	5.13	131.34	121.54
29	AE	170	THR	C-N-CA	5.13	131.34	121.54
49	CT	118	GLU	CB-CG-CD	5.13	121.33	112.60
74	CH	141	LYS	CA-C-N	5.13	129.69	122.46
74	CH	141	LYS	C-N-CA	5.13	129.69	122.46
14	AF	137	GLN	CB-CG-CD	5.13	121.32	112.60
74	CH	28	LYS	CB-CG-CD	5.13	123.10	111.30
77	A5	917	A	P-O3'-C3'	5.13	127.89	120.20
38	CO	168	TYR	CA-CB-CG	5.12	123.12	113.90
83	A6	3731	C	C2'-C3'-O3'	5.12	121.38	113.70
14	AF	22	LYS	CA-CB-CG	5.11	124.32	114.10
53	CY	131	GLU	CB-CG-CD	5.11	121.29	112.60
46	CQ	12	LYS	N-CA-CB	5.11	119.20	110.57
69	Cm	94	MET	CB-CG-SD	5.10	128.01	112.70
3	AK	52	LEU	CA-CB-CG	5.10	134.16	116.30
39	CL	50	PRO	CA-C-N	5.10	130.88	121.70
39	CL	50	PRO	C-N-CA	5.10	130.88	121.70
28	AJ	21	GLU	CA-CB-CG	5.10	124.30	114.10
20	AL	45	LYS	CA-CB-CG	5.10	124.29	114.10
35	CR	152	LYS	CA-CB-CG	5.10	124.30	114.10
74	CH	150	ASP	CA-CB-CG	5.10	117.70	112.60
83	A6	4738	C	C2'-C3'-O3'	5.09	121.34	113.70
30	AC	205	VAL	CB-CA-C	5.09	117.20	111.80
5	AS	65	GLU	CB-CG-CD	5.09	121.25	112.60
21	AB	110	MET	CA-CB-CG	5.09	124.28	114.10
50	CP	152	GLU	CA-CB-CG	5.09	124.28	114.10
45	CD	239	MET	CA-CB-CG	5.09	124.28	114.10
62	Cf	40	GLU	CA-CB-CG	5.09	124.28	114.10
50	CP	92	LEU	CA-CB-CG	5.08	134.08	116.30
77	A5	648	G	P-O3'-C3'	5.08	127.82	120.20
1	Ag	118	ARG	CA-CB-CG	5.07	124.25	114.10
20	AL	20	LYS	CA-CB-CG	5.07	124.25	114.10
15	AQ	128	GLU	CA-CB-CG	5.07	124.24	114.10
18	AX	80	LYS	CA-CB-CG	5.07	124.24	114.10
35	CR	154	LEU	CA-CB-CG	5.07	134.04	116.30
49	CT	114	GLN	CA-CB-CG	5.07	124.23	114.10
21	AB	168	MET	CA-CB-CG	5.07	124.23	114.10
22	AA	30	LEU	CA-CB-CG	5.06	134.02	116.30
41	CM	100	ARG	CB-CG-CD	5.06	122.95	111.30

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
83	A6	3857	G	C2'-C3'-O3'	5.06	121.29	113.70
14	AF	42	LYS	CB-CG-CD	5.05	122.92	111.30
22	AA	198	MET	CA-CB-CG	5.05	124.21	114.10
52	CX	103	LYS	CB-CG-CD	5.05	122.92	111.30
19	AN	118	ILE	CA-CB-CG1	5.05	118.99	110.40
79	A8	126	C	P-O3'-C3'	5.05	127.78	120.20
9	AT	88	MET	CB-CG-SD	5.05	127.85	112.70
70	Cn	22	GLN	CA-CB-CG	5.05	124.20	114.10
37	Cz	215	ARG	CA-CB-CG	5.05	124.19	114.10
83	A6	3959	U	P-O3'-C3'	5.05	127.77	120.20
77	A5	1841	C	P-O3'-C3'	5.04	127.76	120.20
1	Ag	273	GLU	CA-CB-CG	5.04	124.18	114.10
12	AD	202	LYS	CB-CG-CD	5.04	122.89	111.30
35	CR	113	LYS	CA-CB-CG	5.04	124.18	114.10
77	A5	505	G	C2'-C3'-O3'	5.03	121.25	113.70
73	CJ	62	ILE	CA-CB-CG1	5.03	118.95	110.40
46	CQ	97	LYS	CA-CB-CG	5.03	124.15	114.10
21	AB	164	ILE	CA-CB-CG1	5.03	118.94	110.40
41	CM	54	CYS	CA-C-N	-5.02	113.09	122.73
41	CM	54	CYS	C-N-CA	-5.02	113.09	122.73
47	CA	143	THR	CA-C-N	5.02	130.73	121.70
47	CA	143	THR	C-N-CA	5.02	130.73	121.70
21	AB	53	GLN	CB-CG-CD	5.02	121.13	112.60
16	B2	1756	C	C2'-C3'-O3'	5.01	121.22	113.70
26	Ab	36	LYS	CA-C-N	5.01	128.00	120.83
26	Ab	36	LYS	C-N-CA	5.01	128.00	120.83
13	Af	101	ALA	CA-C-N	5.01	130.99	121.97
13	Af	101	ALA	C-N-CA	5.01	130.99	121.97
36	CW	57	ARG	CB-CG-CD	5.01	122.82	111.30
50	CP	89	GLU	CA-CB-CG	5.01	124.11	114.10
56	Ch	61	ILE	CA-CB-CG1	5.01	118.91	110.40
83	A6	4738	C	P-O3'-C3'	5.00	127.70	120.20
59	CF	220	MET	CA-CB-CG	5.00	124.10	114.10

There are no chirality outliers.

All (95) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
30	AC	108	LYS	Peptide
30	AC	109	ILE	Peptide
30	AC	187	ARG	Sidechain
29	AE	148	ARG	Peptide

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Mol	Chain	Res	Type	Group
29	AE	151	ASP	Peptide
29	AE	17	HIS	Peptide
29	AE	18	TRP	Peptide
14	AF	38	TYR	Peptide
14	AF	46	ALA	Peptide
14	AF	47	LYS	Peptide
32	AH	135	PHE	Peptide
32	AH	15	LYS	Peptide
28	AJ	35	TYR	Peptide
20	AL	4	ILE	Peptide
20	AL	84	ARG	Sidechain
4	AM	59	PRO	Peptide
17	AO	137	SER	Peptide
8	AP	27	ASP	Peptide
8	AP	50	ARG	Peptide
8	AP	67	ALA	Peptide
8	AP	68	PRO	Peptide
8	AP	73	PRO	Peptide
15	AQ	43	GLU	Peptide
7	AR	91	LEU	Peptide
2	AU	81	GLN	Peptide
23	AV	49	GLN	Peptide
33	AW	124	LYS	Peptide
18	AX	107	ARG	Sidechain
24	AY	33	ALA	Peptide
24	AY	85	ASN	Peptide
25	Aa	12	LYS	Peptide
26	Ab	79	PHE	Peptide
27	Ae	46	VAL	Peptide
13	Af	102	VAL	Peptide
13	Af	103	LEU	Peptide
1	Ag	282	GLU	Peptide
47	CA	179	ILE	Peptide
47	CA	226	ARG	Sidechain
58	CB	18	PRO	Peptide
58	CB	357	ARG	Sidechain
58	CB	41	VAL	Peptide
68	CC	101	MET	Peptide
68	CC	217	ILE	Peptide
68	CC	22	VAL	Peptide
68	CC	274	LYS	Peptide
68	CC	285	ILE	Peptide

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Mol	Chain	Res	Type	Group
68	CC	306	ARG	Sidechain
68	CC	307	LYS	Peptide
68	CC	311	ARG	Sidechain
68	CC	312	ARG	Peptide
68	CC	321	ASN	Peptide
68	CC	54	VAL	Peptide
45	CD	107	ARG	Sidechain
45	CD	19	LYS	Peptide
45	CD	20	PHE	Peptide
75	CE	42	PRO	Peptide
75	CE	94	LYS	Peptide
59	CF	52	GLU	Peptide
76	CG	149	ASN	Peptide
76	CG	167	VAL	Peptide
74	CH	110	SER	Peptide
74	CH	140	GLN	Peptide
44	CI	111	LEU	Peptide
44	CI	199	TYR	Peptide
73	CJ	175	LEU	Peptide
39	CL	11	LYS	Peptide
41	CM	100	ARG	Peptide
41	CM	68	ALA	Peptide
41	CM	69	HIS	Peptide
43	CN	193	ARG	Peptide
43	CN	77	LYS	Peptide
43	CN	96	ARG	Sidechain
38	CO	110	PRO	Peptide
38	CO	193	THR	Peptide
46	CQ	11	ARG	Peptide
46	CQ	152	PHE	Peptide
46	CQ	161	SER	Peptide
51	CU	107	LYS	Peptide
40	CV	85	ARG	Peptide
53	CY	54	GLU	Peptide
42	Ca	89	ASN	Peptide
42	Ca	93	ASN	Peptide
61	Ce	84	GLU	Peptide
62	Cf	55	ASN	Peptide
65	Cj	10	LYS	Peptide
67	Cl	28	ARG	Sidechain
72	Co	64	LYS	Peptide
72	Co	66	ILE	Peptide

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Mol	Chain	Res	Type	Group
72	Co	75	PRO	Peptide
71	Cp	50	ARG	Sidechain
55	Cr	43	LEU	Peptide
55	Cr	72	LYS	Peptide
55	Cr	77	TYR	Peptide
55	Cr	96	MET	Peptide
37	Cz	173	LYS	Peptide

5.2 Too-close contacts [i](#)

In the following table, the Non-H and H(model) columns list the number of non-hydrogen atoms and hydrogen atoms in the chain respectively. The H(added) column lists the number of hydrogen atoms added and optimized by MolProbity. The Clashes column lists the number of clashes within the asymmetric unit, whereas Symm-Clashes lists symmetry-related clashes.

Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
1	Ag	2436	0	2393	55	0
2	AU	822	0	887	23	0
3	AK	827	0	854	17	0
4	AM	818	0	848	9	0
5	AS	1139	0	1191	32	0
6	Ad	445	0	442	10	0
7	AR	1019	0	1075	15	0
8	AP	970	0	1017	14	0
9	AT	1101	0	1135	18	0
10	AZ	594	0	653	15	0
11	Ac	506	0	536	8	0
12	AD	1757	0	1853	31	0
13	Af	581	0	599	6	0
14	AF	1509	0	1563	42	0
15	AQ	1124	0	1193	24	0
16	B2	37608	0	18955	321	0
17	AO	975	0	996	26	0
18	AX	1098	0	1167	16	0
19	AN	1202	0	1289	20	0
20	AL	1288	0	1362	15	0
21	AB	1747	0	1829	31	0
22	AA	1611	0	1618	38	0
23	AV	625	0	628	15	0
24	AY	1023	0	1090	23	0
25	Aa	847	0	897	21	0
26	Ab	651	0	672	13	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
27	Ae	419	0	463	6	0
28	AJ	1463	0	1578	27	0
29	AE	2073	0	2181	40	0
30	AC	1727	0	1814	46	0
31	AG	1923	0	2089	38	0
32	AH	1521	0	1616	26	0
33	AW	1034	0	1080	24	0
34	AI	1686	0	1772	30	0
35	CR	1574	0	1741	42	0
36	CW	1015	0	1079	26	0
37	Cz	1043	0	1080	31	0
38	CO	1634	0	1779	50	0
39	CL	1682	0	1792	33	0
40	CV	973	0	1034	28	0
41	CM	1139	0	1209	27	0
42	Ca	1162	0	1213	26	0
43	CN	1701	0	1749	47	0
44	CI	1711	0	1749	30	0
45	CD	2353	0	2372	40	0
46	CQ	1465	0	1581	30	0
47	CA	1948	0	2049	34	0
48	CS	1453	0	1490	36	0
49	CT	1298	0	1366	21	0
50	CP	1233	0	1263	24	0
51	CU	884	0	893	5	0
52	CX	994	0	1079	17	0
53	CY	1107	0	1193	22	0
54	CZ	1107	0	1182	17	0
55	Cr	1104	0	1189	29	0
56	Ch	1023	0	1160	24	0
57	Cb	603	0	641	10	0
58	CB	3178	0	3314	63	0
59	CF	1910	0	2048	43	0
60	Cd	931	0	980	15	0
61	Ce	1078	0	1177	15	0
62	Cf	838	0	870	27	0
63	Cg	906	0	999	21	0
64	Ci	840	0	929	21	0
65	Cj	726	0	764	7	0
66	Ck	569	0	637	15	0
67	Cl	444	0	483	9	0
68	CC	2882	0	3059	74	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
69	Cm	421	0	458	9	0
70	Cn	222	0	264	10	0
71	Cp	693	0	747	13	0
72	Co	851	0	922	18	0
73	CJ	1271	0	1304	22	0
74	CH	1526	0	1605	24	0
75	CE	2076	0	2276	44	0
76	CG	1973	0	2128	35	0
77	A5	36611	0	18460	298	0
78	A7	2578	0	1306	25	0
79	A8	3314	0	1683	27	0
80	Cc	1644	0	837	8	0
81	Bb	1407	0	721	5	0
82	Dd	260	0	131	2	0
83	A6	43784	0	21891	352	0
84	Bb	1	0	0	0	0
84	Cc	1	0	0	0	0
84	Dd	1	0	0	0	0
85	A6	1	0	0	0	0
85	B2	3	0	0	0	0
85	Bb	5	0	0	0	0
85	Cc	5	0	0	0	0
85	Dd	1	0	0	0	0
All	All	219326	0	161211	2571	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 7.

All (2571) 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)
16:B2:1288:U:H3	16:B2:1311:C:N4	1.49	1.07
16:B2:677:G:N2	16:B2:1028:A:H62	1.58	1.00
16:B2:677:G:H21	16:B2:1028:A:N6	1.60	1.00
16:B2:562:U:H3	16:B2:587:A:H62	1.06	0.98
83:A6:4344:U:H3	83:A6:4368:G:H1	1.10	0.98
74:CH:82:LYS:O	74:CH:86:LEU:HB3	1.62	0.98
83:A6:4454:G:H1	83:A6:4526:U:H3	1.08	0.98
83:A6:4745:G:N2	83:A6:4955:A:H62	1.61	0.97
83:A6:2557:G:H1	83:A6:2570:U:H3	1.01	0.97
16:B2:1652:G:H1	16:B2:1672:U:H3	0.97	0.96

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:A5:1724:G:N1	77:A5:1838:A:H2	1.65	0.95
16:B2:150:A:H62	16:B2:168:C:H42	0.95	0.94
83:A6:2363:A:H62	83:A6:3859:G:H21	0.99	0.94
83:A6:4745:G:H21	83:A6:4955:A:N6	1.65	0.94
16:B2:1324:G:H1	16:B2:1504:U:H3	0.96	0.93
16:B2:1656:G:H1	16:B2:1668:U:H3	0.99	0.93
37:Cz:186:ALA:O	37:Cz:190:LEU:HB2	1.67	0.92
16:B2:656:G:H1	16:B2:1156:U:H3	1.06	0.92
16:B2:925:G:H1	16:B2:1017:U:H3	1.12	0.92
77:A5:1726:U:H3	77:A5:1836:G:H1	0.92	0.92
83:A6:2439:G:H1	83:A6:2538:U:H3	1.16	0.91
83:A6:3707:U:H3	83:A6:3743:G:H1	0.91	0.90
83:A6:4421:C:H42	83:A6:4475:G:N2	1.67	0.90
81:Bb:34:G:H1	82:Dd:24:U:H3	1.16	0.90
83:A6:2550:G:H1	83:A6:2767:U:H3	1.17	0.90
77:A5:717:U:H3	77:A5:951:G:H1	1.20	0.90
83:A6:4745:G:H21	83:A6:4955:A:H62	0.93	0.90
16:B2:1232:U:H3	16:B2:1526:G:H1	0.96	0.89
22:AA:126:ASP:O	22:AA:130:ASP:HB2	1.73	0.89
77:A5:1996:C:H42	77:A5:2000:G:N2	1.71	0.89
16:B2:150:A:H62	16:B2:168:C:N4	1.69	0.88
77:A5:1724:G:N1	77:A5:1838:A:C2	2.39	0.87
83:A6:4321:U:H3	83:A6:4326:G:H1	1.16	0.87
16:B2:924:G:H1	16:B2:1018:U:H3	1.23	0.87
77:A5:1724:G:H1	77:A5:1838:A:H2	0.87	0.86
77:A5:1996:C:H42	77:A5:2000:G:H22	1.24	0.86
25:Aa:53:ILE:O	25:Aa:57:SER:HB3	1.76	0.86
80:Cc:51:U:H3	80:Cc:65:G:H1	1.24	0.86
59:CF:243:LEU:O	59:CF:247:MET:HB2	1.75	0.85
45:CD:109:LEU:O	45:CD:113:PHE:HB2	1.76	0.85
59:CF:92:VAL:O	59:CF:120:GLY:HA2	1.77	0.84
77:A5:989:U:H3	77:A5:1064:G:H1	1.24	0.84
83:A6:2363:A:N6	83:A6:3859:G:H21	1.75	0.84
30:AC:183:LYS:HA	30:AC:195:LEU:O	1.78	0.84
83:A6:2363:A:H62	83:A6:3859:G:N2	1.76	0.83
16:B2:1351:G:H1	16:B2:1360:U:H3	1.27	0.83
83:A6:3946:G:H1	83:A6:4067:U:H3	1.26	0.83
16:B2:1335:G:H1	16:B2:1492:U:H3	1.22	0.82
16:B2:526:A:H2	16:B2:559:G:H1	1.26	0.82
83:A6:4421:C:H42	83:A6:4475:G:H22	1.25	0.82
83:A6:2605:G:H1	83:A6:2734:U:H3	1.27	0.81

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:A7:79:U:H3	78:A7:97:G:H1	1.24	0.81
77:A5:1996:C:N4	77:A5:2000:G:H22	1.78	0.80
16:B2:1286:G:H21	16:B2:1313:A:H62	1.30	0.80
16:B2:150:A:N6	16:B2:168:C:H42	1.78	0.80
16:B2:116:U:H3	16:B2:347:G:H1	1.31	0.79
16:B2:677:G:H21	16:B2:1028:A:H62	0.81	0.79
83:A6:4297:G:H1	83:A6:4313:A:H2	1.31	0.79
83:A6:4421:C:N4	83:A6:4475:G:H22	1.79	0.79
33:AW:24:GLN:HA	33:AW:63:VAL:O	1.83	0.78
77:A5:1550:G:H1	77:A5:1578:U:H3	1.32	0.78
32:AH:145:ARG:O	32:AH:152:ARG:HA	1.83	0.77
58:CB:26:ARG:HH22	83:A6:4580:U:H5''	1.49	0.77
83:A6:4690:G:H21	83:A6:4700:A:H62	1.32	0.77
77:A5:113:A:H62	77:A5:157:U:H3	1.29	0.77
16:B2:191:A:H62	16:B2:208:G:H21	1.29	0.76
64:CI:44:ILE:O	64:CI:48:CYS:HB2	1.85	0.76
41:CM:108:ASP:HA	41:CM:111:LYS:HG2	1.68	0.76
37:Cz:174:MET:HE3	37:Cz:179:LEU:HD23	1.66	0.76
16:B2:926:A:H61	16:B2:1015:U:H3	1.33	0.76
58:CB:47:LEU:H	58:CB:84:MET:HE1	1.51	0.75
24:AY:78:SER:O	24:AY:82:ALA:HB2	1.87	0.74
43:CN:135:ILE:HG12	43:CN:151:ILE:HG13	1.70	0.74
83:A6:3956:G:H1	83:A6:4056:A:H61	1.35	0.73
30:AC:210:PRO:O	30:AC:214:LEU:HB2	1.88	0.73
59:CF:71:MET:HA	59:CF:74:MET:HG3	1.71	0.73
69:Cm:94:MET:HB3	69:Cm:103:LEU:HB2	1.70	0.73
16:B2:1286:G:H21	16:B2:1313:A:N6	1.85	0.73
16:B2:442:C:H42	16:B2:449:A:H62	1.35	0.73
16:B2:1244:U:H3	16:B2:1255:G:H1	1.36	0.73
16:B2:1166:G:H1	16:B2:1193:U:H3	1.37	0.72
46:CQ:11:ARG:HG3	77:A5:2081:C:H5''	1.71	0.72
41:CM:31:ILE:HB	41:CM:35:ARG:HH12	1.55	0.72
26:Ab:19:HIS:HB3	26:Ab:22:LYS:HG2	1.72	0.71
16:B2:197:U:H3	16:B2:202:G:H1	1.37	0.71
9:AT:130:ASP:HA	9:AT:133:ARG:HG2	1.72	0.71
16:B2:1095:C:N3	16:B2:1149:A:N1	2.39	0.71
16:B2:1560:U:H3	16:B2:1575:G:H1	1.38	0.71
7:AR:10:LYS:HD3	7:AR:14:ARG:HH12	1.55	0.71
16:B2:536:A:H62	16:B2:547:G:H21	1.36	0.71
30:AC:130:ILE:HG12	30:AC:159:LYS:HZ2	1.54	0.70
37:Cz:176:ASP:H	37:Cz:215:ARG:HG3	1.56	0.70

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
55:Cr:119:ARG:HH21	75:CE:112:MET:HE1	1.56	0.70
22:AA:63:ARG:HH22	23:AV:39:VAL:HG13	1.55	0.70
16:B2:1096:G:N1	16:B2:1137:U:N3	2.40	0.70
30:AC:187:ARG:HD3	30:AC:192:LEU:HB3	1.73	0.70
18:AX:11:ARG:HH22	20:AL:105:ARG:HD3	1.56	0.69
16:B2:1653:U:H3	16:B2:1671:G:H1	1.41	0.69
30:AC:127:PHE:HA	30:AC:140:GLY:O	1.91	0.69
83:A6:4997:G:H1	83:A6:5053:U:H3	1.40	0.69
55:Cr:67:ARG:HG2	55:Cr:71:ARG:HH12	1.57	0.69
59:CF:74:MET:HA	59:CF:77:LYS:HB3	1.74	0.69
60:Cd:70:LYS:O	60:Cd:74:ALA:HB2	1.93	0.69
20:AL:59:LYS:HE2	20:AL:134:LEU:HD13	1.73	0.69
16:B2:562:U:H3	16:B2:587:A:N6	1.88	0.69
16:B2:885:U:H3	16:B2:901:G:H1	1.40	0.69
73:CJ:12:MET:HG2	73:CJ:13:ARG:HE	1.58	0.69
68:CC:266:THR:HG23	68:CC:268:ARG:H	1.57	0.69
21:AB:52:THR:HG23	21:AB:58:ALA:H	1.58	0.68
68:CC:5:ARG:HE	68:CC:7:LEU:HD13	1.57	0.68
71:Cp:6:LYS:HG2	71:Cp:7:LYS:HG3	1.75	0.68
83:A6:3692:A:H62	83:A6:3823:G:H21	1.39	0.68
16:B2:1083:A:H62	16:B2:1841:C:H1'	1.58	0.68
77:A5:424:U:H3	79:A8:10:G:H1	1.41	0.68
60:Cd:90:ARG:HG3	60:Cd:102:LEU:HD11	1.74	0.68
16:B2:1183:A:H8	70:Cn:11:ARG:HH22	1.41	0.68
52:CX:111:GLN:HA	52:CX:114:LYS:HB2	1.76	0.68
63:Cg:46:CYS:HB2	63:Cg:49:CYS:H	1.59	0.68
16:B2:851:C:H5''	16:B2:852:G:H5'	1.75	0.67
55:Cr:90:LEU:HD21	75:CE:112:MET:HA	1.75	0.67
77:A5:392:U:H3	77:A5:399:G:H1	1.42	0.67
16:B2:383:G:H1'	20:AL:132:ARG:HE	1.60	0.67
31:AG:5:ILE:HD11	31:AG:14:LYS:HG2	1.76	0.67
21:AB:227:LYS:O	21:AB:231:LEU:HB2	1.94	0.67
78:A7:7:G:H1	78:A7:112:U:H3	1.41	0.67
70:Cn:13:LEU:O	70:Cn:17:ARG:HB2	1.94	0.67
76:CG:83:PHE:HB3	76:CG:159:HIS:HB2	1.77	0.67
13:Af:88:PRO:HD2	16:B2:1507:G:H22	1.59	0.66
46:CQ:128:LEU:HD11	68:CC:292:ILE:HB	1.76	0.66
83:A6:4460:U:H3	83:A6:4516:G:H1	1.41	0.66
44:CI:52:MET:HB3	44:CI:152:LEU:HD13	1.76	0.66
47:CA:3:ARG:H	47:CA:207:VAL:HG12	1.60	0.66
16:B2:193:C:H41	34:AI:143:LYS:HD3	1.60	0.66

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
59:CF:94:ARG:HB2	59:CF:114:LEU:HD12	1.77	0.66
33:AW:6:VAL:HG13	33:AW:29:PRO:HD2	1.76	0.66
38:CO:187:LYS:HG3	38:CO:190:ASP:H	1.59	0.66
42:Ca:101:ILE:HB	77:A5:509:A:H62	1.59	0.66
40:CV:42:VAL:HG12	40:CV:44:GLY:H	1.61	0.66
83:A6:2845:A:H61	83:A6:3843:C:N4	1.92	0.66
44:CI:63:GLU:HA	44:CI:66:GLU:HG2	1.77	0.65
74:CH:51:LYS:HG2	74:CH:52:LYS:HD2	1.76	0.65
67:CI:40:LYS:HB3	77:A5:366:A:H4'	1.79	0.65
16:B2:562:U:O4	16:B2:587:A:N7	2.27	0.65
43:CN:96:ARG:HH12	77:A5:30:C:H4'	1.60	0.65
75:CE:183:ARG:HG3	83:A6:4935:C:H42	1.60	0.65
77:A5:979:C:H42	77:A5:1275:G:H1	1.43	0.65
35:CR:74:ARG:HH12	83:A6:2890:C:H3'	1.62	0.65
47:CA:3:ARG:HH11	77:A5:1628:C:H42	1.41	0.65
76:CG:233:ILE:HA	76:CG:236:HIS:HB3	1.77	0.65
67:CI:7:PHE:O	67:CI:11:ARG:HB3	1.95	0.65
83:A6:2325:C:H2'	83:A6:2326:G:H8	1.61	0.65
83:A6:4690:G:N2	83:A6:4700:A:H62	1.94	0.65
31:AG:61:PHE:H	31:AG:98:ARG:HH21	1.43	0.65
69:Cm:80:PRO:HA	69:Cm:83:ARG:HG2	1.77	0.65
83:A6:2417:A:H61	83:A6:2430:C:H1'	1.61	0.65
83:A6:5022:U:H3	83:A6:5025:C:N4	1.94	0.65
59:CF:187:MET:H	59:CF:187:MET:HE3	1.62	0.65
49:CT:4:THR:HG21	83:A6:4211:C:H42	1.61	0.64
14:AF:143:PRO:HA	14:AF:146:ARG:HB2	1.78	0.64
55:Cr:18:ILE:HD11	55:Cr:20:ARG:HE	1.60	0.64
55:Cr:7:TRP:O	55:Cr:11:ARG:HB3	1.98	0.64
17:AO:57:THR:HG23	17:AO:59:GLY:H	1.62	0.64
39:CL:63:THR:HG21	42:Ca:66:ASN:HB3	1.79	0.64
61:Ce:104:SER:HB3	83:A6:2303:C:H5''	1.77	0.64
79:A8:71:A:H8	79:A8:87:G:H21	1.46	0.64
5:AS:24:ARG:HE	5:AS:28:PHE:HB2	1.63	0.64
17:AO:93:LEU:HG	17:AO:124:MET:HE3	1.80	0.64
45:CD:208:MET:HA	45:CD:211:LEU:HB2	1.78	0.64
77:A5:1398:A:H61	77:A5:1419:G:H2'	1.62	0.64
16:B2:1410:C:H42	16:B2:1436:C:H42	1.44	0.64
16:B2:1741:U:H5''	34:AI:59:ARG:HH21	1.63	0.64
29:AE:10:LYS:HA	29:AE:28:ALA:H	1.63	0.64
16:B2:925:G:N2	16:B2:1017:U:O2	2.26	0.64
55:Cr:118:LEU:O	55:Cr:122:LYS:HB2	1.98	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:A5:1211:G:H2'	77:A5:1212:G:H8	1.62	0.64
83:A6:2845:A:H61	83:A6:3843:C:H42	1.45	0.64
83:A6:4184:G:H3'	83:A6:4185:G:H8	1.62	0.64
4:AM:19:GLN:HA	4:AM:88:TRP:HE1	1.62	0.64
16:B2:867:G:H5''	20:AL:151:THR:H	1.61	0.64
45:CD:22:ARG:HD3	45:CD:27:LYS:HE2	1.80	0.64
56:Ch:24:LEU:HA	56:Ch:27:GLU:HG3	1.79	0.63
58:CB:373:LYS:HD2	83:A6:4627:U:H4'	1.80	0.63
59:CF:49:LEU:HD12	77:A5:2117:G:H1'	1.79	0.63
63:Cg:46:CYS:H	63:Cg:49:CYS:HB2	1.62	0.63
38:CO:116:LYS:HG2	38:CO:118:MET:HB2	1.80	0.63
39:CL:93:THR:HG22	56:Ch:117:ARG:HG2	1.79	0.63
43:CN:146:PRO:HA	43:CN:149:GLN:HE22	1.63	0.63
50:CP:84:PRO:HB2	50:CP:87:SER:HB2	1.80	0.63
61:Ce:76:LYS:HE2	61:Ce:98:GLU:HG2	1.81	0.63
16:B2:68:A:H61	16:B2:81:U:H3	1.45	0.63
16:B2:526:A:N1	16:B2:559:G:O6	2.30	0.63
29:AE:89:VAL:HG13	29:AE:98:ASN:HD21	1.64	0.63
37:Cz:32:VAL:HB	37:Cz:170:GLY:H	1.64	0.63
39:CL:56:ARG:HD2	39:CL:74:ARG:HA	1.81	0.63
15:AQ:142:GLN:HE22	16:B2:1643:U:H1'	1.63	0.63
17:AO:99:ALA:H	17:AO:133:THR:HG22	1.64	0.63
18:AX:124:LYS:HA	18:AX:129:SER:HA	1.80	0.63
58:CB:172:PRO:HG3	58:CB:325:GLU:H	1.62	0.63
67:Cl:16:LYS:HB3	67:Cl:42:ARG:HH12	1.64	0.63
21:AB:125:VAL:HG13	21:AB:169:MET:HE2	1.80	0.63
29:AE:220:THR:HG21	29:AE:225:ILE:HD13	1.81	0.63
68:CC:306:ARG:HD3	68:CC:308:LYS:H	1.64	0.63
47:CA:181:LYS:HG2	47:CA:183:GLY:H	1.62	0.62
50:CP:69:ARG:HD2	83:A6:4981:G:H1'	1.81	0.62
58:CB:217:ILE:HD11	58:CB:347:LEU:HB3	1.81	0.62
77:A5:227:A:H62	77:A5:241:G:H21	1.45	0.62
37:Cz:176:ASP:N	37:Cz:215:ARG:H	1.97	0.62
69:Cm:97:ARG:HH21	83:A6:4423:U:H3'	1.64	0.62
83:A6:2395:A:N6	83:A6:2820:C:O2	2.32	0.62
2:AU:17:ILE:HD11	2:AU:92:HIS:HB3	1.82	0.62
5:AS:26:ILE:HG13	5:AS:45:LEU:HD22	1.81	0.62
14:AF:76:MET:HB3	14:AF:155:CYS:HB2	1.82	0.62
14:AF:179:ASN:HB3	14:AF:187:SER:HB2	1.82	0.62
17:AO:149:ARG:H	25:Aa:27:ALA:HB3	1.64	0.62
24:AY:16:ARG:H	24:AY:16:ARG:HD3	1.63	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
35:CR:9:ARG:HH22	83:A6:2527:A:H5'	1.64	0.62
35:CR:109:TYR:HB3	35:CR:114:LYS:HB2	1.82	0.62
45:CD:273:LEU:HA	45:CD:276:LYS:HB3	1.82	0.62
58:CB:315:ASN:HD21	58:CB:325:GLU:HA	1.64	0.62
10:AZ:46:ASN:HA	10:AZ:78:LYS:HG3	1.81	0.62
14:AF:85:LYS:HB3	14:AF:88:MET:HG2	1.82	0.62
77:A5:86:U:O2	77:A5:98:A:N7	2.32	0.62
10:AZ:66:LYS:HE3	10:AZ:67:LEU:HB2	1.80	0.62
16:B2:869:A:H62	32:AH:116:ARG:HA	1.63	0.62
37:Cz:175:THR:H	37:Cz:214:GLN:N	1.98	0.62
38:CO:94:ARG:HD2	77:A5:1309:C:H5''	1.82	0.62
45:CD:206:ASP:HA	45:CD:209:ARG:HB3	1.82	0.62
53:CY:16:LYS:HG2	79:A8:23:C:H4'	1.80	0.62
58:CB:292:LEU:HD13	58:CB:293:ILE:HG12	1.81	0.62
77:A5:1804:A:H4'	77:A5:1805:A:H2'	1.81	0.62
83:A6:2272:C:H2'	83:A6:2273:G:H8	1.63	0.62
15:AQ:54:PRO:HA	15:AQ:57:LEU:HB2	1.82	0.62
44:CI:169:LYS:HG2	44:CI:177:ASN:HD22	1.62	0.62
49:CT:20:ARG:HH22	78:A7:67:C:H4'	1.62	0.62
5:AS:80:PRO:HG2	5:AS:83:PHE:HB2	1.80	0.62
24:AY:111:LYS:HA	24:AY:114:MET:HG2	1.82	0.62
61:Ce:3:ALA:HA	61:Ce:121:ARG:HE	1.64	0.62
75:CE:55:GLY:HA3	75:CE:65:ARG:H	1.65	0.62
75:CE:95:PRO:HB3	75:CE:104:THR:HA	1.82	0.62
75:CE:129:GLY:HA2	77:A5:970:G:H1'	1.81	0.62
76:CG:197:LYS:HG3	76:CG:198:THR:HG23	1.82	0.62
16:B2:1473:G:H21	16:B2:1475:G:H5'	1.65	0.61
21:AB:52:THR:HG21	76:CG:264:LYS:HE3	1.80	0.61
44:CI:103:LEU:H	44:CI:113:THR:HG21	1.65	0.61
53:CY:30:MET:HE1	53:CY:78:TYR:HA	1.82	0.61
72:Co:66:ILE:HD11	72:Co:85:ILE:HG23	1.82	0.61
77:A5:300:A:H2'	77:A5:301:G:H8	1.63	0.61
1:Ag:21:ILE:HD12	1:Ag:299:PHE:HB2	1.82	0.61
16:B2:382:C:H2'	16:B2:383:G:H8	1.64	0.61
30:AC:194:ARG:O	30:AC:224:THR:HA	2.00	0.61
5:AS:61:GLU:HA	5:AS:64:VAL:HG22	1.83	0.61
45:CD:36:LEU:HD12	45:CD:50:ARG:HG2	1.83	0.61
76:CG:156:VAL:HB	76:CG:202:VAL:HB	1.81	0.61
77:A5:1934:A:N1	77:A5:2052:G:O6	2.33	0.61
6:Ad:33:LYS:HD2	16:B2:1658:G:H5''	1.81	0.61
58:CB:92:TYR:HA	58:CB:101:THR:HA	1.83	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
33:AW:83:LEU:HD11	33:AW:122:GLY:HA3	1.83	0.61
37:Cz:128:LEU:O	37:Cz:131:ALA:C	2.43	0.61
48:CS:8:ARG:HH22	77:A5:940:C:H4'	1.65	0.61
60:Cd:72:VAL:HG13	60:Cd:73:TRP:HD1	1.65	0.61
78:A7:79:U:O2	78:A7:97:G:N2	2.29	0.61
14:AF:89:THR:HA	14:AF:92:ILE:HB	1.81	0.61
48:CS:77:ASN:HB3	48:CS:132:ILE:HB	1.82	0.61
11:Ac:18:LEU:HB3	11:Ac:29:GLN:HB2	1.83	0.61
24:AY:20:ARG:HA	24:AY:75:ILE:O	2.00	0.61
30:AC:127:PHE:HE1	30:AC:141:VAL:HG13	1.65	0.61
83:A6:2845:A:N6	83:A6:3843:C:H42	1.99	0.61
83:A6:3865:A:H61	83:A6:3881:G:H1	1.48	0.61
16:B2:1854:U:H2'	16:B2:1855:G:H8	1.65	0.61
29:AE:100:ARG:HG2	29:AE:102:ILE:HG23	1.82	0.61
83:A6:3697:U:H5''	83:A6:3698:G:H5'	1.83	0.61
62:Cf:96:ALA:HA	62:Cf:99:HIS:HB2	1.82	0.60
75:CE:127:SER:HB2	77:A5:972:C:H41	1.66	0.60
14:AF:39:ILE:HG23	14:AF:68:ILE:HD11	1.82	0.60
68:CC:266:THR:HG22	68:CC:269:LYS:HG2	1.83	0.60
83:A6:4405:G:H1	83:A6:4439:U:H3	1.48	0.60
16:B2:957:A:H3'	16:B2:958:G:H21	1.65	0.60
17:AO:126:ILE:HG13	25:Aa:53:ILE:HA	1.83	0.60
31:AG:59:GLN:HB2	31:AG:98:ARG:HH22	1.66	0.60
32:AH:70:LYS:H	32:AH:70:LYS:HE2	1.66	0.60
77:A5:432:U:H5'	77:A5:433:A:H5''	1.82	0.60
83:A6:4765:G:N1	83:A6:4869:U:N3	2.49	0.60
16:B2:642:U:H4'	16:B2:644:G:H4'	1.84	0.60
16:B2:1286:G:N2	16:B2:1313:A:H62	2.00	0.60
19:AN:78:LYS:HZ1	19:AN:80:LEU:HD22	1.66	0.60
48:CS:101:THR:HG23	48:CS:104:GLY:H	1.66	0.60
1:Ag:30:MET:HA	1:Ag:43:TRP:O	2.01	0.60
14:AF:166:ILE:HD11	16:B2:1599:U:H5''	1.82	0.60
60:Cd:40:LYS:O	60:Cd:44:ARG:HB2	2.02	0.60
16:B2:740:C:H2'	16:B2:741:C:H2'	1.84	0.60
16:B2:919:A:H3'	19:AN:16:LEU:HD23	1.84	0.60
34:AI:81:VAL:HG22	34:AI:102:VAL:HG12	1.83	0.60
66:Ck:34:PHE:O	66:Ck:44:THR:HA	2.01	0.60
72:Co:3:ASN:HB3	83:A6:4232:U:H2'	1.84	0.60
36:CW:59:HIS:HB3	36:CW:61:LYS:HD3	1.84	0.60
43:CN:61:ILE:HG22	43:CN:133:ILE:HG22	1.83	0.60
43:CN:81:TYR:HB3	77:A5:1527:A:H5''	1.84	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:CB:90:VAL:HG23	58:CB:104:THR:HG22	1.84	0.60
74:CH:129:ARG:HG3	74:CH:153:LEU:HD12	1.83	0.60
77:A5:113:A:N7	77:A5:157:U:O4	2.34	0.60
78:A7:2:U:H3	78:A7:117:G:H1	1.49	0.60
9:AT:33:TRP:HZ2	9:AT:102:ARG:HG3	1.66	0.60
52:CX:112:ALA:O	52:CX:116:LEU:HB2	2.01	0.60
30:AC:194:ARG:HB2	30:AC:225:SER:HB3	1.84	0.60
40:CV:27:ASN:O	40:CV:102:ALA:HA	2.01	0.60
54:CZ:53:VAL:HG21	54:CZ:62:ILE:HG13	1.84	0.60
78:A7:77:A:H62	78:A7:99:G:H21	1.50	0.60
83:A6:3598:C:H2'	83:A6:3599:A:H8	1.67	0.60
44:CI:52:MET:HG3	44:CI:136:MET:HB2	1.83	0.59
62:Cf:40:GLU:HA	62:Cf:43:LEU:HD23	1.84	0.59
83:A6:4993:G:H1	83:A6:5058:A:H2	1.48	0.59
21:AB:181:LEU:HA	21:AB:184:VAL:HB	1.84	0.59
30:AC:125:LYS:HG3	30:AC:143:CYS:HB2	1.84	0.59
62:Cf:54:LYS:HE2	77:A5:443:G:H4'	1.84	0.59
66:Ck:7:GLU:HG2	66:Ck:10:ASP:H	1.67	0.59
22:AA:177:MET:HE1	22:AA:180:ARG:HH21	1.66	0.59
58:CB:151:SER:HA	58:CB:154:LYS:HG2	1.84	0.59
3:AK:20:VAL:HG11	12:AD:72:VAL:HG22	1.85	0.59
21:AB:183:GLU:HA	21:AB:186:ASN:HB2	1.83	0.59
30:AC:208:PRO:O	30:AC:212:LYS:HB2	2.03	0.59
54:CZ:6:LYS:HB2	54:CZ:8:GLY:H	1.68	0.59
77:A5:113:A:N6	77:A5:157:U:H3	1.98	0.59
6:Ad:32:ARG:H	6:Ad:33:LYS:HZ3	1.50	0.59
15:AQ:130:LYS:HA	15:AQ:137:ALA:HA	1.83	0.59
37:Cz:166:ALA:HB3	83:A6:3969:G:H1'	1.84	0.59
47:CA:225:ILE:HG21	47:CA:234:LYS:H	1.68	0.59
69:Cm:111:ARG:HH22	83:A6:4698:C:H2'	1.68	0.59
67:Cl:22:PRO:HG3	83:A6:2431:A:H5''	1.83	0.59
77:A5:1438:U:H5''	77:A5:1439:C:H5''	1.85	0.59
16:B2:1133:A:H4'	25:Aa:13:LYS:HE3	1.84	0.59
19:AN:29:THR:HG23	19:AN:32:ASP:H	1.68	0.59
28:AJ:115:PHE:HD2	28:AJ:123:ILE:HG23	1.68	0.59
29:AE:31:PRO:HA	29:AE:81:THR:HB	1.85	0.59
75:CE:254:ASP:HA	75:CE:257:ILE:HG22	1.84	0.59
12:AD:177:LEU:HD23	12:AD:182:LEU:HD23	1.85	0.59
30:AC:123:ARG:HB2	30:AC:145:LYS:HA	1.82	0.59
35:CR:180:LYS:HE2	35:CR:181:LYS:HZ1	1.68	0.59
37:Cz:173:LYS:HA	37:Cz:212:LYS:HA	1.85	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:CO:200:GLY:HA2	38:CO:203:VAL:HG12	1.83	0.59
1:Ag:190:GLY:HA3	12:AD:222:PRO:HA	1.84	0.59
16:B2:668:A:H1'	16:B2:1197:G:H21	1.67	0.59
17:AO:62:VAL:HG21	17:AO:67:ASP:HB2	1.84	0.59
80:Cc:23:G:N7	80:Cc:47:G:N2	2.44	0.59
83:A6:4297:G:O6	83:A6:4313:A:N1	2.36	0.59
21:AB:204:ILE:HD12	21:AB:205:TYR:HB2	1.84	0.59
49:CT:48:VAL:HB	49:CT:94:GLU:HG2	1.84	0.59
68:CC:190:ARG:HG2	68:CC:192:GLY:H	1.67	0.59
73:CJ:47:THR:HG23	78:A7:39:C:H4'	1.85	0.59
80:Cc:1:C:H42	80:Cc:73:A:H61	1.50	0.59
1:Ag:216:ALA:HB3	1:Ag:230:LEU:HB2	1.86	0.58
77:A5:1804:A:H61	77:A5:1832:C:H2'	1.68	0.58
12:AD:106:ARG:HH21	12:AD:173:ARG:HB3	1.69	0.58
16:B2:1337:C:H2'	16:B2:1338:G:H8	1.68	0.58
23:AV:56:CYS:O	23:AV:60:ARG:HB2	2.03	0.58
32:AH:143:ARG:HD2	33:AW:53:ILE:HD12	1.85	0.58
35:CR:137:ILE:HA	35:CR:140:GLU:HG2	1.84	0.58
39:CL:21:ARG:HH12	43:CN:197:THR:HA	1.68	0.58
40:CV:40:ILE:HD11	83:A6:3799:A:C6	2.38	0.58
43:CN:21:PHE:HZ	76:CG:74:LEU:HB2	1.68	0.58
72:Co:43:ARG:HH22	77:A5:293:G:H5''	1.67	0.58
1:Ag:5:MET:HE3	1:Ag:310:TRP:HB3	1.85	0.58
16:B2:1050:A:H62	16:B2:1068:G:H21	1.50	0.58
21:AB:38:MET:HE3	21:AB:38:MET:H	1.68	0.58
24:AY:19:GLN:HE21	24:AY:78:SER:H	1.52	0.58
56:Ch:106:LYS:HD2	77:A5:111:C:H5''	1.85	0.58
40:CV:45:ILE:HG12	40:CV:53:PRO:HB3	1.85	0.58
77:A5:43:U:O4	77:A5:93:G:N2	2.36	0.58
83:A6:4601:U:H2'	83:A6:4602:A:H8	1.68	0.58
1:Ag:152:SER:H	1:Ag:169:GLY:HA2	1.69	0.58
16:B2:121:U:H5''	29:AE:77:ARG:HH21	1.69	0.58
18:AX:14:ARG:HD2	18:AX:18:ARG:HD2	1.84	0.58
29:AE:62:LYS:HB3	29:AE:80:ILE:HD13	1.84	0.58
33:AW:102:ILE:HD11	33:AW:125:ILE:HD11	1.84	0.58
35:CR:8:LYS:HG2	35:CR:19:LYS:HB2	1.86	0.58
60:Cd:29:ILE:O	60:Cd:33:ILE:HB	2.03	0.58
65:Cj:10:LYS:HD2	65:Cj:11:ARG:HA	1.86	0.58
16:B2:508:A:H3'	16:B2:509:G:H8	1.68	0.58
16:B2:1756:C:H2'	16:B2:1757:G:H8	1.68	0.58
21:AB:72:ALA:HB2	21:AB:80:ALA:HA	1.85	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:AH:144:ILE:HD11	32:AH:152:ARG:HB3	1.85	0.58
61:Ce:88:LEU:HB3	61:Ce:120:ILE:HG21	1.85	0.58
77:A5:1972:G:H1	77:A5:1994:C:H42	1.51	0.58
2:AU:21:ARG:HB3	2:AU:88:LEU:HD11	1.86	0.58
38:CO:114:LYS:HD3	83:A6:4756:C:H5''	1.86	0.58
46:CQ:168:ARG:HH11	46:CQ:168:ARG:H	1.51	0.58
47:CA:5:ILE:HG22	47:CA:7:GLY:H	1.69	0.58
58:CB:240:LEU:HD11	58:CB:252:ALA:HB2	1.86	0.58
75:CE:258:LEU:HD23	75:CE:261:ILE:HD11	1.86	0.58
31:AG:162:LEU:HB3	31:AG:170:ARG:HB2	1.84	0.58
59:CF:103:PRO:HA	59:CF:106:ARG:HB3	1.85	0.58
76:CG:250:ILE:HD12	76:CG:253:LEU:HD23	1.84	0.58
1:Ag:44:LYS:HE3	1:Ag:54:ILE:HG22	1.86	0.58
16:B2:242:U:H3	16:B2:280:G:H1	1.51	0.58
36:CW:54:LEU:HA	36:CW:57:ARG:HG2	1.86	0.58
38:CO:75:ALA:HB3	38:CO:78:ARG:HB3	1.86	0.58
45:CD:11:ALA:HB1	77:A5:1743:A:H5'	1.86	0.58
48:CS:45:TRP:O	48:CS:49:SER:HB3	2.03	0.58
57:Cb:62:ALA:HA	57:Cb:65:MET:HE2	1.86	0.58
21:AB:113:MET:HE1	21:AB:209:ASP:HB2	1.85	0.58
72:Co:55:ILE:HG22	80:Cc:76:C:H4'	1.85	0.58
77:A5:1332:C:H2'	77:A5:1333:A:H8	1.68	0.58
83:A6:4064:C:H2'	83:A6:4065:G:H8	1.69	0.58
16:B2:1745:A:H1'	31:AG:66:GLY:HA2	1.84	0.57
59:CF:108:VAL:HA	59:CF:111:LEU:HB2	1.86	0.57
68:CC:346:ASN:HA	68:CC:349:LEU:HG	1.84	0.57
83:A6:2643:G:H1	83:A6:2691:U:H3	1.52	0.57
16:B2:1239:U:H3	16:B2:1242:U:H5''	1.69	0.57
29:AE:139:LEU:HD22	29:AE:150:PRO:HB3	1.87	0.57
45:CD:58:ARG:HA	45:CD:93:THR:HB	1.87	0.57
77:A5:962:C:H2'	83:A6:2264:C:H42	1.68	0.57
8:AP:94:VAL:HG21	8:AP:116:LEU:HD12	1.84	0.57
5:AS:74:PRO:HB2	5:AS:79:ILE:HG21	1.86	0.57
31:AG:158:VAL:HG12	31:AG:159:ARG:HH11	1.70	0.57
38:CO:25:LYS:HE3	77:A5:1913:C:H5''	1.86	0.57
68:CC:326:LEU:HD22	77:A5:975:C:H4'	1.87	0.57
75:CE:258:LEU:O	75:CE:262:LYS:HB2	2.04	0.57
77:A5:1174:G:H22	77:A5:1187:G:H21	1.50	0.57
83:A6:5022:U:H3	83:A6:5025:C:H42	1.47	0.57
16:B2:1358:U:H5'	30:AC:114:LYS:HE2	1.86	0.57
21:AB:62:LEU:HA	21:AB:65:ARG:HH12	1.69	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:AY:104:ARG:HG3	24:AY:107:ARG:HH21	1.69	0.57
46:CQ:66:MET:HB3	46:CQ:70:MET:HE3	1.86	0.57
58:CB:89:ILE:HG13	58:CB:105:VAL:HG22	1.87	0.57
77:A5:1538:U:H2'	77:A5:1539:G:H8	1.69	0.57
14:AF:121:PRO:HD2	14:AF:146:ARG:HA	1.86	0.57
40:CV:82:ILE:HD11	40:CV:122:ALA:H	1.70	0.57
46:CQ:44:ASN:HA	46:CQ:47:VAL:HG12	1.86	0.57
76:CG:157:ILE:O	76:CG:183:ILE:HA	2.05	0.57
77:A5:86:U:N3	77:A5:98:A:C8	2.72	0.57
1:Ag:251:ALA:HB1	1:Ag:286:CYS:HB3	1.86	0.57
17:AO:147:ARG:HG2	25:Aa:28:ARG:HH22	1.70	0.57
20:AL:144:LYS:HE3	20:AL:146:THR:HG22	1.87	0.57
45:CD:63:GLN:HE22	45:CD:65:ALA:HB2	1.68	0.57
52:CX:102:VAL:HG12	52:CX:103:LYS:HD2	1.87	0.57
54:CZ:25:ILE:HD11	54:CZ:28:ASN:HB3	1.85	0.57
73:CJ:15:LEU:HD13	73:CJ:134:LEU:HD11	1.87	0.57
74:CH:59:LYS:HE2	74:CH:66:GLU:HB3	1.85	0.57
83:A6:2442:G:H21	83:A6:2512:A:H2	1.53	0.57
16:B2:962:A:H5''	17:AO:66:ARG:HG3	1.85	0.57
16:B2:1352:G:H1	16:B2:1359:U:H3	1.51	0.57
26:Ab:23:ARG:HD2	26:Ab:27:SER:H	1.70	0.57
36:CW:28:VAL:HG13	36:CW:30:GLN:HE22	1.70	0.57
43:CN:39:ALA:HB3	43:CN:61:ILE:HG13	1.87	0.57
59:CF:134:ARG:HH12	78:A7:97:G:H4'	1.70	0.57
77:A5:1089:G:H2'	77:A5:1090:G:H8	1.69	0.57
83:A6:2770:C:H2'	83:A6:2771:G:H8	1.69	0.57
16:B2:331:C:H2'	31:AG:189:ARG:HD2	1.86	0.57
33:AW:13:SER:HB2	33:AW:27:ILE:HG22	1.86	0.57
38:CO:193:THR:HG23	38:CO:196:LEU:HD23	1.86	0.56
41:CM:35:ARG:HA	41:CM:51:PRO:HA	1.87	0.56
41:CM:47:ARG:HH12	41:CM:68:ALA:HB3	1.68	0.56
55:Cr:33:LYS:HD2	55:Cr:35:ARG:HD3	1.87	0.56
58:CB:225:GLY:HA2	58:CB:273:GLY:HA3	1.87	0.56
8:AP:92:SER:H	8:AP:107:ILE:HD11	1.70	0.56
16:B2:1101:U:H2'	16:B2:1102:G:H8	1.71	0.56
17:AO:95:ILE:HG22	17:AO:129:ILE:HD13	1.87	0.56
48:CS:21:LYS:H	48:CS:22:CYS:HA	1.70	0.56
77:A5:1428:U:H3	77:A5:1456:C:H42	1.54	0.56
5:AS:111:LEU:HA	5:AS:114:LEU:HG	1.87	0.56
16:B2:692:G:H2'	16:B2:693:A:H8	1.70	0.56
16:B2:1832:A:H5''	16:B2:1840:U:H5''	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:AA:65:ILE:HD11	22:AA:145:ILE:HG13	1.88	0.56
28:AJ:49:THR:HA	28:AJ:52:LYS:HE2	1.86	0.56
69:Cm:99:CYS:HB3	69:Cm:115:CYS:HB3	1.87	0.56
74:CH:10:VAL:HG23	74:CH:55:LEU:HB3	1.87	0.56
83:A6:3956:G:H1	83:A6:4056:A:N6	2.02	0.56
2:AU:51:LYS:HG3	2:AU:90:ASP:HB3	1.86	0.56
16:B2:1860:A:H5''	25:Aa:8:ASN:HB3	1.86	0.56
40:CV:34:ALA:HB2	40:CV:72:LEU:HD11	1.86	0.56
58:CB:121:ASN:HB3	58:CB:124:LYS:HE3	1.86	0.56
21:AB:59:SER:O	21:AB:63:LYS:HB2	2.05	0.56
39:CL:74:ARG:HD3	77:A5:75:G:H3'	1.88	0.56
44:CI:91:LEU:HG	44:CI:135:ILE:HG23	1.88	0.56
48:CS:55:LYS:HZ2	48:CS:57:SER:H	1.53	0.56
83:A6:2777:G:H5''	83:A6:2778:G:H5'	1.88	0.56
64:CI:61:LEU:HD23	64:CI:94:LEU:HD11	1.87	0.56
75:CE:150:LEU:HD12	75:CE:194:VAL:HG21	1.86	0.56
14:AF:56:TYR:HA	14:AF:62:ARG:HG3	1.88	0.56
33:AW:15:ASN:HD22	33:AW:71:LYS:HG3	1.69	0.56
37:Cz:168:ALA:HB2	83:A6:3970:G:H4'	1.86	0.56
43:CN:71:ARG:HB2	43:CN:94:PHE:HB2	1.88	0.56
65:Cj:52:LYS:HE3	68:CC:61:GLN:HB3	1.86	0.56
16:B2:374:G:O6	16:B2:385:G:O6	2.23	0.56
77:A5:252:C:H2'	77:A5:253:G:H8	1.69	0.56
16:B2:677:G:H5'	19:AN:120:SER:HB2	1.88	0.56
30:AC:183:LYS:HG2	33:AW:95:PRO:HA	1.87	0.56
46:CQ:105:VAL:HB	46:CQ:110:ARG:HE	1.71	0.56
77:A5:1593:A:H5''	83:A6:2839:U:H5''	1.88	0.56
2:AU:56:MET:HG2	2:AU:86:LYS:HE3	1.88	0.56
23:AV:36:VAL:HG13	23:AV:51:LYS:HZ1	1.71	0.56
24:AY:86:GLU:HB3	24:AY:91:LEU:HD11	1.86	0.56
43:CN:73:ARG:HB3	43:CN:89:VAL:HG23	1.88	0.56
12:AD:6:SER:O	12:AD:10:LYS:HB3	2.06	0.55
15:AQ:139:ALA:HB2	16:B2:1650:A:H5''	1.88	0.55
38:CO:166:ILE:HA	38:CO:169:ARG:HB2	1.88	0.55
44:CI:74:LYS:HD3	83:A6:4415:A:H4'	1.86	0.55
68:CC:323:ARG:HG2	77:A5:1281:G:H5'	1.86	0.55
77:A5:227:A:H62	77:A5:241:G:N2	2.04	0.55
4:AM:26:LEU:HA	4:AM:31:LEU:HD11	1.88	0.55
9:AT:103:VAL:O	9:AT:107:LEU:HB2	2.06	0.55
16:B2:59:U:H5'	16:B2:503:C:H41	1.71	0.55
35:CR:44:LEU:HD22	35:CR:49:LEU:HD12	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
46:CQ:39:THR:HG23	46:CQ:41:SER:HB3	1.87	0.55
60:Cd:46:LEU:HA	60:Cd:49:ILE:HG13	1.89	0.55
61:Ce:59:GLY:HA2	77:A5:1899:G:H21	1.70	0.55
83:A6:3783:A:H2	83:A6:3790:U:H3	1.54	0.55
14:AF:74:ASN:HB3	16:B2:1676:U:H5'	1.88	0.55
15:AQ:43:GLU:HA	15:AQ:45:ARG:HB2	1.87	0.55
16:B2:1775:U:H2'	16:B2:1776:G:H8	1.70	0.55
42:Ca:2:PRO:HD2	42:Ca:5:LEU:HD22	1.88	0.55
16:B2:71:G:H5''	31:AG:170:ARG:HH22	1.71	0.55
16:B2:191:A:H62	16:B2:208:G:N2	2.01	0.55
29:AE:230:LYS:HB2	29:AE:233:LYS:HE3	1.87	0.55
32:AH:82:GLU:HA	32:AH:85:LYS:HG2	1.88	0.55
34:AI:74:ARG:HD2	34:AI:108:PRO:HB2	1.89	0.55
38:CO:79:ILE:HD11	38:CO:138:LEU:HD21	1.87	0.55
62:Cf:27:LEU:HB3	62:Cf:83:MET:HE2	1.88	0.55
63:Cg:8:ARG:HH12	83:A6:2530:U:H5'	1.71	0.55
77:A5:58:G:H2'	79:A8:33:G:H2'	1.88	0.55
83:A6:2849:A:H62	83:A6:3838:U:H3	1.55	0.55
5:AS:26:ILE:HA	5:AS:56:ALA:HB2	1.88	0.55
10:AZ:69:THR:H	10:AZ:72:VAL:HB	1.70	0.55
22:AA:7:VAL:HG13	22:AA:8:LEU:HD22	1.89	0.55
45:CD:104:LEU:HB2	45:CD:247:ILE:HD12	1.88	0.55
60:Cd:21:VAL:H	60:Cd:90:ARG:HB3	1.72	0.55
80:Cc:15:G:N2	80:Cc:49:C:O2	2.37	0.55
16:B2:380:G:H1'	34:AI:5:ARG:HD2	1.88	0.55
16:B2:1049:A:H3'	16:B2:1050:A:H8	1.71	0.55
24:AY:17:LEU:HD12	24:AY:18:LEU:HG	1.89	0.55
48:CS:45:TRP:HE1	48:CS:55:LYS:HA	1.72	0.55
73:CJ:146:ARG:HH12	78:A7:27:G:H5''	1.71	0.55
83:A6:2283:G:H2'	83:A6:2284:G:H8	1.72	0.55
83:A6:4630:G:H1	83:A6:4668:U:H3	1.55	0.55
3:AK:11:ILE:HA	3:AK:14:LEU:HB2	1.87	0.55
29:AE:126:VAL:HA	29:AE:141:THR:HA	1.89	0.55
73:CJ:75:ARG:HH21	78:A7:40:U:H3	1.55	0.55
83:A6:4888:U:O2	83:A6:4931:G:N2	2.38	0.55
21:AB:226:GLY:HA3	83:A6:4099:G:H4'	1.88	0.55
22:AA:140:VAL:HG13	22:AA:142:LEU:HG	1.88	0.55
50:CP:16:LYS:HB3	50:CP:149:ILE:HG22	1.88	0.55
77:A5:741:C:H42	77:A5:923:C:H42	1.54	0.55
5:AS:112:GLU:HA	5:AS:116:LYS:HZ1	1.71	0.55
35:CR:146:LYS:HA	35:CR:149:LYS:HG2	1.89	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
42:Ca:134:GLU:HB2	42:Ca:138:LYS:HZ2	1.72	0.55
43:CN:68:ARG:HE	43:CN:128:LYS:HG3	1.72	0.55
45:CD:129:GLU:HG3	45:CD:177:THR:HB	1.89	0.55
59:CF:152:GLU:O	59:CF:156:LYS:HB2	2.07	0.55
75:CE:149:ILE:HG23	75:CE:197:THR:HB	1.88	0.55
7:AR:71:ILE:HG22	7:AR:73:LEU:H	1.71	0.55
39:CL:189:ALA:HB2	64:CI:10:GLY:HA2	1.88	0.55
47:CA:40:TYR:HA	47:CA:90:CYS:O	2.07	0.55
77:A5:1700:G:H21	77:A5:2118:G:H21	1.55	0.55
43:CN:200:LEU:HD22	68:CC:108:TRP:HB2	1.88	0.54
77:A5:436:C:H2'	77:A5:437:G:H8	1.72	0.54
6:AD:39:CYS:O	6:AD:43:PHE:HB2	2.07	0.54
45:CD:239:MET:HA	45:CD:242:LYS:HG2	1.89	0.54
62:Cf:52:LYS:HB3	62:Cf:67:THR:HG22	1.89	0.54
68:CC:51:PRO:HD2	77:A5:1371:A:H62	1.72	0.54
68:CC:312:ARG:HE	77:A5:957:G:H22	1.54	0.54
77:A5:735:G:N2	77:A5:929:A:H62	2.05	0.54
77:A5:1616:U:H2'	77:A5:1617:G:H8	1.72	0.54
7:AR:22:THR:HG23	7:AR:23:ARG:HG2	1.89	0.54
7:AR:41:ILE:HG12	7:AR:47:ARG:HB3	1.87	0.54
12:AD:6:SER:O	12:AD:10:LYS:CB	2.56	0.54
21:AB:194:GLY:HA2	21:AB:197:ILE:HD12	1.90	0.54
45:CD:22:ARG:HA	45:CD:25:GLU:HB2	1.89	0.54
66:Ck:49:ASP:HB3	66:Ck:52:LYS:HE3	1.89	0.54
12:AD:114:ALA:HB3	12:AD:117:ARG:HB2	1.88	0.54
34:AI:103:LEU:HB3	34:AI:170:LYS:HE3	1.90	0.54
40:CV:62:MET:HE3	40:CV:62:MET:H	1.72	0.54
42:Ca:34:ASN:HB2	42:Ca:45:PHE:HZ	1.71	0.54
49:CT:104:SER:HA	49:CT:107:LYS:HG3	1.90	0.54
50:CP:128:ARG:HD3	50:CP:130:TYR:HE1	1.70	0.54
56:Ch:4:ILE:HD13	56:Ch:9:LEU:HD11	1.88	0.54
58:CB:133:TYR:HA	58:CB:136:LYS:HD3	1.88	0.54
16:B2:1092:G:H2'	16:B2:1093:A:H8	1.73	0.54
17:AO:81:VAL:HG12	17:AO:84:ARG:HH12	1.71	0.54
37:Cz:52:THR:HG21	37:Cz:139:THR:HA	1.90	0.54
58:CB:107:ALA:HB2	58:CB:201:LEU:HD12	1.89	0.54
83:A6:2411:C:H2'	83:A6:2412:A:H8	1.72	0.54
15:AQ:112:LEU:HD22	15:AQ:119:LEU:HD13	1.90	0.54
29:AE:71:LYS:HA	29:AE:76:VAL:HA	1.89	0.54
30:AC:108:LYS:HZ1	30:AC:110:MET:HB3	1.71	0.54
35:CR:134:ASN:HD22	35:CR:136:ARG:HG3	1.73	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:A6:2312:U:O2	83:A6:2326:G:O6	2.26	0.54
17:AO:96:LYS:HG3	17:AO:130:GLU:HG3	1.90	0.54
22:AA:90:PHE:HB2	22:AA:175:TRP:HE1	1.73	0.54
49:CT:28:ALA:O	49:CT:32:ARG:HB2	2.08	0.54
77:A5:1382:G:H2'	77:A5:1383:G:H8	1.71	0.54
11:Ac:34:PHE:HB2	11:Ac:40:ARG:HD2	1.90	0.54
47:CA:57:PRO:HG2	47:CA:78:ALA:HB3	1.89	0.54
68:CC:154:VAL:HG22	68:CC:253:THR:HA	1.90	0.54
83:A6:3973:G:H1	83:A6:4038:C:H42	1.55	0.54
1:Ag:132:TRP:HA	1:Ag:138:CYS:HA	1.90	0.54
1:Ag:201:SER:HB3	1:Ag:206:LEU:HB2	1.90	0.54
15:AQ:10:VAL:HG22	15:AQ:25:CYS:HB2	1.90	0.54
44:CI:3:ARG:HH12	44:CI:63:GLU:HG3	1.73	0.54
83:A6:3855:C:H2'	83:A6:3856:A:H8	1.73	0.54
83:A6:4237:C:H2'	83:A6:4238:G:H8	1.73	0.54
83:A6:4741:C:H2'	83:A6:4742:G:H8	1.73	0.54
1:Ag:166:VAL:HG12	1:Ag:176:VAL:HG22	1.89	0.54
34:AI:135:GLU:O	34:AI:139:LYS:HA	2.08	0.54
35:CR:10:LEU:HD11	83:A6:2526:C:H5''	1.89	0.54
40:CV:48:ARG:HH21	58:CB:9:PRO:HG2	1.73	0.54
48:CS:139:ARG:HB3	48:CS:142:VAL:HG22	1.90	0.54
51:CU:91:LEU:HB2	51:CU:96:LEU:HB2	1.88	0.54
83:A6:2704:C:H2'	83:A6:2705:G:H8	1.73	0.54
16:B2:93:U:H4'	29:AE:7:LYS:HB3	1.90	0.53
19:AN:119:GLU:HA	19:AN:122:ILE:HG13	1.89	0.53
27:Ae:31:ARG:HH11	28:AJ:127:ARG:HH21	1.56	0.53
47:CA:202:VAL:HG12	47:CA:217:GLN:HG3	1.89	0.53
54:CZ:70:SER:H	54:CZ:115:LYS:HE3	1.73	0.53
55:Cr:74:ALA:HA	68:CC:134:PRO:HG2	1.91	0.53
61:Ce:22:ARG:HB2	61:Ce:35:TRP:HA	1.90	0.53
66:Ck:52:LYS:HA	66:Ck:55:LYS:HG3	1.90	0.53
70:Cn:15:ARG:O	70:Cn:19:LYS:HB2	2.08	0.53
83:A6:4235:G:O6	83:A6:4289:U:O2	2.26	0.53
35:CR:68:LEU:HD13	35:CR:71:ARG:HD3	1.90	0.53
36:CW:46:PRO:HA	36:CW:49:ILE:HG22	1.90	0.53
57:Cb:16:TRP:HB3	57:Cb:21:ILE:HD11	1.90	0.53
5:AS:115:LYS:HB3	5:AS:126:PHE:HE1	1.74	0.53
12:AD:51:LEU:HB3	12:AD:91:VAL:HG12	1.90	0.53
24:AY:117:VAL:HB	24:AY:124:ASN:HD21	1.74	0.53
26:Ab:7:LEU:HD23	33:AW:24:GLN:HG2	1.90	0.53
28:AJ:40:LYS:H	28:AJ:40:LYS:HD3	1.73	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:CN:203:TYR:HB3	68:CC:114:ARG:HG3	1.89	0.53
68:CC:208:CYS:HB3	68:CC:230:LEU:HD13	1.89	0.53
47:CA:183:GLY:HA2	77:A5:1613:A:H5'	1.89	0.53
59:CF:101:VAL:HG22	59:CF:139:TYR:HE2	1.72	0.53
76:CG:157:ILE:HD11	76:CG:167:VAL:HG13	1.91	0.53
77:A5:1350:C:H2'	77:A5:1351:G:C8	2.43	0.53
8:AP:44:ARG:HG2	8:AP:84:ILE:HD11	1.89	0.53
8:AP:126:VAL:HG12	8:AP:127:LYS:H	1.74	0.53
12:AD:49:ILE:HG12	12:AD:87:TYR:HB2	1.90	0.53
18:AX:107:ARG:HD3	18:AX:110:HIS:HB2	1.90	0.53
83:A6:4389:C:H2'	83:A6:4390:A:H8	1.73	0.53
28:AJ:151:LEU:HA	28:AJ:154:GLN:HG2	1.91	0.53
39:CL:141:ALA:HA	39:CL:146:LEU:HD23	1.91	0.53
55:Cr:94:ARG:HH21	55:Cr:97:ILE:HD12	1.73	0.53
77:A5:440:U:H2'	77:A5:441:G:H8	1.73	0.53
22:AA:77:ILE:HD11	22:AA:124:VAL:HG22	1.90	0.53
44:CI:185:VAL:HG22	44:CI:190:LEU:HD21	1.91	0.53
45:CD:209:ARG:HA	45:CD:212:MET:HE1	1.91	0.53
45:CD:262:LYS:HE3	45:CD:265:ARG:HB3	1.90	0.53
49:CT:69:GLN:HE21	49:CT:70:HIS:H	1.55	0.53
72:Co:38:LYS:HA	72:Co:41:TYR:HB3	1.91	0.53
83:A6:3707:U:O4	83:A6:3743:G:O6	2.26	0.53
3:AK:50:GLN:HA	3:AK:53:LYS:HG3	1.89	0.53
9:AT:40:ALA:HB3	9:AT:43:LYS:HG2	1.91	0.53
36:CW:47:ARG:HH22	36:CW:58:LYS:HB3	1.72	0.53
38:CO:87:MET:HB2	77:A5:2051:C:H1'	1.89	0.53
45:CD:106:ALA:HB2	45:CD:166:ALA:HA	1.89	0.53
59:CF:232:ASP:HA	59:CF:236:ARG:HH22	1.74	0.53
68:CC:101:MET:HE1	83:A6:2343:G:C4	2.44	0.53
77:A5:1603:C:H2'	77:A5:1604:G:H8	1.74	0.53
7:AR:71:ILE:HG22	7:AR:74:GLN:H	1.74	0.53
16:B2:374:G:N7	16:B2:385:G:N1	2.54	0.53
16:B2:1655:C:H2'	16:B2:1656:G:H8	1.73	0.53
38:CO:12:ARG:HB2	38:CO:37:ARG:HD3	1.91	0.53
45:CD:35:ARG:HH12	83:A6:4326:G:H1'	1.74	0.53
51:CU:19:LEU:HB2	51:CU:74:SER:O	2.08	0.53
83:A6:2335:C:H2'	83:A6:2336:G:H8	1.74	0.53
2:AU:22:ILE:HD11	2:AU:112:VAL:HG23	1.91	0.53
8:AP:25:LEU:HA	8:AP:28:MET:HE1	1.91	0.53
14:AF:50:PRO:HB3	14:AF:69:VAL:HG22	1.91	0.53
14:AF:145:ARG:HA	14:AF:148:ASN:HB2	1.91	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:B2:519:A:H2'	16:B2:520:A:H8	1.73	0.53
16:B2:1748:G:H1	16:B2:1786:U:H3	1.55	0.53
18:AX:112:VAL:H	18:AX:115:ILE:HD11	1.73	0.53
53:CY:30:MET:HE2	53:CY:75:ARG:HA	1.91	0.53
64:CI:61:LEU:HD21	64:CI:90:LEU:HD13	1.90	0.53
74:CH:59:LYS:HB3	74:CH:70:VAL:HG23	1.89	0.53
77:A5:347:A:H4'	77:A5:1367:C:H41	1.74	0.53
3:AK:85:LEU:HB3	3:AK:89:ILE:HD11	1.91	0.52
24:AY:78:SER:O	24:AY:82:ALA:CB	2.55	0.52
24:AY:88:LYS:HB2	24:AY:99:LYS:HE2	1.91	0.52
32:AH:155:LYS:HA	32:AH:186:ASN:O	2.09	0.52
77:A5:1332:C:H2'	77:A5:1333:A:C8	2.43	0.52
77:A5:1359:G:H2'	77:A5:1360:G:C8	2.44	0.52
83:A6:2846:G:H2'	83:A6:2847:G:H8	1.74	0.52
83:A6:4421:C:N4	83:A6:4475:G:N2	2.41	0.52
12:AD:14:ASP:HA	12:AD:17:PHE:HB3	1.91	0.52
14:AF:138:ALA:HB3	14:AF:204:ARG:HB2	1.90	0.52
16:B2:1166:G:N2	16:B2:1193:U:O2	2.37	0.52
33:AW:25:VAL:HG22	33:AW:63:VAL:H	1.74	0.52
34:AI:178:ARG:HG2	34:AI:181:GLN:H	1.73	0.52
59:CF:149:SER:O	59:CF:153:LEU:HB2	2.08	0.52
68:CC:69:THR:HG21	83:A6:3906:A:H2'	1.90	0.52
1:Ag:42:MET:HG3	1:Ag:56:GLN:HB3	1.91	0.52
16:B2:526:A:H5'	27:Ae:31:ARG:HH22	1.73	0.52
16:B2:923:G:H5''	19:AN:3:ARG:H	1.74	0.52
50:CP:41:ILE:HG12	50:CP:112:LEU:HD12	1.91	0.52
58:CB:45:ALA:HB3	58:CB:183:ILE:HD12	1.91	0.52
58:CB:305:THR:HG23	58:CB:307:TYR:H	1.74	0.52
63:Cg:54:ARG:HD3	63:Cg:54:ARG:H	1.75	0.52
63:Cg:107:LEU:HD23	63:Cg:108:LYS:HD2	1.91	0.52
11:Ac:29:GLN:HB3	11:Ac:43:ILE:HD11	1.90	0.52
16:B2:1259:A:H1'	16:B2:1264:C:H42	1.73	0.52
33:AW:106:THR:HG23	33:AW:108:ALA:H	1.74	0.52
35:CR:88:ARG:HG2	83:A6:2812:A:H5'	1.90	0.52
38:CO:81:TRP:HB2	38:CO:104:VAL:HG21	1.91	0.52
44:CI:47:PRO:HD2	44:CI:141:LYS:HA	1.91	0.52
77:A5:246:G:H2'	77:A5:247:G:H8	1.74	0.52
77:A5:1621:A:H5''	83:A6:2451:A:H5'	1.92	0.52
83:A6:3870:C:H2'	83:A6:3871:A:H8	1.75	0.52
83:A6:4237:C:H2'	83:A6:4238:G:C8	2.44	0.52
14:AF:153:LEU:HD12	14:AF:189:ALA:HA	1.91	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:B2:1488:C:H3'	16:B2:1489:A:H4'	1.91	0.52
16:B2:1786:U:H2'	16:B2:1787:G:H8	1.74	0.52
16:B2:1864:U:H2'	25:Aa:10:ARG:HH12	1.75	0.52
45:CD:108:ARG:HH22	45:CD:252:VAL:H	1.57	0.52
52:CX:104:ALA:HB1	52:CX:109:ILE:HD11	1.91	0.52
54:CZ:17:ARG:HH22	63:Cg:76:ARG:HD2	1.75	0.52
58:CB:278:THR:HG21	83:A6:4715:C:H5''	1.91	0.52
69:Cm:95:ILE:HD11	69:Cm:124:LYS:HG2	1.91	0.52
5:AS:124:ARG:HH11	5:AS:129:LEU:HB3	1.74	0.52
16:B2:1652:G:O6	16:B2:1672:U:O4	2.27	0.52
39:CL:126:LEU:HB3	56:Ch:117:ARG:HH22	1.75	0.52
56:Ch:25:LYS:HD3	56:Ch:54:ILE:HG21	1.91	0.52
83:A6:4060:U:H2'	83:A6:4061:G:H8	1.75	0.52
7:AR:106:LEU:HB3	7:AR:111:PHE:HB2	1.91	0.52
9:AT:87:VAL:HG21	16:B2:1607:A:H5'	1.92	0.52
46:CQ:65:ARG:O	46:CQ:69:LYS:HB2	2.09	0.52
67:Cl:47:THR:HG21	77:A5:367:C:H5''	1.91	0.52
68:CC:5:ARG:H	68:CC:5:ARG:HD3	1.75	0.52
2:AU:23:THR:HB	2:AU:88:LEU:HD13	1.92	0.52
16:B2:4:C:H5'	30:AC:230:THR:HG21	1.92	0.52
16:B2:398:A:H5''	16:B2:400:C:H5'	1.92	0.52
38:CO:193:THR:HA	38:CO:196:LEU:HB3	1.92	0.52
58:CB:245:HIS:HB3	83:A6:4525:C:H5''	1.90	0.52
64:Ci:85:ARG:HH12	77:A5:307:A:H4'	1.75	0.52
66:Ck:10:ASP:HA	66:Ck:13:LEU:HB3	1.92	0.52
83:A6:3932:U:H2'	83:A6:3933:G:H8	1.75	0.52
8:AP:127:LYS:HB2	8:AP:130:ARG:HD3	1.91	0.52
18:AX:46:HIS:HB3	18:AX:101:LEU:HD11	1.92	0.52
19:AN:99:ARG:HE	19:AN:115:LEU:HD21	1.75	0.52
22:AA:110:ASN:HB3	22:AA:113:GLN:HG2	1.90	0.52
38:CO:196:LEU:HD13	41:CM:119:ARG:HD2	1.92	0.52
45:CD:107:ARG:HG3	45:CD:248:ARG:HA	1.91	0.52
46:CQ:24:TYR:HA	46:CQ:27:LEU:HB2	1.91	0.52
47:CA:230:PRO:HB3	83:A6:3928:A:H61	1.75	0.52
51:CU:23:LEU:HB2	51:CU:70:ILE:HB	1.92	0.52
59:CF:28:LEU:HB3	59:CF:32:ARG:HH21	1.75	0.52
5:AS:15:VAL:HG12	5:AS:20:ILE:HG12	1.91	0.52
17:AO:33:ILE:HG13	17:AO:97:LEU:HA	1.92	0.52
19:AN:118:ILE:HA	19:AN:121:ARG:HD3	1.93	0.52
20:AL:40:ILE:HD11	20:AL:61:PRO:HB2	1.92	0.52
64:Ci:97:MET:H	64:Ci:97:MET:HE3	1.74	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:A6:4185:G:H2'	83:A6:4186:A:H8	1.75	0.52
14:AF:49:LEU:HD11	15:AQ:49:TYR:HB3	1.92	0.51
14:AF:168:THR:O	14:AF:172:CYS:HB2	2.10	0.51
18:AX:67:ARG:HG3	18:AX:115:ILE:HG22	1.92	0.51
32:AH:129:ILE:O	32:AH:133:LEU:HB2	2.10	0.51
38:CO:155:THR:HA	38:CO:158:GLU:HG2	1.91	0.51
39:CL:40:GLN:HB3	39:CL:44:ARG:HH21	1.74	0.51
39:CL:42:LYS:HA	39:CL:45:ARG:HE	1.74	0.51
46:CQ:172:ARG:HD2	46:CQ:173:LYS:H	1.75	0.51
68:CC:180:ILE:HG13	68:CC:181:LYS:HE2	1.92	0.51
68:CC:306:ARG:HD3	68:CC:308:LYS:N	2.24	0.51
76:CG:65:ARG:HG2	79:A8:151:G:H5'	1.92	0.51
16:B2:655:A:H4'	16:B2:656:G:H3'	1.92	0.51
40:CV:57:VAL:HG13	40:CV:84:GLN:HE21	1.75	0.51
44:CI:149:ILE:HG23	44:CI:165:ILE:HG21	1.91	0.51
53:CY:23:SER:HA	53:CY:26:ARG:HB2	1.92	0.51
55:Cr:19:LYS:HB3	83:A6:2337:C:H4'	1.92	0.51
73:CJ:26:VAL:HG22	73:CJ:32:ARG:HH11	1.75	0.51
78:A7:105:C:H2'	78:A7:106:G:H8	1.74	0.51
2:AU:26:SER:HB3	2:AU:32:LEU:HB2	1.93	0.51
35:CR:41:ILE:HA	35:CR:44:LEU:HB2	1.92	0.51
58:CB:158:GLN:HG2	58:CB:159:VAL:HG23	1.92	0.51
71:Cp:11:VAL:HG21	71:Cp:23:ARG:HB3	1.93	0.51
83:A6:3930:U:H3	83:A6:4180:G:H1	1.57	0.51
83:A6:4072:C:H2'	83:A6:4073:A:H8	1.75	0.51
16:B2:846:G:C4	29:AE:19:MET:HE1	2.45	0.51
29:AE:122:LYS:HB2	29:AE:162:ILE:HD11	1.91	0.51
37:Cz:179:LEU:HD22	37:Cz:183:ILE:HG13	1.92	0.51
75:CE:149:ILE:HD11	75:CE:161:ARG:HB3	1.91	0.51
77:A5:2055:G:H5''	77:A5:2056:G:H5''	1.92	0.51
81:Bb:46:G:H3'	81:Bb:47:U:H4'	1.92	0.51
16:B2:4:C:H4'	30:AC:207:ALA:HB2	1.92	0.51
19:AN:114:ARG:HD3	19:AN:117:LEU:HD12	1.92	0.51
29:AE:68:ARG:HD3	29:AE:76:VAL:HG11	1.92	0.51
32:AH:73:GLN:HA	32:AH:135:PHE:HZ	1.76	0.51
47:CA:30:ARG:HH21	47:CA:31:ALA:HB3	1.76	0.51
56:Ch:10:ARG:HD2	56:Ch:60:VAL:HG13	1.92	0.51
58:CB:293:ILE:H	58:CB:298:LEU:HB2	1.76	0.51
64:CI:29:ARG:HD3	64:CI:32:ARG:HB3	1.92	0.51
64:CI:87:ARG:HD3	64:CI:90:LEU:HD11	1.92	0.51
75:CE:247:LYS:HD3	75:CE:251:LYS:HE3	1.91	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:A5:137:G:H2'	77:A5:138:G:H8	1.76	0.51
2:AU:44:LYS:HE2	2:AU:50:VAL:HG22	1.92	0.51
5:AS:120:HIS:HA	5:AS:123:LEU:HG	1.93	0.51
16:B2:165:G:H2'	16:B2:166:A:H8	1.76	0.51
58:CB:80:GLU:HB2	58:CB:326:VAL:HG12	1.91	0.51
61:Ce:91:CYS:HB2	61:Ce:95:TYR:HB2	1.90	0.51
63:Cg:67:LEU:HG	63:Cg:71:LYS:HD3	1.92	0.51
63:Cg:103:VAL:HA	63:Cg:106:VAL:HG12	1.93	0.51
1:Ag:170:TRP:HD1	7:AR:23:ARG:HE	1.59	0.51
16:B2:639:C:H2'	16:B2:640:A:H8	1.75	0.51
16:B2:1183:A:H2'	16:B2:1184:G:H8	1.76	0.51
16:B2:1335:G:O6	16:B2:1492:U:O4	2.28	0.51
25:Aa:88:SER:O	25:Aa:92:ARG:HB3	2.11	0.51
46:CQ:156:PRO:HB3	46:CQ:163:THR:HG21	1.91	0.51
52:CX:56:ARG:HB2	77:A5:14:C:H5''	1.92	0.51
53:CY:80:ILE:HD13	53:CY:82:ILE:HD11	1.93	0.51
62:Cf:11:PHE:HE1	62:Cf:26:ALA:HB1	1.76	0.51
77:A5:659:G:H2'	77:A5:660:A:H8	1.76	0.51
77:A5:1927:U:H3	77:A5:2056:G:H1	1.59	0.51
83:A6:2375:A:H2'	83:A6:2376:A:H8	1.75	0.51
12:AD:168:VAL:HG12	12:AD:189:MET:HB3	1.93	0.51
15:AQ:105:LYS:HA	15:AQ:108:ILE:HB	1.93	0.51
20:AL:22:ARG:HG3	34:AI:155:ASN:HA	1.92	0.51
37:Cz:128:LEU:HA	37:Cz:131:ALA:HB3	1.92	0.51
41:CM:111:LYS:HE3	75:CE:270:TYR:HE2	1.76	0.51
72:Co:42:ASP:HA	72:Co:45:GLN:HB2	1.92	0.51
77:A5:1089:G:H2'	77:A5:1090:G:C8	2.46	0.51
77:A5:1911:C:H1'	77:A5:1917:A:H2'	1.93	0.51
12:AD:137:VAL:HB	12:AD:185:LYS:HB2	1.91	0.51
34:AI:196:GLU:HA	34:AI:199:LEU:HG	1.93	0.51
52:CX:41:ARG:HH12	76:CG:51:LEU:H	1.58	0.51
60:Cd:41:ARG:HH12	83:A6:4636:U:H5''	1.76	0.51
64:Ci:45:ARG:HH21	64:Ci:50:PHE:HA	1.76	0.51
77:A5:446:C:H1'	83:A6:2314:G:H4'	1.92	0.51
16:B2:366:U:O2	16:B2:394:G:O6	2.29	0.51
16:B2:496:C:H2'	16:B2:497:C:H6	1.76	0.51
22:AA:172:GLY:HA3	22:AA:203:PHE:H	1.75	0.51
22:AA:186:ARG:HG3	23:AV:46:PHE:HB3	1.93	0.51
29:AE:98:ASN:HD22	29:AE:114:ILE:HD11	1.76	0.51
34:AI:148:LYS:HA	34:AI:151:GLU:HB3	1.91	0.51
42:Ca:145:VAL:HG22	64:Ci:4:ARG:HH22	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
45:CD:177:THR:HA	45:CD:180:PHE:HD2	1.74	0.51
48:CS:74:ARG:HB3	48:CS:76:LYS:HE3	1.93	0.51
52:CX:56:ARG:HG3	52:CX:58:PRO:HD3	1.92	0.51
56:Ch:107:GLN:HA	56:Ch:110:LYS:HG2	1.92	0.51
60:Cd:75:LYS:HE2	83:A6:4652:G:H4'	1.93	0.51
68:CC:96:CYS:HA	83:A6:2352:U:H1'	1.93	0.51
71:Cp:22:LEU:HA	71:Cp:25:MET:HG2	1.93	0.51
77:A5:1974:U:H4'	77:A5:1975:G:H5'	1.93	0.51
78:A7:7:G:N2	78:A7:112:U:O2	2.34	0.51
83:A6:4275:G:H2'	83:A6:4276:G:H8	1.74	0.51
5:AS:45:LEU:HB2	5:AS:50:ILE:HD11	1.92	0.50
14:AF:76:MET:HB2	14:AF:159:ARG:HH21	1.76	0.50
16:B2:858:A:H2'	16:B2:859:G:H8	1.76	0.50
16:B2:1010:G:H2'	16:B2:1011:A:H8	1.76	0.50
16:B2:1133:A:H2'	16:B2:1134:G:H8	1.76	0.50
29:AE:147:ILE:HG21	29:AE:169:ILE:HG23	1.93	0.50
38:CO:142:ALA:HA	38:CO:145:VAL:HG12	1.92	0.50
48:CS:32:ILE:HG21	48:CS:40:ALA:HA	1.93	0.50
62:Cf:10:ILE:HG23	62:Cf:29:LYS:HG3	1.93	0.50
25:Aa:30:VAL:HG21	25:Aa:74:CYS:HB2	1.93	0.50
35:CR:97:ARG:O	35:CR:101:ILE:HB	2.12	0.50
43:CN:57:GLN:HG3	79:A8:142:U:H4'	1.92	0.50
44:CI:115:MET:HE1	83:A6:4195:G:C4	2.46	0.50
53:CY:39:ARG:HH12	53:CY:45:ARG:HD3	1.77	0.50
71:Cp:36:LYS:HE2	71:Cp:46:LYS:HA	1.92	0.50
72:Co:68:LEU:HD23	72:Co:83:LEU:HD12	1.94	0.50
83:A6:2685:C:H1'	83:A6:2686:G:H5'	1.94	0.50
83:A6:2711:G:H5''	83:A6:2712:G:H5'	1.93	0.50
1:Ag:18:VAL:HG21	1:Ag:307:VAL:HG22	1.93	0.50
9:AT:76:THR:HB	9:AT:95:GLY:H	1.75	0.50
16:B2:878:G:H1	16:B2:908:A:H2	1.59	0.50
22:AA:34:MET:HB2	22:AA:37:TYR:HB2	1.94	0.50
36:CW:23:ARG:HG3	36:CW:25:ASP:H	1.75	0.50
79:A8:78:G:H2'	79:A8:79:G:H8	1.76	0.50
83:A6:4638:U:H2'	83:A6:4639:G:C8	2.46	0.50
6:Ad:14:PHE:HB2	16:B2:1661:A:C8	2.46	0.50
10:AZ:103:HIS:HD2	10:AZ:106:GLN:HG3	1.76	0.50
16:B2:217:A:H61	16:B2:304:C:H42	1.59	0.50
18:AX:4:CYS:HB2	18:AX:13:LEU:HD23	1.94	0.50
31:AG:72:ARG:HA	31:AG:98:ARG:HA	1.93	0.50
31:AG:134:GLY:HA3	36:CW:82:ILE:HG23	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:CS:38:VAL:HG12	59:CF:237:GLU:HG2	1.93	0.50
62:Cf:36:ARG:HA	62:Cf:39:THR:HG22	1.92	0.50
70:Cn:11:ARG:HA	70:Cn:14:LYS:HB2	1.93	0.50
72:Co:72:CYS:HB3	72:Co:78:ARG:H	1.76	0.50
83:A6:3819:G:H2'	83:A6:3820:G:H8	1.77	0.50
83:A6:4577:U:O2	83:A6:4726:G:O6	2.30	0.50
11:Ac:45:ASN:HB2	14:AF:139:VAL:HG11	1.94	0.50
16:B2:993:G:H5'	16:B2:1102:G:H1'	1.93	0.50
36:CW:20:ARG:HE	40:CV:94:VAL:HG11	1.77	0.50
38:CO:29:LEU:HG	62:Cf:29:LYS:HD3	1.93	0.50
41:CM:16:SER:HA	41:CM:22:GLY:H	1.76	0.50
57:Cb:43:MET:HE2	57:Cb:47:LYS:HD2	1.93	0.50
73:CJ:164:ARG:H	73:CJ:164:ARG:HE	1.59	0.50
75:CE:246:ARG:HH22	83:A6:4936:G:H1	1.60	0.50
79:A8:15:G:H4'	83:A6:2355:G:H4'	1.92	0.50
83:A6:4238:G:H2'	83:A6:4239:A:H8	1.77	0.50
83:A6:4991:U:H2'	83:A6:4992:G:H8	1.76	0.50
12:AD:42:THR:HG23	12:AD:45:ARG:HB3	1.93	0.50
18:AX:10:ALA:HA	18:AX:13:LEU:HG	1.94	0.50
35:CR:174:GLU:HA	35:CR:177:LEU:HB2	1.94	0.50
37:Cz:215:ARG:HH21	37:Cz:217:TYR:HA	1.75	0.50
38:CO:64:THR:HA	58:CB:263:ALA:HA	1.92	0.50
52:CX:84:GLU:HA	52:CX:87:MET:HG2	1.93	0.50
58:CB:312:LYS:HD3	58:CB:370:THR:HG21	1.94	0.50
14:AF:93:VAL:O	14:AF:97:PHE:HB2	2.12	0.50
16:B2:375:U:H2'	16:B2:376:A:C8	2.47	0.50
16:B2:1163:C:H2'	16:B2:1164:G:H8	1.76	0.50
17:AO:27:VAL:HB	17:AO:90:ILE:HA	1.94	0.50
26:Ab:3:LEU:HD22	33:AW:22:LYS:HE2	1.94	0.50
57:Cb:31:SER:HB2	77:A5:1463:C:H5''	1.92	0.50
59:CF:21:LYS:HG3	59:CF:25:PHE:HE2	1.77	0.50
64:Ci:70:LEU:HD13	64:Ci:87:ARG:HE	1.76	0.50
68:CC:322:LEU:HA	68:CC:325:MET:HG2	1.94	0.50
76:CG:136:LEU:HD13	76:CG:202:VAL:HG13	1.94	0.50
77:A5:440:U:H2'	77:A5:441:G:C8	2.47	0.50
77:A5:1818:G:H21	77:A5:1822:U:H3	1.60	0.50
1:Ag:247:TRP:HB3	1:Ag:258:ILE:HD11	1.94	0.50
15:AQ:34:VAL:HG13	15:AQ:70:VAL:HB	1.93	0.50
16:B2:525:A:H62	16:B2:589:G:H22	1.59	0.50
16:B2:1155:U:H5''	30:AC:194:ARG:HH22	1.77	0.50
18:AX:48:LYS:HB2	18:AX:75:ILE:HD11	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
28:AJ:79:ARG:HA	28:AJ:82:VAL:HG22	1.93	0.50
30:AC:186:GLY:HA3	30:AC:243:ALA:HB2	1.93	0.50
35:CR:180:LYS:HA	35:CR:183:GLU:HB2	1.93	0.50
38:CO:72:HIS:HB2	38:CO:74:ARG:HH21	1.76	0.50
43:CN:22:LEU:HD21	76:CG:164:ILE:HD11	1.94	0.50
43:CN:159:ARG:HE	43:CN:164:LEU:HB2	1.77	0.50
74:CH:23:ARG:HD2	74:CH:39:ASN:HA	1.94	0.50
83:A6:2283:G:H2'	83:A6:2284:G:C8	2.46	0.50
1:Ag:159:ASN:HD21	1:Ag:163:PRO:HA	1.77	0.50
5:AS:88:LYS:HE2	16:B2:1612:G:H5'	1.93	0.50
43:CN:75:VAL:HG13	43:CN:77:LYS:H	1.77	0.50
44:CI:129:VAL:HG23	44:CI:133:GLN:HB3	1.93	0.50
46:CQ:85:THR:HG22	46:CQ:104:ARG:HB2	1.94	0.50
55:Cr:86:ALA:HB2	77:A5:678:C:H5''	1.93	0.50
73:CJ:111:GLU:HA	73:CJ:125:ILE:HD11	1.93	0.50
77:A5:1726:U:O4	77:A5:1836:G:O6	2.30	0.50
3:AK:43:LEU:O	3:AK:47:LYS:HB2	2.11	0.49
14:AF:47:LYS:HG3	15:AQ:117:ARG:HH21	1.78	0.49
14:AF:76:MET:HE3	14:AF:76:MET:H	1.77	0.49
16:B2:448:A:H62	34:AI:29:LEU:HD11	1.77	0.49
16:B2:787:G:H5''	31:AG:237:LEU:HD21	1.93	0.49
29:AE:114:ILE:HD13	29:AE:118:GLU:HB3	1.93	0.49
43:CN:138:PHE:HA	43:CN:143:ARG:HE	1.77	0.49
45:CD:12:TYR:O	45:CD:16:TYR:HB2	2.12	0.49
58:CB:53:MET:HB2	58:CB:77:THR:HA	1.93	0.49
66:Ck:34:PHE:HE1	66:Ck:57:LYS:HZ2	1.59	0.49
68:CC:142:HIS:HE1	68:CC:248:ARG:HG3	1.77	0.49
77:A5:104:G:H2'	77:A5:105:A:H8	1.76	0.49
83:A6:2520:C:H2'	83:A6:2521:G:H8	1.75	0.49
83:A6:4319:C:H2'	83:A6:4320:G:C8	2.47	0.49
83:A6:4319:C:H2'	83:A6:4320:G:H8	1.76	0.49
5:AS:116:LYS:HE2	5:AS:116:LYS:H	1.75	0.49
16:B2:391:C:H2'	16:B2:392:A:H8	1.77	0.49
16:B2:1609:C:H2'	16:B2:1610:G:H8	1.77	0.49
17:AO:147:ARG:HB3	17:AO:150:ARG:HH22	1.76	0.49
24:AY:58:PHE:HD1	24:AY:59:GLY:H	1.60	0.49
38:CO:8:VAL:HG13	38:CO:36:VAL:HG11	1.92	0.49
48:CS:55:LYS:HE2	78:A7:97:G:H5'	1.92	0.49
52:CX:68:ARG:HH12	52:CX:70:LYS:HD3	1.76	0.49
54:CZ:6:LYS:HG2	54:CZ:9:LYS:HB2	1.94	0.49
54:CZ:133:LYS:HZ2	54:CZ:135:ARG:HA	1.77	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Ag:206:LEU:HB3	1:Ag:218:LEU:HD21	1.93	0.49
2:Au:44:LYS:HZ2	2:Au:48:LEU:H	1.59	0.49
4:AM:51:VAL:HG22	4:AM:77:ILE:HD11	1.92	0.49
7:AR:69:ILE:HB	7:AR:71:ILE:HG13	1.93	0.49
9:AT:104:LEU:HA	9:AT:107:LEU:HD23	1.94	0.49
22:AA:87:VAL:HG21	22:AA:100:ALA:HB2	1.95	0.49
30:AC:146:GLU:HG3	30:AC:148:ALA:H	1.78	0.49
32:AH:98:ARG:HG2	32:AH:125:VAL:HG22	1.95	0.49
33:AW:86:LEU:HD11	33:AW:117:ARG:HD2	1.93	0.49
48:CS:48:VAL:HA	48:CS:51:LEU:HG	1.95	0.49
48:CS:142:VAL:HA	48:CS:145:PHE:HB2	1.94	0.49
77:A5:35:U:H4'	77:A5:1525:A:H2	1.77	0.49
77:A5:735:G:H21	77:A5:929:A:H62	1.60	0.49
8:AP:67:ALA:HA	8:AP:73:PRO:HG3	1.94	0.49
34:AI:84:ASN:HD22	34:AI:100:CYS:HB3	1.75	0.49
39:CL:62:PRO:HG3	77:A5:74:G:H1'	1.92	0.49
50:CP:127:ARG:HH12	83:A6:2421:G:H4'	1.76	0.49
68:CC:209:ILE:HD11	68:CC:229:LEU:HD22	1.95	0.49
72:Co:14:LYS:HD2	72:Co:77:CYS:HA	1.95	0.49
3:AK:13:GLU:HA	3:AK:16:PHE:HB2	1.93	0.49
14:AF:128:ILE:HB	14:AF:130:ARG:HG2	1.94	0.49
16:B2:525:A:H62	16:B2:589:G:H1	1.59	0.49
22:AA:64:ALA:HA	23:AV:36:VAL:HA	1.94	0.49
24:AY:9:THR:HG22	24:AY:25:ILE:HG22	1.94	0.49
45:CD:112:ARG:HH12	45:CD:113:PHE:HD1	1.61	0.49
45:CD:246:ALA:HA	45:CD:249:GLU:HG3	1.95	0.49
47:CA:104:VAL:HG23	47:CA:160:SER:HA	1.93	0.49
49:CT:36:LYS:HA	49:CT:64:VAL:HB	1.94	0.49
54:CZ:42:LEU:HD13	54:CZ:74:VAL:HG22	1.94	0.49
58:CB:57:VAL:HA	58:CB:72:VAL:O	2.11	0.49
77:A5:1469:C:H2'	77:A5:1470:G:H8	1.77	0.49
1:Ag:42:MET:HB3	1:Ag:57:ARG:H	1.77	0.49
16:B2:1183:A:H3'	70:Cn:11:ARG:HH12	1.76	0.49
16:B2:1244:U:H2'	16:B2:1245:G:H8	1.76	0.49
19:AN:116:ILE:HA	19:AN:119:GLU:HG3	1.95	0.49
34:AI:83:TYR:HB3	34:AI:101:ILE:HD11	1.94	0.49
39:CL:28:GLN:HA	39:CL:31:ARG:HD2	1.94	0.49
58:CB:370:THR:HG23	58:CB:380:GLN:HB3	1.94	0.49
60:Cd:87:ARG:HB3	60:Cd:107:THR:HG23	1.95	0.49
64:CI:58:MET:HE1	64:CI:90:LEU:HB2	1.93	0.49
73:CJ:9:GLU:HG3	73:CJ:11:PRO:HD3	1.93	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
3:AK:29:MET:HE2	3:AK:31:LYS:H	1.78	0.49
5:AS:75:ARG:HA	5:AS:79:ILE:HG22	1.94	0.49
14:AF:35:LEU:HB3	14:AF:39:ILE:HD12	1.95	0.49
16:B2:1864:U:C2	25:Aa:75:VAL:HG11	2.47	0.49
25:Aa:19:GLN:HE22	25:Aa:32:LYS:HD2	1.77	0.49
33:AW:24:GLN:HE21	33:AW:64:ASN:HB3	1.78	0.49
44:CI:90:ARG:HH22	77:A5:1783:C:H4'	1.77	0.49
58:CB:28:LYS:HG3	58:CB:30:LYS:HD3	1.94	0.49
58:CB:285:TYR:HB2	58:CB:332:MET:HG3	1.93	0.49
71:Cp:86:LEU:HA	71:Cp:89:LEU:HB3	1.93	0.49
83:A6:4765:G:O6	83:A6:4869:U:O4	2.31	0.49
1:Ag:177:TRP:HA	1:Ag:184:LEU:HA	1.95	0.49
13:Af:95:ARG:HB3	13:Af:97:LYS:HE2	1.95	0.49
16:B2:5:U:H2'	16:B2:6:G:H8	1.76	0.49
31:AG:157:VAL:HG13	31:AG:159:ARG:HG2	1.94	0.49
34:AI:143:LYS:HA	34:AI:146:GLN:HB2	1.95	0.49
35:CR:139:MET:HE3	35:CR:142:ILE:HD11	1.95	0.49
35:CR:164:SER:HA	35:CR:167:LYS:HB2	1.95	0.49
37:Cz:175:THR:HA	37:Cz:215:ARG:HG2	1.95	0.49
38:CO:61:ARG:HD3	38:CO:66:PRO:HB3	1.95	0.49
39:CL:136:LYS:H	39:CL:137:GLY:HA2	1.77	0.49
40:CV:24:ALA:O	40:CV:38:TYR:HA	2.13	0.49
50:CP:71:ALA:HB1	83:A6:4970:C:H5''	1.94	0.49
50:CP:118:GLN:HB3	50:CP:147:GLU:HB3	1.94	0.49
53:CY:59:ARG:HB2	53:CY:103:LYS:HB3	1.94	0.49
59:CF:112:LEU:HD12	59:CF:123:VAL:HG11	1.95	0.49
75:CE:150:LEU:HD21	75:CE:164:PHE:HB3	1.94	0.49
77:A5:989:U:O2	77:A5:1064:G:N2	2.40	0.49
83:A6:2485:U:H3	83:A6:2493:G:H1	1.61	0.49
83:A6:2557:G:O6	83:A6:2570:U:O4	2.31	0.49
16:B2:873:G:H2'	16:B2:874:G:H8	1.78	0.49
18:AX:10:ALA:O	18:AX:14:ARG:HB2	2.12	0.49
18:AX:125:VAL:HG23	18:AX:130:LEU:HB3	1.95	0.49
40:CV:21:PRO:HD2	83:A6:2847:G:H1'	1.95	0.49
46:CQ:154:LYS:HZ3	46:CQ:163:THR:HG23	1.77	0.49
66:Ck:25:ILE:HD11	66:Ck:68:GLU:HA	1.95	0.49
76:CG:82:GLN:HG3	76:CG:171:PRO:HG3	1.95	0.49
77:A5:477:C:H2'	77:A5:478:G:H8	1.78	0.49
77:A5:722:G:H2'	77:A5:723:A:H8	1.78	0.49
77:A5:2016:C:H2'	77:A5:2017:A:H8	1.76	0.49
77:A5:2089:G:H1	83:A6:2263:A:H5''	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:AS:23:ARG:HH22	10:AZ:46:ASN:HB2	1.78	0.49
16:B2:948:C:H2'	16:B2:949:G:H8	1.78	0.49
16:B2:1337:C:H2'	16:B2:1338:G:C8	2.47	0.49
20:AL:40:ILE:HG23	20:AL:68:ILE:HD11	1.95	0.49
26:Ab:73:LEU:HD21	26:Ab:77:CYS:HB2	1.95	0.49
28:AJ:149:VAL:HG11	28:AJ:157:ILE:HD11	1.95	0.49
29:AE:127:ARG:HD2	29:AE:128:LYS:HZ2	1.77	0.49
33:AW:27:ILE:HG13	33:AW:61:ILE:HB	1.94	0.49
75:CE:105:ARG:HH22	77:A5:688:U:H5''	1.78	0.49
77:A5:1188:C:H2'	77:A5:1189:G:H8	1.78	0.49
78:A7:63:C:H5'	78:A7:64:G:H5''	1.94	0.49
1:Ag:34:ALA:HA	1:Ag:40:ILE:HG22	1.95	0.48
16:B2:1095:C:H42	16:B2:1149:A:H2	1.57	0.48
16:B2:1138:C:H3'	23:AV:61:ARG:HH12	1.78	0.48
16:B2:1455:A:H2'	16:B2:1456:G:H8	1.77	0.48
35:CR:102:LEU:HA	35:CR:105:LEU:HG	1.95	0.48
35:CR:169:ALA:HA	35:CR:172:ARG:HD2	1.94	0.48
43:CN:114:ARG:HD2	43:CN:157:LYS:HA	1.94	0.48
46:CQ:53:MET:HB3	46:CQ:57:ASN:HB2	1.93	0.48
53:CY:31:SER:HA	53:CY:48:PRO:HA	1.93	0.48
73:CJ:95:ARG:HG2	73:CJ:175:LEU:HD11	1.95	0.48
74:CH:6:SER:HB2	74:CH:70:VAL:HG21	1.95	0.48
83:A6:2495:U:H2'	83:A6:2496:G:H8	1.77	0.48
83:A6:3845:A:H4'	83:A6:4668:U:H4'	1.94	0.48
29:AE:72:ILE:HG12	29:AE:90:ILE:HG22	1.96	0.48
39:CL:123:LYS:HD3	56:Ch:122:LYS:H	1.78	0.48
44:CI:88:ARG:HH11	44:CI:90:ARG:HH21	1.61	0.48
48:CS:51:LEU:HD21	49:CT:153:PRO:HA	1.95	0.48
66:Ck:11:PHE:HA	66:Ck:14:THR:HG22	1.95	0.48
76:CG:61:ILE:HA	76:CG:64:GLN:HG2	1.95	0.48
83:A6:3961:G:H1	83:A6:3964:U:H3'	1.77	0.48
3:AK:80:ARG:HD3	3:AK:85:LEU:HB2	1.94	0.48
7:AR:51:ALA:HA	7:AR:54:VAL:HG12	1.96	0.48
16:B2:979:C:H2'	16:B2:980:A:H8	1.78	0.48
16:B2:1808:U:H2'	16:B2:1809:A:H8	1.78	0.48
24:AY:21:LYS:HG3	24:AY:75:ILE:HB	1.94	0.48
29:AE:22:LYS:HG3	29:AE:23:LEU:HD12	1.94	0.48
38:CO:172:LYS:HA	38:CO:175:MET:HB3	1.95	0.48
42:Ca:138:LYS:HD3	42:Ca:138:LYS:HA	1.65	0.48
43:CN:72:LYS:HD2	43:CN:89:VAL:HG22	1.94	0.48
44:CI:93:PRO:HA	44:CI:127:ALA:HB2	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
75:CE:246:ARG:HH22	83:A6:4936:G:H22	1.59	0.48
77:A5:1509:C:H2'	77:A5:1510:G:H8	1.79	0.48
83:A6:2360:A:H4'	83:A6:2361:G:H4'	1.95	0.48
83:A6:4748:U:O2	83:A6:4952:G:O6	2.31	0.48
83:A6:4973:U:H3	83:A6:4985:U:H3	1.59	0.48
1:Ag:28:PRO:HB3	1:Ag:293:ALA:HB3	1.94	0.48
16:B2:225:G:H1	16:B2:294:U:H5'	1.78	0.48
16:B2:928:G:H2'	16:B2:929:G:C8	2.49	0.48
23:AV:1:MET:HE2	30:AC:181:PRO:HG2	1.94	0.48
23:AV:71:ARG:HH22	26:Ab:4:ALA:HB2	1.78	0.48
48:CS:122:HIS:HB2	78:A7:94:C:H4'	1.96	0.48
48:CS:132:ILE:HD13	48:CS:137:CYS:HB3	1.96	0.48
68:CC:37:VAL:HG23	68:CC:237:ILE:HD11	1.94	0.48
73:CJ:147:ARG:HH22	78:A7:4:U:H5''	1.78	0.48
76:CG:125:LYS:HE3	76:CG:129:PRO:HB3	1.94	0.48
1:Ag:56:GLN:HG3	1:Ag:57:ARG:HG2	1.95	0.48
3:AK:50:GLN:HG2	3:AK:53:LYS:HE2	1.94	0.48
16:B2:1829:G:H1'	16:B2:1850:A:H2	1.78	0.48
21:AB:164:ILE:HG22	21:AB:167:LYS:HE3	1.95	0.48
26:Ab:67:THR:HG23	26:Ab:69:GLY:H	1.78	0.48
38:CO:92:THR:HG22	38:CO:94:ARG:HG2	1.94	0.48
42:Ca:32:ARG:HH12	77:A5:1652:U:H5''	1.79	0.48
55:Cr:75:THR:HA	55:Cr:76:SER:HA	1.61	0.48
68:CC:5:ARG:HH22	77:A5:490:C:H4'	1.78	0.48
77:A5:1211:G:H2'	77:A5:1212:G:C8	2.46	0.48
9:AT:104:LEU:HD13	9:AT:121:ARG:HH11	1.78	0.48
16:B2:893:U:H2'	16:B2:894:G:H8	1.78	0.48
76:CG:137:ARG:HD3	76:CG:137:ARG:HA	1.70	0.48
77:A5:161:G:H2'	77:A5:162:A:H8	1.77	0.48
77:A5:1105:C:H2'	77:A5:1106:A:C8	2.48	0.48
83:A6:4993:G:O6	83:A6:5058:A:N1	2.47	0.48
1:Ag:44:LYS:O	1:Ag:53:GLY:CA	2.62	0.48
12:AD:105:LEU:HD13	12:AD:122:VAL:HG21	1.94	0.48
14:AF:173:LEU:O	14:AF:177:LEU:HB2	2.13	0.48
16:B2:1139:C:H3'	16:B2:1140:G:H8	1.77	0.48
23:AV:32:ILE:HB	23:AV:55:ILE:HG23	1.95	0.48
41:CM:40:GLY:HA3	41:CM:45:VAL:HB	1.96	0.48
43:CN:190:ALA:HA	43:CN:193:ARG:HD3	1.96	0.48
75:CE:153:LEU:HA	75:CE:159:GLY:H	1.79	0.48
79:A8:130:C:H2'	79:A8:131:G:H8	1.79	0.48
83:A6:2735:G:H2'	83:A6:2736:G:H8	1.77	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:A6:4238:G:H2'	83:A6:4239:A:C8	2.49	0.48
83:A6:4454:G:O6	83:A6:4526:U:O4	2.31	0.48
83:A6:4992:G:H2'	83:A6:4993:G:H8	1.77	0.48
16:B2:242:U:O2	16:B2:280:G:N2	2.45	0.48
30:AC:110:MET:H	30:AC:110:MET:HE3	1.78	0.48
31:AG:131:ARG:H	36:CW:81:ALA:HB3	1.79	0.48
40:CV:48:ARG:HH22	83:A6:4621:C:H5'	1.79	0.48
44:CI:96:VAL:HG21	44:CI:122:PRO:HB3	1.95	0.48
54:CZ:54:THR:HG23	54:CZ:57:MET:HE1	1.95	0.48
56:Ch:121:VAL:HG23	56:Ch:122:LYS:HG2	1.95	0.48
68:CC:167:ALA:HB1	68:CC:221:PHE:HB3	1.96	0.48
83:A6:4736:C:H2'	83:A6:4737:G:H8	1.79	0.48
14:AF:195:GLU:HA	14:AF:198:ARG:HG3	1.94	0.48
22:AA:102:ARG:HG2	22:AA:104:THR:H	1.79	0.48
22:AA:140:VAL:HA	30:AC:87:PRO:HG2	1.96	0.48
40:CV:83:ARG:HG3	40:CV:102:ALA:HB3	1.95	0.48
58:CB:324:GLY:HA2	83:A6:5051:C:H4'	1.93	0.48
74:CH:48:LEU:HD13	74:CH:56:ARG:HD3	1.95	0.48
83:A6:2745:A:H2'	83:A6:2746:A:H8	1.79	0.48
83:A6:3846:C:H2'	83:A6:3847:C:H6	1.79	0.48
12:AD:157:MET:HE1	12:AD:159:HIS:HD2	1.78	0.48
16:B2:1845:A:H2'	16:B2:1846:G:H8	1.79	0.48
32:AH:53:VAL:HG23	32:AH:55:GLY:H	1.79	0.48
68:CC:158:VAL:HG13	68:CC:159:GLU:HG3	1.95	0.48
68:CC:166:GLU:HA	68:CC:169:LEU:HB2	1.94	0.48
77:A5:73:A:H2'	77:A5:74:G:H8	1.79	0.48
77:A5:323:C:H2'	77:A5:324:A:H8	1.77	0.48
77:A5:1922:G:H2'	77:A5:1923:A:H8	1.78	0.48
16:B2:19:A:H5'	18:AX:107:ARG:HH12	1.78	0.47
16:B2:28:U:H2'	16:B2:29:G:C8	2.49	0.47
16:B2:1102:G:H1	16:B2:1130:G:H22	1.61	0.47
21:AB:144:LYS:HE3	21:AB:206:PRO:HB3	1.96	0.47
27:Ae:39:ASN:HA	27:Ae:43:VAL:HG22	1.96	0.47
45:CD:51:MET:HE1	45:CD:105:LEU:HD23	1.95	0.47
46:CQ:69:LYS:HB3	46:CQ:70:MET:HE2	1.96	0.47
62:Cf:104:MET:HE2	83:A6:4947:U:H5	1.80	0.47
68:CC:183:VAL:HG11	68:CC:226:GLY:HA3	1.96	0.47
74:CH:44:GLU:HB2	74:CH:58:ASP:HB2	1.95	0.47
83:A6:4174:U:H2'	83:A6:4175:G:H8	1.79	0.47
16:B2:1120:U:H3'	16:B2:1121:G:H8	1.78	0.47
18:AX:19:ASP:HA	18:AX:22:TRP:HD1	1.80	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
41:CM:127:VAL:O	41:CM:131:GLN:HB2	2.14	0.47
46:CQ:23:ILE:HD12	55:Cr:8:MET:HG2	1.96	0.47
58:CB:200:ARG:HA	58:CB:203:GLN:HE22	1.79	0.47
62:Cf:4:ARG:HB3	75:CE:277:LEU:HD23	1.95	0.47
64:Ci:90:LEU:HA	64:Ci:93:VAL:HG22	1.96	0.47
77:A5:1069:G:H2'	77:A5:1070:G:H8	1.79	0.47
77:A5:1742:A:H2'	77:A5:1743:A:H8	1.79	0.47
78:A7:4:U:H4'	78:A7:26:C:H4'	1.95	0.47
83:A6:3848:U:H2'	83:A6:3849:A:C8	2.49	0.47
83:A6:4275:G:H2'	83:A6:4276:G:C8	2.49	0.47
28:AJ:60:LEU:HD21	28:AJ:73:GLU:HB2	1.97	0.47
37:Cz:186:ALA:HA	37:Cz:190:LEU:HD23	1.97	0.47
41:CM:122:ILE:HA	41:CM:125:ASN:HB2	1.95	0.47
42:Ca:76:ASP:HB3	42:Ca:114:LYS:HB3	1.97	0.47
45:CD:17:GLN:HE22	49:CT:22:HIS:HB2	1.79	0.47
74:CH:13:PRO:HD2	74:CH:81:ILE:HD11	1.95	0.47
74:CH:114:ILE:HD11	74:CH:124:ARG:HB2	1.97	0.47
79:A8:78:G:H2'	79:A8:79:G:C8	2.49	0.47
83:A6:4041:C:H2'	83:A6:4042:G:H8	1.79	0.47
83:A6:4622:A:H2'	83:A6:4623:G:C8	2.49	0.47
16:B2:900:C:H2'	16:B2:901:G:H8	1.79	0.47
16:B2:1218:C:H1'	16:B2:1683:C:H42	1.78	0.47
25:Aa:38:LYS:O	25:Aa:70:LYS:HA	2.13	0.47
28:AJ:87:LEU:HD22	28:AJ:91:LYS:HD2	1.94	0.47
28:AJ:101:LYS:HD2	28:AJ:103:GLU:H	1.79	0.47
30:AC:82:TYR:CZ	30:AC:164:PRO:HD3	2.50	0.47
39:CL:46:ILE:HB	39:CL:49:ARG:HB2	1.96	0.47
53:CY:26:ARG:HH21	53:CY:76:LYS:HA	1.79	0.47
62:Cf:15:LYS:HG2	62:Cf:22:ARG:HB2	1.95	0.47
68:CC:218:ILE:H	68:CC:218:ILE:HD12	1.80	0.47
69:Cm:104:HIS:HB2	69:Cm:107:ALA:HB2	1.96	0.47
74:CH:92:MET:HB3	74:CH:144:LEU:HB3	1.96	0.47
77:A5:86:U:C2	77:A5:98:A:N7	2.82	0.47
77:A5:1266:G:H5''	77:A5:2121:C:H41	1.79	0.47
77:A5:1965:G:H4'	83:A6:4695:C:H1'	1.95	0.47
77:A5:2075:G:H2'	77:A5:2076:G:H8	1.79	0.47
83:A6:2753:G:H2'	83:A6:2754:G:C4	2.49	0.47
4:AM:91:LEU:HD11	4:AM:104:VAL:HG12	1.97	0.47
6:Ad:13:LYS:HA	6:Ad:18:SER:HB3	1.96	0.47
15:AQ:49:TYR:HA	15:AQ:52:LEU:HD12	1.96	0.47
16:B2:301:A:H1'	34:AI:72:CYS:HA	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:B2:1845:A:H2'	16:B2:1846:G:C8	2.49	0.47
33:AW:3:ARG:HH12	33:AW:28:ARG:HG2	1.79	0.47
41:CM:111:LYS:HE3	75:CE:270:TYR:CE2	2.50	0.47
42:Ca:126:ALA:HB3	42:Ca:129:PHE:HE1	1.79	0.47
43:CN:199:GLN:HG3	77:A5:81:C:H5''	1.97	0.47
49:CT:64:VAL:HA	49:CT:74:ILE:HG22	1.96	0.47
55:Cr:43:LEU:HA	55:Cr:45:HIS:H	1.80	0.47
55:Cr:79:ARG:HG2	55:Cr:80:THR:HG23	1.96	0.47
77:A5:1411:C:H2'	77:A5:1412:G:H8	1.80	0.47
83:A6:4274:A:H2'	83:A6:4275:G:C8	2.49	0.47
5:AS:138:THR:HA	5:AS:141:ARG:HH21	1.79	0.47
16:B2:924:G:N2	16:B2:1018:U:O2	2.37	0.47
16:B2:941:C:H2'	16:B2:942:G:C8	2.49	0.47
31:AG:18:VAL:HG21	31:AG:23:LYS:HG2	1.97	0.47
38:CO:177:LEU:HD21	41:CM:131:GLN:HG3	1.97	0.47
41:CM:4:ARG:HB2	48:CS:153:PRO:HB2	1.95	0.47
41:CM:132:LYS:O	41:CM:136:LEU:HB2	2.14	0.47
44:CI:76:MET:HG3	44:CI:85:PHE:CG	2.50	0.47
52:CX:125:ASN:HB3	52:CX:137:TYR:HB2	1.97	0.47
53:CY:3:PHE:HB2	77:A5:243:A:H5''	1.97	0.47
59:CF:236:ARG:HB2	59:CF:239:GLN:HB2	1.96	0.47
76:CG:261:LEU:HA	76:CG:264:LYS:HE2	1.96	0.47
77:A5:651:C:H2'	77:A5:652:G:H8	1.79	0.47
16:B2:1228:A:H2'	16:B2:1229:G:H8	1.80	0.47
16:B2:1362:U:H5''	16:B2:1363:C:H5	1.79	0.47
22:AA:198:MET:HA	22:AA:199:PRO:HD3	1.73	0.47
30:AC:67:GLY:HA2	30:AC:93:ILE:HG12	1.97	0.47
30:AC:94:ILE:HD11	30:AC:98:LEU:HD22	1.96	0.47
32:AH:144:ILE:H	33:AW:52:ILE:HD11	1.79	0.47
39:CL:101:ARG:HH22	77:A5:76:A:H5'	1.79	0.47
43:CN:127:TYR:HB3	43:CN:129:PHE:HE1	1.80	0.47
45:CD:150:LEU:HD21	73:CJ:146:ARG:HB3	1.96	0.47
54:CZ:17:ARG:HH21	63:Cg:76:ARG:H	1.61	0.47
68:CC:116:ASN:HB2	68:CC:119:GLN:HG2	1.97	0.47
75:CE:61:ALA:HB2	77:A5:1239:C:H42	1.78	0.47
77:A5:1503:A:H4'	77:A5:1504:G:H5'	1.97	0.47
81:Bb:34:G:O6	82:Dd:24:U:O4	2.33	0.47
83:A6:2604:C:H2'	83:A6:2605:G:H8	1.79	0.47
83:A6:3780:G:H1	83:A6:3814:U:H3	1.63	0.47
9:AT:40:ALA:HA	9:AT:96:SER:H	1.80	0.47
12:AD:204:LEU:HD13	12:AD:206:ASP:H	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
30:AC:178:HIS:HE1	30:AC:199:PRO:HA	1.78	0.47
31:AG:197:GLN:HA	31:AG:200:LYS:HE3	1.97	0.47
44:CI:86:HIS:HB3	44:CI:139:ARG:HG2	1.96	0.47
59:CF:111:LEU:HD21	77:A5:1724:G:H21	1.79	0.47
74:CH:53:LYS:HD2	74:CH:54:ARG:HG2	1.96	0.47
83:A6:4739:C:H2'	83:A6:4740:G:C8	2.50	0.47
83:A6:4887:C:O2	83:A6:4932:U:N3	2.40	0.47
1:Ag:11:LEU:HB2	1:Ag:307:VAL:HB	1.95	0.47
6:Ad:22:ARG:HB2	6:Ad:38:MET:HE1	1.97	0.47
6:Ad:31:ILE:HG23	6:Ad:33:LYS:HE2	1.96	0.47
13:Af:119:ARG:HH22	13:Af:148:TYR:HE2	1.61	0.47
16:B2:39:A:H5''	16:B2:428:U:H3	1.80	0.47
16:B2:49:C:H2'	16:B2:472:C:H41	1.80	0.47
16:B2:106:C:H2'	16:B2:107:A:C8	2.49	0.47
16:B2:442:C:N4	16:B2:449:A:H62	2.08	0.47
16:B2:639:C:H2'	16:B2:640:A:C8	2.49	0.47
16:B2:1030:A:H2'	16:B2:1031:A:H8	1.80	0.47
19:AN:22:VAL:HA	19:AN:24:THR:HG23	1.95	0.47
21:AB:128:LYS:HD2	21:AB:134:LEU:HD13	1.97	0.47
22:AA:80:ARG:HH11	22:AA:129:ALA:HB3	1.80	0.47
29:AE:198:ARG:HG2	29:AE:208:VAL:HG13	1.95	0.47
35:CR:172:ARG:HA	35:CR:175:GLU:HB2	1.97	0.47
35:CR:183:GLU:HA	35:CR:186:LYS:HG2	1.95	0.47
43:CN:55:ALA:HB1	77:A5:148:C:H4'	1.97	0.47
43:CN:103:GLU:HG2	43:CN:118:SER:HB3	1.97	0.47
52:CX:95:THR:HG22	52:CX:139:ARG:HG3	1.97	0.47
72:Co:21:HIS:HB3	72:Co:70:LEU:HB3	1.97	0.47
75:CE:218:LYS:HB3	75:CE:220:LYS:HE3	1.96	0.47
77:A5:146:G:H2'	77:A5:147:A:H8	1.80	0.47
79:A8:19:C:H2'	79:A8:20:A:H8	1.80	0.47
83:A6:4866:C:H2'	83:A6:4867:G:H8	1.80	0.47
1:Ag:40:ILE:HG13	1:Ag:59:LEU:HD13	1.96	0.47
16:B2:600:G:H2'	16:B2:601:G:H8	1.80	0.47
16:B2:1656:G:O6	16:B2:1668:U:O4	2.33	0.47
19:AN:84:LEU:HD22	19:AN:85:PRO:HD2	1.97	0.47
31:AG:64:LYS:HB2	31:AG:97:VAL:HG21	1.96	0.47
36:CW:74:ARG:HG3	36:CW:76:VAL:HG23	1.97	0.47
43:CN:181:HIS:HB2	77:A5:99:A:H4'	1.97	0.47
55:Cr:53:PRO:HG3	55:Cr:117:ILE:HD12	1.95	0.47
68:CC:79:VAL:HG11	77:A5:375:G:H5'	1.97	0.47
77:A5:1447:C:H2'	77:A5:1448:G:H8	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:A5:1550:G:N2	77:A5:1578:U:O2	2.39	0.47
83:A6:4389:C:H2'	83:A6:4390:A:C8	2.49	0.47
83:A6:4867:G:H2'	83:A6:4868:G:H8	1.80	0.47
83:A6:4887:C:N3	83:A6:4932:U:O4	2.48	0.47
16:B2:495:U:H5''	29:AE:49:ARG:HH12	1.79	0.46
16:B2:1206:G:N1	16:B2:1694:U:N3	2.62	0.46
17:AO:29:GLY:H	17:AO:93:LEU:HA	1.80	0.46
21:AB:144:LYS:HB3	21:AB:206:PRO:HB2	1.97	0.46
31:AG:2:LYS:HE3	31:AG:2:LYS:HB3	1.66	0.46
57:Cb:65:MET:HE3	77:A5:1829:G:H1'	1.97	0.46
59:CF:101:VAL:HG12	59:CF:106:ARG:HB2	1.98	0.46
65:Cj:43:ARG:HG3	77:A5:21:G:H5''	1.97	0.46
79:A8:122:G:H21	79:A8:128:C:H5	1.62	0.46
83:A6:4866:C:H2'	83:A6:4867:G:C8	2.50	0.46
14:AF:55:ARG:HD2	15:AQ:125:ARG:HH21	1.81	0.46
14:AF:153:LEU:HD11	14:AF:192:LYS:HG2	1.97	0.46
16:B2:377:G:H5'	34:AI:99:ASN:HB2	1.96	0.46
16:B2:1098:C:H2'	16:B2:1099:G:C8	2.50	0.46
20:AL:137:THR:HG21	34:AI:13:LYS:HD3	1.98	0.46
29:AE:197:ASN:HB3	29:AE:209:HIS:HB2	1.98	0.46
32:AH:46:THR:HG21	32:AH:97:GLN:HG2	1.97	0.46
43:CN:54:LYS:HG3	43:CN:56:LYS:HG2	1.97	0.46
43:CN:99:GLN:HG3	43:CN:167:ALA:HB2	1.96	0.46
47:CA:224:THR:HG21	83:A6:3705:G:H21	1.80	0.46
49:CT:17:ARG:HH12	83:A6:4277:G:H5''	1.79	0.46
55:Cr:127:LYS:H	55:Cr:130:ARG:HG2	1.81	0.46
58:CB:284:ILE:HD13	58:CB:331:VAL:HG23	1.97	0.46
61:Ce:33:ARG:H	61:Ce:33:ARG:HG2	1.53	0.46
76:CG:98:LEU:HD11	76:CG:218:LEU:HD21	1.97	0.46
77:A5:283:G:H2'	77:A5:284:G:H8	1.79	0.46
77:A5:482:G:H2'	77:A5:483:G:C8	2.50	0.46
83:A6:2647:A:H62	83:A6:2686:G:H8	1.63	0.46
83:A6:3927:U:H2'	83:A6:3928:A:H8	1.79	0.46
16:B2:979:C:H2'	16:B2:980:A:C8	2.50	0.46
16:B2:1656:G:N2	16:B2:1668:U:O2	2.38	0.46
16:B2:1717:C:H4'	70:Cn:21:ARG:HD3	1.97	0.46
22:AA:76:VAL:HG12	22:AA:87:VAL:HG12	1.96	0.46
33:AW:38:LEU:HA	33:AW:41:MET:HB2	1.97	0.46
48:CS:7:LEU:HB2	48:CS:107:THR:HG23	1.96	0.46
63:Cg:84:ALA:HA	63:Cg:87:VAL:HG22	1.97	0.46
68:CC:289:LEU:HA	68:CC:292:ILE:HG12	1.96	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:A5:730:G:H2'	77:A5:731:G:H8	1.80	0.46
83:A6:3773:U:H2'	83:A6:3774:A:H8	1.80	0.46
2:AU:56:MET:HE1	16:B2:1580:A:H5'	1.98	0.46
12:AD:8:LYS:HZ2	12:AD:9:ARG:HG3	1.80	0.46
23:AV:74:LYS:HE3	23:AV:82:ASN:HB2	1.98	0.46
28:AJ:70:ARG:HH21	28:AJ:94:LEU:HD21	1.79	0.46
39:CL:120:TYR:HA	39:CL:123:LYS:HG2	1.97	0.46
44:CI:30:LYS:HE2	44:CI:30:LYS:H	1.79	0.46
47:CA:70:LYS:HG2	47:CA:72:ARG:HH21	1.80	0.46
56:Ch:85:PRO:HB2	56:Ch:87:LYS:HE3	1.98	0.46
77:A5:1630:A:H5''	77:A5:1631:A:N7	2.30	0.46
80:Cc:43:G:H2'	80:Cc:44:A:H8	1.80	0.46
83:A6:2295:C:H2'	83:A6:2296:G:C8	2.51	0.46
83:A6:3773:U:H2'	83:A6:3774:A:C8	2.50	0.46
8:AP:100:LYS:HD3	16:B2:1240:A:C4	2.50	0.46
16:B2:1653:U:O2	16:B2:1671:G:N2	2.37	0.46
21:AB:71:LEU:HA	21:AB:74:LEU:HB2	1.96	0.46
37:Cz:36:ILE:HA	37:Cz:204:LEU:HD22	1.97	0.46
37:Cz:177:ASP:H	37:Cz:215:ARG:N	2.14	0.46
74:CH:25:VAL:HG23	74:CH:36:ARG:HB3	1.96	0.46
83:A6:2701:U:H3	83:A6:2715:G:H1	1.64	0.46
83:A6:4495:G:H2'	83:A6:4496:A:H8	1.81	0.46
83:A6:4992:G:H2'	83:A6:4993:G:C8	2.50	0.46
1:Ag:107:ASP:HB3	1:Ag:125:ARG:HD3	1.97	0.46
1:Ag:122:SER:O	1:Ag:129:ILE:HA	2.16	0.46
2:AU:66:ARG:HD2	2:AU:77:TRP:HE1	1.79	0.46
9:AT:88:MET:HE1	16:B2:1665:G:C5	2.51	0.46
15:AQ:11:GLN:HE21	16:B2:1397:U:H5	1.63	0.46
16:B2:1096:G:O6	16:B2:1137:U:O4	2.34	0.46
47:CA:108:PRO:HB3	71:Cp:90:LYS:HD3	1.96	0.46
55:Cr:3:ALA:HB2	55:Cr:44:ILE:HA	1.97	0.46
57:Cb:32:LEU:HD13	57:Cb:40:LEU:HD21	1.98	0.46
77:A5:20:U:H3'	77:A5:21:G:H8	1.80	0.46
77:A5:977:C:H2'	77:A5:978:G:C8	2.49	0.46
83:A6:4108:G:H2'	83:A6:4109:G:H8	1.81	0.46
2:AU:27:ARG:HB2	12:AD:11:PHE:HE2	1.81	0.46
7:AR:95:ILE:HD12	7:AR:114:LEU:HD13	1.98	0.46
16:B2:74:G:H2'	16:B2:75:G:H4'	1.96	0.46
16:B2:374:G:H4'	20:AL:84:ARG:HH12	1.80	0.46
16:B2:1092:G:H2'	16:B2:1093:A:C8	2.51	0.46
21:AB:49:VAL:HG11	21:AB:62:LEU:HG	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:CW:19:ARG:HD2	40:CV:95:PHE:HB2	1.97	0.46
45:CD:256:LYS:HE3	45:CD:256:LYS:HB3	1.75	0.46
47:CA:203:ALA:HB1	83:A6:3650:C:H5''	1.98	0.46
62:Cf:45:LYS:HE2	62:Cf:107:PRO:HD2	1.98	0.46
77:A5:1775:A:H3'	77:A5:1776:A:H8	1.80	0.46
79:A8:43:A:H2'	79:A8:44:A:H8	1.81	0.46
83:A6:3861:A:H2'	83:A6:3862:A:H8	1.81	0.46
83:A6:4630:G:N2	83:A6:4668:U:O2	2.43	0.46
4:AM:52:GLN:HG3	4:AM:65:VAL:HG11	1.97	0.46
15:AQ:93:VAL:O	15:AQ:97:GLN:HB2	2.15	0.46
15:AQ:97:GLN:HA	15:AQ:105:LYS:HE2	1.97	0.46
19:AN:30:SER:HA	19:AN:33:VAL:HG22	1.98	0.46
34:AI:136:ILE:HA	34:AI:139:LYS:HD3	1.97	0.46
35:CR:99:MET:O	35:CR:103:ARG:HB2	2.16	0.46
38:CO:181:ALA:HB2	41:CM:130:LEU:HD21	1.98	0.46
47:CA:213:GLY:HA3	83:A6:4544:A:H5''	1.97	0.46
52:CX:129:ARG:HH22	52:CX:135:LYS:HE3	1.81	0.46
63:Cg:87:VAL:HA	63:Cg:90:ARG:HB2	1.98	0.46
76:CG:192:ARG:HH22	77:A5:5:A:H4'	1.81	0.46
77:A5:475:G:H2'	77:A5:476:G:C8	2.51	0.46
83:A6:3870:C:H2'	83:A6:3871:A:C8	2.51	0.46
16:B2:329:G:H2'	16:B2:330:G:H8	1.81	0.46
16:B2:808:A:H2	16:B2:855:G:H22	1.64	0.46
16:B2:869:A:H1'	16:B2:915:G:H8	1.81	0.46
21:AB:185:VAL:HA	21:AB:188:LEU:HB2	1.98	0.46
34:AI:57:ALA:HB1	34:AI:60:LEU:HD23	1.96	0.46
36:CW:12:LYS:H	36:CW:12:LYS:HD2	1.80	0.46
36:CW:34:ALA:HA	36:CW:37:GLU:HB3	1.97	0.46
38:CO:18:ARG:HH11	48:CS:161:ARG:HH12	1.64	0.46
40:CV:51:ARG:HH12	83:A6:4620:U:H5''	1.81	0.46
48:CS:82:LEU:HB2	48:CS:93:MET:HB2	1.98	0.46
50:CP:72:GLN:H	50:CP:72:GLN:HG2	1.39	0.46
54:CZ:32:GLY:HA2	54:CZ:37:PRO:HA	1.97	0.46
55:Cr:90:LEU:HD23	55:Cr:118:LEU:HD12	1.96	0.46
58:CB:372:SER:HB3	58:CB:377:GLY:HA2	1.97	0.46
68:CC:231:ASN:HB3	68:CC:234:LYS:HG2	1.98	0.46
68:CC:308:LYS:HD3	68:CC:308:LYS:HA	1.76	0.46
77:A5:287:U:H2'	77:A5:288:G:C8	2.51	0.46
77:A5:480:C:H2'	77:A5:481:G:C8	2.50	0.46
77:A5:1996:C:N3	77:A5:2000:G:N1	2.64	0.46
83:A6:2327:G:H2'	83:A6:2328:G:H8	1.81	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Ag:18:VAL:HB	1:Ag:301:GLY:HA3	1.98	0.46
2:AU:67:LYS:HD3	2:AU:78:ASP:HB3	1.97	0.46
3:AK:27:VAL:HB	6:Ad:8:TRP:HZ2	1.81	0.46
31:AG:22:ARG:NH1	31:AG:22:ARG:HA	2.31	0.46
33:AW:23:ARG:O	33:AW:64:ASN:HA	2.16	0.46
35:CR:155:LEU:HA	35:CR:158:GLN:HE21	1.80	0.46
38:CO:41:ILE:HD11	38:CO:138:LEU:HD22	1.98	0.46
45:CD:180:PHE:HD1	45:CD:181:PRO:HD2	1.81	0.46
59:CF:240:ILE:HG13	59:CF:244:ILE:HG12	1.98	0.46
76:CG:217:LYS:HE3	76:CG:217:LYS:HB3	1.81	0.46
77:A5:1724:G:O6	77:A5:1838:A:N1	2.48	0.46
83:A6:2830:G:H2'	83:A6:2831:G:H8	1.81	0.46
83:A6:3598:C:H2'	83:A6:3599:A:C8	2.49	0.46
83:A6:3671:G:H2'	83:A6:3672:G:C4	2.51	0.46
83:A6:3965:A:H61	83:A6:4045:G:H21	1.63	0.46
1:Ag:77:PHE:HA	1:Ag:90:TRP:O	2.16	0.45
37:Cz:174:MET:H	37:Cz:212:LYS:HD2	1.81	0.45
54:CZ:67:LYS:HE3	54:CZ:69:LYS:HG2	1.97	0.45
56:Ch:25:LYS:HA	56:Ch:25:LYS:HD2	1.77	0.45
68:CC:78:ARG:HH22	83:A6:2352:U:H5''	1.80	0.45
68:CC:218:ILE:HA	68:CC:229:LEU:HD11	1.98	0.45
76:CG:223:ARG:HA	76:CG:223:ARG:HH11	1.80	0.45
77:A5:268:G:H2'	77:A5:269:G:H8	1.82	0.45
77:A5:734:G:H5'	77:A5:936:C:H41	1.81	0.45
77:A5:1086:C:H2'	77:A5:1087:A:H8	1.80	0.45
77:A5:1348:U:H2'	77:A5:1349:G:H8	1.81	0.45
83:A6:3720:G:H22	83:A6:3733:A:H2	1.64	0.45
2:AU:34:LYS:HD3	2:AU:35:VAL:HG13	1.99	0.45
16:B2:1288:U:O2	16:B2:1311:C:N3	2.49	0.45
19:AN:91:LEU:HD13	19:AN:122:ILE:HG22	1.96	0.45
37:Cz:39:LYS:HD3	37:Cz:39:LYS:HA	1.83	0.45
40:CV:105:ILE:HD13	40:CV:105:ILE:HA	1.88	0.45
42:Ca:75:LEU:HD23	42:Ca:113:GLY:HA2	1.98	0.45
52:CX:64:SER:HB3	56:Ch:80:PRO:HG3	1.96	0.45
54:CZ:27:LYS:HZ1	54:CZ:98:LYS:HB2	1.81	0.45
59:CF:104:LYS:HZ1	77:A5:1726:U:H5'	1.80	0.45
63:Cg:2:VAL:HG21	83:A6:2613:C:H4'	1.98	0.45
71:Cp:44:LYS:HD3	71:Cp:44:LYS:HA	1.72	0.45
74:CH:90:TYR:HB2	74:CH:146:LEU:HB2	1.98	0.45
77:A5:1:C:H42	83:A6:4154:G:H5'	1.81	0.45
77:A5:1814:C:H2'	77:A5:1816:C:H5	1.81	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:A6:3848:U:H2'	83:A6:3849:A:H8	1.80	0.45
12:AD:176:LEU:HD11	16:B2:1499:U:H4'	1.98	0.45
15:AQ:98:LYS:HA	15:AQ:98:LYS:HD3	1.84	0.45
16:B2:804:U:H3	16:B2:859:G:H1	1.62	0.45
16:B2:1228:A:H2'	16:B2:1229:G:C8	2.50	0.45
29:AE:123:LEU:HD11	29:AE:235:TRP:HB2	1.98	0.45
30:AC:155:ILE:HG23	30:AC:159:LYS:NZ	2.31	0.45
31:AG:5:ILE:HD13	31:AG:124:LEU:HD23	1.99	0.45
55:Cr:119:ARG:HA	55:Cr:122:LYS:HE3	1.97	0.45
59:CF:31:LYS:HD3	77:A5:2098:G:H4'	1.97	0.45
72:Co:9:ARG:HA	72:Co:20:PRO:HA	1.97	0.45
76:CG:51:LEU:HG	76:CG:54:PHE:HB2	1.98	0.45
77:A5:709:C:H2'	77:A5:710:G:C8	2.52	0.45
77:A5:1382:G:H2'	77:A5:1383:G:C8	2.51	0.45
1:Ag:44:LYS:HE2	1:Ag:56:GLN:HB2	1.98	0.45
8:AP:28:MET:HG3	8:AP:32:GLN:HE21	1.81	0.45
16:B2:28:U:H2'	16:B2:29:G:H8	1.81	0.45
16:B2:1201:U:H2'	16:B2:1203:G:C8	2.52	0.45
17:AO:31:CYS:HA	17:AO:44:VAL:HG12	1.98	0.45
29:AE:87:MET:HE1	29:AE:122:LYS:HB3	1.97	0.45
33:AW:102:ILE:HD13	33:AW:128:PHE:HB3	1.97	0.45
37:Cz:207:LYS:HG3	83:A6:3969:G:H1	1.82	0.45
40:CV:93:GLY:HA2	58:CB:73:VAL:HG11	1.98	0.45
50:CP:59:PRO:HB2	50:CP:61:ARG:HG2	1.97	0.45
53:CY:22:PRO:HB3	79:A8:91:A:H5'	1.99	0.45
62:Cf:52:LYS:HA	62:Cf:67:THR:HA	1.98	0.45
75:CE:71:ARG:HD3	77:A5:982:U:C2	2.52	0.45
75:CE:98:GLY:HA2	75:CE:99:ASP:HA	1.74	0.45
77:A5:113:A:N6	77:A5:157:U:C2	2.84	0.45
77:A5:1663:C:H1'	83:A6:2320:G:H21	1.80	0.45
77:A5:1933:G:H2'	77:A5:1934:A:C8	2.51	0.45
83:A6:2520:C:H2'	83:A6:2521:G:C8	2.51	0.45
83:A6:2521:G:H5'	83:A6:2640:G:H1'	1.98	0.45
83:A6:2620:G:H1	83:A6:2636:U:H3	1.65	0.45
83:A6:3865:A:N6	83:A6:3881:G:H1	2.14	0.45
83:A6:3876:A:H1'	83:A6:4445:U:H4'	1.99	0.45
83:A6:4297:G:C6	83:A6:4313:A:N1	2.85	0.45
83:A6:4896:G:H2'	83:A6:4897:G:C8	2.52	0.45
10:AZ:49:LEU:HD22	10:AZ:50:PHE:H	1.82	0.45
14:AF:189:ALA:O	14:AF:193:LYS:HB2	2.17	0.45
21:AB:113:MET:HG3	21:AB:142:PHE:CD2	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
25:Aa:5:ARG:HA	25:Aa:92:ARG:HH12	1.81	0.45
28:AJ:172:ARG:HD3	28:AJ:173:VAL:H	1.82	0.45
30:AC:265:PRO:HA	30:AC:268:GLU:HG2	1.97	0.45
41:CM:13:ALA:HA	41:CM:58:THR:HG23	1.97	0.45
44:CI:114:GLY:HA2	83:A6:4441:A:H5''	1.98	0.45
44:CI:115:MET:HE2	83:A6:4442:U:H5''	1.98	0.45
63:Cg:97:ILE:HD13	63:Cg:100:GLN:HE21	1.81	0.45
68:CC:217:ILE:HG23	68:CC:220:ALA:HB3	1.99	0.45
77:A5:907:C:H2'	77:A5:908:G:H8	1.82	0.45
77:A5:2062:C:H2'	77:A5:2063:G:H8	1.80	0.45
83:A6:3658:C:H2'	83:A6:3659:G:H8	1.82	0.45
83:A6:3868:G:H22	83:A6:3900:G:H1'	1.81	0.45
83:A6:4297:G:N1	83:A6:4313:A:C2	2.69	0.45
83:A6:4537:C:H2'	83:A6:4538:G:H8	1.81	0.45
14:AF:193:LYS:HD3	14:AF:193:LYS:HA	1.72	0.45
22:AA:23:THR:HG21	22:AA:173:LEU:HD12	1.99	0.45
49:CT:51:GLY:HA3	49:CT:92:ARG:HG3	1.99	0.45
57:Cb:5:LYS:HD3	57:Cb:5:LYS:H	1.81	0.45
68:CC:117:THR:HA	68:CC:120:LYS:HE3	1.97	0.45
83:A6:2521:G:H2'	83:A6:2522:G:H8	1.82	0.45
83:A6:4997:G:H2'	83:A6:4998:G:H8	1.81	0.45
1:Ag:225:LYS:HD3	1:Ag:225:LYS:HA	1.81	0.45
3:AK:65:ARG:HH12	6:Ad:25:SER:H	1.63	0.45
16:B2:1221:G:H2'	16:B2:1222:G:H8	1.80	0.45
31:AG:38:ALA:CB	31:AG:48:TYR:O	2.65	0.45
41:CM:76:ALA:HA	41:CM:79:LYS:HE3	1.99	0.45
44:CI:208:LYS:HA	44:CI:211:VAL:HB	1.97	0.45
47:CA:62:VAL:HG12	47:CA:73:THR:HB	1.99	0.45
47:CA:143:THR:HA	47:CA:144:LYS:HD3	1.98	0.45
55:Cr:123:PRO:HA	55:Cr:126:VAL:H	1.81	0.45
58:CB:21:ARG:HA	58:CB:274:TYR:HB3	1.98	0.45
59:CF:117:ILE:HG13	59:CF:118:PHE:CD1	2.52	0.45
68:CC:181:LYS:HD2	77:A5:219:G:H1	1.82	0.45
77:A5:1738:A:H2'	77:A5:1739:G:C8	2.52	0.45
83:A6:2521:G:H2'	83:A6:2522:G:C8	2.51	0.45
83:A6:3707:U:O2	83:A6:3743:G:N2	2.37	0.45
7:AR:101:ASP:HA	7:AR:104:GLU:HG3	1.99	0.45
16:B2:5:U:H2'	16:B2:6:G:C8	2.51	0.45
17:AO:57:THR:HG22	17:AO:60:MET:SD	2.57	0.45
22:AA:11:LYS:HD3	22:AA:184:ARG:HH12	1.81	0.45
22:AA:139:TYR:HA	23:AV:29:HIS:HB3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:CL:5:ARG:NH1	39:CL:5:ARG:HA	2.32	0.45
39:CL:120:TYR:O	39:CL:124:LEU:HB2	2.17	0.45
39:CL:161:TYR:HE2	42:Ca:105:ARG:HD2	1.82	0.45
44:CI:57:TYR:HD1	44:CI:130:HIS:HA	1.80	0.45
55:Cr:25:TYR:HA	55:Cr:35:ARG:HA	1.99	0.45
56:Ch:13:LYS:HZ2	56:Ch:15:GLU:H	1.64	0.45
68:CC:10:VAL:HG13	68:CC:153:VAL:HG12	1.99	0.45
68:CC:346:ASN:HB2	68:CC:350:ARG:HH12	1.82	0.45
71:Cp:11:VAL:HB	71:Cp:23:ARG:HD2	1.98	0.45
75:CE:135:GLN:N	77:A5:1288:G:H1	2.14	0.45
77:A5:31:U:H3	77:A5:51:A:H61	1.65	0.45
77:A5:744:G:H2'	77:A5:745:G:C8	2.52	0.45
77:A5:2020:U:H2'	77:A5:2021:G:H8	1.82	0.45
79:A8:19:C:H2'	79:A8:20:A:C8	2.52	0.45
83:A6:2611:A:H5'	83:A6:2688:G:H4'	1.98	0.45
83:A6:4081:G:H2'	83:A6:4082:G:C8	2.52	0.45
83:A6:4174:U:H2'	83:A6:4175:G:C8	2.51	0.45
3:AK:95:ARG:HD3	12:AD:67:ARG:HE	1.82	0.45
16:B2:562:U:H2'	16:B2:563:G:C8	2.52	0.45
16:B2:602:G:H3'	16:B2:603:C:H2'	1.98	0.45
16:B2:795:A:H2'	16:B2:796:G:H8	1.82	0.45
16:B2:1324:G:N2	16:B2:1504:U:O2	2.40	0.45
34:AI:193:LYS:HA	34:AI:196:GLU:HG3	1.99	0.45
40:CV:48:ARG:NH2	83:A6:4621:C:H5'	2.32	0.45
47:CA:112:ILE:HG23	47:CA:133:TYR:HB2	1.99	0.45
47:CA:242:ARG:HD2	83:A6:3745:U:H4'	1.98	0.45
48:CS:85:ASP:HB3	48:CS:123:SER:HB3	1.99	0.45
53:CY:2:LYS:HB2	77:A5:1368:A:H4'	1.99	0.45
56:Ch:3:LYS:HG3	56:Ch:5:LYS:H	1.80	0.45
63:Cg:40:LYS:HE2	63:Cg:52:ARG:HH12	1.81	0.45
77:A5:185:C:H4'	77:A5:189:G:H5''	1.99	0.45
77:A5:1722:C:H2'	77:A5:1723:A:H8	1.82	0.45
77:A5:2074:C:H2'	77:A5:2075:G:C8	2.52	0.45
83:A6:3667:C:H2'	83:A6:3668:C:H6	1.81	0.45
83:A6:4312:U:H2'	83:A6:4313:A:H8	1.82	0.45
1:Ag:241:PHE:HE2	1:Ag:261:LEU:HD11	1.82	0.45
13:Af:111:ASN:HA	13:Af:112:GLY:HA2	1.62	0.45
16:B2:1324:G:O6	16:B2:1504:U:O4	2.35	0.45
30:AC:58:LYS:HB3	30:AC:58:LYS:HE3	1.73	0.45
42:Ca:75:LEU:HB3	42:Ca:117:LEU:HD21	1.99	0.45
51:CU:21:PHE:HB2	51:CU:72:VAL:HB	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:CB:238:LYS:HE2	58:CB:238:LYS:HA	1.98	0.45
58:CB:243:LYS:HG2	83:A6:4526:U:H4'	1.98	0.45
59:CF:70:ARG:HH21	77:A5:1209:U:H4'	1.82	0.45
75:CE:109:LEU:H	75:CE:114:ARG:NH2	2.15	0.45
77:A5:1724:G:C2	77:A5:1838:A:H2	2.32	0.45
83:A6:2411:C:H2'	83:A6:2412:A:C8	2.49	0.45
83:A6:3917:A:H2'	83:A6:3918:G:H8	1.82	0.45
83:A6:4069:U:H2'	83:A6:4070:U:H6	1.82	0.45
1:Ag:165:ILE:HG23	1:Ag:179:LEU:HD21	1.99	0.44
16:B2:1010:G:H2'	16:B2:1011:A:C8	2.51	0.44
16:B2:1348:G:H1	16:B2:1381:G:H22	1.65	0.44
29:AE:68:ARG:HA	29:AE:76:VAL:HG21	1.99	0.44
39:CL:46:ILE:HD13	39:CL:49:ARG:HB2	1.98	0.44
39:CL:106:SER:HB2	39:CL:109:SER:HB3	1.98	0.44
46:CQ:19:LYS:HE2	46:CQ:19:LYS:HB2	1.72	0.44
50:CP:128:ARG:HE	50:CP:136:ILE:HG21	1.82	0.44
56:Ch:68:ASN:O	56:Ch:72:PHE:HB3	2.18	0.44
59:CF:70:ARG:HH11	59:CF:73:ARG:HH11	1.65	0.44
60:Cd:67:ARG:HH12	60:Cd:70:LYS:HG3	1.81	0.44
62:Cf:30:ILE:HG12	62:Cf:42:TYR:CE2	2.52	0.44
62:Cf:109:ARG:HA	62:Cf:110:ILE:HA	1.78	0.44
63:Cg:5:LEU:HD13	63:Cg:30:ILE:HG22	1.98	0.44
77:A5:1514:U:H2'	77:A5:1515:A:C8	2.52	0.44
83:A6:4537:C:H2'	83:A6:4538:G:C8	2.51	0.44
83:A6:4593:C:H2'	83:A6:4594:U:H6	1.82	0.44
12:AD:65:ARG:HE	12:AD:65:ARG:HB3	1.59	0.44
12:AD:205:PRO:HB3	16:B2:1389:C:H5'	1.98	0.44
16:B2:1007:C:H2'	16:B2:1008:A:C8	2.52	0.44
16:B2:1049:A:H2	16:B2:1069:U:H3	1.65	0.44
26:Ab:18:LYS:HE2	26:Ab:23:ARG:HG2	1.99	0.44
38:CO:199:HIS:HB2	41:CM:112:VAL:HG12	1.98	0.44
39:CL:101:ARG:HH12	77:A5:76:A:H5'	1.81	0.44
40:CV:22:VAL:HG23	40:CV:52:LEU:HB3	1.98	0.44
43:CN:50:ARG:HD3	77:A5:113:A:N3	2.31	0.44
56:Ch:66:LYS:HB3	56:Ch:66:LYS:HE2	1.69	0.44
68:CC:283:LYS:HB3	68:CC:283:LYS:HE2	1.79	0.44
76:CG:83:PHE:HA	76:CG:183:ILE:HG21	1.98	0.44
77:A5:43:U:H3'	77:A5:44:A:H8	1.81	0.44
77:A5:228:C:H2'	77:A5:229:G:C8	2.51	0.44
77:A5:300:A:H2'	77:A5:301:G:C8	2.49	0.44
77:A5:1344:C:H2'	77:A5:1345:A:H8	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:A5:1505:C:H2'	77:A5:1506:G:C8	2.52	0.44
83:A6:3731:C:H2'	83:A6:3732:A:C8	2.53	0.44
83:A6:4760:G:H2'	83:A6:4761:G:H8	1.82	0.44
5:AS:132:ARG:HB3	5:AS:134:GLN:HE22	1.81	0.44
9:AT:24:LYS:HD2	9:AT:24:LYS:HA	1.74	0.44
12:AD:133:GLY:HA3	12:AD:155:GLY:HA3	1.99	0.44
16:B2:649:U:H2'	16:B2:650:A:H8	1.82	0.44
16:B2:1288:U:H3	16:B2:1311:C:H42	0.67	0.44
22:AA:33:GLN:HB2	22:AA:34:MET:HE3	1.99	0.44
28:AJ:18:ARG:HA	28:AJ:18:ARG:HD3	1.79	0.44
29:AE:10:LYS:HB2	29:AE:27:PHE:HA	1.99	0.44
32:AH:64:VAL:HB	32:AH:94:PHE:HE1	1.83	0.44
40:CV:120:PRO:HB3	40:CV:138:SER:HB2	1.99	0.44
44:CI:185:VAL:HG13	44:CI:190:LEU:HD11	1.98	0.44
46:CQ:154:LYS:HD3	46:CQ:154:LYS:HA	1.78	0.44
48:CS:169:THR:HG21	83:A6:4875:G:H5'	1.98	0.44
75:CE:36:LYS:HG2	75:CE:38:LYS:HB2	1.99	0.44
77:A5:229:G:H2'	77:A5:230:G:C8	2.52	0.44
77:A5:755:C:H2'	77:A5:756:G:H8	1.81	0.44
77:A5:1509:C:H2'	77:A5:1510:G:C8	2.52	0.44
83:A6:3880:G:H2'	83:A6:3881:G:C8	2.52	0.44
83:A6:4208:U:H2'	83:A6:4209:G:C8	2.52	0.44
83:A6:4552:U:H2'	83:A6:4553:A:C8	2.52	0.44
19:AN:98:VAL:HG13	19:AN:115:LEU:HD23	1.98	0.44
24:AY:110:ARG:HD3	24:AY:128:GLY:HA3	1.99	0.44
30:AC:69:LEU:HB3	30:AC:75:ILE:HG13	2.00	0.44
31:AG:27:PHE:HA	31:AG:30:LYS:HE2	2.00	0.44
31:AG:136:LYS:HZ2	31:AG:137:ARG:HH22	1.66	0.44
44:CI:7:ARG:HA	44:CI:10:ARG:HG2	1.98	0.44
50:CP:102:ALA:HB1	50:CP:107:LEU:HB2	1.99	0.44
56:Ch:89:ARG:HA	56:Ch:92:ARG:HE	1.83	0.44
65:Cj:85:LYS:HA	65:Cj:85:LYS:HD2	1.85	0.44
75:CE:102:GLY:H	77:A5:687:U:H2'	1.82	0.44
77:A5:432:U:H5	83:A6:3887:C:H42	1.64	0.44
79:A8:28:C:H2'	79:A8:29:G:C8	2.53	0.44
83:A6:2272:C:H2'	83:A6:2273:G:C8	2.50	0.44
83:A6:3731:C:H2'	83:A6:3732:A:H8	1.83	0.44
83:A6:4153:C:H2'	83:A6:4154:G:C8	2.52	0.44
83:A6:4186:A:H2'	83:A6:4187:G:C8	2.53	0.44
1:Ag:282:GLU:HG3	1:Ag:284:PRO:HD3	2.00	0.44
5:AS:98:VAL:HG13	5:AS:103:LEU:HD13	2.00	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
12:AD:157:MET:HA	12:AD:189:MET:HE2	2.00	0.44
16:B2:346:C:H4'	29:AE:30:ARG:HH12	1.83	0.44
16:B2:1351:G:O6	16:B2:1360:U:O4	2.35	0.44
25:Aa:79:ILE:HG23	25:Aa:84:VAL:HG13	2.00	0.44
36:CW:58:LYS:HE2	36:CW:58:LYS:HB2	1.91	0.44
37:Cz:179:LEU:HD12	37:Cz:216:LEU:H	1.82	0.44
37:Cz:209:THR:HG22	37:Cz:210:MET:H	1.82	0.44
43:CN:174:LEU:HD13	77:A5:62:A:H5''	1.99	0.44
47:CA:46:LYS:HE3	47:CA:46:LYS:HB3	1.91	0.44
64:Ci:23:LYS:HE2	64:Ci:23:LYS:HB2	1.76	0.44
64:Ci:50:PHE:HD1	64:Ci:51:ALA:H	1.66	0.44
66:Ck:61:PRO:HA	66:Ck:62:PRO:HD3	1.83	0.44
78:A7:70:G:H2'	78:A7:71:G:H8	1.83	0.44
79:A8:77:A:H3'	79:A8:78:G:H8	1.82	0.44
83:A6:2605:G:O6	83:A6:2734:U:O4	2.35	0.44
83:A6:3670:C:H2'	83:A6:3671:G:C8	2.52	0.44
83:A6:4151:G:H2'	83:A6:4152:G:H8	1.82	0.44
1:Ag:18:VAL:HA	1:Ag:35:SER:HB2	1.99	0.44
3:AK:3:MET:HE1	3:AK:8:ARG:HB2	2.00	0.44
14:AF:201:LYS:HE3	14:AF:201:LYS:HA	1.99	0.44
16:B2:736:C:H2'	16:B2:737:G:C8	2.53	0.44
16:B2:1050:A:H62	16:B2:1068:G:N2	2.16	0.44
16:B2:1375:G:H2'	16:B2:1376:A:C8	2.51	0.44
22:AA:57:LYS:HZ3	22:AA:161:ILE:HA	1.82	0.44
28:AJ:170:PRO:HG2	28:AJ:175:ARG:HG3	1.98	0.44
30:AC:107:LEU:HD23	30:AC:127:PHE:HB3	2.00	0.44
34:AI:118:ALA:HB1	34:AI:137:LEU:HD12	1.99	0.44
36:CW:74:ARG:HA	36:CW:74:ARG:HD2	1.56	0.44
37:Cz:177:ASP:HB2	37:Cz:214:GLN:HB3	1.98	0.44
47:CA:32:VAL:HG23	47:CA:123:ARG:HH12	1.82	0.44
48:CS:56:LYS:HA	48:CS:56:LYS:HD2	1.75	0.44
51:CU:52:LYS:HA	51:CU:52:LYS:HD2	1.89	0.44
53:CY:75:ARG:HH12	79:A8:72:A:H5'	1.82	0.44
62:Cf:5:LEU:HD12	75:CE:153:LEU:HB2	1.99	0.44
68:CC:195:LYS:HA	68:CC:200:ARG:HA	1.98	0.44
68:CC:281:MET:HE2	68:CC:281:MET:H	1.82	0.44
72:Co:30:LYS:HD3	72:Co:32:SER:H	1.83	0.44
75:CE:56:ARG:HG2	75:CE:65:ARG:HG3	1.98	0.44
77:A5:18:C:H2'	77:A5:19:G:C8	2.52	0.44
77:A5:267:G:H2'	77:A5:268:G:H8	1.83	0.44
77:A5:312:G:H1	77:A5:325:U:H3	1.64	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:A5:422:C:H2'	77:A5:423:G:C8	2.52	0.44
77:A5:1348:U:H2'	77:A5:1349:G:C8	2.52	0.44
83:A6:4530:U:H2'	83:A6:4531:U:H2'	2.00	0.44
83:A6:4991:U:H2'	83:A6:4992:G:C8	2.53	0.44
1:Ag:164:ILE:HG21	1:Ag:221:LEU:HD21	1.99	0.44
12:AD:70:THR:O	12:AD:74:GLN:HB2	2.17	0.44
14:AF:47:LYS:HE2	14:AF:47:LYS:HB2	1.78	0.44
15:AQ:140:ARG:HB2	16:B2:1644:C:H4'	1.99	0.44
16:B2:647:U:H2'	16:B2:648:A:H8	1.81	0.44
16:B2:1351:G:H4'	22:AA:109:THR:HB	1.98	0.44
22:AA:63:ARG:HA	22:AA:66:VAL:HG22	2.00	0.44
29:AE:53:LYS:HD3	29:AE:53:LYS:HA	1.86	0.44
38:CO:7:LEU:HB3	48:CS:167:PHE:HE2	1.82	0.44
39:CL:33:ILE:HA	39:CL:36:ARG:HB2	2.00	0.44
40:CV:83:ARG:HH22	40:CV:119:GLY:HA3	1.82	0.44
48:CS:34:ALA:HB1	48:CS:39:VAL:HG23	2.00	0.44
50:CP:126:ARG:HD2	50:CP:140:MET:HE1	1.99	0.44
77:A5:1306:C:H2'	77:A5:1307:A:C8	2.53	0.44
83:A6:2583:C:H2'	83:A6:2584:G:H8	1.81	0.44
83:A6:2638:G:H21	83:A6:2697:A:H62	1.66	0.44
83:A6:3660:C:H2'	83:A6:3682:A:H61	1.83	0.44
83:A6:4493:U:H2'	83:A6:4494:G:C8	2.53	0.44
15:AQ:8:GLN:HB2	15:AQ:99:TYR:CZ	2.53	0.44
21:AB:103:MET:O	21:AB:214:LYS:HA	2.18	0.44
29:AE:139:LEU:HD13	29:AE:154:ILE:HG21	1.99	0.44
30:AC:184:VAL:HG21	30:AC:247:THR:HG22	1.99	0.44
31:AG:5:ILE:HA	31:AG:111:LEU:HB2	2.00	0.44
38:CO:34:VAL:HG21	38:CO:112:TYR:HE2	1.83	0.44
38:CO:143:HIS:CD2	38:CO:150:GLN:HG3	2.52	0.44
41:CM:100:ARG:HA	41:CM:103:LYS:HD2	2.00	0.44
43:CN:140:LYS:HA	43:CN:143:ARG:HB2	1.99	0.44
43:CN:145:ASN:HA	43:CN:146:PRO:HD3	1.84	0.44
62:Cf:74:VAL:HA	62:Cf:86:ALA:HA	1.99	0.44
68:CC:181:LYS:HD3	68:CC:181:LYS:HA	1.76	0.44
77:A5:475:G:H2'	77:A5:476:G:H8	1.83	0.44
77:A5:1884:C:H2'	77:A5:1885:G:H8	1.83	0.44
83:A6:4704:C:H2'	83:A6:4705:A:C8	2.53	0.44
83:A6:4723:A:H2'	83:A6:4724:A:C8	2.52	0.44
1:Ag:121:VAL:HG13	1:Ag:131:LEU:HD23	2.00	0.44
2:AU:24:LEU:HA	2:AU:111:GLU:O	2.18	0.44
10:AZ:73:VAL:HG23	10:AZ:79:ILE:HG21	1.99	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:B2:1780:G:H2'	16:B2:1781:A:C8	2.53	0.44
19:AN:31:ASP:HA	19:AN:34:LYS:HG2	1.98	0.44
24:AY:83:LYS:HA	24:AY:83:LYS:HD3	1.85	0.44
29:AE:71:LYS:HE2	29:AE:71:LYS:HB2	1.75	0.44
31:AG:31:ARG:HH22	31:AG:32:MET:HG2	1.82	0.44
32:AH:41:ARG:HG2	35:CR:188:LEU:HB3	1.99	0.44
45:CD:264:LYS:HD2	45:CD:264:LYS:HA	1.88	0.44
46:CQ:165:PRO:HG3	46:CQ:180:ARG:HH12	1.83	0.44
57:Cb:7:HIS:CD2	83:A6:4218:U:H4'	2.53	0.44
68:CC:142:HIS:CE1	68:CC:248:ARG:HG3	2.53	0.44
68:CC:150:LEU:HD22	68:CC:151:PRO:HA	2.00	0.44
68:CC:230:LEU:HD11	68:CC:239:LYS:HB3	1.99	0.44
73:CJ:141:ILE:HA	73:CJ:144:LYS:HE2	2.00	0.44
77:A5:1317:U:H2'	77:A5:1318:C:C6	2.53	0.44
77:A5:2081:C:H2'	77:A5:2082:G:C8	2.53	0.44
83:A6:3933:G:H2'	83:A6:3934:G:H8	1.82	0.44
11:Ac:48:GLY:HA3	14:AF:142:SER:HB3	2.00	0.43
16:B2:750:C:H2'	16:B2:751:G:H8	1.82	0.43
16:B2:1144:A:H5'	16:B2:1355:C:H41	1.82	0.43
16:B2:1166:G:H2'	16:B2:1167:G:H8	1.82	0.43
21:AB:83:LYS:HG2	21:AB:106:THR:HG22	1.99	0.43
27:Ae:35:ARG:O	27:Ae:39:ASN:HB3	2.18	0.43
29:AE:162:ILE:HD13	29:AE:164:LEU:HD13	2.00	0.43
35:CR:38:ARG:O	35:CR:42:ARG:HB2	2.18	0.43
36:CW:17:HIS:CE1	58:CB:371:THR:HG21	2.53	0.43
41:CM:24:LEU:HD11	41:CM:86:TRP:CD2	2.53	0.43
43:CN:140:LYS:NZ	77:A5:125:C:H5'	2.33	0.43
48:CS:41:LYS:HE2	48:CS:41:LYS:HB3	1.86	0.43
59:CF:40:LYS:HB2	59:CF:40:LYS:HE2	1.81	0.43
59:CF:45:ALA:O	59:CF:48:LYS:HB3	2.18	0.43
69:Cm:88:LYS:HE2	69:Cm:88:LYS:HB3	1.74	0.43
77:A5:93:G:H2'	77:A5:94:A:C8	2.53	0.43
77:A5:418:A:H4'	83:A6:2311:C:H5'	2.00	0.43
77:A5:725:G:H2'	77:A5:726:G:H8	1.82	0.43
83:A6:2447:U:H2'	83:A6:2448:G:H8	1.82	0.43
83:A6:2539:C:H2'	83:A6:2540:C:C6	2.53	0.43
83:A6:2749:C:H2'	83:A6:2750:G:C8	2.53	0.43
1:Ag:199:THR:HG22	1:Ag:208:ALA:HB3	2.00	0.43
10:AZ:73:VAL:HA	10:AZ:76:ARG:HB2	1.99	0.43
16:B2:345:U:H1'	29:AE:33:THR:HB	1.99	0.43
16:B2:941:C:H2'	16:B2:942:G:H8	1.82	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:B2:1144:A:H2'	16:B2:1145:A:C8	2.52	0.43
16:B2:1213:C:H2'	16:B2:1214:A:C8	2.53	0.43
17:AO:40:THR:HG21	17:AO:111:GLY:HA3	2.00	0.43
22:AA:74:VAL:HG23	22:AA:96:ALA:HA	2.00	0.43
28:AJ:82:VAL:HG12	28:AJ:87:LEU:HB2	1.99	0.43
28:AJ:86:VAL:HG12	28:AJ:87:LEU:HD23	1.99	0.43
30:AC:179:THR:HA	30:AC:219:ILE:HD11	2.00	0.43
36:CW:18:GLY:HA2	36:CW:32:LEU:HA	1.99	0.43
42:Ca:94:LYS:HA	42:Ca:95:THR:HA	1.72	0.43
43:CN:80:THR:HG22	43:CN:87:HIS:HA	2.00	0.43
47:CA:92:LYS:HG2	47:CA:103:PRO:HG2	2.00	0.43
52:CX:60:TYR:HE1	77:A5:16:G:H5'	1.83	0.43
54:CZ:51:ARG:HB3	54:CZ:65:ARG:HH11	1.83	0.43
66:Ck:24:LYS:HE2	66:Ck:24:LYS:HB2	1.79	0.43
72:Co:64:LYS:HB3	83:A6:4370:G:H5''	1.99	0.43
77:A5:1069:G:H2'	77:A5:1070:G:C8	2.52	0.43
83:A6:2572:C:H2'	83:A6:2573:A:H8	1.83	0.43
83:A6:3732:A:H2'	83:A6:3733:A:C8	2.52	0.43
83:A6:4745:G:N2	83:A6:4955:A:N6	2.39	0.43
22:AA:137:ALA:HA	22:AA:140:VAL:HG12	1.99	0.43
23:AV:14:PRO:HD2	30:AC:255:LEU:HD23	1.99	0.43
25:Aa:103:PRO:HG2	25:Aa:106:ALA:HA	2.00	0.43
26:Ab:2:PRO:HG2	26:Ab:4:ALA:HB3	2.00	0.43
38:CO:199:HIS:O	38:CO:203:VAL:HB	2.18	0.43
43:CN:77:LYS:HD2	83:A6:3928:A:H1'	1.99	0.43
46:CQ:69:LYS:HA	46:CQ:72:LEU:HD12	2.00	0.43
55:Cr:53:PRO:HA	55:Cr:54:ALA:HA	1.58	0.43
58:CB:286:LYS:HG3	58:CB:332:MET:HG2	1.99	0.43
62:Cf:22:ARG:HB3	62:Cf:24:HIS:CE1	2.53	0.43
63:Cg:57:ARG:HD2	63:Cg:71:LYS:HG3	2.00	0.43
68:CC:312:ARG:HH11	83:A6:2274:C:H5''	1.83	0.43
73:CJ:58:ARG:H	73:CJ:58:ARG:HE	1.65	0.43
77:A5:1447:C:H2'	77:A5:1448:G:C8	2.53	0.43
77:A5:1939:A:H5'	77:A5:1940:G:H4'	2.00	0.43
77:A5:2049:G:H2'	77:A5:2050:G:C8	2.53	0.43
83:A6:2589:C:H3'	83:A6:2590:G:H8	1.83	0.43
16:B2:854:A:H2'	16:B2:855:G:H8	1.84	0.43
16:B2:1103:C:H2'	16:B2:1104:G:C8	2.53	0.43
38:CO:185:VAL:HG23	38:CO:188:LYS:N	2.32	0.43
39:CL:75:GLY:HA3	39:CL:99:ASP:HB2	2.00	0.43
48:CS:21:LYS:HA	48:CS:21:LYS:HD3	1.78	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
57:Cb:72:ILE:HA	57:Cb:75:LEU:HG	2.00	0.43
61:Ce:99:ILE:HG21	61:Ce:108:ARG:HD3	2.00	0.43
74:CH:20:LEU:HD11	74:CH:45:LEU:HD23	2.01	0.43
77:A5:441:G:H2'	77:A5:442:G:C8	2.53	0.43
77:A5:1094:G:H2'	77:A5:1095:A:H8	1.84	0.43
83:A6:4970:C:H2'	83:A6:4971:A:H8	1.83	0.43
2:AU:59:LYS:HB2	2:AU:84:ILE:HG23	2.01	0.43
2:AU:66:ARG:HD2	2:AU:77:TRP:NE1	2.34	0.43
11:Ac:31:ARG:HD2	11:Ac:41:SER:HB2	2.00	0.43
14:AF:58:ALA:H	14:AF:62:ARG:NH1	2.16	0.43
28:AJ:139:LYS:HE2	28:AJ:139:LYS:HB2	1.67	0.43
35:CR:142:ILE:O	35:CR:146:LYS:HG3	2.18	0.43
36:CW:10:GLY:HA3	36:CW:53:VAL:HG22	2.00	0.43
38:CO:167:HIS:HA	38:CO:170:LYS:HE3	2.01	0.43
38:CO:187:LYS:HZ3	38:CO:190:ASP:HA	1.83	0.43
50:CP:62:ARG:HG3	50:CP:63:TYR:HD1	1.83	0.43
52:CX:113:VAL:HG21	52:CX:138:VAL:HG11	2.01	0.43
72:Co:38:LYS:HB3	72:Co:38:LYS:HE2	1.84	0.43
74:CH:93:ARG:HD2	74:CH:143:GLU:HG3	2.00	0.43
77:A5:41:C:H4'	83:A6:4188:U:H4'	2.01	0.43
83:A6:3722:G:H2'	83:A6:3723:A:H8	1.83	0.43
83:A6:4577:U:H2'	83:A6:4578:G:C8	2.53	0.43
83:A6:4699:U:H1'	83:A6:4700:A:H5''	1.99	0.43
16:B2:366:U:C2	16:B2:394:G:O6	2.71	0.43
16:B2:1430:C:H2'	16:B2:1431:G:H8	1.84	0.43
20:AL:104:LYS:HE3	20:AL:104:LYS:HB3	1.92	0.43
24:AY:10:ARG:HG3	24:AY:11:LYS:HG2	2.01	0.43
38:CO:12:ARG:HD3	48:CS:171:ARG:HH22	1.82	0.43
38:CO:148:LYS:HE2	38:CO:148:LYS:HB2	1.67	0.43
45:CD:259:LYS:HA	45:CD:259:LYS:HD3	1.89	0.43
47:CA:140:ASN:HA	47:CA:141:PRO:HD3	1.86	0.43
50:CP:75:GLN:NE2	83:A6:5065:U:H1'	2.34	0.43
53:CY:69:LYS:HE2	53:CY:69:LYS:HB2	1.85	0.43
58:CB:218:ASP:HB2	58:CB:280:ILE:HA	2.01	0.43
59:CF:82:TYR:CZ	59:CF:84:PRO:HA	2.53	0.43
64:Ci:37:THR:HA	64:Ci:40:VAL:HG12	2.01	0.43
67:Cl:15:LYS:HD3	67:Cl:15:LYS:HA	1.78	0.43
68:CC:205:ARG:NH1	68:CC:242:PRO:HB3	2.33	0.43
71:Cp:30:GLU:HA	71:Cp:33:GLN:HG2	2.01	0.43
75:CE:152:ILE:HD11	75:CE:155:GLY:H	1.83	0.43
76:CG:97:LYS:HD3	76:CG:100:HIS:HE1	1.83	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:A5:429:A:H2'	77:A5:430:G:C8	2.54	0.43
83:A6:3932:U:H2'	83:A6:3933:G:C8	2.53	0.43
83:A6:4704:C:H2'	83:A6:4705:A:H8	1.83	0.43
10:AZ:99:LEU:HD11	10:AZ:102:LYS:HB2	2.01	0.43
16:B2:494:C:H41	16:B2:509:G:H21	1.66	0.43
16:B2:1004:U:H2'	16:B2:1005:G:C8	2.54	0.43
16:B2:1017:U:H5'	19:AN:55:ARG:HE	1.83	0.43
16:B2:1232:U:H2'	16:B2:1233:G:C8	2.54	0.43
16:B2:1277:C:H2'	16:B2:1278:A:H8	1.84	0.43
16:B2:1808:U:H2'	16:B2:1809:A:C8	2.54	0.43
17:AO:102:GLY:H	17:AO:134:PRO:HG2	1.84	0.43
25:Aa:23:CYS:HB2	25:Aa:74:CYS:HB3	2.00	0.43
29:AE:11:ARG:H	29:AE:11:ARG:HG2	1.50	0.43
29:AE:228:ILE:HD12	29:AE:234:PRO:HB3	2.00	0.43
33:AW:33:VAL:O	33:AW:37:PHE:HB2	2.19	0.43
35:CR:45:ILE:HG22	35:CR:50:ILE:HB	2.01	0.43
35:CR:170:ARG:HA	35:CR:173:ARG:HB2	2.01	0.43
36:CW:51:TRP:HZ2	83:A6:5005:G:H2'	1.82	0.43
41:CM:30:VAL:HG21	48:CS:152:PHE:HE1	1.84	0.43
47:CA:241:ARG:HH12	83:A6:3659:G:H5''	1.83	0.43
53:CY:34:LEU:HD12	53:CY:39:ARG:HG3	2.01	0.43
55:Cr:97:ILE:HG23	55:Cr:101:LYS:HE2	2.01	0.43
55:Cr:101:LYS:HD2	55:Cr:106:LEU:HD23	2.01	0.43
56:Ch:13:LYS:HZ3	56:Ch:14:LYS:HB2	1.83	0.43
56:Ch:91:MET:HA	56:Ch:94:ARG:HG2	2.01	0.43
58:CB:4:ARG:HD2	58:CB:4:ARG:HA	1.90	0.43
58:CB:239:LYS:HE2	58:CB:239:LYS:HB2	1.91	0.43
61:Ce:60:TYR:CE1	77:A5:1900:C:H4'	2.53	0.43
62:Cf:89:ARG:NH2	83:A6:4943:A:H62	2.15	0.43
68:CC:211:TYR:HD2	68:CC:214:ASP:HB3	1.83	0.43
76:CG:261:LEU:HD13	76:CG:264:LYS:HE2	2.01	0.43
77:A5:422:C:H2'	77:A5:423:G:H8	1.83	0.43
83:A6:2771:G:C2	83:A6:2772:C:H1'	2.53	0.43
16:B2:530:U:H3'	16:B2:531:A:H8	1.83	0.43
16:B2:656:G:H21	16:B2:663:C:H5''	1.84	0.43
16:B2:1102:G:H1	16:B2:1130:G:H1	1.67	0.43
16:B2:1221:G:H2'	16:B2:1222:G:C8	2.54	0.43
29:AE:136:ILE:HD12	29:AE:137:PRO:HD2	2.01	0.43
32:AH:52:GLU:HA	32:AH:58:LYS:HA	2.01	0.43
35:CR:142:ILE:HA	35:CR:145:LEU:HD23	2.00	0.43
42:Ca:116:LYS:HD2	42:Ca:116:LYS:HA	1.69	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
47:CA:18:ALA:HB2	83:A6:3677:U:H5''	2.00	0.43
50:CP:120:ASN:HD22	79:A8:13:G:H1'	1.84	0.43
58:CB:58:ARG:HG3	58:CB:72:VAL:HG13	1.99	0.43
59:CF:112:LEU:HB2	59:CF:114:LEU:HD23	2.01	0.43
77:A5:266:C:H2'	77:A5:267:G:H8	1.83	0.43
77:A5:1801:A:H2'	77:A5:1802:A:C8	2.53	0.43
79:A8:9:A:H2'	79:A8:10:G:H8	1.82	0.43
83:A6:4765:G:O6	83:A6:4869:U:C4	2.72	0.43
5:AS:10:GLN:HE21	5:AS:58:GLU:HA	1.83	0.43
9:AT:134:ILE:HA	9:AT:137:GLN:HG3	2.01	0.43
16:B2:155:G:H2'	16:B2:156:G:H8	1.84	0.43
16:B2:909:G:H2'	16:B2:910:G:H8	1.84	0.43
16:B2:1244:U:H2'	16:B2:1245:G:C8	2.52	0.43
32:AH:77:VAL:HA	32:AH:80:VAL:HB	2.01	0.43
34:AI:97:VAL:HA	34:AI:179:PRO:HG2	1.99	0.43
35:CR:130:ASN:ND2	35:CR:131:VAL:H	2.17	0.43
41:CM:1:MET:HE3	41:CM:2:VAL:HG22	2.01	0.43
45:CD:126:THR:HA	45:CD:196:ARG:HH21	1.83	0.43
49:CT:39:ILE:HB	49:CT:102:ARG:HG3	1.99	0.43
49:CT:43:LYS:HA	49:CT:43:LYS:HD2	1.84	0.43
53:CY:79:VAL:HG13	53:CY:99:ILE:H	1.84	0.43
55:Cr:101:LYS:HA	55:Cr:101:LYS:HD3	1.83	0.43
58:CB:44:THR:HA	58:CB:349:LYS:HG3	2.01	0.43
60:Cd:21:VAL:HG22	60:Cd:90:ARG:HE	1.84	0.43
77:A5:1810:G:H2'	77:A5:1811:G:C8	2.54	0.43
83:A6:2308:A:H4'	83:A6:2334:C:H4'	2.00	0.43
83:A6:4235:G:H2'	83:A6:4236:G:H8	1.84	0.43
83:A6:4675:U:H2'	83:A6:4676:G:C8	2.54	0.43
7:AR:84:TYR:HE2	22:AA:205:ARG:HH21	1.66	0.43
12:AD:197:LYS:H	12:AD:198:ILE:C	2.26	0.43
15:AQ:109:LYS:HA	15:AQ:112:LEU:HB2	2.00	0.43
16:B2:407:G:H1	18:AX:43:GLY:HA3	1.82	0.43
16:B2:1319:U:H2'	16:B2:1320:G:C8	2.54	0.43
30:AC:213:LEU:HD21	30:AC:240:THR:HG21	2.00	0.43
31:AG:172:LYS:HA	31:AG:172:LYS:HD2	1.85	0.43
32:AH:83:LEU:HA	32:AH:86:LYS:HG2	2.01	0.43
33:AW:31:SER:H	33:AW:34:ILE:HB	1.84	0.43
37:Cz:80:VAL:HA	37:Cz:141:ASN:HB2	2.01	0.43
42:Ca:26:ARG:HD3	42:Ca:26:ARG:HA	1.71	0.43
43:CN:36:LEU:HA	43:CN:63:ARG:O	2.18	0.43
49:CT:12:ARG:HB2	83:A6:4209:G:H5''	2.01	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:CX:149:VAL:HA	52:CX:152:LYS:HG3	2.01	0.43
58:CB:89:ILE:HD11	58:CB:153:MET:HE3	2.00	0.43
77:A5:32:G:H21	77:A5:50:C:H5	1.66	0.43
77:A5:239:C:H2'	77:A5:240:G:C8	2.54	0.43
5:AS:79:ILE:HD12	5:AS:79:ILE:HA	1.90	0.42
7:AR:76:GLU:HA	7:AR:79:GLU:OE1	2.19	0.42
14:AF:20:PHE:HB3	14:AF:23:TRP:HB2	2.01	0.42
16:B2:24:C:H2'	16:B2:25:A:C8	2.54	0.42
16:B2:53:C:H5''	24:AY:112:ASN:HD21	1.83	0.42
16:B2:1075:C:H2'	16:B2:1076:G:H8	1.83	0.42
19:AN:76:LYS:HB3	19:AN:76:LYS:HE3	1.72	0.42
22:AA:24:HIS:HB3	22:AA:51:LEU:HD21	2.00	0.42
25:Aa:28:ARG:HG3	25:Aa:30:VAL:HG23	2.01	0.42
28:AJ:55:LYS:HD3	28:AJ:55:LYS:HA	1.79	0.42
35:CR:58:HIS:HE1	83:A6:4645:C:OP1	2.02	0.42
38:CO:153:THR:HA	38:CO:156:LEU:HG	2.00	0.42
41:CM:55:MET:HB2	41:CM:56:GLN:H	1.64	0.42
41:CM:117:LYS:HD3	83:A6:4927:G:H8	1.84	0.42
43:CN:64:ILE:HG21	43:CN:102:ALA:HA	2.01	0.42
45:CD:22:ARG:HH22	78:A7:7:G:H3'	1.83	0.42
47:CA:247:ARG:H	47:CA:247:ARG:HD2	1.84	0.42
64:Ci:4:ARG:HD3	64:Ci:7:MET:HE3	2.01	0.42
64:Ci:80:HIS:CE1	64:Ci:81:ILE:HG23	2.54	0.42
83:A6:2572:C:H2'	83:A6:2573:A:C8	2.54	0.42
83:A6:4635:A:H2	83:A6:4663:G:H21	1.65	0.42
1:Ag:292:SER:HB3	1:Ag:295:GLY:H	1.85	0.42
8:AP:33:LEU:HA	8:AP:36:LEU:HG	2.00	0.42
16:B2:388:U:H2'	16:B2:389:A:C8	2.54	0.42
31:AG:70:HIS:HB3	31:AG:101:ILE:HB	2.01	0.42
34:AI:66:SER:HA	34:AI:73:THR:HA	2.01	0.42
38:CO:81:TRP:O	38:CO:85:ARG:HB2	2.19	0.42
42:Ca:51:GLY:HA2	46:CQ:178:ARG:H	1.84	0.42
45:CD:226:TYR:HD1	45:CD:226:TYR:HA	1.75	0.42
56:Ch:16:GLU:HA	56:Ch:19:LYS:HE3	2.01	0.42
65:Cj:10:LYS:HE2	77:A5:1535:C:H5'	2.00	0.42
65:Cj:21:ARG:HH21	65:Cj:39:TYR:HD1	1.67	0.42
73:CJ:92:TYR:HB2	73:CJ:172:GLY:HA2	1.99	0.42
73:CJ:94:LEU:HD21	73:CJ:174:ILE:HG12	2.01	0.42
77:A5:1603:C:H2'	77:A5:1604:G:C8	2.53	0.42
77:A5:2020:U:H2'	77:A5:2021:G:C8	2.55	0.42
79:A8:43:A:H2'	79:A8:44:A:C8	2.53	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:A6:2798:A:H3'	83:A6:2799:G:H8	1.83	0.42
83:A6:3732:A:H2'	83:A6:3733:A:H8	1.83	0.42
8:AP:64:LYS:HE3	8:AP:92:SER:HA	2.01	0.42
9:AT:72:VAL:HB	9:AT:97:LYS:HB2	2.00	0.42
9:AT:123:LEU:HD11	9:AT:127:GLY:HA3	2.01	0.42
16:B2:526:A:N1	16:B2:559:G:C6	2.86	0.42
16:B2:1655:C:H2'	16:B2:1656:G:C8	2.53	0.42
17:AO:136:PRO:HB2	17:AO:138:ASP:HA	2.01	0.42
30:AC:196:ILE:HB	30:AC:223:TYR:HD2	1.83	0.42
31:AG:142:ARG:HD2	31:AG:147:LEU:HB2	2.01	0.42
43:CN:50:ARG:HA	43:CN:50:ARG:HD2	1.82	0.42
50:CP:117:ILE:HD12	50:CP:117:ILE:HA	1.84	0.42
58:CB:373:LYS:HA	58:CB:373:LYS:HD3	1.82	0.42
59:CF:152:GLU:HA	59:CF:155:TYR:HB2	2.02	0.42
75:CE:51:VAL:HA	75:CE:52:ARG:HA	1.77	0.42
77:A5:1353:G:H4'	77:A5:1355:G:H4'	2.00	0.42
77:A5:1732:C:H2'	77:A5:1733:G:C8	2.54	0.42
80:Cc:30:G:H2'	80:Cc:31:G:H8	1.84	0.42
1:Ag:27:PHE:HB2	1:Ag:30:MET:SD	2.60	0.42
4:AM:81:ASP:HB2	4:AM:84:LYS:HE3	2.02	0.42
5:AS:55:ARG:HH21	10:AZ:80:ARG:HG2	1.83	0.42
15:AQ:102:GLU:HG2	15:AQ:105:LYS:HD2	2.00	0.42
16:B2:1118:C:H6	16:B2:1118:C:H2'	1.71	0.42
16:B2:1523:C:H2'	16:B2:1524:G:H8	1.84	0.42
20:AL:56:ILE:HG23	20:AL:57:ASP:H	1.84	0.42
21:AB:56:LYS:H	21:AB:56:LYS:HE2	1.84	0.42
22:AA:71:PRO:HB2	22:AA:95:GLY:H	1.83	0.42
26:Ab:16:LYS:H	26:Ab:16:LYS:HE2	1.83	0.42
47:CA:101:VAL:HG22	47:CA:163:ARG:HB2	2.02	0.42
58:CB:290:GLY:HA3	58:CB:328:ASN:HA	2.00	0.42
59:CF:170:THR:HG22	68:CC:315:LYS:HB3	2.02	0.42
63:Cg:36:LYS:HE2	63:Cg:36:LYS:HB3	1.81	0.42
65:Cj:87:LYS:HD3	65:Cj:87:LYS:HA	1.69	0.42
66:Ck:50:LYS:HA	66:Ck:50:LYS:HD2	1.80	0.42
68:CC:55:SER:HB2	68:CC:57:LEU:HB3	2.00	0.42
68:CC:308:LYS:HD2	83:A6:2263:A:H61	1.84	0.42
75:CE:272:ARG:HE	83:A6:4883:C:H4'	1.85	0.42
77:A5:318:A:H2'	77:A5:319:A:H8	1.84	0.42
79:A8:17:A:H2'	79:A8:18:U:H6	1.85	0.42
83:A6:2275:G:H2'	83:A6:2276:A:C8	2.54	0.42
83:A6:2362:U:H2'	83:A6:2363:A:C8	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:A6:3867:A:H2'	83:A6:3868:G:C8	2.55	0.42
83:A6:4593:C:H2'	83:A6:4594:U:C6	2.54	0.42
1:Ag:215:GLN:HA	1:Ag:232:GLY:H	1.85	0.42
10:AZ:74:SER:HA	10:AZ:79:ILE:HG22	2.01	0.42
16:B2:692:G:H2'	16:B2:693:A:C8	2.51	0.42
16:B2:873:G:H2'	16:B2:874:G:C8	2.55	0.42
16:B2:1398:G:H22	16:B2:1448:A:H2	1.65	0.42
21:AB:20:LYS:HA	21:AB:20:LYS:HD2	1.81	0.42
29:AE:20:LEU:HD22	29:AE:21:ASP:H	1.85	0.42
35:CR:93:VAL:HA	35:CR:96:MET:HB2	2.00	0.42
48:CS:41:LYS:HE2	48:CS:61:ILE:HG13	2.01	0.42
63:Cg:82:MET:HA	63:Cg:82:MET:HE3	2.00	0.42
71:Cp:55:TRP:O	71:Cp:63:THR:HA	2.19	0.42
77:A5:722:G:H2'	77:A5:723:A:C8	2.55	0.42
77:A5:1327:C:H2'	77:A5:1328:G:C8	2.55	0.42
77:A5:1688:G:H2'	77:A5:1689:G:C8	2.55	0.42
83:A6:2607:C:H2'	83:A6:2608:G:H8	1.85	0.42
83:A6:4660:G:H2'	83:A6:4661:G:H8	1.84	0.42
1:Ag:11:LEU:HB2	1:Ag:307:VAL:O	2.20	0.42
3:AK:57:TYR:HD1	3:AK:74:GLU:HG2	1.85	0.42
5:AS:107:LEU:O	5:AS:111:LEU:HD22	2.19	0.42
16:B2:867:G:H2'	16:B2:868:G:C5	2.55	0.42
16:B2:1743:G:H21	16:B2:1791:A:H62	1.68	0.42
16:B2:1753:C:H2'	16:B2:1754:G:H8	1.84	0.42
21:AB:97:LEU:HB2	21:AB:232:HIS:CE1	2.55	0.42
22:AA:198:MET:HE1	22:AA:200:ASP:HB2	2.00	0.42
28:AJ:91:LYS:HD2	28:AJ:97:ILE:HG22	2.02	0.42
28:AJ:136:ARG:HE	28:AJ:160:SER:HA	1.85	0.42
46:CQ:154:LYS:HB3	46:CQ:155:ALA:C	2.45	0.42
56:Ch:106:LYS:HE2	56:Ch:106:LYS:HB3	1.89	0.42
67:Cl:41:ARG:HA	67:Cl:41:ARG:HD2	1.74	0.42
68:CC:33:ARG:HG3	68:CC:36:ILE:HD11	2.01	0.42
68:CC:101:MET:HG3	68:CC:104:PRO:HA	2.01	0.42
68:CC:142:HIS:CE1	68:CC:249:PHE:H	2.37	0.42
68:CC:205:ARG:HD2	83:A6:2297:G:H5'	2.02	0.42
73:CJ:169:LYS:HE2	73:CJ:169:LYS:HB3	1.84	0.42
77:A5:189:G:H2'	77:A5:190:G:H8	1.85	0.42
77:A5:436:C:H2'	77:A5:437:G:C8	2.54	0.42
77:A5:1830:G:H2'	77:A5:1831:G:H8	1.85	0.42
78:A7:15:C:H2'	78:A7:16:A:H8	1.84	0.42
83:A6:4861:G:H2'	83:A6:4862:G:H8	1.84	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:Ag:262:GLU:HA	1:Ag:263:GLY:HA2	1.76	0.42
9:AT:71:GLY:HA3	16:B2:1562:C:H5''	2.01	0.42
9:AT:116:ASP:HA	9:AT:122:LYS:HE2	2.01	0.42
16:B2:324:C:H5''	16:B2:325:C:H5'	2.01	0.42
16:B2:656:G:O6	16:B2:1156:U:O4	2.38	0.42
16:B2:980:A:H2'	16:B2:981:A:C8	2.55	0.42
22:AA:66:VAL:HG12	22:AA:182:VAL:HG13	2.00	0.42
30:AC:129:ALA:HB1	30:AC:216:MET:HE2	2.01	0.42
31:AG:131:ARG:HD2	36:CW:80:ARG:HH21	1.84	0.42
31:AG:135:PRO:HD3	36:CW:82:ILE:HD12	2.01	0.42
31:AG:142:ARG:HA	31:AG:147:LEU:HD12	2.00	0.42
37:Cz:174:MET:HA	37:Cz:214:GLN:H	1.85	0.42
40:CV:85:ARG:HB2	40:CV:97:TYR:HB2	2.02	0.42
43:CN:24:ARG:HH22	83:A6:3937:C:H5''	1.85	0.42
53:CY:125:SER:HA	53:CY:128:VAL:HG12	2.02	0.42
54:CZ:101:PHE:HD1	54:CZ:102:ARG:H	1.66	0.42
58:CB:77:THR:HB	58:CB:333:LEU:HB3	2.02	0.42
58:CB:95:THR:HG23	58:CB:97:ARG:H	1.84	0.42
70:Cn:7:LYS:HA	70:Cn:10:MET:HB3	2.01	0.42
75:CE:87:LYS:HA	75:CE:87:LYS:HD2	1.90	0.42
75:CE:108:LYS:HD2	75:CE:108:LYS:HA	1.90	0.42
77:A5:91:G:H21	83:A6:4379:A:H62	1.68	0.42
77:A5:955:G:H2'	77:A5:956:A:C8	2.54	0.42
77:A5:1591:U:H5'	77:A5:1592:G:H5'	2.01	0.42
77:A5:1636:U:H5''	77:A5:1637:A:H5'	2.01	0.42
77:A5:1812:C:H2'	77:A5:1813:U:C6	2.55	0.42
78:A7:30:C:H2'	78:A7:31:G:C8	2.55	0.42
83:A6:2528:G:H4'	83:A6:2783:A:H4'	2.02	0.42
83:A6:2663:G:H2'	83:A6:2664:G:H8	1.85	0.42
83:A6:2897:G:H2'	83:A6:2898:G:C8	2.55	0.42
16:B2:548:C:H2'	16:B2:549:C:C6	2.55	0.42
16:B2:1536:G:H2'	16:B2:1537:A:H8	1.85	0.42
16:B2:1617:G:H22	16:B2:1620:A:H2'	1.84	0.42
30:AC:80:GLU:HB3	30:AC:265:PRO:HG3	2.00	0.42
31:AG:119:LYS:HZ1	31:AG:121:ILE:HG13	1.85	0.42
35:CR:151:ARG:HG2	35:CR:155:LEU:HD23	2.01	0.42
42:Ca:53:PHE:HB2	46:CQ:178:ARG:HD3	2.02	0.42
45:CD:179:ARG:HD3	45:CD:179:ARG:HA	1.82	0.42
45:CD:270:LYS:HD2	45:CD:270:LYS:HA	1.92	0.42
49:CT:74:ILE:HD12	49:CT:89:ILE:HB	2.01	0.42
50:CP:120:ASN:ND2	79:A8:13:G:H1'	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
58:CB:303:ALA:HB2	58:CB:314:ILE:HD13	2.02	0.42
66:Ck:67:LYS:HE3	66:Ck:67:LYS:HB3	1.76	0.42
68:CC:121:ARG:HD2	68:CC:277:TYR:CE2	2.54	0.42
68:CC:157:LYS:HD3	68:CC:157:LYS:HA	1.84	0.42
71:Cp:62:LYS:HD3	71:Cp:62:LYS:HA	1.74	0.42
74:CH:8:GLN:HG3	74:CH:71:ARG:HB3	2.02	0.42
74:CH:92:MET:CB	74:CH:144:LEU:O	2.67	0.42
77:A5:1557:C:H2'	77:A5:1558:A:C8	2.54	0.42
83:A6:2751:G:H2'	83:A6:2752:G:H8	1.85	0.42
83:A6:2763:U:H2'	83:A6:2764:A:C8	2.54	0.42
83:A6:4594:U:H2'	83:A6:4595:G:C8	2.55	0.42
83:A6:4756:C:H42	83:A6:4915:G:H4'	1.84	0.42
4:AM:83:LYS:HA	4:AM:83:LYS:HD3	1.81	0.42
8:AP:15:PHE:HD2	8:AP:22:LEU:HD21	1.85	0.42
16:B2:1172:U:H2'	16:B2:1173:A:C8	2.55	0.42
16:B2:1210:G:H2'	16:B2:1211:G:H8	1.84	0.42
26:Ab:81:ARG:NH1	26:Ab:81:ARG:HA	2.35	0.42
35:CR:95:TRP:O	35:CR:99:MET:HB3	2.20	0.42
38:CO:79:ILE:HA	38:CO:82:ARG:HB3	2.02	0.42
38:CO:172:LYS:O	38:CO:176:ARG:HG2	2.19	0.42
39:CL:49:ARG:HH22	56:Ch:120:ALA:HA	1.84	0.42
40:CV:26:ILE:HD12	40:CV:101:ASN:HB3	2.01	0.42
45:CD:176:SER:HB2	83:A6:4323:A:H4'	2.02	0.42
47:CA:246:LEU:HD23	47:CA:246:LEU:HA	1.95	0.42
53:CY:33:PRO:HD3	77:A5:239:C:H5'	2.01	0.42
59:CF:44:LYS:HA	59:CF:44:LYS:HD2	1.87	0.42
61:Ce:111:ILE:HD13	61:Ce:111:ILE:HA	1.89	0.42
62:Cf:48:ALA:HB1	62:Cf:69:VAL:HG21	2.02	0.42
71:Cp:87:LYS:HA	71:Cp:87:LYS:HD2	1.79	0.42
76:CG:184:ILE:HD12	76:CG:185:LYS:N	2.35	0.42
77:A5:161:G:H2'	77:A5:162:A:C8	2.55	0.42
77:A5:460:C:H2'	77:A5:461:G:H8	1.84	0.42
83:A6:2414:G:H2'	83:A6:2415:U:H6	1.84	0.42
83:A6:3589:G:H2'	83:A6:3590:G:C8	2.55	0.42
2:AU:54:VAL:HB	2:AU:88:LEU:HB3	2.02	0.42
12:AD:37:VAL:HG12	12:AD:50:ILE:HG22	2.01	0.42
12:AD:201:LYS:HG3	12:AD:203:PRO:HD2	2.02	0.42
16:B2:359:U:H3	16:B2:403:G:H1	1.66	0.42
24:AY:12:PHE:HB2	24:AY:23:MET:HE1	2.02	0.42
27:Ae:28:LYS:HA	27:Ae:28:LYS:HD2	1.81	0.42
30:AC:135:GLY:HA2	30:AC:165:VAL:HG22	2.01	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
32:AH:142:LYS:HB2	32:AH:154:ILE:HD11	2.02	0.42
35:CR:87:ALA:HB2	77:A5:1549:G:H4'	2.02	0.42
35:CR:101:ILE:HD12	35:CR:101:ILE:HA	1.86	0.42
35:CR:134:ASN:ND2	83:A6:2896:G:H5''	2.35	0.42
36:CW:66:GLU:HA	36:CW:69:LYS:HG2	2.01	0.42
37:Cz:70:ASP:HB2	37:Cz:87:ILE:HB	2.02	0.42
53:CY:52:ASP:HA	53:CY:69:LYS:HD2	2.01	0.42
53:CY:80:ILE:HD11	53:CY:104:VAL:HG21	2.02	0.42
58:CB:89:ILE:HG21	58:CB:197:ALA:HB1	2.02	0.42
58:CB:221:GLY:HA3	58:CB:345:LEU:HD12	2.01	0.42
59:CF:220:MET:HE2	59:CF:221:LYS:N	2.34	0.42
63:Cg:62:LYS:HA	63:Cg:65:MET:HE1	2.01	0.42
66:Ck:56:LEU:HA	66:Ck:59:SER:HB2	2.01	0.42
67:Cl:45:ARG:NH2	83:A6:2796:G:H5'	2.35	0.42
68:CC:194:GLY:HA2	68:CC:197:ARG:HG3	2.01	0.42
68:CC:265:GLY:H	68:CC:279:LEU:HD21	1.85	0.42
72:Co:51:GLN:HB3	83:A6:3925:U:H4'	2.02	0.42
73:CJ:68:ILE:HD12	83:A6:4258:C:H5'	2.02	0.42
75:CE:261:ILE:HA	75:CE:267:LEU:HD12	2.00	0.42
77:A5:1199:G:H2'	77:A5:1200:G:H8	1.85	0.42
77:A5:1468:C:H2'	77:A5:1469:C:H6	1.85	0.42
77:A5:1733:G:N3	83:A6:4214:A:H2'	2.34	0.42
81:Bb:43:G:H2'	81:Bb:44:A:C8	2.55	0.42
83:A6:4742:G:H2'	83:A6:4743:G:H8	1.85	0.42
2:AU:52:GLY:HA3	2:AU:53:PRO:HD3	1.89	0.41
10:AZ:83:LEU:HA	10:AZ:86:ALA:HB3	2.01	0.41
14:AF:188:TYR:HA	14:AF:191:LYS:HG2	2.02	0.41
16:B2:102:A:H5''	34:AI:19:LYS:HZ2	1.84	0.41
16:B2:991:G:C5	16:B2:1134:G:H4'	2.55	0.41
16:B2:1009:A:H2'	16:B2:1010:G:H8	1.85	0.41
16:B2:1051:G:H2'	16:B2:1052:A:C8	2.54	0.41
16:B2:1210:G:H2'	16:B2:1211:G:C8	2.55	0.41
16:B2:1330:G:H4'	16:B2:1331:C:H3'	2.02	0.41
17:AO:147:ARG:HH11	17:AO:150:ARG:HH12	1.68	0.41
24:AY:44:LEU:HD23	24:AY:75:ILE:HD11	2.02	0.41
26:Ab:14:GLU:HA	26:Ab:17:ARG:HB3	2.02	0.41
29:AE:86:PHE:HA	29:AE:109:PHE:HE1	1.84	0.41
36:CW:20:ARG:HD3	36:CW:20:ARG:HA	1.92	0.41
37:Cz:177:ASP:H	37:Cz:214:GLN:C	2.28	0.41
37:Cz:179:LEU:H	37:Cz:216:LEU:N	2.18	0.41
38:CO:60:LYS:HB3	77:A5:2045:G:H21	1.85	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
38:CO:195:VAL:HG23	41:CM:119:ARG:HH12	1.85	0.41
42:Ca:36:GLY:HA3	42:Ca:40:HIS:CE1	2.55	0.41
44:CI:15:LYS:HB2	77:A5:1787:A:C6	2.54	0.41
45:CD:49:TYR:HB3	45:CD:64:ILE:HD11	2.02	0.41
46:CQ:144:LYS:HA	46:CQ:144:LYS:HD3	1.93	0.41
47:CA:29:LEU:H	47:CA:123:ARG:HB3	1.85	0.41
50:CP:148:MET:HE3	50:CP:148:MET:HB3	1.76	0.41
55:Cr:106:LEU:HD12	55:Cr:106:LEU:HA	1.96	0.41
77:A5:1554:A:H3'	77:A5:1555:G:H8	1.85	0.41
83:A6:2607:C:H2'	83:A6:2608:G:C8	2.55	0.41
83:A6:2804:C:H2'	83:A6:2805:C:C6	2.55	0.41
83:A6:4235:G:H2'	83:A6:4236:G:C8	2.55	0.41
1:Ag:45:LEU:HD23	1:Ag:53:GLY:HA3	2.03	0.41
1:Ag:77:PHE:HB3	1:Ag:89:LEU:HD11	2.01	0.41
16:B2:750:C:H2'	16:B2:751:G:C8	2.55	0.41
16:B2:1103:C:H2'	16:B2:1104:G:H8	1.85	0.41
16:B2:1215:C:H6	16:B2:1215:C:H2'	1.71	0.41
16:B2:1841:C:H5''	70:Cn:2:ARG:HB2	2.02	0.41
23:AV:16:LYS:NZ	30:AC:259:THR:H	2.18	0.41
27:Ae:31:ARG:HB3	28:AJ:38:ARG:HG3	2.03	0.41
33:AW:46:TYR:HD2	33:AW:69:LEU:HD23	1.85	0.41
35:CR:58:HIS:CE1	83:A6:4645:C:H5''	2.55	0.41
40:CV:60:MET:HB2	40:CV:129:TRP:CZ2	2.54	0.41
50:CP:69:ARG:HH21	83:A6:3893:C:H1'	1.85	0.41
53:CY:4:ASN:HA	53:CY:5:PRO:HD3	1.90	0.41
59:CF:20:LYS:HZ1	83:A6:2260:C:H5''	1.86	0.41
59:CF:212:LYS:HE3	59:CF:212:LYS:HB3	1.78	0.41
63:Cg:93:ARG:HA	63:Cg:96:LEU:HD23	2.01	0.41
68:CC:267:TRP:HE1	68:CC:281:MET:HA	1.85	0.41
69:Cm:102:ARG:HE	83:A6:4686:G:H5''	1.84	0.41
76:CG:192:ARG:HD3	76:CG:192:ARG:HA	1.78	0.41
77:A5:228:C:H2'	77:A5:229:G:H8	1.82	0.41
77:A5:1411:C:H2'	77:A5:1412:G:C8	2.55	0.41
77:A5:1519:C:H2'	77:A5:1520:C:H6	1.85	0.41
77:A5:1687:U:H2'	77:A5:1688:G:C8	2.55	0.41
77:A5:1742:A:H2'	77:A5:1743:A:C8	2.55	0.41
4:AM:18:LEU:HA	4:AM:21:VAL:HG22	2.00	0.41
5:AS:107:LEU:HA	5:AS:110:ASP:HB3	2.02	0.41
16:B2:388:U:H2'	16:B2:389:A:H8	1.85	0.41
19:AN:22:VAL:HG22	19:AN:23:PRO:HA	2.03	0.41
22:AA:80:ARG:CZ	22:AA:126:ASP:HB3	2.50	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
36:CW:94:ARG:HA	36:CW:94:ARG:HD3	1.76	0.41
38:CO:117:ARG:HH11	38:CO:160:ARG:HH21	1.68	0.41
42:Ca:72:THR:HG21	42:Ca:112:LEU:HD22	2.03	0.41
43:CN:26:ARG:HG3	43:CN:30:TYR:CE2	2.55	0.41
44:CI:141:LYS:HE2	44:CI:141:LYS:HB2	1.86	0.41
46:CQ:26:ARG:H	46:CQ:26:ARG:HG2	1.66	0.41
46:CQ:34:PHE:O	46:CQ:38:ARG:HB2	2.21	0.41
46:CQ:151:HIS:NE2	46:CQ:164:LYS:HG2	2.36	0.41
48:CS:62:VAL:HA	59:CF:83:VAL:HB	2.02	0.41
54:CZ:16:GLY:H	63:Cg:76:ARG:HH12	1.68	0.41
59:CF:227:PHE:HD1	59:CF:232:ASP:H	1.68	0.41
72:Co:98:LYS:HE2	83:A6:4233:A:H4'	2.02	0.41
75:CE:239:LYS:HE2	75:CE:239:LYS:HB2	1.90	0.41
76:CG:154:LEU:HD23	76:CG:180:PRO:HB2	2.02	0.41
76:CG:196:ARG:HH22	77:A5:149:A:H3'	1.85	0.41
77:A5:1344:C:H2'	77:A5:1345:A:C8	2.55	0.41
77:A5:1968:G:H2'	77:A5:1969:G:C8	2.55	0.41
78:A7:105:C:H2'	78:A7:106:G:C8	2.54	0.41
5:AS:25:LYS:HA	5:AS:55:ARG:HA	2.01	0.41
10:AZ:48:VAL:HA	10:AZ:80:ARG:HB2	2.02	0.41
16:B2:503:C:H3'	16:B2:504:G:H8	1.85	0.41
16:B2:1036:A:H4'	16:B2:1855:G:H21	1.85	0.41
17:AO:96:LYS:HE3	17:AO:96:LYS:HB3	1.90	0.41
22:AA:191:ARG:H	23:AV:43:THR:HG21	1.86	0.41
28:AJ:144:ILE:HD12	28:AJ:145:PRO:HD2	2.02	0.41
31:AG:33:ALA:HA	31:AG:51:ARG:HG3	2.01	0.41
32:AH:107:LYS:H	32:AH:107:LYS:HG2	1.66	0.41
33:AW:14:ILE:HG22	33:AW:25:VAL:HG11	2.03	0.41
34:AI:43:ILE:HD13	34:AI:57:ALA:HA	2.01	0.41
39:CL:3:PRO:HD2	42:Ca:41:HIS:CE1	2.55	0.41
39:CL:188:ASN:O	39:CL:192:PHE:HB3	2.19	0.41
42:Ca:115:GLY:HA2	42:Ca:136:LYS:NZ	2.36	0.41
43:CN:36:LEU:HD11	43:CN:109:HIS:CG	2.55	0.41
43:CN:115:VAL:HG11	43:CN:160:GLU:HB3	2.02	0.41
45:CD:64:ILE:HG22	45:CD:105:LEU:HD21	2.02	0.41
46:CQ:167:VAL:HG12	46:CQ:169:SER:H	1.85	0.41
47:CA:78:ALA:HB1	47:CA:82:ILE:HD11	2.02	0.41
47:CA:92:LYS:HE2	47:CA:93:LYS:HE3	2.02	0.41
49:CT:80:VAL:HG13	49:CT:83:LYS:HE3	2.01	0.41
68:CC:279:LEU:HA	68:CC:280:PRO:HD3	1.93	0.41
68:CC:306:ARG:H	68:CC:306:ARG:HD2	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:A5:323:C:H2'	77:A5:324:A:C8	2.55	0.41
77:A5:1738:A:H2'	77:A5:1739:G:H8	1.84	0.41
79:A8:8:U:H2'	79:A8:9:A:C8	2.56	0.41
83:A6:2295:C:H2'	83:A6:2296:G:H8	1.85	0.41
83:A6:2540:C:H2'	83:A6:2541:G:C8	2.55	0.41
83:A6:3658:C:H2'	83:A6:3659:G:C8	2.54	0.41
83:A6:3717:A:H2'	83:A6:3718:A:H8	1.85	0.41
83:A6:4153:C:H2'	83:A6:4154:G:H8	1.84	0.41
83:A6:4679:G:H2'	83:A6:4680:G:H8	1.85	0.41
83:A6:5005:G:H1'	83:A6:5042:A:H61	1.85	0.41
1:Ag:112:ALA:HB3	1:Ag:121:VAL:HG23	2.02	0.41
5:AS:39:ARG:HH12	16:B2:1630:A:P	2.43	0.41
7:AR:32:LYS:HE3	7:AR:32:LYS:HB3	1.75	0.41
9:AT:132:ASP:HB3	16:B2:1419:C:H5''	2.03	0.41
10:AZ:94:LYS:HA	10:AZ:94:LYS:HD2	1.92	0.41
14:AF:19:LEU:HD22	14:AF:24:SER:HA	2.01	0.41
14:AF:30:ILE:HD11	14:AF:41:VAL:HB	2.02	0.41
14:AF:36:GLN:H	14:AF:36:GLN:HG2	1.62	0.41
16:B2:64:A:H2	16:B2:83:A:H62	1.68	0.41
16:B2:75:G:C2	31:AG:171:THR:HB	2.56	0.41
16:B2:1299:A:H2'	16:B2:1301:A:H5''	2.03	0.41
16:B2:1609:C:H2'	16:B2:1610:G:C8	2.55	0.41
20:AL:18:GLN:HG2	20:AL:34:PRO:HD2	2.01	0.41
21:AB:161:VAL:O	21:AB:165:ARG:HB2	2.19	0.41
42:Ca:148:ALA:H	64:Ca:6:PRO:HB2	1.86	0.41
55:Cr:122:LYS:HG3	55:Cr:125:MET:HE2	2.02	0.41
56:Ch:104:THR:O	56:Ch:108:GLN:HB2	2.21	0.41
58:CB:162:VAL:O	58:CB:182:GLU:HA	2.21	0.41
61:Ce:85:LEU:HD11	61:Ce:115:ALA:HB2	2.02	0.41
61:Ce:93:LYS:HE3	75:CE:118:THR:HB	2.02	0.41
62:Cf:11:PHE:CE1	62:Cf:26:ALA:HB1	2.56	0.41
68:CC:175:LYS:HA	68:CC:175:LYS:HD2	1.92	0.41
75:CE:224:LYS:HA	75:CE:224:LYS:HD3	1.77	0.41
76:CG:73:ARG:HH22	76:CG:243:GLY:HA2	1.84	0.41
77:A5:757:G:H2'	77:A5:758:G:H8	1.85	0.41
77:A5:2075:G:H2'	77:A5:2076:G:C8	2.55	0.41
83:A6:2608:G:H2'	83:A6:2609:G:H8	1.85	0.41
1:Ag:5:MET:HG3	1:Ag:310:TRP:CD1	2.56	0.41
1:Ag:183:LYS:HA	1:Ag:183:LYS:HD3	1.76	0.41
2:AU:59:LYS:HB2	2:AU:59:LYS:HE2	1.89	0.41
4:AM:23:LYS:HA	4:AM:23:LYS:HD3	1.76	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:AS:10:GLN:NE2	5:AS:58:GLU:HA	2.35	0.41
14:AF:157:GLY:HA2	14:AF:188:TYR:HD2	1.86	0.41
16:B2:935:G:H2'	16:B2:936:G:C8	2.56	0.41
30:AC:99:GLY:H	30:AC:102:LEU:HD13	1.85	0.41
30:AC:124:PHE:HD2	30:AC:147:VAL:HB	1.85	0.41
31:AG:98:ARG:H	31:AG:98:ARG:HG2	1.59	0.41
35:CR:152:LYS:O	35:CR:156:ALA:HB2	2.21	0.41
36:CW:22:ALA:HA	36:CW:28:VAL:HG23	2.01	0.41
38:CO:16:LEU:O	38:CO:20:ALA:HB2	2.21	0.41
39:CL:101:ARG:HA	64:CI:25:ARG:HH12	1.85	0.41
40:CV:40:ILE:HA	40:CV:40:ILE:HD12	1.67	0.41
42:Ca:112:LEU:HD23	77:A5:1387:A:C6	2.56	0.41
46:CQ:43:PHE:HZ	46:CQ:81:VAL:HG21	1.85	0.41
47:CA:5:ILE:HB	47:CA:8:GLN:H	1.85	0.41
61:Ce:37:LYS:HE3	61:Ce:37:LYS:HB2	1.84	0.41
67:Cl:16:LYS:HG3	67:Cl:49:LEU:HD11	2.01	0.41
77:A5:279:A:H61	77:A5:306:A:H3'	1.85	0.41
77:A5:1340:C:H2'	77:A5:1341:U:C6	2.56	0.41
77:A5:1876:U:H2'	77:A5:1877:G:C8	2.56	0.41
83:A6:2905:C:H2'	83:A6:2906:G:H8	1.86	0.41
83:A6:4997:G:H2'	83:A6:4998:G:C8	2.55	0.41
1:Ag:16:GLY:HA3	1:Ag:36:ARG:HB2	2.02	0.41
1:Ag:123:GLY:HA2	1:Ag:129:ILE:HG13	2.02	0.41
2:AU:22:ILE:HD13	2:AU:114:VAL:HG22	2.03	0.41
7:AR:20:TYR:HD1	7:AR:23:ARG:HG3	1.84	0.41
11:Ac:14:VAL:HG13	11:Ac:30:VAL:HG13	2.03	0.41
16:B2:193:C:N4	34:AI:143:LYS:HD3	2.33	0.41
16:B2:350:C:H2'	16:B2:351:G:H8	1.86	0.41
20:AL:132:ARG:HD2	20:AL:132:ARG:HA	1.87	0.41
23:AV:59:ILE:HG22	23:AV:64:GLU:HB3	2.02	0.41
34:AI:17:LYS:HA	34:AI:17:LYS:HD3	1.75	0.41
38:CO:16:LEU:HD11	38:CO:83:THR:HG21	2.02	0.41
39:CL:121:ARG:HH21	39:CL:124:LEU:HD22	1.86	0.41
46:CQ:120:ILE:HD12	46:CQ:121:LEU:H	1.86	0.41
48:CS:118:ARG:HB2	77:A5:2034:G:H4'	2.02	0.41
54:CZ:129:TRP:HA	54:CZ:132:GLN:HB2	2.02	0.41
73:CJ:19:LYS:HE3	73:CJ:19:LYS:HB3	1.84	0.41
73:CJ:88:LYS:HA	73:CJ:88:LYS:HD2	1.86	0.41
1:Ag:119:GLN:HE22	1:Ag:121:VAL:HG22	1.85	0.41
3:AK:42:ASN:HA	3:AK:46:MET:HE1	2.03	0.41
12:AD:173:ARG:HB2	12:AD:184:ILE:HD11	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:AF:51:HIS:HD2	14:AF:90:VAL:HG11	1.85	0.41
16:B2:54:A:H3'	16:B2:451:G:H22	1.85	0.41
16:B2:1133:A:H2'	16:B2:1134:G:C8	2.54	0.41
24:AY:7:ILE:HD11	24:AY:40:ILE:HG22	2.03	0.41
30:AC:246:LYS:HB2	30:AC:246:LYS:HE3	1.84	0.41
32:AH:62:ILE:HD12	32:AH:94:PHE:HA	2.02	0.41
42:Ca:94:LYS:HA	42:Ca:94:LYS:HE3	2.03	0.41
48:CS:132:ILE:HG23	48:CS:136:LYS:HB3	2.02	0.41
49:CT:71:ALA:HA	49:CT:92:ARG:HA	2.03	0.41
59:CF:132:MET:HE3	77:A5:1726:U:H1'	2.03	0.41
60:Cd:23:ARG:HG2	60:Cd:121:ASN:HA	2.02	0.41
74:CH:93:ARG:HH11	74:CH:143:GLU:HG3	1.86	0.41
76:CG:176:LYS:HG3	76:CG:177:MET:HE3	2.02	0.41
77:A5:1204:C:H2'	77:A5:1205:G:H8	1.85	0.41
79:A8:153:C:H2'	79:A8:154:G:C8	2.56	0.41
83:A6:4228:G:H1'	83:A6:4337:C:H42	1.85	0.41
83:A6:4239:A:H2'	83:A6:4240:G:C8	2.56	0.41
1:Ag:264:LYS:HB2	1:Ag:264:LYS:HE2	1.90	0.41
2:AU:104:ILE:HD12	2:AU:104:ILE:HA	1.95	0.41
5:AS:39:ARG:HA	5:AS:42:HIS:HB3	2.03	0.41
5:AS:74:PRO:HG2	5:AS:75:ARG:HH21	1.86	0.41
8:AP:79:HIS:HB2	16:B2:1298:G:H1'	2.02	0.41
15:AQ:131:LYS:HD3	15:AQ:131:LYS:HA	1.89	0.41
16:B2:145:G:H2'	16:B2:146:G:C8	2.56	0.41
16:B2:527:C:H4'	28:AJ:125:HIS:CE1	2.56	0.41
16:B2:633:C:H2'	16:B2:634:A:C8	2.56	0.41
16:B2:1163:C:H2'	16:B2:1164:G:C8	2.55	0.41
17:AO:27:VAL:HG22	21:AB:46:LYS:HE2	2.03	0.41
21:AB:103:MET:HG3	21:AB:215:VAL:HG22	2.02	0.41
21:AB:133:TYR:HE1	21:AB:220:LYS:HB2	1.86	0.41
24:AY:3:ASP:HB2	24:AY:30:PRO:HG2	2.03	0.41
30:AC:116:THR:HG23	30:AC:118:ALA:H	1.86	0.41
31:AG:160:LYS:HE3	31:AG:160:LYS:HB3	1.91	0.41
32:AH:9:VAL:HG21	32:AH:27:LEU:HD11	2.02	0.41
34:AI:120:PRO:HD3	34:AI:137:LEU:HD11	2.02	0.41
38:CO:196:LEU:HD12	38:CO:199:HIS:CE1	2.56	0.41
39:CL:46:ILE:H	39:CL:46:ILE:HG13	1.71	0.41
40:CV:128:LEU:HD22	40:CV:129:TRP:CE2	2.56	0.41
43:CN:114:ARG:HD3	43:CN:114:ARG:HA	1.90	0.41
49:CT:60:LYS:H	49:CT:60:LYS:HG2	1.65	0.41
61:Ce:101:HIS:HA	61:Ce:108:ARG:HH22	1.86	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:Cf:49:TYR:O	62:Cf:69:VAL:HA	2.21	0.41
62:Cf:78:HIS:HB2	62:Cf:85:ARG:HG3	2.03	0.41
62:Cf:89:ARG:HH22	83:A6:4943:A:H62	1.69	0.41
68:CC:260:LEU:HD23	68:CC:260:LEU:HA	1.94	0.41
68:CC:299:GLN:HA	68:CC:302:LEU:HB2	2.01	0.41
75:CE:175:VAL:HB	75:CE:187:ARG:O	2.21	0.41
77:A5:113:A:H61	77:A5:158:A:H62	1.68	0.41
77:A5:288:G:H2'	77:A5:289:C:C6	2.56	0.41
77:A5:725:G:H2'	77:A5:726:G:C8	2.55	0.41
77:A5:1870:C:H2'	77:A5:1871:A:C8	2.56	0.41
77:A5:1989:G:H2'	77:A5:1990:A:H8	1.86	0.41
78:A7:77:A:H62	78:A7:99:G:N2	2.16	0.41
81:Bb:37:YYG:H2'	81:Bb:38:A:O4'	2.21	0.41
83:A6:3893:C:H2'	83:A6:3894:A:C8	2.54	0.41
83:A6:4184:G:H3'	83:A6:4185:G:C8	2.49	0.41
16:B2:920:A:H2'	16:B2:922:A:H8	1.86	0.41
16:B2:948:C:H2'	16:B2:949:G:C8	2.56	0.41
16:B2:1438:A:H2'	16:B2:1439:A:C8	2.55	0.41
30:AC:107:LEU:HB3	30:AC:233:LEU:HD11	2.03	0.41
38:CO:7:LEU:N	38:CO:31:ARG:HH12	2.18	0.41
38:CO:108:ILE:HG21	38:CO:117:ARG:HD3	2.03	0.41
39:CL:177:LYS:HA	39:CL:177:LYS:HD3	1.81	0.41
40:CV:17:SER:H	40:CV:88:TYR:HB2	1.85	0.41
68:CC:49:ARG:HD3	77:A5:349:A:C5	2.56	0.41
70:Cn:18:ARG:HA	70:Cn:21:ARG:HB2	2.03	0.41
73:CJ:33:LEU:HB3	73:CJ:50:PHE:HZ	1.86	0.41
77:A5:670:G:H2'	77:A5:671:G:H8	1.85	0.41
77:A5:755:C:H2'	77:A5:756:G:C8	2.55	0.41
77:A5:2029:A:H2'	77:A5:2030:A:C8	2.55	0.41
3:AK:29:MET:HE2	3:AK:31:LYS:N	2.36	0.40
3:AK:71:LEU:HD11	3:AK:76:ILE:HG13	2.03	0.40
8:AP:58:LYS:HA	8:AP:58:LYS:HD3	1.80	0.40
11:Ac:48:GLY:HA2	14:AF:145:ARG:CZ	2.52	0.40
16:B2:1352:G:H2'	16:B2:1353:A:H8	1.86	0.40
16:B2:1491:G:H2'	16:B2:1492:U:C6	2.56	0.40
16:B2:1706:G:H2'	16:B2:1707:U:H6	1.86	0.40
28:AJ:29:LEU:HD12	28:AJ:30:LYS:HD3	2.02	0.40
29:AE:72:ILE:HB	29:AE:77:ARG:HD3	2.03	0.40
31:AG:230:LYS:HA	31:AG:230:LYS:HD3	1.78	0.40
36:CW:101:ARG:HD3	36:CW:105:ARG:HH22	1.84	0.40
42:Ca:29:PRO:HA	77:A5:1654:G:H5''	2.03	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
43:CN:21:PHE:HD2	76:CG:77:PRO:HD3	1.85	0.40
44:CI:52:MET:SD	44:CI:135:ILE:HB	2.60	0.40
48:CS:106:VAL:HA	48:CS:109:CYS:HB3	2.03	0.40
59:CF:36:LYS:HE3	59:CF:36:LYS:HB3	1.83	0.40
74:CH:76:HIS:HB3	74:CH:80:MET:HE2	2.02	0.40
77:A5:283:G:H2'	77:A5:284:G:C8	2.56	0.40
77:A5:284:G:H2'	77:A5:285:G:H8	1.86	0.40
77:A5:451:C:H5''	77:A5:453:G:H2'	2.03	0.40
77:A5:1620:U:H2'	77:A5:1621:A:C8	2.56	0.40
78:A7:7:G:H2'	78:A7:8:G:C8	2.56	0.40
79:A8:153:C:H2'	79:A8:154:G:H8	1.85	0.40
80:Cc:43:G:H2'	80:Cc:44:A:C8	2.56	0.40
83:A6:2258:C:H5''	83:A6:2259:G:H8	1.86	0.40
83:A6:4107:G:H2'	83:A6:4108:G:C8	2.56	0.40
83:A6:4547:C:H2'	83:A6:4549:G:C8	2.56	0.40
83:A6:4741:C:H2'	83:A6:4742:G:C8	2.56	0.40
1:Ag:147:HIS:HD2	1:Ag:151:VAL:HG22	1.86	0.40
1:Ag:168:CYS:HB3	1:Ag:174:VAL:HG22	2.03	0.40
5:AS:25:LYS:HZ2	5:AS:26:ILE:HG12	1.86	0.40
6:Ad:33:LYS:HE2	6:Ad:33:LYS:HB2	1.86	0.40
16:B2:155:G:H2'	16:B2:156:G:C8	2.56	0.40
16:B2:300:U:H2'	16:B2:301:A:C8	2.57	0.40
16:B2:1049:A:H1'	16:B2:1855:G:H1'	2.03	0.40
25:Aa:51:ARG:H	25:Aa:51:ARG:HG2	1.69	0.40
26:Ab:21:LYS:HD2	26:Ab:21:LYS:HA	1.84	0.40
31:AG:160:LYS:HA	31:AG:161:PRO:HD3	1.98	0.40
32:AH:110:THR:HB	32:AH:113:LYS:H	1.86	0.40
32:AH:138:GLU:HB3	32:AH:159:ASP:HB2	2.04	0.40
37:Cz:195:LYS:HD3	37:Cz:195:LYS:H	1.86	0.40
41:CM:52:PHE:HA	41:CM:55:MET:SD	2.61	0.40
43:CN:47:LYS:HE2	77:A5:279:A:H3'	2.03	0.40
48:CS:16:CYS:HA	48:CS:59:GLY:HA3	2.04	0.40
50:CP:27:LYS:HB2	83:A6:2361:G:N7	2.36	0.40
50:CP:59:PRO:HG3	50:CP:76:TRP:CD1	2.56	0.40
52:CX:37:LYS:HD2	52:CX:38:LYS:HG3	2.02	0.40
57:Cb:41:ARG:O	57:Cb:45:PHE:HB2	2.21	0.40
58:CB:50:LYS:HA	58:CB:79:VAL:HG22	2.02	0.40
58:CB:232:THR:HG21	58:CB:249:ARG:HB2	2.02	0.40
59:CF:119:ASN:HD22	59:CF:119:ASN:HA	1.69	0.40
66:Ck:52:LYS:HE3	66:Ck:52:LYS:HB3	1.92	0.40
68:CC:141:GLY:HA3	68:CC:204:ARG:HH12	1.85	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:A5:266:C:H2'	77:A5:267:G:C8	2.55	0.40
77:A5:363:A:H61	77:A5:376:A:H5''	1.85	0.40
77:A5:1468:C:H2'	77:A5:1469:C:C6	2.57	0.40
77:A5:1726:U:O2	77:A5:1836:G:N2	2.34	0.40
2:AU:61:LEU:HD11	12:AD:8:LYS:HB2	2.02	0.40
9:AT:115:LYS:HD2	9:AT:115:LYS:HA	1.83	0.40
12:AD:126:ILE:HD12	12:AD:188:ILE:HD13	2.02	0.40
15:AQ:143:LYS:HD3	16:B2:1249:C:H4'	2.01	0.40
16:B2:347:G:H2'	16:B2:348:A:C8	2.56	0.40
16:B2:351:G:H2'	16:B2:352:U:H6	1.87	0.40
16:B2:1016:U:H4'	19:AN:16:LEU:HD13	2.03	0.40
16:B2:1588:A:H2'	16:B2:1589:A:C8	2.56	0.40
22:AA:22:GLY:HA2	22:AA:24:HIS:CE1	2.56	0.40
22:AA:76:VAL:HA	22:AA:123:VAL:HG22	2.04	0.40
25:Aa:66:LYS:HB3	25:Aa:68:TYR:CE1	2.57	0.40
28:AJ:60:LEU:HD23	28:AJ:60:LEU:HA	1.93	0.40
32:AH:15:LYS:HB2	32:AH:15:LYS:HE2	1.87	0.40
41:CM:113:MET:HE3	83:A6:4882:U:H3	1.86	0.40
43:CN:21:PHE:HD1	43:CN:21:PHE:HA	1.76	0.40
43:CN:55:ALA:HB3	77:A5:152:U:H5'	2.03	0.40
45:CD:40:ASP:HB2	49:CT:69:GLN:HB2	2.02	0.40
45:CD:80:ALA:HB1	45:CD:92:LEU:HB3	2.03	0.40
50:CP:141:SER:HA	83:A6:3859:G:H5'	2.04	0.40
58:CB:161:ARG:HA	58:CB:183:ILE:O	2.21	0.40
58:CB:179:HIS:CG	58:CB:344:VAL:HG11	2.56	0.40
58:CB:299:ILE:HA	58:CB:302:ASN:HD21	1.87	0.40
62:Cf:46:ARG:HH22	77:A5:708:G:H5''	1.86	0.40
62:Cf:107:PRO:HG3	75:CE:192:LYS:HE2	2.02	0.40
64:Ci:84:LYS:H	64:Ci:84:LYS:HG2	1.64	0.40
70:Cn:2:ARG:HE	70:Cn:5:TRP:NE1	2.19	0.40
71:Cp:13:LYS:HB3	77:A5:1553:A:H1'	2.03	0.40
73:CJ:15:LEU:HD12	73:CJ:165:TRP:CG	2.56	0.40
76:CG:154:LEU:HD22	76:CG:155:VAL:H	1.86	0.40
76:CG:252:LYS:HE3	76:CG:252:LYS:HB3	1.83	0.40
77:A5:310:G:H2'	77:A5:311:G:H8	1.87	0.40
77:A5:1968:G:H2'	77:A5:1969:G:H8	1.86	0.40
78:A7:30:C:H2'	78:A7:31:G:H8	1.86	0.40
79:A8:142:U:H2'	79:A8:143:G:C8	2.57	0.40
83:A6:2846:G:H2'	83:A6:2847:G:C8	2.55	0.40
83:A6:2905:C:H2'	83:A6:2906:G:C8	2.57	0.40
83:A6:4867:G:H2'	83:A6:4868:G:C8	2.56	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
83:A6:4922:C:H2'	83:A6:4923:C:C6	2.56	0.40
1:Ag:172:LYS:HG2	1:Ag:191:HIS:HB3	2.02	0.40
13:Af:99:LYS:HA	13:Af:99:LYS:HD2	1.92	0.40
14:AF:110:GLN:HA	14:AF:113:VAL:HG12	2.03	0.40
15:AQ:32:ILE:HD12	15:AQ:68:ILE:HD12	2.03	0.40
16:B2:289:G:H22	16:B2:293:C:H5	1.69	0.40
16:B2:1166:G:H2'	16:B2:1167:G:C8	2.56	0.40
16:B2:1392:U:H2'	16:B2:1393:G:C8	2.56	0.40
17:AO:92:ALA:HA	17:AO:124:MET:HB2	2.03	0.40
17:AO:113:GLN:HA	17:AO:116:LEU:HG	2.04	0.40
18:AX:66:ILE:H	18:AX:66:ILE:HG13	1.73	0.40
28:AJ:37:LEU:HD21	28:AJ:42:GLU:HB3	2.03	0.40
28:AJ:94:LEU:HA	28:AJ:97:ILE:HG12	2.03	0.40
30:AC:187:ARG:HH11	30:AC:190:SER:HA	1.86	0.40
31:AG:15:LEU:HD23	31:AG:15:LEU:HA	1.90	0.40
34:AI:4:SER:HA	34:AI:29:LEU:HA	2.03	0.40
37:Cz:38:LEU:HD22	37:Cz:194:LEU:HD21	2.04	0.40
49:CT:132:PRO:HB2	59:CF:126:ASN:HD21	1.86	0.40
50:CP:33:ALA:HB1	50:CP:117:ILE:HG21	2.03	0.40
53:CY:58:VAL:HG13	53:CY:59:ARG:HG2	2.03	0.40
58:CB:154:LYS:NZ	58:CB:194:LEU:HB2	2.36	0.40
66:Ck:17:ARG:H	66:Ck:17:ARG:HG2	1.65	0.40
72:Co:65:LYS:HG3	72:Co:87:ARG:HG3	2.02	0.40
72:Co:75:PRO:HA	72:Co:78:ARG:HH22	1.86	0.40
77:A5:325:U:H2'	77:A5:326:C:C6	2.57	0.40
77:A5:1449:C:H2'	77:A5:1450:C:H6	1.87	0.40
77:A5:1839:U:H2'	77:A5:1840:G:C8	2.56	0.40
83:A6:3595:U:H5''	83:A6:3596:A:H5''	2.03	0.40
83:A6:4208:U:H2'	83:A6:4209:G:H8	1.86	0.40
83:A6:4679:G:H2'	83:A6:4680:G:C8	2.57	0.40
5:AS:23:ARG:HH12	10:AZ:46:ASN:HB2	1.87	0.40
13:Af:132:MET:HG3	13:Af:139:HIS:NE2	2.36	0.40
16:B2:342:C:H2'	16:B2:343:A:H8	1.86	0.40
16:B2:394:G:H4'	20:AL:81:LYS:HD3	2.04	0.40
16:B2:869:A:N3	16:B2:915:G:H1'	2.36	0.40
16:B2:1009:A:H2'	16:B2:1010:G:C8	2.56	0.40
16:B2:1419:C:H2'	16:B2:1420:G:C8	2.57	0.40
16:B2:1560:U:H2'	16:B2:1561:A:H8	1.87	0.40
16:B2:1844:U:H2'	16:B2:1845:A:C8	2.57	0.40
16:B2:1854:U:P	17:AO:147:ARG:HH12	2.45	0.40
22:AA:167:GLY:H	22:AA:171:VAL:HG23	1.87	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
24:AY:116:LYS:HA	24:AY:116:LYS:HD3	1.77	0.40
25:Aa:20:PRO:HA	25:Aa:31:PRO:HA	2.04	0.40
25:Aa:44:ILE:H	25:Aa:44:ILE:HG12	1.68	0.40
32:AH:144:ILE:HD12	32:AH:145:ARG:H	1.85	0.40
35:CR:130:ASN:HD22	35:CR:131:VAL:H	1.70	0.40
35:CR:180:LYS:HG2	35:CR:181:LYS:HZ2	1.86	0.40
39:CL:61:CYS:SG	39:CL:66:TYR:HB2	2.61	0.40
44:CI:61:SER:O	44:CI:65:LEU:HD22	2.22	0.40
55:Cr:126:VAL:HG12	55:Cr:130:ARG:HE	1.85	0.40
58:CB:36:ASP:HA	58:CB:37:PRO:HD3	1.91	0.40
58:CB:86:VAL:HG12	58:CB:201:LEU:HD13	2.02	0.40
60:Cd:39:LYS:HE3	60:Cd:39:LYS:HB3	1.82	0.40
60:Cd:68:LEU:O	60:Cd:72:VAL:HG12	2.21	0.40
74:CH:69:THR:HG22	83:A6:4700:A:H2	1.87	0.40
74:CH:151:ILE:HD12	74:CH:151:ILE:HA	1.97	0.40
75:CE:101:ASN:H	75:CE:102:GLY:HA2	1.86	0.40
77:A5:460:C:H2'	77:A5:461:G:C8	2.57	0.40
77:A5:1204:C:H2'	77:A5:1205:G:C8	2.56	0.40
83:A6:4877:G:H5''	83:A6:4878:C:H5	1.86	0.40

There are no symmetry-related clashes.

5.3 Torsion angles [i](#)

5.3.1 Protein backbone [i](#)

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

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

Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
1	Ag	311/313 (99%)	268 (86%)	41 (13%)	2 (1%)	22	53
2	AU	102/104 (98%)	90 (88%)	9 (9%)	3 (3%)	3	22
3	AK	96/98 (98%)	68 (71%)	24 (25%)	4 (4%)	2	15
4	AM	102/124 (82%)	83 (81%)	16 (16%)	3 (3%)	3	22
5	AS	135/137 (98%)	120 (89%)	14 (10%)	1 (1%)	19	50

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
6	Ad	51/53 (96%)	41 (80%)	10 (20%)	0	100	100
7	AR	124/126 (98%)	107 (86%)	15 (12%)	2 (2%)	8	32
8	AP	115/127 (91%)	90 (78%)	21 (18%)	4 (4%)	3	19
9	AT	139/141 (99%)	130 (94%)	8 (6%)	1 (1%)	19	50
10	AZ	72/75 (96%)	63 (88%)	9 (12%)	0	100	100
11	Ac	62/64 (97%)	54 (87%)	8 (13%)	0	100	100
12	AD	224/227 (99%)	194 (87%)	27 (12%)	3 (1%)	10	36
13	Af	69/71 (97%)	52 (75%)	14 (20%)	3 (4%)	2	14
14	AF	189/191 (99%)	165 (87%)	23 (12%)	1 (0%)	25	56
15	AQ	139/141 (99%)	122 (88%)	16 (12%)	1 (1%)	19	50
17	AO	128/136 (94%)	104 (81%)	23 (18%)	1 (1%)	16	46
18	AX	139/142 (98%)	132 (95%)	6 (4%)	1 (1%)	19	50
19	AN	147/150 (98%)	134 (91%)	12 (8%)	1 (1%)	19	50
20	AL	155/158 (98%)	133 (86%)	21 (14%)	1 (1%)	22	53
21	AB	213/215 (99%)	189 (89%)	21 (10%)	3 (1%)	9	34
22	AA	201/208 (97%)	160 (80%)	38 (19%)	3 (2%)	8	33
23	AV	80/82 (98%)	65 (81%)	14 (18%)	1 (1%)	10	36
24	AY	124/126 (98%)	105 (85%)	15 (12%)	4 (3%)	3	20
25	Aa	105/107 (98%)	88 (84%)	15 (14%)	2 (2%)	6	29
26	Ab	81/84 (96%)	70 (86%)	11 (14%)	0	100	100
27	Ae	50/59 (85%)	41 (82%)	8 (16%)	1 (2%)	6	28
28	AJ	173/182 (95%)	156 (90%)	16 (9%)	1 (1%)	22	53
29	AE	259/263 (98%)	228 (88%)	29 (11%)	2 (1%)	16	46
30	AC	221/226 (98%)	204 (92%)	17 (8%)	0	100	100
31	AG	235/237 (99%)	217 (92%)	18 (8%)	0	100	100
32	AH	187/190 (98%)	159 (85%)	24 (13%)	4 (2%)	5	27
33	AW	127/129 (98%)	110 (87%)	17 (13%)	0	100	100
34	AI	204/206 (99%)	172 (84%)	27 (13%)	5 (2%)	4	24
35	CR	186/189 (98%)	173 (93%)	13 (7%)	0	100	100
36	CW	122/124 (98%)	108 (88%)	13 (11%)	1 (1%)	16	46
37	Cz	123/217 (57%)	85 (69%)	32 (26%)	6 (5%)	2	12

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
38	CO	197/202 (98%)	174 (88%)	20 (10%)	3 (2%)	8	33
39	CL	206/210 (98%)	177 (86%)	27 (13%)	2 (1%)	13	42
40	CV	128/133 (96%)	122 (95%)	5 (4%)	1 (1%)	16	46
41	CM	137/139 (99%)	123 (90%)	14 (10%)	0	100	100
42	Ca	145/147 (99%)	120 (83%)	22 (15%)	3 (2%)	5	27
43	CN	201/203 (99%)	180 (90%)	21 (10%)	0	100	100
44	CI	211/213 (99%)	190 (90%)	20 (10%)	1 (0%)	25	56
45	CD	287/289 (99%)	257 (90%)	29 (10%)	1 (0%)	37	66
46	CQ	179/188 (95%)	157 (88%)	18 (10%)	4 (2%)	5	26
47	CA	252/255 (99%)	234 (93%)	18 (7%)	0	100	100
48	CS	173/175 (99%)	153 (88%)	19 (11%)	1 (1%)	22	53
49	CT	157/159 (99%)	143 (91%)	14 (9%)	0	100	100
50	CP	150/152 (99%)	141 (94%)	8 (5%)	1 (1%)	19	50
51	CU	101/112 (90%)	90 (89%)	11 (11%)	0	100	100
52	CX	119/121 (98%)	104 (87%)	13 (11%)	2 (2%)	7	31
53	CY	131/133 (98%)	123 (94%)	8 (6%)	0	100	100
54	CZ	133/135 (98%)	124 (93%)	9 (7%)	0	100	100
55	Cr	135/137 (98%)	103 (76%)	28 (21%)	4 (3%)	3	21
56	Ch	121/123 (98%)	104 (86%)	15 (12%)	2 (2%)	7	31
57	Cb	72/78 (92%)	64 (89%)	7 (10%)	1 (1%)	9	34
58	CB	392/397 (99%)	357 (91%)	30 (8%)	5 (1%)	10	36
59	CF	227/229 (99%)	209 (92%)	16 (7%)	2 (1%)	14	44
60	Cd	111/113 (98%)	99 (89%)	10 (9%)	2 (2%)	7	30
61	Ce	129/133 (97%)	117 (91%)	12 (9%)	0	100	100
62	Cf	99/109 (91%)	88 (89%)	10 (10%)	1 (1%)	13	42
63	Cg	112/114 (98%)	101 (90%)	11 (10%)	0	100	100
64	Ci	101/103 (98%)	88 (87%)	12 (12%)	1 (1%)	13	42
65	Cj	87/90 (97%)	75 (86%)	11 (13%)	1 (1%)	12	40
66	Ck	67/69 (97%)	60 (90%)	6 (9%)	1 (2%)	8	33
67	Cl	48/50 (96%)	42 (88%)	6 (12%)	0	100	100
68	CC	360/368 (98%)	300 (83%)	53 (15%)	7 (2%)	6	29

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
69	Cm	49/52 (94%)	48 (98%)	1 (2%)	0	100	100
70	Cn	21/25 (84%)	21 (100%)	0	0	100	100
71	Cp	87/90 (97%)	80 (92%)	7 (8%)	0	100	100
72	Co	102/105 (97%)	80 (78%)	17 (17%)	5 (5%)	2	12
73	CJ	154/168 (92%)	143 (93%)	11 (7%)	0	100	100
74	CH	189/191 (99%)	175 (93%)	13 (7%)	1 (0%)	25	56
75	CE	255/262 (97%)	206 (81%)	40 (16%)	9 (4%)	3	19
76	CG	244/246 (99%)	217 (89%)	25 (10%)	2 (1%)	16	46
All	All	11259/11640 (97%)	9869 (88%)	1262 (11%)	128 (1%)	15	40

All (128) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
1	Ag	282	GLU
2	AU	107	GLU
3	AK	2	LEU
3	AK	30	PRO
3	AK	43	LEU
4	AM	94	ILE
7	AR	95	ILE
8	AP	126	VAL
9	AT	34	VAL
12	AD	198	ILE
12	AD	201	LYS
12	AD	202	LYS
13	Af	98	VAL
13	Af	102	VAL
17	AO	56	VAL
19	AN	28	LEU
20	AL	23	VAL
21	AB	22	VAL
22	AA	206	ASP
24	AY	30	PRO
27	Ae	47	PRO
29	AE	90	ILE
29	AE	171	ASP
32	AH	66	VAL
32	AH	76	GLN
32	AH	160	LYS

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Mol	Chain	Res	Type
34	AI	120	PRO
34	AI	140	LYS
37	Cz	172	VAL
38	CO	111	PRO
38	CO	192	TYR
39	CL	47	ALA
39	CL	157	VAL
40	CV	45	ILE
48	CS	75	VAL
52	CX	58	PRO
55	Cr	78	VAL
56	Ch	4	ILE
58	CB	393	LYS
64	Ci	5	TYR
68	CC	16	GLU
68	CC	313	VAL
72	Co	73	VAL
72	Co	76	ASN
75	CE	42	PRO
75	CE	47	ASN
75	CE	94	LYS
75	CE	96	VAL
76	CG	185	LYS
2	AU	70	CYS
8	AP	75	VAL
13	Af	110	GLU
18	AX	99	GLU
22	AA	159	ILE
24	AY	5	VAL
24	AY	120	THR
34	AI	158	ILE
37	Cz	71	GLN
37	Cz	81	ASP
37	Cz	213	PRO
42	Ca	91	ALA
44	CI	112	GLN
46	CQ	11	ARG
55	Cr	44	ILE
59	CF	197	VAL
62	Cf	55	ASN
68	CC	184	TYR
68	CC	311	ARG

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Mol	Chain	Res	Type
75	CE	138	ARG
75	CE	187	ARG
76	CG	207	VAL
2	AU	50	VAL
37	Cz	200	ASN
46	CQ	155	ALA
55	Cr	88	ALA
56	Ch	5	LYS
59	CF	233	ALA
60	Cd	95	ASP
68	CC	92	PHE
68	CC	309	ILE
72	Co	65	LYS
74	CH	107	GLU
4	AM	113	ASP
8	AP	69	PRO
21	AB	210	VAL
23	AV	41	LYS
34	AI	148	LYS
36	CW	72	THR
38	CO	189	ILE
42	Ca	78	LEU
46	CQ	159	PRO
58	CB	293	ILE
72	Co	32	SER
72	Co	77	CYS
1	Ag	281	ALA
4	AM	103	VAL
5	AS	12	ILE
15	AQ	32	ILE
21	AB	209	ASP
22	AA	190	SER
24	AY	6	THR
25	Aa	98	PRO
28	AJ	148	ILE
32	AH	100	ILE
34	AI	147	LYS
45	CD	125	VAL
46	CQ	98	LEU
55	Cr	71	ARG
57	Cb	21	ILE
75	CE	50	LEU

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Mol	Chain	Res	Type
75	CE	51	VAL
3	AK	3	MET
14	AF	79	HIS
25	Aa	62	TYR
37	Cz	161	LYS
42	Ca	47	LYS
52	CX	43	SER
60	Cd	17	ILE
75	CE	56	ARG
7	AR	88	VAL
65	Cj	83	THR
50	CP	7	ASP
58	CB	299	ILE
8	AP	73	PRO
58	CB	326	VAL
66	Ck	32	VAL
68	CC	24	LEU
58	CB	18	PRO

5.3.2 Protein sidechains ⓘ

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

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

Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
1	Ag	272/272 (100%)	253 (93%)	19 (7%)	12	37
2	AU	94/94 (100%)	92 (98%)	2 (2%)	48	70
3	AK	89/89 (100%)	85 (96%)	4 (4%)	23	52
4	AM	89/104 (86%)	87 (98%)	2 (2%)	47	69
5	AS	119/119 (100%)	115 (97%)	4 (3%)	32	59
6	Ad	47/47 (100%)	39 (83%)	8 (17%)	1	8
7	AR	114/114 (100%)	108 (95%)	6 (5%)	19	47
8	AP	106/116 (91%)	102 (96%)	4 (4%)	28	56
9	AT	112/112 (100%)	104 (93%)	8 (7%)	12	37
10	AZ	66/66 (100%)	62 (94%)	4 (6%)	15	42

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
11	Ac	57/57 (100%)	54 (95%)	3 (5%)	19	47
12	AD	189/190 (100%)	178 (94%)	11 (6%)	17	44
13	Af	64/64 (100%)	61 (95%)	3 (5%)	22	51
14	AF	161/161 (100%)	152 (94%)	9 (6%)	17	45
15	AQ	117/117 (100%)	112 (96%)	5 (4%)	25	53
17	AO	101/106 (95%)	92 (91%)	9 (9%)	8	28
18	AX	113/114 (99%)	104 (92%)	9 (8%)	10	32
19	AN	130/130 (100%)	125 (96%)	5 (4%)	28	56
20	AL	141/142 (99%)	132 (94%)	9 (6%)	14	40
21	AB	196/196 (100%)	189 (96%)	7 (4%)	30	57
22	AA	171/174 (98%)	165 (96%)	6 (4%)	31	58
23	AV	66/66 (100%)	60 (91%)	6 (9%)	7	27
24	AY	108/108 (100%)	102 (94%)	6 (6%)	17	45
25	Aa	90/90 (100%)	83 (92%)	7 (8%)	10	33
26	Ab	75/76 (99%)	73 (97%)	2 (3%)	40	65
27	Ae	43/48 (90%)	42 (98%)	1 (2%)	45	68
28	AJ	156/157 (99%)	149 (96%)	7 (4%)	23	52
29	AE	224/225 (100%)	211 (94%)	13 (6%)	17	44
30	AC	187/190 (98%)	173 (92%)	14 (8%)	11	34
31	AG	207/207 (100%)	198 (96%)	9 (4%)	25	53
32	AH	169/170 (99%)	161 (95%)	8 (5%)	22	51
33	AW	112/112 (100%)	103 (92%)	9 (8%)	10	32
34	AI	178/178 (100%)	168 (94%)	10 (6%)	17	45
35	CR	167/168 (99%)	162 (97%)	5 (3%)	36	62
36	CW	103/103 (100%)	98 (95%)	5 (5%)	21	49
37	Cz	116/196 (59%)	111 (96%)	5 (4%)	25	53
38	CO	171/173 (99%)	161 (94%)	10 (6%)	17	44
39	CL	174/176 (99%)	165 (95%)	9 (5%)	19	47
40	CV	101/102 (99%)	94 (93%)	7 (7%)	13	38
41	CM	118/118 (100%)	111 (94%)	7 (6%)	16	43
42	Ca	120/120 (100%)	112 (93%)	8 (7%)	13	39

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
43	CN	171/171 (100%)	153 (90%)	18 (10%)	5	21
44	CI	180/180 (100%)	171 (95%)	9 (5%)	20	48
45	CD	243/243 (100%)	233 (96%)	10 (4%)	26	54
46	CQ	159/165 (96%)	148 (93%)	11 (7%)	13	38
47	CA	196/197 (100%)	189 (96%)	7 (4%)	30	57
48	CS	156/156 (100%)	148 (95%)	8 (5%)	20	48
49	CT	139/139 (100%)	131 (94%)	8 (6%)	17	44
50	CP	133/133 (100%)	120 (90%)	13 (10%)	6	24
51	CU	100/102 (98%)	96 (96%)	4 (4%)	27	55
52	CX	109/109 (100%)	103 (94%)	6 (6%)	18	45
53	CY	123/123 (100%)	108 (88%)	15 (12%)	4	16
54	CZ	117/117 (100%)	108 (92%)	9 (8%)	10	33
55	Cr	121/121 (100%)	111 (92%)	10 (8%)	9	31
56	Ch	110/110 (100%)	106 (96%)	4 (4%)	30	57
57	Cb	62/66 (94%)	60 (97%)	2 (3%)	34	61
58	CB	343/345 (99%)	329 (96%)	14 (4%)	26	54
59	CF	198/198 (100%)	186 (94%)	12 (6%)	15	42
60	Cd	102/102 (100%)	95 (93%)	7 (7%)	13	38
61	Ce	117/119 (98%)	102 (87%)	15 (13%)	3	15
62	Cf	84/88 (96%)	78 (93%)	6 (7%)	12	37
63	Cg	98/98 (100%)	92 (94%)	6 (6%)	15	42
64	Ci	87/87 (100%)	83 (95%)	4 (5%)	23	52
65	Cj	74/75 (99%)	72 (97%)	2 (3%)	40	65
66	Ck	64/64 (100%)	61 (95%)	3 (5%)	22	51
67	Cl	47/47 (100%)	44 (94%)	3 (6%)	14	40
68	CC	301/305 (99%)	289 (96%)	12 (4%)	27	55
69	Cm	47/48 (98%)	45 (96%)	2 (4%)	25	53
70	Cn	22/24 (92%)	19 (86%)	3 (14%)	3	14
71	Cp	73/74 (99%)	68 (93%)	5 (7%)	13	38
72	Co	92/93 (99%)	87 (95%)	5 (5%)	18	46
73	CJ	133/142 (94%)	125 (94%)	8 (6%)	16	42

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
74	CH	170/170 (100%)	163 (96%)	7 (4%)	26	54
75	CE	228/232 (98%)	216 (95%)	12 (5%)	19	47
76	CG	209/209 (100%)	201 (96%)	8 (4%)	28	56
All	All	9841/10019 (98%)	9288 (94%)	553 (6%)	20	45

All (553) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	Ag	18	VAL
1	Ag	27	PHE
1	Ag	48	ASP
1	Ag	54	ILE
1	Ag	59	LEU
1	Ag	66	VAL
1	Ag	111	VAL
1	Ag	121	VAL
1	Ag	153	CYS
1	Ag	160	SER
1	Ag	185	LYS
1	Ag	218	LEU
1	Ag	255	SER
1	Ag	258	ILE
1	Ag	274	VAL
1	Ag	279	SER
1	Ag	287	THR
1	Ag	299	PHE
1	Ag	306	LEU
2	AU	60	THR
2	AU	80	PHE
3	AK	15	LEU
3	AK	58	VAL
3	AK	85	LEU
3	AK	93	THR
4	AM	75	ASN
4	AM	88	TRP
5	AS	50	ILE
5	AS	99	LEU
5	AS	107	LEU
5	AS	141	ARG
6	Ad	7	TYR
6	Ad	12	ARG

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Mol	Chain	Res	Type
6	Ad	27	ARG
6	Ad	34	TYR
6	Ad	36	LEU
6	Ad	46	TYR
6	Ad	50	ILE
6	Ad	53	ILE
7	AR	22	THR
7	AR	33	ARG
7	AR	69	ILE
7	AR	91	LEU
7	AR	98	VAL
7	AR	114	LEU
8	AP	14	LYS
8	AP	16	THR
8	AP	37	TYR
8	AP	94	VAL
9	AT	6	VAL
9	AT	28	LEU
9	AT	63	HIS
9	AT	72	VAL
9	AT	77	LYS
9	AT	90	SER
9	AT	91	HIS
9	AT	99	VAL
10	AZ	65	TYR
10	AZ	68	ILE
10	AZ	99	LEU
10	AZ	108	ILE
11	Ac	32	VAL
11	Ac	67	ARG
11	Ac	68	LEU
12	AD	3	VAL
12	AD	5	ILE
12	AD	8	LYS
12	AD	40	ARG
12	AD	58	VAL
12	AD	59	LEU
12	AD	74	GLN
12	AD	75	LYS
12	AD	170	THR
12	AD	204	LEU
12	AD	217	ILE

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Mol	Chain	Res	Type
13	Af	89	LYS
13	Af	146	LEU
13	Af	150	PHE
14	AF	29	GLN
14	AF	48	TYR
14	AF	60	ARG
14	AF	72	LEU
14	AF	88	MET
14	AF	130	ARG
14	AF	144	LEU
14	AF	169	ILE
14	AF	172	CYS
15	AQ	10	VAL
15	AQ	20	THR
15	AQ	55	VAL
15	AQ	56	LEU
15	AQ	88	ILE
17	AO	28	PHE
17	AO	53	ILE
17	AO	62	VAL
17	AO	72	TYR
17	AO	81	VAL
17	AO	90	ILE
17	AO	94	HIS
17	AO	114	SER
17	AO	151	LEU
18	AX	21	LYS
18	AX	27	TYR
18	AX	55	VAL
18	AX	66	ILE
18	AX	75	ILE
18	AX	87	ASN
18	AX	91	LEU
18	AX	105	PHE
18	AX	110	HIS
19	AN	14	SER
19	AN	46	THR
19	AN	52	VAL
19	AN	60	VAL
19	AN	66	VAL
20	AL	4	ILE
20	AL	42	LEU

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Mol	Chain	Res	Type
20	AL	56	ILE
20	AL	76	VAL
20	AL	82	MET
20	AL	83	GLN
20	AL	87	VAL
20	AL	102	PHE
20	AL	137	THR
21	AB	49	VAL
21	AB	52	THR
21	AB	60	ASP
21	AB	105	LEU
21	AB	193	ILE
21	AB	204	ILE
21	AB	208	HIS
22	AA	44	ASP
22	AA	58	LEU
22	AA	144	THR
22	AA	148	CYS
22	AA	158	ASP
22	AA	159	ILE
23	AV	11	LEU
23	AV	13	VAL
23	AV	18	SER
23	AV	21	ASN
23	AV	50	PHE
23	AV	59	ILE
24	AY	20	ARG
24	AY	22	GLN
24	AY	40	ILE
24	AY	48	TYR
24	AY	96	LEU
24	AY	102	THR
25	Aa	36	ILE
25	Aa	40	VAL
25	Aa	43	ASN
25	Aa	44	ILE
25	Aa	79	ILE
25	Aa	83	VAL
25	Aa	101	PHE
26	Ab	41	TYR
26	Ab	53	VAL
27	Ae	29	THR

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Mol	Chain	Res	Type
28	AJ	8	VAL
28	AJ	14	VAL
28	AJ	27	GLN
28	AJ	31	LEU
28	AJ	93	LYS
28	AJ	113	GLN
28	AJ	142	VAL
29	AE	42	LEU
29	AE	45	ILE
29	AE	59	ASP
29	AE	75	LYS
29	AE	102	ILE
29	AE	126	VAL
29	AE	156	VAL
29	AE	157	ASN
29	AE	194	VAL
29	AE	221	ARG
29	AE	226	PHE
29	AE	244	ILE
29	AE	256	LEU
30	AC	71	LYS
30	AC	106	VAL
30	AC	112	VAL
30	AC	120	GLN
30	AC	123	ARG
30	AC	130	ILE
30	AC	163	VAL
30	AC	182	CYS
30	AC	209	VAL
30	AC	213	LEU
30	AC	216	MET
30	AC	232	THR
30	AC	256	TRP
30	AC	274	VAL
31	AG	25	ARG
31	AG	97	VAL
31	AG	106	LEU
31	AG	118	GLU
31	AG	129	VAL
31	AG	154	ARG
31	AG	164	LYS
31	AG	181	THR

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Mol	Chain	Res	Type
31	AG	204	GLU
32	AH	9	VAL
32	AH	19	PHE
32	AH	25	GLN
32	AH	92	VAL
32	AH	107	LYS
32	AH	140	VAL
32	AH	156	VAL
32	AH	162	GLN
33	AW	33	VAL
33	AW	42	MET
33	AW	53	ILE
33	AW	63	VAL
33	AW	81	VAL
33	AW	84	LYS
33	AW	104	LEU
33	AW	121	THR
33	AW	126	LEU
34	AI	44	HIS
34	AI	46	VAL
34	AI	62	VAL
34	AI	78	ILE
34	AI	79	ILE
34	AI	96	LEU
34	AI	104	ILE
34	AI	107	THR
34	AI	109	TYR
34	AI	182	CYS
35	CR	6	LEU
35	CR	24	LEU
35	CR	78	ILE
35	CR	82	LYS
35	CR	103	ARG
36	CW	41	LEU
36	CW	59	HIS
36	CW	78	PHE
36	CW	90	ILE
36	CW	96	GLN
37	Cz	84	HIS
37	Cz	178	GLU
37	Cz	184	HIS
37	Cz	191	VAL

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Mol	Chain	Res	Type
37	Cz	196	LYS
38	CO	6	VAL
38	CO	8	VAL
38	CO	15	LEU
38	CO	55	LEU
38	CO	58	LEU
38	CO	62	MET
38	CO	144	GLU
38	CO	152	VAL
38	CO	193	THR
38	CO	199	HIS
39	CL	10	LEU
39	CL	40	GLN
39	CL	55	ILE
39	CL	60	ARG
39	CL	69	LYS
39	CL	70	VAL
39	CL	151	THR
39	CL	157	VAL
39	CL	198	ARG
40	CV	37	LEU
40	CV	39	ILE
40	CV	48	ARG
40	CV	49	LEU
40	CV	77	HIS
40	CV	82	ILE
40	CV	96	LEU
41	CM	7	VAL
41	CM	9	VAL
41	CM	11	ARG
41	CM	28	VAL
41	CM	32	ASP
41	CM	37	LEU
41	CM	100	ARG
42	Ca	11	LEU
42	Ca	15	VAL
42	Ca	81	LEU
42	Ca	88	VAL
42	Ca	100	ILE
42	Ca	123	ILE
42	Ca	138	LYS
42	Ca	147	VAL

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Mol	Chain	Res	Type
43	CN	10	LEU
43	CN	18	VAL
43	CN	21	PHE
43	CN	26	ARG
43	CN	30	TYR
43	CN	59	TYR
43	CN	60	VAL
43	CN	115	VAL
43	CN	133	ILE
43	CN	135	ILE
43	CN	152	THR
43	CN	155	VAL
43	CN	158	HIS
43	CN	176	LYS
43	CN	178	HIS
43	CN	179	LYS
43	CN	192	TRP
43	CN	201	HIS
44	CI	8	CYS
44	CI	59	GLN
44	CI	77	VAL
44	CI	96	VAL
44	CI	129	VAL
44	CI	164	LYS
44	CI	166	HIS
44	CI	210	ARG
44	CI	212	LEU
45	CD	21	ARG
45	CD	37	VAL
45	CD	56	THR
45	CD	92	LEU
45	CD	126	THR
45	CD	132	VAL
45	CD	211	LEU
45	CD	223	PHE
45	CD	226	TYR
45	CD	253	TYR
46	CQ	31	LEU
46	CQ	34	PHE
46	CQ	52	PHE
46	CQ	54	SER
46	CQ	68	ARG

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Mol	Chain	Res	Type
46	CQ	81	VAL
46	CQ	83	VAL
46	CQ	98	LEU
46	CQ	137	VAL
46	CQ	148	VAL
46	CQ	168	ARG
47	CA	48	ILE
47	CA	73	THR
47	CA	92	LYS
47	CA	116	LEU
47	CA	117	GLU
47	CA	126	LEU
47	CA	175	ILE
48	CS	12	VAL
48	CS	39	VAL
48	CS	62	VAL
48	CS	108	GLN
48	CS	124	ILE
48	CS	156	HIS
48	CS	158	VAL
48	CS	167	PHE
49	CT	2	THR
49	CT	31	MET
49	CT	42	ILE
49	CT	60	LYS
49	CT	72	VAL
49	CT	79	GLN
49	CT	118	GLU
49	CT	150	LEU
50	CP	4	TYR
50	CP	14	SER
50	CP	52	THR
50	CP	58	VAL
50	CP	72	GLN
50	CP	93	HIS
50	CP	99	GLU
50	CP	108	ASP
50	CP	113	VAL
50	CP	128	ARG
50	CP	139	TYR
50	CP	142	SER
50	CP	147	GLU

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Mol	Chain	Res	Type
51	CU	80	LYS
51	CU	91	LEU
51	CU	102	VAL
51	CU	103	VAL
52	CX	51	THR
52	CX	71	LEU
52	CX	83	THR
52	CX	97	VAL
52	CX	100	VAL
52	CX	147	LEU
53	CY	7	VAL
53	CY	20	ASN
53	CY	32	SER
53	CY	44	VAL
53	CY	55	VAL
53	CY	71	VAL
53	CY	80	ILE
53	CY	82	ILE
53	CY	83	GLU
53	CY	85	VAL
53	CY	95	VAL
53	CY	97	VAL
53	CY	106	ILE
53	CY	111	LEU
53	CY	131	GLU
54	CZ	6	LYS
54	CZ	12	LEU
54	CZ	22	LYS
54	CZ	25	ILE
54	CZ	38	TYR
54	CZ	46	ILE
54	CZ	101	PHE
54	CZ	113	GLU
54	CZ	118	PHE
55	Cr	9	VAL
55	Cr	30	ASN
55	Cr	44	ILE
55	Cr	45	HIS
55	Cr	49	VAL
55	Cr	62	VAL
55	Cr	81	THR
55	Cr	102	TYR

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Mol	Chain	Res	Type
55	Cr	117	ILE
55	Cr	131	THR
56	Ch	1	MET
56	Ch	93	ARG
56	Ch	108	GLN
56	Ch	116	LEU
57	Cb	8	THR
57	Cb	40	LEU
58	CB	66	LYS
58	CB	67	VAL
58	CB	99	LEU
58	CB	113	GLU
58	CB	162	VAL
58	CB	173	LEU
58	CB	205	VAL
58	CB	262	VAL
58	CB	274	TYR
58	CB	307	TYR
58	CB	344	VAL
58	CB	346	THR
58	CB	352	LEU
58	CB	371	THR
59	CF	34	ARG
59	CF	58	HIS
59	CF	89	LEU
59	CF	95	ILE
59	CF	108	VAL
59	CF	111	LEU
59	CF	132	MET
59	CF	170	THR
59	CF	214	SER
59	CF	221	LYS
59	CF	223	LYS
59	CF	246	ARG
60	Cd	29	ILE
60	Cd	33	ILE
60	Cd	56	GLU
60	Cd	68	LEU
60	Cd	102	LEU
60	Cd	103	TYR
60	Cd	107	THR
61	Ce	1	MET

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Mol	Chain	Res	Type
61	Ce	4	LEU
61	Ce	13	VAL
61	Ce	15	LYS
61	Ce	19	LYS
61	Ce	33	ARG
61	Ce	34	ASN
61	Ce	41	ILE
61	Ce	50	LYS
61	Ce	53	ILE
61	Ce	54	LEU
61	Ce	85	LEU
61	Ce	101	HIS
61	Ce	113	GLU
61	Ce	129	LEU
62	Cf	24	HIS
62	Cf	33	VAL
62	Cf	50	VAL
62	Cf	54	LYS
62	Cf	69	VAL
62	Cf	87	LYS
63	Cg	19	LYS
63	Cg	33	LEU
63	Cg	35	THR
63	Cg	38	VAL
63	Cg	74	VAL
63	Cg	107	LEU
64	Ci	37	THR
64	Ci	60	LEU
64	Ci	61	LEU
64	Ci	73	ILE
65	Cj	32	SER
65	Cj	58	THR
66	Ck	23	VAL
66	Ck	47	ILE
66	Ck	69	LEU
67	Cl	26	TRP
67	Cl	37	TYR
67	Cl	51	LEU
68	CC	84	THR
68	CC	85	HIS
68	CC	133	LEU
68	CC	147	VAL

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Mol	Chain	Res	Type
68	CC	184	TYR
68	CC	221	PHE
68	CC	235	LEU
68	CC	238	LEU
68	CC	273	LEU
68	CC	282	HIS
68	CC	311	ARG
68	CC	323	ARG
69	Cm	81	SER
69	Cm	108	VAL
70	Cn	10	MET
70	Cn	13	LEU
70	Cn	20	MET
71	Cp	3	LYS
71	Cp	28	LYS
71	Cp	50	ARG
71	Cp	86	LEU
71	Cp	89	LEU
72	Co	52	THR
72	Co	61	LYS
72	Co	73	VAL
72	Co	83	LEU
72	Co	85	ILE
73	CJ	32	ARG
73	CJ	49	VAL
73	CJ	50	PHE
73	CJ	70	VAL
73	CJ	83	LEU
73	CJ	96	LYS
73	CJ	109	ILE
73	CJ	156	ARG
74	CH	20	LEU
74	CH	45	LEU
74	CH	60	TRP
74	CH	71	ARG
74	CH	134	CYS
74	CH	152	GLU
74	CH	167	VAL
75	CE	32	LEU
75	CE	118	THR
75	CE	152	ILE
75	CE	179	LEU

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Mol	Chain	Res	Type
75	CE	194	VAL
75	CE	199	THR
75	CE	203	ILE
75	CE	222	LEU
75	CE	223	ARG
75	CE	264	ILE
75	CE	271	LEU
75	CE	272	ARG
76	CG	74	LEU
76	CG	95	LEU
76	CG	108	GLN
76	CG	161	VAL
76	CG	164	ILE
76	CG	166	LEU
76	CG	232	GLU
76	CG	246	SER

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (120) such sidechains are listed below:

Mol	Chain	Res	Type
1	Ag	14	HIS
1	Ag	117	ASN
1	Ag	143	GLN
1	Ag	147	HIS
1	Ag	159	ASN
2	AU	100	GLN
3	AK	39	ASN
4	AM	19	GLN
4	AM	52	GLN
5	AS	10	GLN
7	AR	62	GLN
8	AP	32	GLN
8	AP	54	HIS
9	AT	63	HIS
9	AT	85	ASN
9	AT	142	ASN
10	AZ	112	ASN
11	Ac	7	GLN
12	AD	4	GLN
12	AD	101	GLN
12	AD	179	GLN
14	AF	29	GLN

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Mol	Chain	Res	Type
14	AF	31	ASN
14	AF	107	ASN
15	AQ	29	ASN
15	AQ	97	GLN
15	AQ	142	GLN
17	AO	26	ASN
18	AX	77	ASN
18	AX	87	ASN
19	AN	36	GLN
20	AL	13	GLN
21	AB	124	HIS
22	AA	169	HIS
24	AY	15	ASN
24	AY	19	GLN
24	AY	124	ASN
28	AJ	154	GLN
29	AE	36	HIS
29	AE	50	ASN
29	AE	67	GLN
29	AE	98	ASN
30	AC	172	ASN
30	AC	178	HIS
31	AG	59	GLN
31	AG	65	GLN
31	AG	155	GLN
32	AH	12	ASN
32	AH	76	GLN
33	AW	24	GLN
33	AW	113	HIS
34	AI	9	HIS
34	AI	52	ASN
34	AI	84	ASN
34	AI	155	ASN
34	AI	168	GLN
35	CR	30	ASN
35	CR	40	GLN
35	CR	58	HIS
35	CR	121	HIS
35	CR	134	ASN
37	Cz	72	GLN
37	Cz	182	ASN
41	CM	44	GLN

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Mol	Chain	Res	Type
41	CM	66	HIS
42	Ca	49	HIS
42	Ca	89	ASN
43	CN	37	HIS
43	CN	57	GLN
43	CN	91	GLN
44	CI	163	GLN
45	CD	63	GLN
45	CD	157	ASN
45	CD	191	ASN
45	CD	244	HIS
46	CQ	93	GLN
47	CA	38	HIS
49	CT	69	GLN
50	CP	97	ASN
50	CP	118	GLN
50	CP	133	HIS
53	CY	4	ASN
53	CY	14	ASN
53	CY	65	GLN
54	CZ	78	ASN
55	Cr	30	ASN
55	Cr	41	ASN
55	Cr	85	ASN
56	Ch	108	GLN
57	Cb	49	HIS
58	CB	203	GLN
58	CB	204	GLN
58	CB	209	GLN
58	CB	315	ASN
58	CB	328	ASN
58	CB	380	GLN
59	CF	39	GLN
59	CF	131	ASN
60	Cd	28	ASN
61	Ce	57	ASN
61	Ce	81	ASN
61	Ce	126	ASN
63	Cg	100	GLN
65	Cj	16	HIS
67	Cl	20	ASN
67	Cl	43	HIS

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Mol	Chain	Res	Type
68	CC	116	ASN
68	CC	142	HIS
68	CC	310	HIS
68	CC	343	GLN
69	Cm	87	GLN
73	CJ	65	ASN
73	CJ	97	ASN
73	CJ	112	HIS
74	CH	15	ASN
75	CE	135	GLN
75	CE	167	GLN
75	CE	205	ASN
76	CG	153	GLN
76	CG	208	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
16	B2	1747/1796 (97%)	503 (28%)	40 (2%)
77	A5	1681/1778 (94%)	521 (30%)	62 (3%)
78	A7	120/121 (99%)	26 (21%)	0
79	A8	155/157 (98%)	38 (24%)	3 (1%)
80	Cc	76/77 (98%)	18 (23%)	0
81	Bb	63/76 (82%)	24 (38%)	0
82	Dd	12/13 (92%)	2 (16%)	0
83	A6	2004/2108 (95%)	570 (28%)	56 (2%)
All	All	5858/6126 (95%)	1702 (29%)	161 (2%)

All (1702) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
16	B2	2	A
16	B2	3	C
16	B2	4	C
16	B2	5	U
16	B2	25	A
16	B2	26	U
16	B2	33	G
16	B2	39	A
16	B2	41	G
16	B2	42	A

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Mol	Chain	Res	Type
16	B2	44	U
16	B2	45	A
16	B2	46	A
16	B2	47	G
16	B2	56	G
16	B2	65	C
16	B2	66	G
16	B2	67	C
16	B2	68	A
16	B2	71	G
16	B2	72	C
16	B2	73	C
16	B2	74	G
16	B2	75	G
16	B2	76	U
16	B2	77	A
16	B2	78	C
16	B2	79	A
16	B2	80	G
16	B2	93	U
16	B2	99	A
16	B2	103	A
16	B2	110	U
16	B2	113	G
16	B2	115	U
16	B2	118	C
16	B2	123	G
16	B2	125	C
16	B2	126	G
16	B2	127	C
16	B2	140	C
16	B2	141	A
16	B2	142	C
16	B2	143	U
16	B2	146	G
16	B2	147	A
16	B2	155	G
16	B2	158	A
16	B2	160	U
16	B2	164	A
16	B2	167	G
16	B2	171	A

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Mol	Chain	Res	Type
16	B2	176	U
16	B2	180	G
16	B2	181	A
16	B2	183	G
16	B2	188	C
16	B2	189	U
16	B2	191	A
16	B2	192	C
16	B2	206	G
16	B2	226	A
16	B2	227	U
16	B2	228	C
16	B2	230	A
16	B2	231	A
16	B2	233	C
16	B2	238	C
16	B2	244	A
16	B2	281	C
16	B2	284	C
16	B2	285	U
16	B2	286	U
16	B2	287	U
16	B2	288	G
16	B2	295	C
16	B2	302	A
16	B2	304	C
16	B2	306	C
16	B2	307	G
16	B2	308	G
16	B2	309	G
16	B2	312	G
16	B2	313	A
16	B2	317	C
16	B2	319	C
16	B2	321	C
16	B2	324	C
16	B2	325	C
16	B2	326	C
16	B2	328	U
16	B2	332	G
16	B2	347	G
16	B2	350	C

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Mol	Chain	Res	Type
16	B2	351	G
16	B2	353	C
16	B2	362	C
16	B2	364	A
16	B2	367	U
16	B2	368	U
16	B2	370	G
16	B2	371	A
16	B2	373	G
16	B2	381	C
16	B2	383	G
16	B2	385	G
16	B2	386	C
16	B2	389	A
16	B2	398	A
16	B2	400	C
16	B2	409	C
16	B2	418	A
16	B2	426	A
16	B2	428	U
16	B2	435	A
16	B2	438	G
16	B2	447	A
16	B2	448	A
16	B2	450	C
16	B2	452	G
16	B2	464	A
16	B2	465	A
16	B2	466	G
16	B2	471	G
16	B2	472	C
16	B2	473	A
16	B2	474	G
16	B2	476	A
16	B2	482	G
16	B2	485	A
16	B2	486	A
16	B2	487	U
16	B2	492	C
16	B2	496	C
16	B2	498	C
16	B2	499	G

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Mol	Chain	Res	Type
16	B2	500	A
16	B2	510	G
16	B2	523	A
16	B2	525	A
16	B2	527	C
16	B2	529	A
16	B2	532	C
16	B2	533	A
16	B2	535	G
16	B2	550	C
16	B2	551	U
16	B2	552	G
16	B2	553	U
16	B2	556	U
16	B2	559	G
16	B2	560	A
16	B2	564	A
16	B2	568	C
16	B2	569	A
16	B2	576	A
16	B2	582	U
16	B2	588	G
16	B2	590	A
16	B2	591	U
16	B2	593	C
16	B2	600	G
16	B2	604	A
16	B2	605	A
16	B2	606	G
16	B2	607	U
16	B2	608	C
16	B2	614	C
16	B2	617	G
16	B2	619	A
16	B2	625	G
16	B2	628	A
16	B2	629	A
16	B2	630	U
16	B2	634	A
16	B2	643	A
16	B2	644	G
16	B2	655	A

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Mol	Chain	Res	Type
16	B2	656	G
16	B2	660	C
16	B2	662	G
16	B2	663	C
16	B2	666	U
16	B2	668	A
16	B2	669	A
16	B2	671	A
16	B2	672	A
16	B2	673	G
16	B2	682	U
16	B2	683	G
16	B2	688	U
16	B2	689	U
16	B2	691	G
16	B2	698	G
16	B2	733	C
16	B2	735	C
16	B2	738	C
16	B2	739	C
16	B2	741	C
16	B2	742	U
16	B2	743	U
16	B2	744	G
16	B2	745	C
16	B2	747	U
16	B2	748	C
16	B2	749	U
16	B2	752	G
16	B2	753	C
16	B2	788	G
16	B2	797	C
16	B2	798	G
16	B2	799	U
16	B2	801	U
16	B2	809	A
16	B2	810	A
16	B2	811	A
16	B2	812	A
16	B2	819	G
16	B2	821	G
16	B2	822	U

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Mol	Chain	Res	Type
16	B2	830	A
16	B2	831	G
16	B2	833	C
16	B2	834	C
16	B2	835	C
16	B2	836	G
16	B2	837	A
16	B2	838	G
16	B2	839	C
16	B2	840	C
16	B2	841	G
16	B2	845	G
16	B2	847	A
16	B2	853	C
16	B2	867	G
16	B2	868	G
16	B2	870	A
16	B2	871	U
16	B2	873	G
16	B2	875	A
16	B2	876	C
16	B2	877	C
16	B2	878	G
16	B2	881	G
16	B2	887	U
16	B2	888	U
16	B2	890	U
16	B2	897	U
16	B2	903	A
16	B2	911	C
16	B2	913	A
16	B2	914	U
16	B2	917	U
16	B2	920	A
16	B2	921	G
16	B2	925	G
16	B2	926	A
16	B2	933	G
16	B2	937	C
16	B2	955	A
16	B2	961	G
16	B2	963	A

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Mol	Chain	Res	Type
16	B2	969	U
16	B2	970	G
16	B2	971	G
16	B2	990	A
16	B2	992	A
16	B2	999	G
16	B2	1001	A
16	B2	1002	U
16	B2	1023	A
16	B2	1039	C
16	B2	1045	U
16	B2	1049	A
16	B2	1050	A
16	B2	1054	G
16	B2	1060	A
16	B2	1061	U
16	B2	1062	A
16	B2	1068	G
16	B2	1077	A
16	B2	1078	C
16	B2	1080	A
16	B2	1082	A
16	B2	1083	A
16	B2	1084	A
16	B2	1085	C
16	B2	1087	A
16	B2	1088	U
16	B2	1090	C
16	B2	1096	G
16	B2	1097	G
16	B2	1098	C
16	B2	1100	A
16	B2	1102	G
16	B2	1109	C
16	B2	1110	G
16	B2	1111	U
16	B2	1115	U
16	B2	1117	C
16	B2	1118	C
16	B2	1119	A
16	B2	1120	U
16	B2	1128	C

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Mol	Chain	Res	Type
16	B2	1129	G
16	B2	1133	A
16	B2	1138	C
16	B2	1140	G
16	B2	1143	A
16	B2	1148	A
16	B2	1149	A
16	B2	1153	C
16	B2	1154	U
16	B2	1155	U
16	B2	1157	G
16	B2	1166	G
16	B2	1170	A
16	B2	1173	A
16	B2	1183	A
16	B2	1195	A
16	B2	1202	U
16	B2	1206	G
16	B2	1207	G
16	B2	1208	A
16	B2	1209	A
16	B2	1212	G
16	B2	1215	C
16	B2	1217	A
16	B2	1221	G
16	B2	1224	G
16	B2	1231	C
16	B2	1232	U
16	B2	1242	U
16	B2	1243	U
16	B2	1251	A
16	B2	1253	A
16	B2	1254	C
16	B2	1256	G
16	B2	1257	G
16	B2	1259	A
16	B2	1264	C
16	B2	1271	C
16	B2	1274	G
16	B2	1275	G
16	B2	1283	C
16	B2	1284	A

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Mol	Chain	Res	Type
16	B2	1285	G
16	B2	1286	G
16	B2	1287	A
16	B2	1298	G
16	B2	1301	A
16	B2	1302	G
16	B2	1303	C
16	B2	1308	U
16	B2	1313	A
16	B2	1315	U
16	B2	1331	C
16	B2	1333	U
16	B2	1341	C
16	B2	1343	U
16	B2	1345	G
16	B2	1348	G
16	B2	1354	G
16	B2	1358	U
16	B2	1362	U
16	B2	1371	U
16	B2	1372	U
16	B2	1373	C
16	B2	1378	A
16	B2	1382	A
16	B2	1389	C
16	B2	1395	C
16	B2	1396	A
16	B2	1397	U
16	B2	1398	G
16	B2	1401	A
16	B2	1402	A
16	B2	1404	U
16	B2	1412	C
16	B2	1414	A
16	B2	1416	C
16	B2	1417	C
16	B2	1418	C
16	B2	1419	C
16	B2	1425	G
16	B2	1426	U
16	B2	1430	C
16	B2	1435	C

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Mol	Chain	Res	Type
16	B2	1437	C
16	B2	1441	U
16	B2	1442	U
16	B2	1446	A
16	B2	1449	G
16	B2	1452	A
16	B2	1454	A
16	B2	1455	A
16	B2	1456	G
16	B2	1462	U
16	B2	1463	U
16	B2	1475	G
16	B2	1476	A
16	B2	1477	U
16	B2	1478	U
16	B2	1489	A
16	B2	1490	G
16	B2	1493	C
16	B2	1494	U
16	B2	1495	G
16	B2	1498	A
16	B2	1500	G
16	B2	1507	G
16	B2	1508	A
16	B2	1509	U
16	B2	1512	C
16	B2	1513	C
16	B2	1520	G
16	B2	1521	C
16	B2	1522	A
16	B2	1523	C
16	B2	1527	C
16	B2	1531	A
16	B2	1535	U
16	B2	1536	G
16	B2	1542	C
16	B2	1544	C
16	B2	1545	A
16	B2	1548	G
16	B2	1552	G
16	B2	1553	C
16	B2	1556	A

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Mol	Chain	Res	Type
16	B2	1557	C
16	B2	1560	U
16	B2	1563	G
16	B2	1567	G
16	B2	1570	G
16	B2	1573	G
16	B2	1578	U
16	B2	1580	A
16	B2	1587	G
16	B2	1588	A
16	B2	1590	C
16	B2	1593	C
16	B2	1598	G
16	B2	1599	U
16	B2	1600	G
16	B2	1601	A
16	B2	1602	U
16	B2	1604	G
16	B2	1606	G
16	B2	1613	G
16	B2	1621	U
16	B2	1623	A
16	B2	1637	A
16	B2	1638	G
16	B2	1643	U
16	B2	1647	A
16	B2	1648	G
16	B2	1649	U
16	B2	1664	A
16	B2	1665	G
16	B2	1669	G
16	B2	1680	G
16	B2	1689	C
16	B2	1690	U
16	B2	1695	A
16	B2	1698	C
16	B2	1699	A
16	B2	1702	G
16	B2	1705	C
16	B2	1710	C
16	B2	1721	U
16	B2	1722	G

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Mol	Chain	Res	Type
16	B2	1744	G
16	B2	1746	U
16	B2	1751	C
16	B2	1757	G
16	B2	1783	C
16	B2	1784	G
16	B2	1785	C
16	B2	1786	U
16	B2	1798	C
16	B2	1823	A
16	B2	1824	A
16	B2	1825	A
16	B2	1826	G
16	B2	1828	C
16	B2	1831	A
16	B2	1832	A
16	B2	1834	A
16	B2	1838	U
16	B2	1839	U
16	B2	1844	U
16	B2	1849	G
16	B2	1851	A
16	B2	1852	C
16	B2	1861	G
16	B2	1862	G
16	B2	1863	A
16	B2	1864	U
16	B2	1865	C
16	B2	1866	A
16	B2	1867	U
16	B2	1869	A
77	A5	3	C
77	A5	11	G
77	A5	12	A
77	A5	13	U
77	A5	15	A
77	A5	16	G
77	A5	18	C
77	A5	21	G
77	A5	25	A
77	A5	28	C
77	A5	30	C

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Mol	Chain	Res	Type
77	A5	39	A
77	A5	42	A
77	A5	47	A
77	A5	48	G
77	A5	54	G
77	A5	58	G
77	A5	59	A
77	A5	63	G
77	A5	64	A
77	A5	65	A
77	A5	66	A
77	A5	67	C
77	A5	70	A
77	A5	71	C
77	A5	72	C
77	A5	73	A
77	A5	76	A
77	A5	78	U
77	A5	84	A
77	A5	91	G
77	A5	93	G
77	A5	108	A
77	A5	109	G
77	A5	110	C
77	A5	112	C
77	A5	115	C
77	A5	116	G
77	A5	117	C
77	A5	119	G
77	A5	120	A
77	A5	126	C
77	A5	127	G
77	A5	135	G
77	A5	136	C
77	A5	137	G
77	A5	142	G
77	A5	143	C
77	A5	144	G
77	A5	149	A
77	A5	150	U
77	A5	151	G
77	A5	155	C

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Mol	Chain	Res	Type
77	A5	159	C
77	A5	160	G
77	A5	164	G
77	A5	171	U
77	A5	172	C
77	A5	173	C
77	A5	185	C
77	A5	187	U
77	A5	188	G
77	A5	189	G
77	A5	195	C
77	A5	197	A
77	A5	200	U
77	A5	201	C
77	A5	207	G
77	A5	210	C
77	A5	216	C
77	A5	217	C
77	A5	218	A
77	A5	219	G
77	A5	220	C
77	A5	221	C
77	A5	224	U
77	A5	226	G
77	A5	227	A
77	A5	232	G
77	A5	233	U
77	A5	243	A
77	A5	246	G
77	A5	265	C
77	A5	275	C
77	A5	276	C
77	A5	277	G
77	A5	278	G
77	A5	279	A
77	A5	280	G
77	A5	293	G
77	A5	297	U
77	A5	302	C
77	A5	306	A
77	A5	309	C
77	A5	310	G

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Mol	Chain	Res	Type
77	A5	315	G
77	A5	316	U
77	A5	322	C
77	A5	334	A
77	A5	340	C
77	A5	347	A
77	A5	348	G
77	A5	350	C
77	A5	357	U
77	A5	360	A
77	A5	361	C
77	A5	373	G
77	A5	381	U
77	A5	387	G
77	A5	405	U
77	A5	406	C
77	A5	408	A
77	A5	409	G
77	A5	412	G
77	A5	413	G
77	A5	414	C
77	A5	415	G
77	A5	432	U
77	A5	433	A
77	A5	438	G
77	A5	443	G
77	A5	444	G
77	A5	449	C
77	A5	452	A
77	A5	453	G
77	A5	454	U
77	A5	455	C
77	A5	458	C
77	A5	464	G
77	A5	468	U
77	A5	469	C
77	A5	473	C
77	A5	474	C
77	A5	481	G
77	A5	485	C
77	A5	486	C
77	A5	487	G

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Mol	Chain	Res	Type
77	A5	491	G
77	A5	498	C
77	A5	499	G
77	A5	500	G
77	A5	501	C
77	A5	502	C
77	A5	504	G
77	A5	506	C
77	A5	509	A
77	A5	510	U
77	A5	513	U
77	A5	514	U
77	A5	515	C
77	A5	639	U
77	A5	640	C
77	A5	641	G
77	A5	649	A
77	A5	656	C
77	A5	657	C
77	A5	661	C
77	A5	663	G
77	A5	664	G
77	A5	665	C
77	A5	666	G
77	A5	667	A
77	A5	669	C
77	A5	670	G
77	A5	676	C
77	A5	677	G
77	A5	681	G
77	A5	685	C
77	A5	687	U
77	A5	688	U
77	A5	689	U
77	A5	692	A
77	A5	696	C
77	A5	697	G
77	A5	704	C
77	A5	707	C
77	A5	712	C
77	A5	713	C
77	A5	720	G

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Mol	Chain	Res	Type
77	A5	721	G
77	A5	727	C
77	A5	728	U
77	A5	729	G
77	A5	730	G
77	A5	733	A
77	A5	734	G
77	A5	735	G
77	A5	737	C
77	A5	745	G
77	A5	746	A
77	A5	747	A
77	A5	748	G
77	A5	749	G
77	A5	912	G
77	A5	918	G
77	A5	927	G
77	A5	928	C
77	A5	929	A
77	A5	931	C
77	A5	932	A
77	A5	933	G
77	A5	935	A
77	A5	936	C
77	A5	938	C
77	A5	939	G
77	A5	940	C
77	A5	942	G
77	A5	943	A
77	A5	944	A
77	A5	945	U
77	A5	946	C
77	A5	947	C
77	A5	952	G
77	A5	956	A
77	A5	957	G
77	A5	958	G
77	A5	959	G
77	A5	960	A
77	A5	961	G
77	A5	962	C
77	A5	964	A

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Mol	Chain	Res	Type
77	A5	965	G
77	A5	966	A
77	A5	967	C
77	A5	968	C
77	A5	969	C
77	A5	970	G
77	A5	971	U
77	A5	972	C
77	A5	975	C
77	A5	976	G
77	A5	982	U
77	A5	1072	C
77	A5	1076	C
77	A5	1101	C
77	A5	1102	U
77	A5	1103	C
77	A5	1104	C
77	A5	1164	G
77	A5	1166	G
77	A5	1167	C
77	A5	1210	C
77	A5	1211	G
77	A5	1212	G
77	A5	1214	C
77	A5	1215	C
77	A5	1218	G
77	A5	1219	G
77	A5	1222	A
77	A5	1233	G
77	A5	1238	A
77	A5	1239	C
77	A5	1240	G
77	A5	1242	G
77	A5	1266	G
77	A5	1267	C
77	A5	1268	G
77	A5	1269	G
77	A5	1270	A
77	A5	1271	G
77	A5	1272	C
77	A5	1274	A
77	A5	1275	G

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Mol	Chain	Res	Type
77	A5	1280	C
77	A5	1281	G
77	A5	1282	G
77	A5	1283	G
77	A5	1284	G
77	A5	1285	U
77	A5	1288	G
77	A5	1289	C
77	A5	1293	G
77	A5	1294	A
77	A5	1295	C
77	A5	1296	G
77	A5	1297	U
77	A5	1301	C
77	A5	1302	U
77	A5	1303	A
77	A5	1309	C
77	A5	1313	C
77	A5	1314	C
77	A5	1319	U
77	A5	1322	A
77	A5	1326	A
77	A5	1336	G
77	A5	1338	G
77	A5	1344	C
77	A5	1346	C
77	A5	1354	A
77	A5	1357	C
77	A5	1358	G
77	A5	1359	G
77	A5	1361	G
77	A5	1362	G
77	A5	1365	C
77	A5	1366	G
77	A5	1367	C
77	A5	1368	A
77	A5	1369	C
77	A5	1370	G
77	A5	1371	A
77	A5	1377	G
77	A5	1378	C
77	A5	1379	C

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Mol	Chain	Res	Type
77	A5	1381	U
77	A5	1387	A
77	A5	1394	G
77	A5	1397	A
77	A5	1398	A
77	A5	1399	G
77	A5	1407	C
77	A5	1408	G
77	A5	1410	U
77	A5	1411	C
77	A5	1420	A
77	A5	1426	G
77	A5	1427	A
77	A5	1428	U
77	A5	1429	C
77	A5	1432	G
77	A5	1435	G
77	A5	1437	C
77	A5	1439	C
77	A5	1446	C
77	A5	1451	G
77	A5	1455	G
77	A5	1456	C
77	A5	1466	G
77	A5	1475	G
77	A5	1476	C
77	A5	1478	C
77	A5	1480	C
77	A5	1481	C
77	A5	1485	C
77	A5	1490	G
77	A5	1497	A
77	A5	1498	G
77	A5	1499	C
77	A5	1501	C
77	A5	1502	G
77	A5	1503	A
77	A5	1504	G
77	A5	1515	A
77	A5	1517	G
77	A5	1518	A
77	A5	1523	A

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Mol	Chain	Res	Type
77	A5	1526	G
77	A5	1534	A
77	A5	1535	C
77	A5	1537	A
77	A5	1543	G
77	A5	1547	A
77	A5	1564	A
77	A5	1566	C
77	A5	1574	G
77	A5	1578	U
77	A5	1591	U
77	A5	1596	U
77	A5	1597	G
77	A5	1601	A
77	A5	1612	G
77	A5	1613	A
77	A5	1624	G
77	A5	1625	G
77	A5	1627	G
77	A5	1631	A
77	A5	1632	A
77	A5	1633	G
77	A5	1634	A
77	A5	1637	A
77	A5	1640	C
77	A5	1641	G
77	A5	1649	U
77	A5	1654	G
77	A5	1661	C
77	A5	1663	C
77	A5	1664	U
77	A5	1665	C
77	A5	1670	G
77	A5	1676	C
77	A5	1677	U
77	A5	1680	G
77	A5	1694	C
77	A5	1697	G
77	A5	1698	C
77	A5	1699	A
77	A5	1700	G
77	A5	1719	A

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Mol	Chain	Res	Type
77	A5	1720	C
77	A5	1723	A
77	A5	1724	G
77	A5	1725	U
77	A5	1731	C
77	A5	1733	G
77	A5	1734	G
77	A5	1740	C
77	A5	1741	G
77	A5	1742	A
77	A5	1750	G
77	A5	1754	U
77	A5	1755	C
77	A5	1756	U
77	A5	1760	G
77	A5	1761	G
77	A5	1764	G
77	A5	1766	A
77	A5	1768	C
77	A5	1772	C
77	A5	1775	A
77	A5	1776	A
77	A5	1777	C
77	A5	1784	U
77	A5	1785	C
77	A5	1787	A
77	A5	1789	C
77	A5	1803	G
77	A5	1804	A
77	A5	1805	A
77	A5	1811	G
77	A5	1812	C
77	A5	1815	G
77	A5	1816	C
77	A5	1818	G
77	A5	1819	G
77	A5	1821	G
77	A5	1822	U
77	A5	1826	G
77	A5	1828	C
77	A5	1829	G
77	A5	1833	G

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Mol	Chain	Res	Type
77	A5	1834	U
77	A5	1836	G
77	A5	1841	C
77	A5	1842	G
77	A5	1847	C
77	A5	1848	C
77	A5	1854	G
77	A5	1855	G
77	A5	1866	U
77	A5	1869	G
77	A5	1881	C
77	A5	1882	U
77	A5	1888	A
77	A5	1890	G
77	A5	1892	A
77	A5	1897	A
77	A5	1898	C
77	A5	1906	U
77	A5	1907	A
77	A5	1915	C
77	A5	1916	G
77	A5	1917	A
77	A5	1918	U
77	A5	1920	C
77	A5	1921	C
77	A5	1922	G
77	A5	1924	C
77	A5	1930	U
77	A5	1931	C
77	A5	1938	C
77	A5	1948	G
77	A5	1961	G
77	A5	1962	A
77	A5	1964	A
77	A5	1966	C
77	A5	1971	C
77	A5	1975	G
77	A5	1976	G
77	A5	1979	A
77	A5	1982	G
77	A5	1983	A
77	A5	1984	A

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Mol	Chain	Res	Type
77	A5	1985	G
77	A5	1987	C
77	A5	1992	U
77	A5	1997	U
77	A5	1999	A
77	A5	2001	G
77	A5	2002	A
77	A5	2003	G
77	A5	2004	U
77	A5	2008	U
77	A5	2009	A
77	A5	2010	A
77	A5	2024	G
77	A5	2025	A
77	A5	2026	A
77	A5	2034	G
77	A5	2044	U
77	A5	2046	G
77	A5	2047	A
77	A5	2048	U
77	A5	2052	G
77	A5	2055	G
77	A5	2056	G
77	A5	2067	C
77	A5	2069	A
77	A5	2070	U
77	A5	2073	C
77	A5	2076	G
77	A5	2084	C
77	A5	2085	G
77	A5	2087	C
77	A5	2088	A
77	A5	2089	G
77	A5	2090	U
77	A5	2091	C
77	A5	2092	G
77	A5	2093	A
77	A5	2094	G
77	A5	2096	G
77	A5	2097	U
77	A5	2098	G
77	A5	2114	G

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Mol	Chain	Res	Type
77	A5	2115	G
77	A5	2116	C
77	A5	2117	G
77	A5	2119	C
77	A5	2122	G
77	A5	2123	C
78	A7	7	G
78	A7	10	C
78	A7	11	A
78	A7	13	A
78	A7	18	C
78	A7	33	U
78	A7	39	C
78	A7	41	G
78	A7	42	A
78	A7	49	A
78	A7	53	U
78	A7	61	G
78	A7	64	G
78	A7	67	C
78	A7	73	U
78	A7	74	A
78	A7	76	U
78	A7	93	G
78	A7	94	C
78	A7	96	U
78	A7	97	G
78	A7	100	A
78	A7	108	G
78	A7	110	G
78	A7	115	A
78	A7	121	U
79	A8	16	G
79	A8	21	C
79	A8	23	C
79	A8	31	G
79	A8	34	U
79	A8	35	C
79	A8	39	G
79	A8	41	A
79	A8	45	C
79	A8	46	G

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Mol	Chain	Res	Type
79	A8	59	A
79	A8	62	A
79	A8	63	U
79	A8	71	A
79	A8	74	U
79	A8	77	A
79	A8	80	A
79	A8	81	C
79	A8	82	A
79	A8	83	C
79	A8	85	U
79	A8	86	U
79	A8	87	G
79	A8	95	A
79	A8	96	C
79	A8	97	A
79	A8	103	A
79	A8	105	C
79	A8	110	U
79	A8	111	U
79	A8	114	G
79	A8	125	C
79	A8	126	C
79	A8	127	U
79	A8	141	C
79	A8	150	C
79	A8	154	G
79	A8	156	U
80	Cc	7	G
80	Cc	9	G
80	Cc	16	C
80	Cc	18	C
80	Cc	19	G
80	Cc	20	G
80	Cc	22	A
80	Cc	23	G
80	Cc	36	A
80	Cc	48	U
80	Cc	50	G
80	Cc	53	G
80	Cc	56	U
80	Cc	62	C

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Mol	Chain	Res	Type
80	Cc	63	C
80	Cc	65	G
80	Cc	66	C
80	Cc	77	A
81	Bb	5	A
81	Bb	6	U
81	Bb	7	U
81	Bb	8	U
81	Bb	9	A
81	Bb	11	C
81	Bb	15	G
81	Bb	16	U
81	Bb	17	U
81	Bb	18	G
81	Bb	19	G
81	Bb	22	G
81	Bb	24	G
81	Bb	39	U
81	Bb	41	U
81	Bb	42	G
81	Bb	46	G
81	Bb	47	U
81	Bb	48	C
81	Bb	61	C
81	Bb	62	A
81	Bb	68	U
81	Bb	70	C
81	Bb	73	A
82	Dd	15	U
82	Dd	16	U
83	A6	2253	A
83	A6	2254	G
83	A6	2255	C
83	A6	2257	C
83	A6	2258	C
83	A6	2259	G
83	A6	2260	C
83	A6	2261	G
83	A6	2263	A
83	A6	2264	C
83	A6	2265	G
83	A6	2266	C

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Mol	Chain	Res	Type
83	A6	2267	U
83	A6	2268	A
83	A6	2269	C
83	A6	2270	G
83	A6	2273	G
83	A6	2274	C
83	A6	2289	C
83	A6	2290	C
83	A6	2296	G
83	A6	2297	G
83	A6	2300	A
83	A6	2301	G
83	A6	2306	G
83	A6	2313	A
83	A6	2314	G
83	A6	2322	G
83	A6	2325	C
83	A6	2331	G
83	A6	2333	G
83	A6	2341	A
83	A6	2343	G
83	A6	2345	G
83	A6	2347	A
83	A6	2351	C
83	A6	2360	A
83	A6	2364	G
83	A6	2370	A
83	A6	2373	C
83	A6	2377	C
83	A6	2382	A
83	A6	2384	U
83	A6	2389	A
83	A6	2391	G
83	A6	2392	C
83	A6	2395	A
83	A6	2396	A
83	A6	2399	G
83	A6	2401	A
83	A6	2409	U
83	A6	2410	C
83	A6	2421	G
83	A6	2422	C

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Mol	Chain	Res	Type
83	A6	2428	A
83	A6	2437	C
83	A6	2438	A
83	A6	2440	U
83	A6	2441	C
83	A6	2450	G
83	A6	2456	G
83	A6	2458	C
83	A6	2461	G
83	A6	2463	G
83	A6	2470	C
83	A6	2472	A
83	A6	2473	A
83	A6	2474	G
83	A6	2475	G
83	A6	2476	G
83	A6	2488	C
83	A6	2489	C
83	A6	2490	U
83	A6	2491	C
83	A6	2504	C
83	A6	2505	C
83	A6	2506	G
83	A6	2511	A
83	A6	2513	A
83	A6	2517	A
83	A6	2526	C
83	A6	2529	A
83	A6	2531	C
83	A6	2532	C
83	A6	2533	C
83	A6	2544	G
83	A6	2546	G
83	A6	2547	G
83	A6	2549	G
83	A6	2552	G
83	A6	2554	U
83	A6	2566	G
83	A6	2575	U
83	A6	2583	C
83	A6	2586	G
83	A6	2587	A

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Mol	Chain	Res	Type
83	A6	2589	C
83	A6	2591	A
83	A6	2600	A
83	A6	2601	A
83	A6	2612	G
83	A6	2620	G
83	A6	2627	C
83	A6	2638	G
83	A6	2639	U
83	A6	2647	A
83	A6	2648	G
83	A6	2650	G
83	A6	2652	G
83	A6	2653	C
83	A6	2658	G
83	A6	2661	U
83	A6	2662	G
83	A6	2667	C
83	A6	2669	C
83	A6	2670	C
83	A6	2671	C
83	A6	2675	G
83	A6	2681	G
83	A6	2686	G
83	A6	2687	U
83	A6	2688	G
83	A6	2695	A
83	A6	2696	A
83	A6	2709	C
83	A6	2710	C
83	A6	2711	G
83	A6	2713	C
83	A6	2716	C
83	A6	2719	C
83	A6	2721	G
83	A6	2726	G
83	A6	2727	C
83	A6	2734	U
83	A6	2740	U
83	A6	2743	A
83	A6	2750	G
83	A6	2752	G

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Mol	Chain	Res	Type
83	A6	2754	G
83	A6	2759	G
83	A6	2760	G
83	A6	2761	U
83	A6	2762	G
83	A6	2765	A
83	A6	2766	A
83	A6	2767	U
83	A6	2768	C
83	A6	2769	U
83	A6	2770	C
83	A6	2772	C
83	A6	2773	G
83	A6	2783	A
83	A6	2787	A
83	A6	2788	U
83	A6	2789	A
83	A6	2790	U
83	A6	2794	C
83	A6	2795	A
83	A6	2798	A
83	A6	2800	G
83	A6	2804	C
83	A6	2806	A
83	A6	2812	A
83	A6	2814	C
83	A6	2824	C
83	A6	2825	A
83	A6	2826	U
83	A6	2827	G
83	A6	2828	U
83	A6	2829	U
83	A6	2830	G
83	A6	2833	A
83	A6	2838	G
83	A6	2839	U
83	A6	2842	G
83	A6	2845	A
83	A6	2848	G
83	A6	2850	A
83	A6	2855	G
83	A6	2884	G

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Mol	Chain	Res	Type
83	A6	2896	G
83	A6	2897	G
83	A6	2898	G
83	A6	2900	U
83	A6	2904	U
83	A6	2905	C
83	A6	3593	C
83	A6	3594	C
83	A6	3595	U
83	A6	3596	A
83	A6	3597	G
83	A6	3605	C
83	A6	3606	U
83	A6	3607	U
83	A6	3611	A
83	A6	3614	G
83	A6	3615	G
83	A6	3617	G
83	A6	3618	C
83	A6	3625	G
83	A6	3626	G
83	A6	3630	A
83	A6	3635	A
83	A6	3650	C
83	A6	3656	A
83	A6	3657	U
83	A6	3662	A
83	A6	3664	G
83	A6	3666	C
83	A6	3673	C
83	A6	3674	G
83	A6	3678	G
83	A6	3682	A
83	A6	3688	U
83	A6	3692	A
83	A6	3694	U
83	A6	3698	G
83	A6	3705	G
83	A6	3707	U
83	A6	3709	U
83	A6	3711	A
83	A6	3712	A

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Mol	Chain	Res	Type
83	A6	3713	U
83	A6	3727	A
83	A6	3729	U
83	A6	3732	A
83	A6	3747	A
83	A6	3748	A
83	A6	3754	G
83	A6	3756	A
83	A6	3757	G
83	A6	3759	A
83	A6	3760	A
83	A6	3761	C
83	A6	3773	U
83	A6	3774	A
83	A6	3776	G
83	A6	3777	G
83	A6	3778	U
83	A6	3783	A
83	A6	3784	A
83	A6	3785	A
83	A6	3786	U
83	A6	3791	C
83	A6	3792	G
83	A6	3802	U
83	A6	3807	A
83	A6	3811	G
83	A6	3812	C
83	A6	3813	A
83	A6	3814	U
83	A6	3817	A
83	A6	3818	U
83	A6	3819	G
83	A6	3838	U
83	A6	3839	G
83	A6	3840	U
83	A6	3843	C
83	A6	3844	U
83	A6	3858	C
83	A6	3859	G
83	A6	3867	A
83	A6	3877	A
83	A6	3878	C

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Mol	Chain	Res	Type
83	A6	3879	G
83	A6	3880	G
83	A6	3886	G
83	A6	3888	G
83	A6	3889	G
83	A6	3893	C
83	A6	3897	G
83	A6	3898	G
83	A6	3899	G
83	A6	3901	A
83	A6	3906	A
83	A6	3907	G
83	A6	3908	A
83	A6	3915	U
83	A6	3923	A
83	A6	3926	C
83	A6	3947	A
83	A6	3959	U
83	A6	3960	A
83	A6	3962	A
83	A6	3963	A
83	A6	3964	U
83	A6	3965	A
83	A6	3967	G
83	A6	3969	G
83	A6	3972	A
83	A6	3973	G
83	A6	4037	C
83	A6	4038	C
83	A6	4042	G
83	A6	4043	G
83	A6	4044	U
83	A6	4045	G
83	A6	4047	A
83	A6	4048	A
83	A6	4049	U
83	A6	4053	A
83	A6	4073	A
83	A6	4076	G
83	A6	4077	A
83	A6	4083	U
83	A6	4084	G

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Mol	Chain	Res	Type
83	A6	4085	A
83	A6	4087	G
83	A6	4089	G
83	A6	4093	G
83	A6	4094	G
83	A6	4104	G
83	A6	4106	G
83	A6	4107	G
83	A6	4114	C
83	A6	4115	G
83	A6	4116	C
83	A6	4117	U
83	A6	4119	C
83	A6	4120	U
83	A6	4121	G
83	A6	4122	G
83	A6	4125	C
83	A6	4126	C
83	A6	4127	A
83	A6	4142	C
83	A6	4143	G
83	A6	4144	C
83	A6	4160	C
83	A6	4163	U
83	A6	4164	C
83	A6	4165	C
83	A6	4170	A
83	A6	4171	C
83	A6	4173	G
83	A6	4183	G
83	A6	4184	G
83	A6	4185	G
83	A6	4191	G
83	A6	4206	C
83	A6	4212	A
83	A6	4225	G
83	A6	4228	G
83	A6	4229	U
83	A6	4232	U
83	A6	4233	A
83	A6	4238	G
83	A6	4243	C

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Mol	Chain	Res	Type
83	A6	4251	A
83	A6	4254	G
83	A6	4255	A
83	A6	4258	C
83	A6	4266	G
83	A6	4267	G
83	A6	4268	A
83	A6	4271	A
83	A6	4273	A
83	A6	4279	A
83	A6	4280	A
83	A6	4282	A
83	A6	4290	U
83	A6	4291	G
83	A6	4294	C
83	A6	4296	U
83	A6	4297	G
83	A6	4304	A
83	A6	4305	G
83	A6	4306	U
83	A6	4314	C
83	A6	4317	A
83	A6	4318	C
83	A6	4326	G
83	A6	4329	G
83	A6	4330	G
83	A6	4332	C
83	A6	4334	U
83	A6	4335	C
83	A6	4338	G
83	A6	4346	U
83	A6	4347	G
83	A6	4348	A
83	A6	4349	C
83	A6	4350	C
83	A6	4354	U
83	A6	4355	G
83	A6	4363	A
83	A6	4364	G
83	A6	4373	G
83	A6	4376	A
83	A6	4377	G

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Mol	Chain	Res	Type
83	A6	4378	A
83	A6	4380	A
83	A6	4387	C
83	A6	4391	G
83	A6	4393	G
83	A6	4394	A
83	A6	4395	U
83	A6	4396	A
83	A6	4413	C
83	A6	4419	U
83	A6	4422	A
83	A6	4423	U
83	A6	4424	A
83	A6	4426	C
83	A6	4432	C
83	A6	4436	U
83	A6	4438	U
83	A6	4444	C
83	A6	4448	G
83	A6	4449	A
83	A6	4455	G
83	A6	4463	U
83	A6	4464	A
83	A6	4466	C
83	A6	4471	U
83	A6	4476	C
83	A6	4488	A
83	A6	4491	G
83	A6	4495	G
83	A6	4500	U
83	A6	4504	C
83	A6	4512	U
83	A6	4513	A
83	A6	4518	A
83	A6	4523	A
83	A6	4524	G
83	A6	4525	C
83	A6	4528	G
83	A6	4534	G
83	A6	4536	C
83	A6	4548	A
83	A6	4557	U

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Mol	Chain	Res	Type
83	A6	4560	C
83	A6	4567	G
83	A6	4569	U
83	A6	4572	U
83	A6	4575	G
83	A6	4581	G
83	A6	4582	C
83	A6	4584	A
83	A6	4586	G
83	A6	4590	A
83	A6	4599	A
83	A6	4617	G
83	A6	4621	C
83	A6	4622	A
83	A6	4623	G
83	A6	4632	U
83	A6	4633	G
83	A6	4634	U
83	A6	4636	U
83	A6	4637	G
83	A6	4639	G
83	A6	4652	G
83	A6	4653	C
83	A6	4656	A
83	A6	4657	U
83	A6	4664	A
83	A6	4669	A
83	A6	4670	C
83	A6	4671	C
83	A6	4672	A
83	A6	4677	U
83	A6	4678	G
83	A6	4687	A
83	A6	4691	A
83	A6	4694	G
83	A6	4697	U
83	A6	4700	A
83	A6	4708	A
83	A6	4709	U
83	A6	4710	C
83	A6	4714	C
83	A6	4720	C

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Mol	Chain	Res	Type
83	A6	4721	G
83	A6	4723	A
83	A6	4730	C
83	A6	4731	G
83	A6	4732	G
83	A6	4739	C
83	A6	4749	C
83	A6	4750	G
83	A6	4751	G
83	A6	4752	U
83	A6	4753	U
83	A6	4754	G
83	A6	4756	C
83	A6	4757	C
83	A6	4758	U
83	A6	4762	A
83	A6	4764	A
83	A6	4768	G
83	A6	4771	C
83	A6	4864	U
83	A6	4869	U
83	A6	4870	G
83	A6	4871	C
83	A6	4872	G
83	A6	4873	G
83	A6	4874	A
83	A6	4875	G
83	A6	4876	U
83	A6	4877	G
83	A6	4878	C
83	A6	4881	U
83	A6	4882	U
83	A6	4883	C
83	A6	4884	G
83	A6	4885	U
83	A6	4886	C
83	A6	4888	U
83	A6	4889	G
83	A6	4890	G
83	A6	4895	C
83	A6	4896	G
83	A6	4901	G

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Mol	Chain	Res	Type
83	A6	4910	G
83	A6	4915	G
83	A6	4925	U
83	A6	4927	G
83	A6	4933	C
83	A6	4937	C
83	A6	4938	A
83	A6	4939	C
83	A6	4940	C
83	A6	4941	G
83	A6	4943	A
83	A6	4944	C
83	A6	4945	G
83	A6	4946	U
83	A6	4947	U
83	A6	4948	C
83	A6	4950	U
83	A6	4951	G
83	A6	4952	G
83	A6	4966	A
83	A6	4967	A
83	A6	4968	A
83	A6	4975	G
83	A6	4976	U
83	A6	4981	G
83	A6	4985	U
83	A6	4988	U
83	A6	4989	U
83	A6	4990	C
83	A6	4991	U
83	A6	4992	G
83	A6	4998	G
83	A6	5002	U
83	A6	5003	U
83	A6	5006	U
83	A6	5007	A
83	A6	5013	C
83	A6	5014	A
83	A6	5017	G
83	A6	5023	C
83	A6	5026	U
83	A6	5027	C

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Mol	Chain	Res	Type
83	A6	5028	G
83	A6	5031	G
83	A6	5032	C
83	A6	5035	U
83	A6	5041	G
83	A6	5042	A
83	A6	5047	C
83	A6	5050	C
83	A6	5054	C
83	A6	5060	A
83	A6	5061	A
83	A6	5062	G

All (161) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
16	B2	24	C
16	B2	72	C
16	B2	102	A
16	B2	127	C
16	B2	139	C
16	B2	140	C
16	B2	141	A
16	B2	190	G
16	B2	225	G
16	B2	327	G
16	B2	370	G
16	B2	465	A
16	B2	531	A
16	B2	532	C
16	B2	534	G
16	B2	552	G
16	B2	604	A
16	B2	688	U
16	B2	732	U
16	B2	734	C
16	B2	746	C
16	B2	797	C
16	B2	833	C
16	B2	839	C
16	B2	880	G
16	B2	1108	G

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Mol	Chain	Res	Type
16	B2	1137	U
16	B2	1253	A
16	B2	1307	U
16	B2	1395	C
16	B2	1396	A
16	B2	1401	A
16	B2	1429	G
16	B2	1474	A
16	B2	1543	U
16	B2	1637	A
16	B2	1679	A
16	B2	1756	C
16	B2	1825	A
16	B2	1830	U
77	A5	64	A
77	A5	125	C
77	A5	186	G
77	A5	187	U
77	A5	220	C
77	A5	245	C
77	A5	333	U
77	A5	451	C
77	A5	452	A
77	A5	486	C
77	A5	505	G
77	A5	648	G
77	A5	655	C
77	A5	666	G
77	A5	668	C
77	A5	703	G
77	A5	746	A
77	A5	911	U
77	A5	917	A
77	A5	926	G
77	A5	931	C
77	A5	945	U
77	A5	955	G
77	A5	957	G
77	A5	971	U
77	A5	974	C
77	A5	1211	G
77	A5	1232	G

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Mol	Chain	Res	Type
77	A5	1238	A
77	A5	1239	C
77	A5	1269	G
77	A5	1281	G
77	A5	1284	G
77	A5	1288	G
77	A5	1293	G
77	A5	1294	A
77	A5	1296	G
77	A5	1356	U
77	A5	1407	C
77	A5	1410	U
77	A5	1419	G
77	A5	1428	U
77	A5	1445	U
77	A5	1474	C
77	A5	1484	G
77	A5	1500	A
77	A5	1534	A
77	A5	1633	G
77	A5	1696	C
77	A5	1804	A
77	A5	1832	C
77	A5	1833	G
77	A5	1835	G
77	A5	1841	C
77	A5	1854	G
77	A5	1921	C
77	A5	2046	G
77	A5	2083	C
77	A5	2088	A
77	A5	2089	G
77	A5	2097	U
77	A5	2116	C
79	A8	94	G
79	A8	124	U
79	A8	126	C
83	A6	2256	C
83	A6	2257	C
83	A6	2260	C
83	A6	2263	A
83	A6	2267	U

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Mol	Chain	Res	Type
83	A6	2272	C
83	A6	2313	A
83	A6	2487	G
83	A6	2574	G
83	A6	2649	G
83	A6	2661	U
83	A6	2695	A
83	A6	2769	U
83	A6	3616	U
83	A6	3672	G
83	A6	3697	U
83	A6	3731	C
83	A6	3753	G
83	A6	3857	G
83	A6	3876	A
83	A6	3887	C
83	A6	3888	G
83	A6	3946	G
83	A6	3959	U
83	A6	3968	U
83	A6	4036	G
83	A6	4047	A
83	A6	4072	C
83	A6	4075	U
83	A6	4082	G
83	A6	4119	C
83	A6	4164	C
83	A6	4170	A
83	A6	4232	U
83	A6	4237	C
83	A6	4448	G
83	A6	4656	A
83	A6	4699	U
83	A6	4713	G
83	A6	4738	C
83	A6	4748	U
83	A6	4871	C
83	A6	4874	A
83	A6	4885	U
83	A6	4887	C
83	A6	4889	G
83	A6	4895	C

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Mol	Chain	Res	Type
83	A6	4924	C
83	A6	4937	C
83	A6	4951	G
83	A6	4991	U
83	A6	4997	G
83	A6	5022	U
83	A6	5027	C
83	A6	5059	C
83	A6	5060	A

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

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

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

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	$\# Z > 2$	Counts	RMSZ	$\# Z > 2$
81	YYG	Bb	37	84,81	30,42,43	1.25	4 (13%)	32,62,65	1.98	5 (15%)

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

Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
81	YYG	Bb	37	84,81	-	10/20/42/43	0/3/4/4

All (4) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
81	Bb	37	YYG	C8-N7	-3.62	1.29	1.34
81	Bb	37	YYG	C12-N1	3.38	1.42	1.36
81	Bb	37	YYG	C2-N2	-3.20	1.29	1.35
81	Bb	37	YYG	C4-N3	-2.04	1.37	1.40

All (5) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
81	Bb	37	YYG	C3-N3-C4	7.55	128.17	116.76
81	Bb	37	YYG	C3-N3-C2	-4.76	115.70	120.09
81	Bb	37	YYG	C13-C12-N1	3.67	129.16	122.55
81	Bb	37	YYG	C11-C12-N1	-3.21	104.72	106.53
81	Bb	37	YYG	C4-N3-C2	-2.29	116.12	122.30

There are no chirality outliers.

All (10) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
81	Bb	37	YYG	C12-C13-C14-C15
81	Bb	37	YYG	C14-C15-N20-C21
81	Bb	37	YYG	O23-C21-N20-C15
81	Bb	37	YYG	N20-C21-O23-C24
81	Bb	37	YYG	O22-C21-O23-C24
81	Bb	37	YYG	C15-C16-O18-C19
81	Bb	37	YYG	O22-C21-N20-C15
81	Bb	37	YYG	O17-C16-O18-C19
81	Bb	37	YYG	N20-C15-C16-O18
81	Bb	37	YYG	N20-C15-C16-O17

There are no ring outliers.

1 monomer is involved in 1 short contact:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
81	Bb	37	YYG	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 3 ligands modelled in this entry, 3 are monoatomic - leaving 0 for Mogul analysis.

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

There are no torsion outliers.

There are no ring outliers.

No monomer is involved in short contacts.

5.7 Other polymers [i](#)

There are no such residues in this entry.

5.8 Polymer linkage issues [i](#)

The following chains have linkage breaks:

Mol	Chain	Number of breaks
77	A5	5
16	B2	4
83	A6	4

All chain breaks are listed below:

Model	Chain	Residue-1	Atom-1	Residue-2	Atom-2	Distance (Å)
1	A5	2098:G	O3'	2113:G	P	29.39
1	B2	755:C	O3'	785:C	P	18.43
1	A6	3988:C	O3'	4012:G	P	18.21
1	A5	763:C	O3'	888:G	P	18.02
1	B2	1761:U	O3'	1769:C	P	17.36
1	A6	3288:G	O3'	3576:C	P	17.05
1	A6	2918:G	O3'	3274:G	P	16.42
1	A6	4793:G	O3'	4840:C	P	15.79
1	A5	1112:C	O3'	1155:C	P	15.56
1	A5	993:G	O3'	1047:C	P	15.52
1	A5	1242:G	O3'	1262:G	P	13.65
1	B2	1202:U	O3'	1203:G	P	3.84
1	B2	1690:U	O3'	1691:U	P	3.52

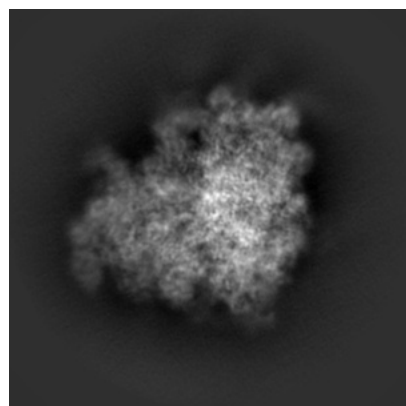
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-72482. These allow visual inspection of the internal detail of the map and identification of artifacts.

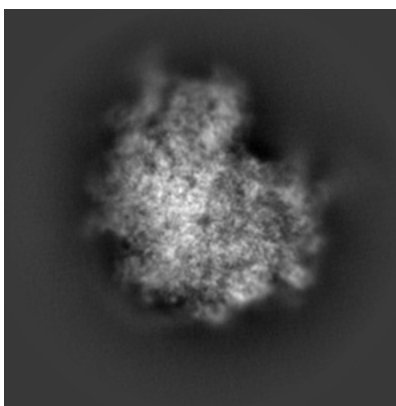
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

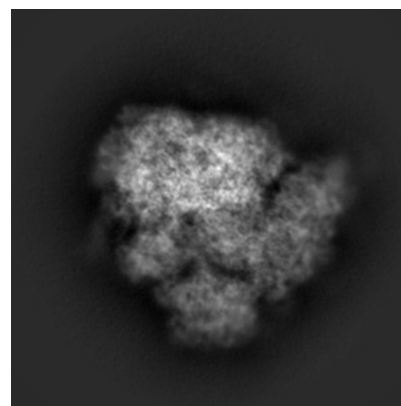
6.1.1 Primary map



X

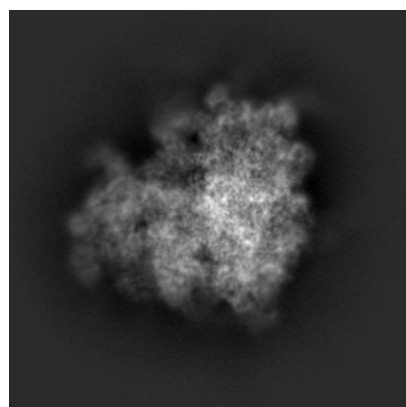


Y

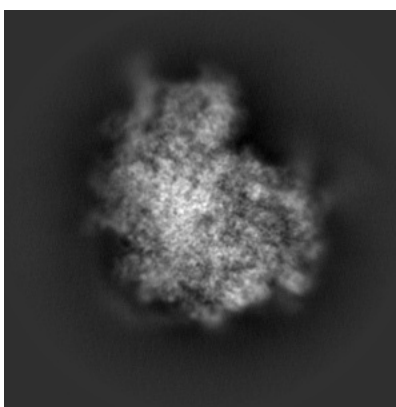


Z

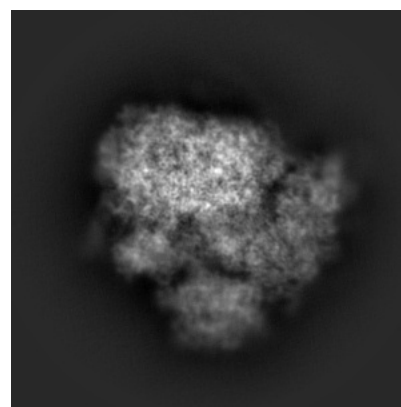
6.1.2 Raw map



X



Y

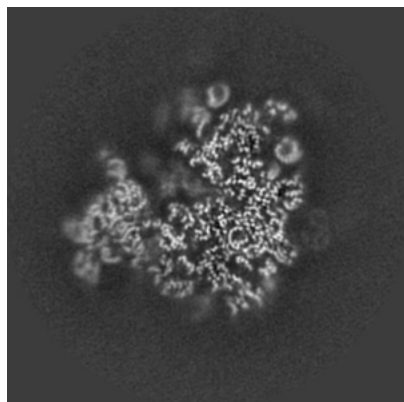


Z

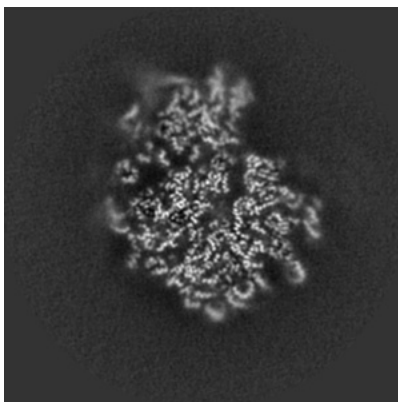
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

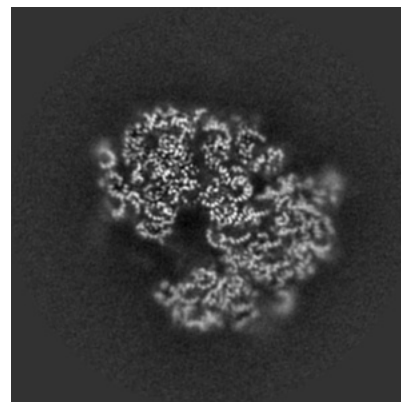
6.2.1 Primary map



X Index: 200

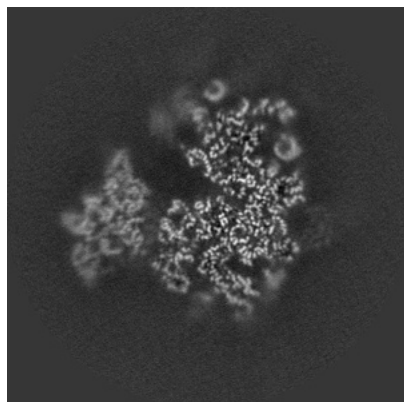


Y Index: 200

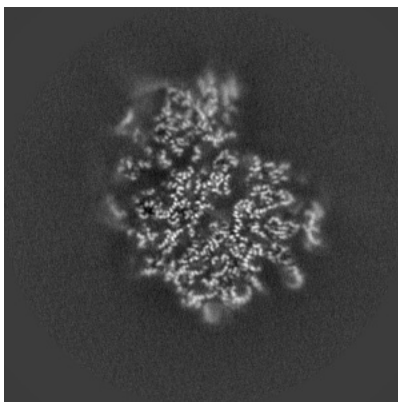


Z Index: 200

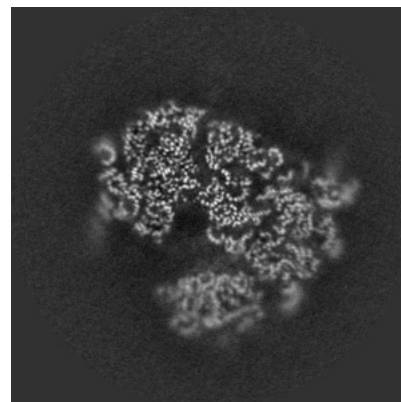
6.2.2 Raw map



X Index: 200



Y Index: 200

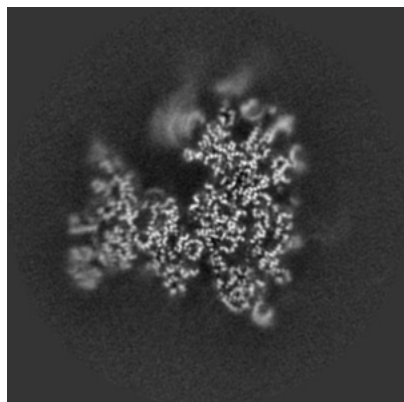


Z Index: 200

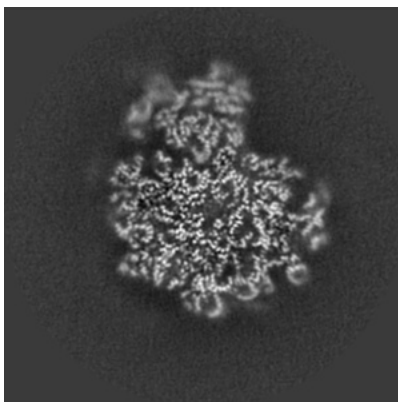
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

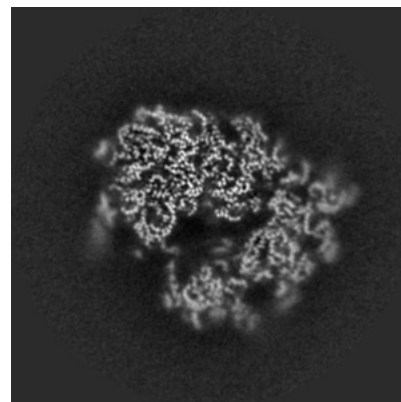
6.3.1 Primary map



X Index: 219

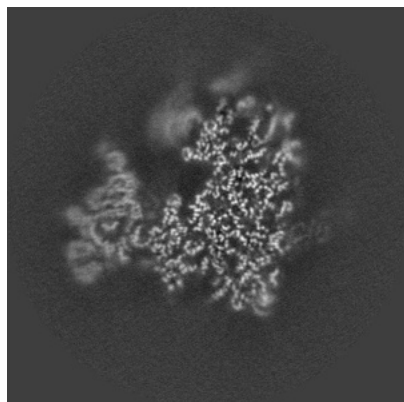


Y Index: 208

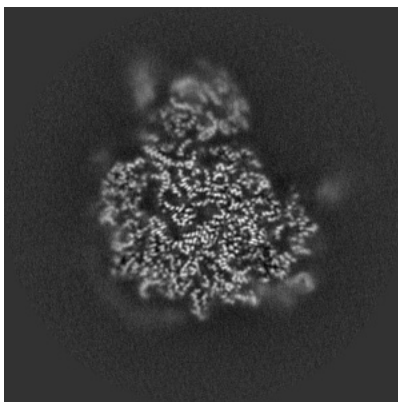


Z Index: 209

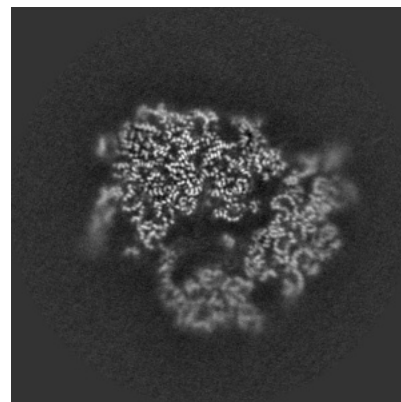
6.3.2 Raw map



X Index: 213



Y Index: 227

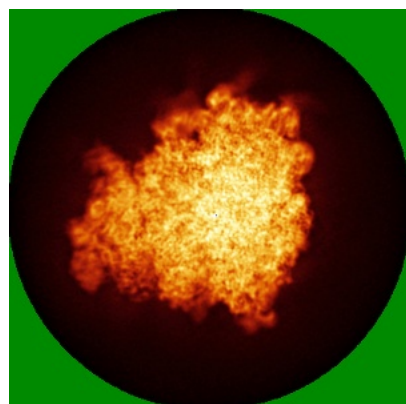


Z Index: 210

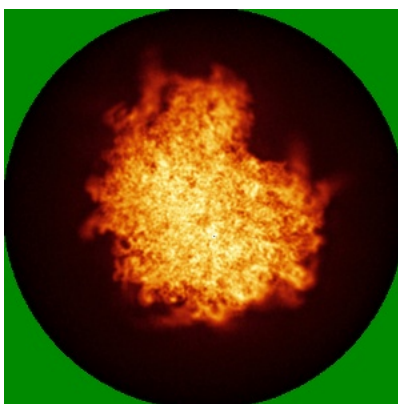
The images above show the largest variance slices of the map in three orthogonal directions.

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

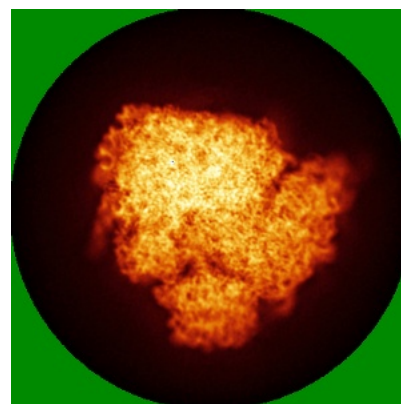
6.4.1 Primary map



X

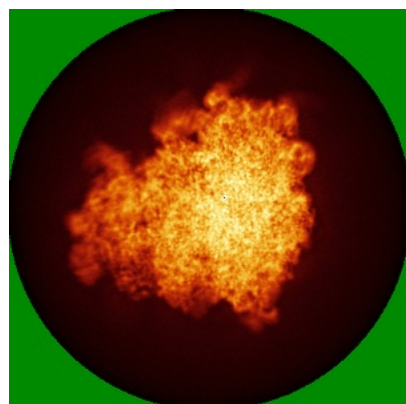


Y

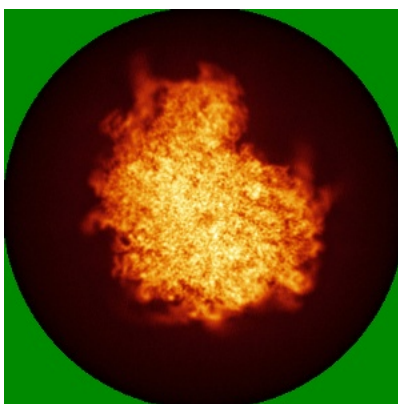


Z

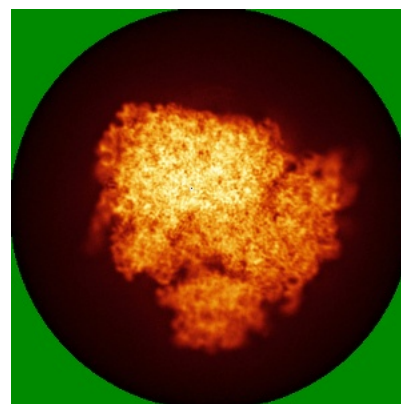
6.4.2 Raw map



X



Y

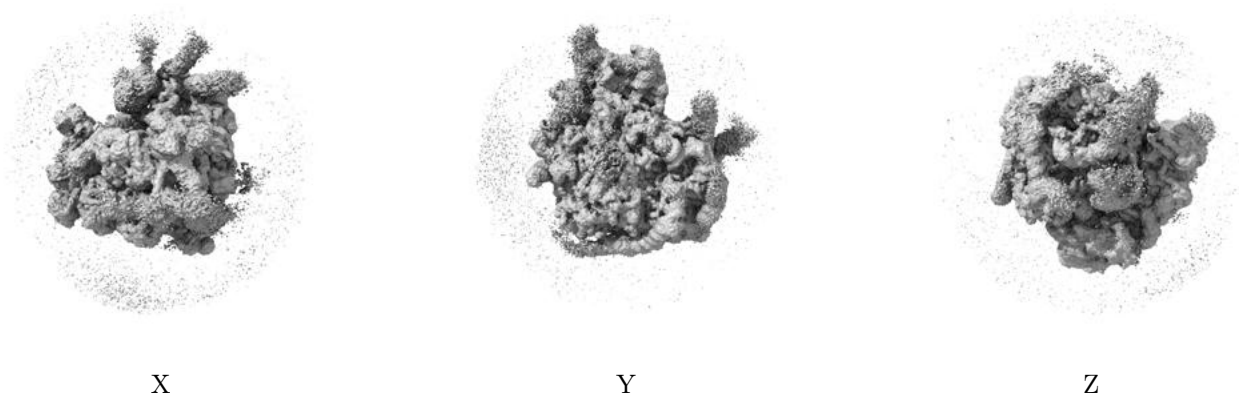


Z

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.

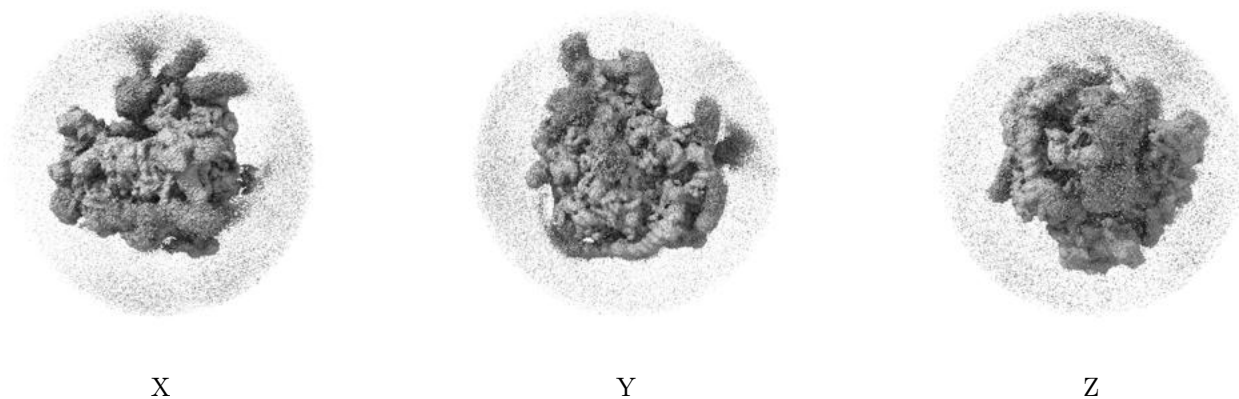
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.002. 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.

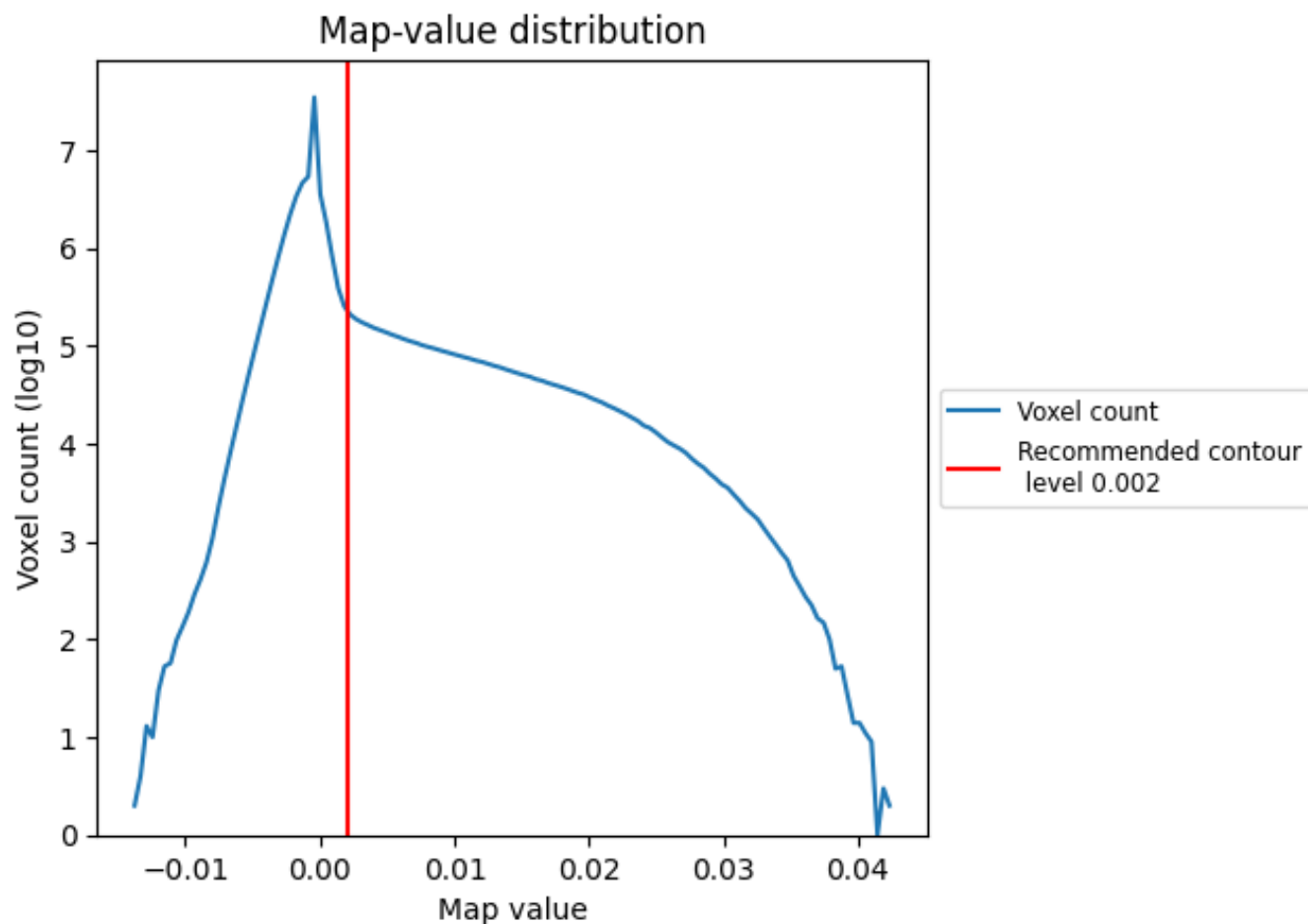
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

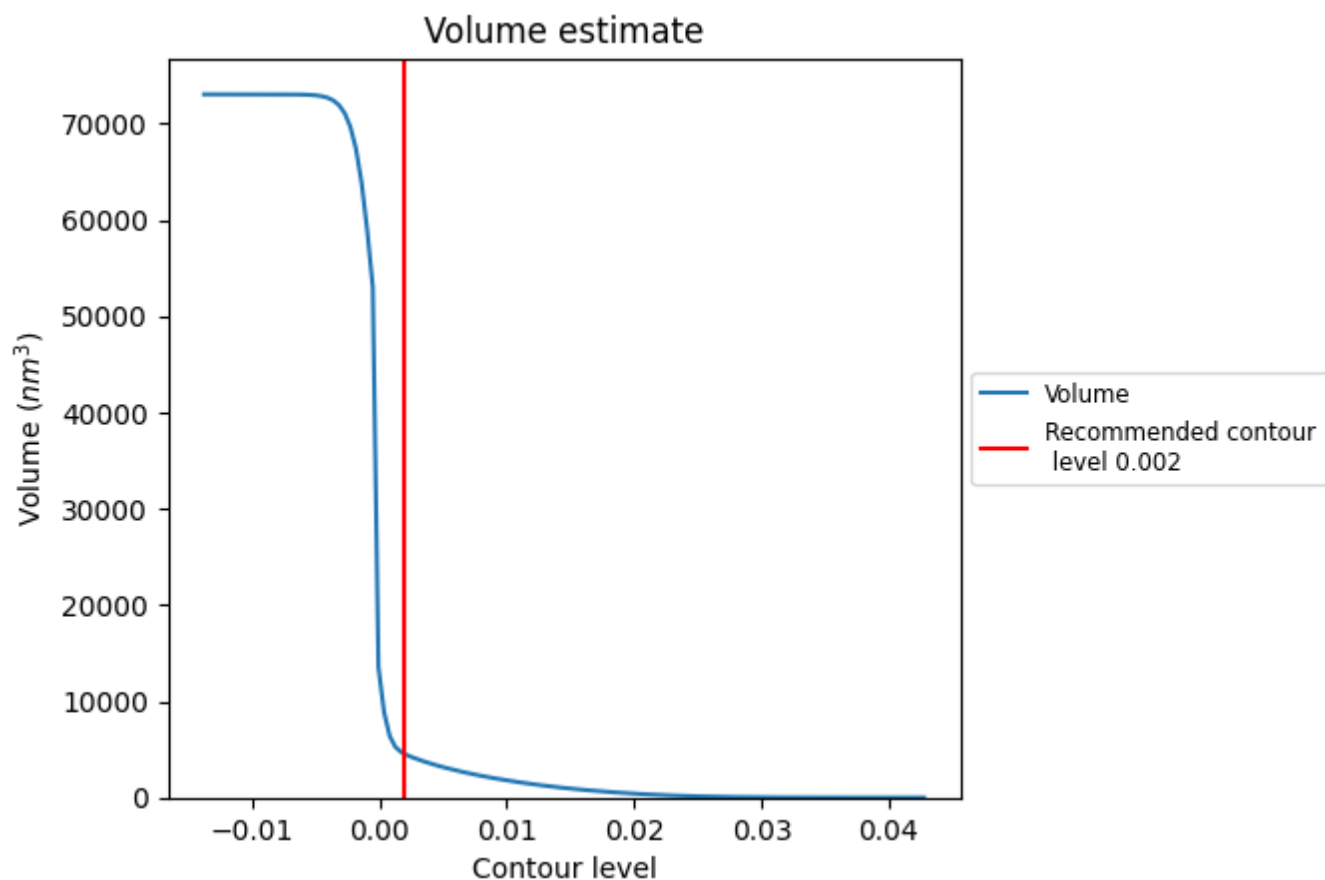
This section contains the results of statistical analysis of the map.

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.

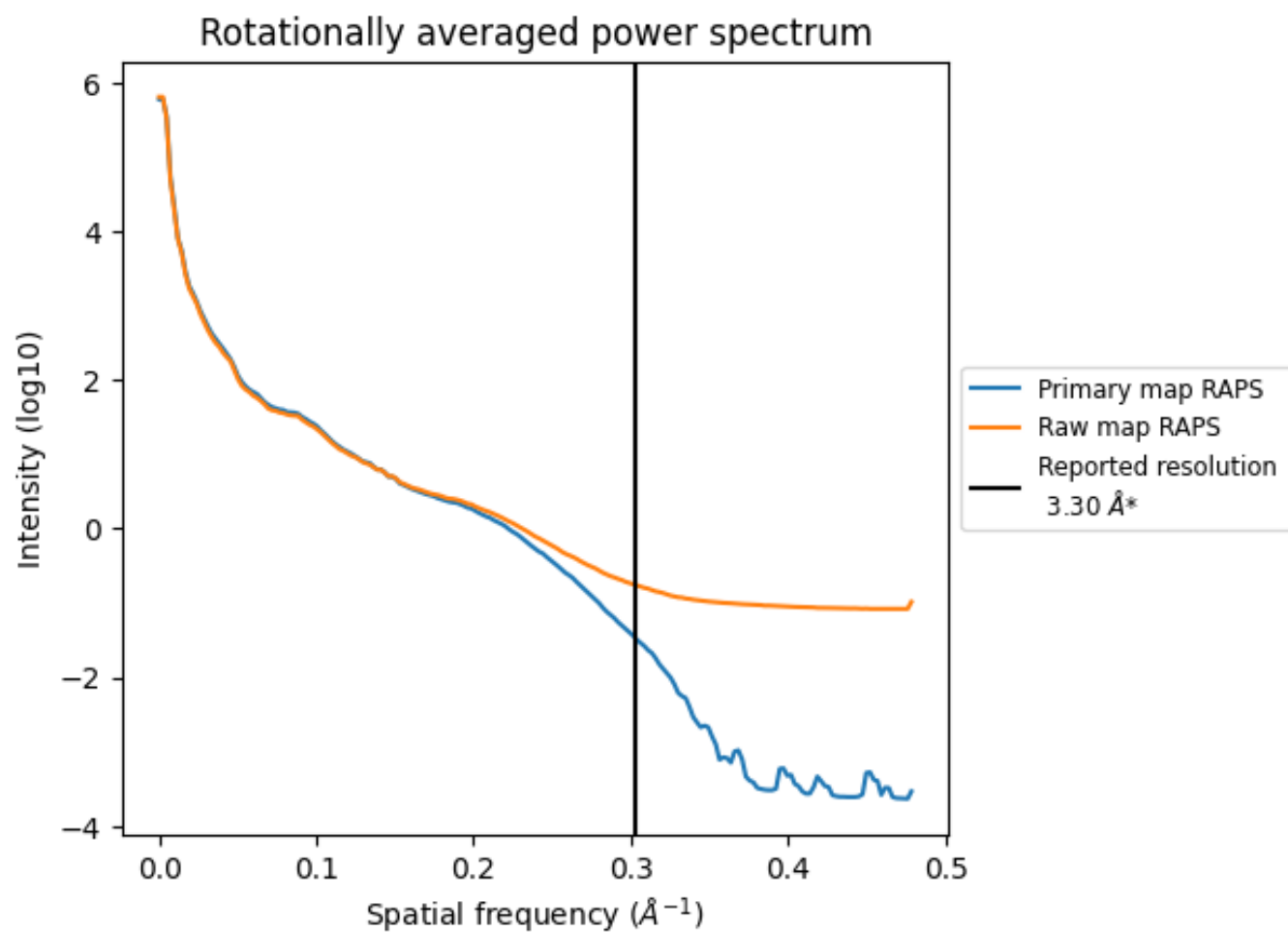
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 4520 nm³; this corresponds to an approximate mass of 4083 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 ⓘ

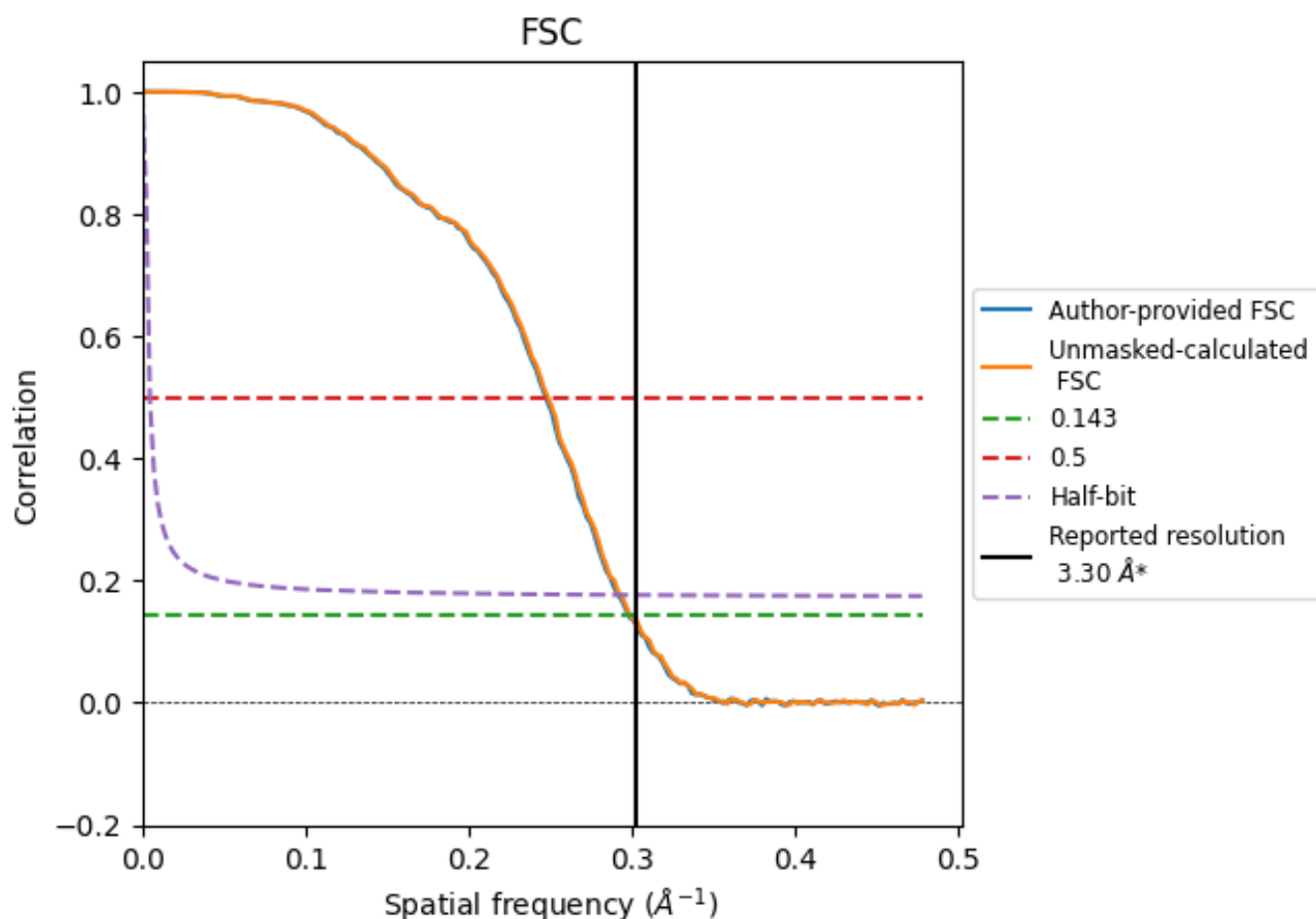


*Reported resolution corresponds to spatial frequency of 0.303 Å⁻¹

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.303 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

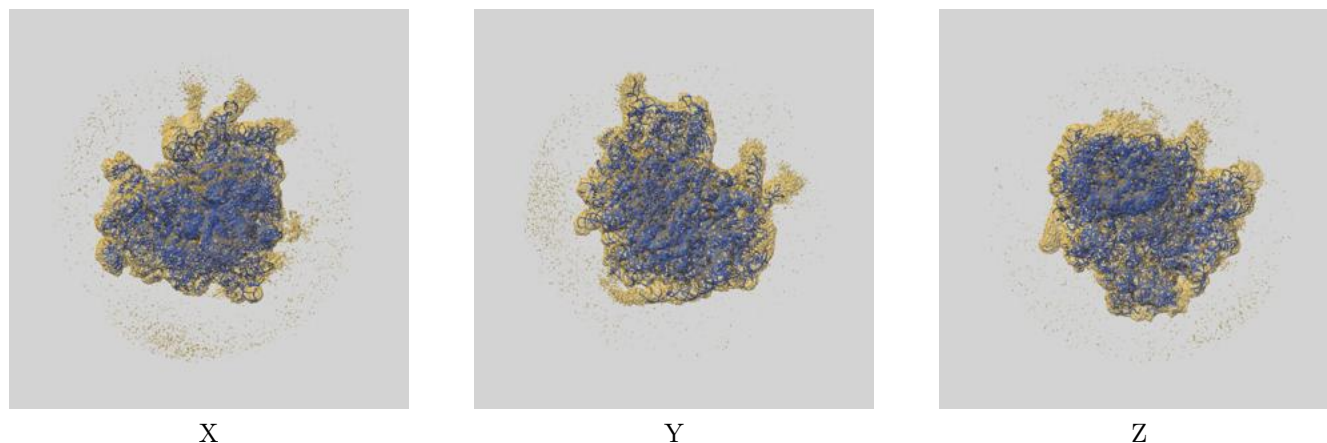
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	3.30	-	-
Author-provided FSC curve	3.35	4.04	3.43
Unmasked-calculated*	3.34	4.02	3.41

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

9 Map-model fit [i](#)

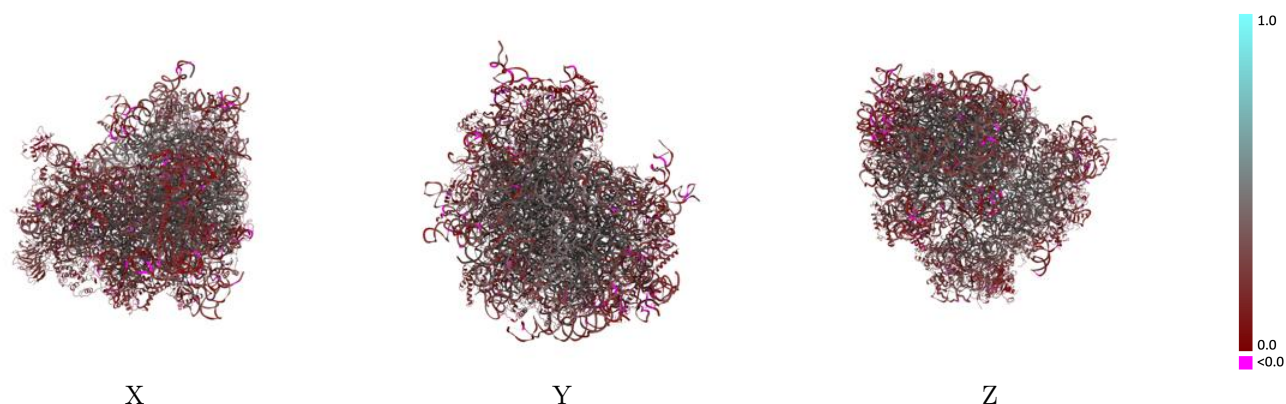
This section contains information regarding the fit between EMDB map EMD-72482 and PDB model 9Y4G. Per-residue inclusion information can be found in section 3 on page 20.

9.1 Map-model overlay [i](#)



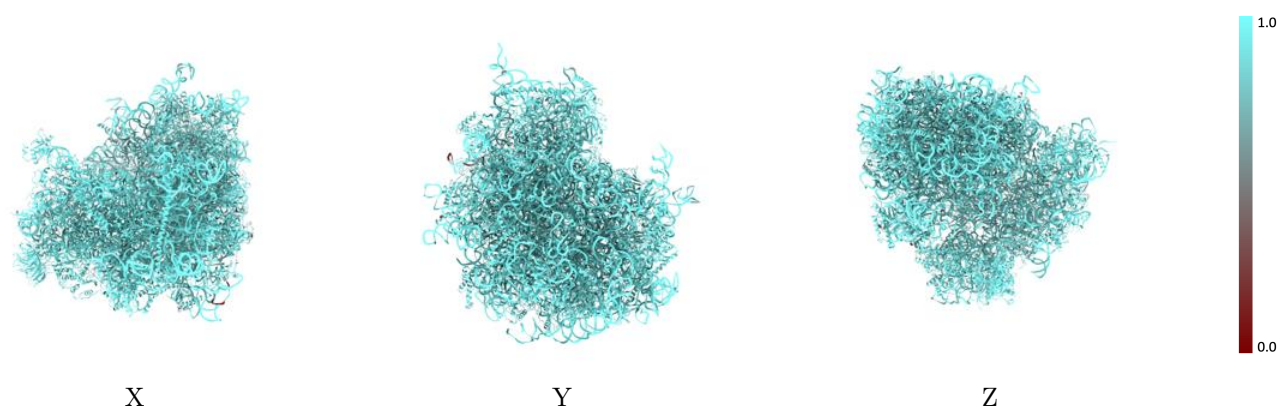
The images above show the 3D surface view of the map at the recommended contour level 0.002 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



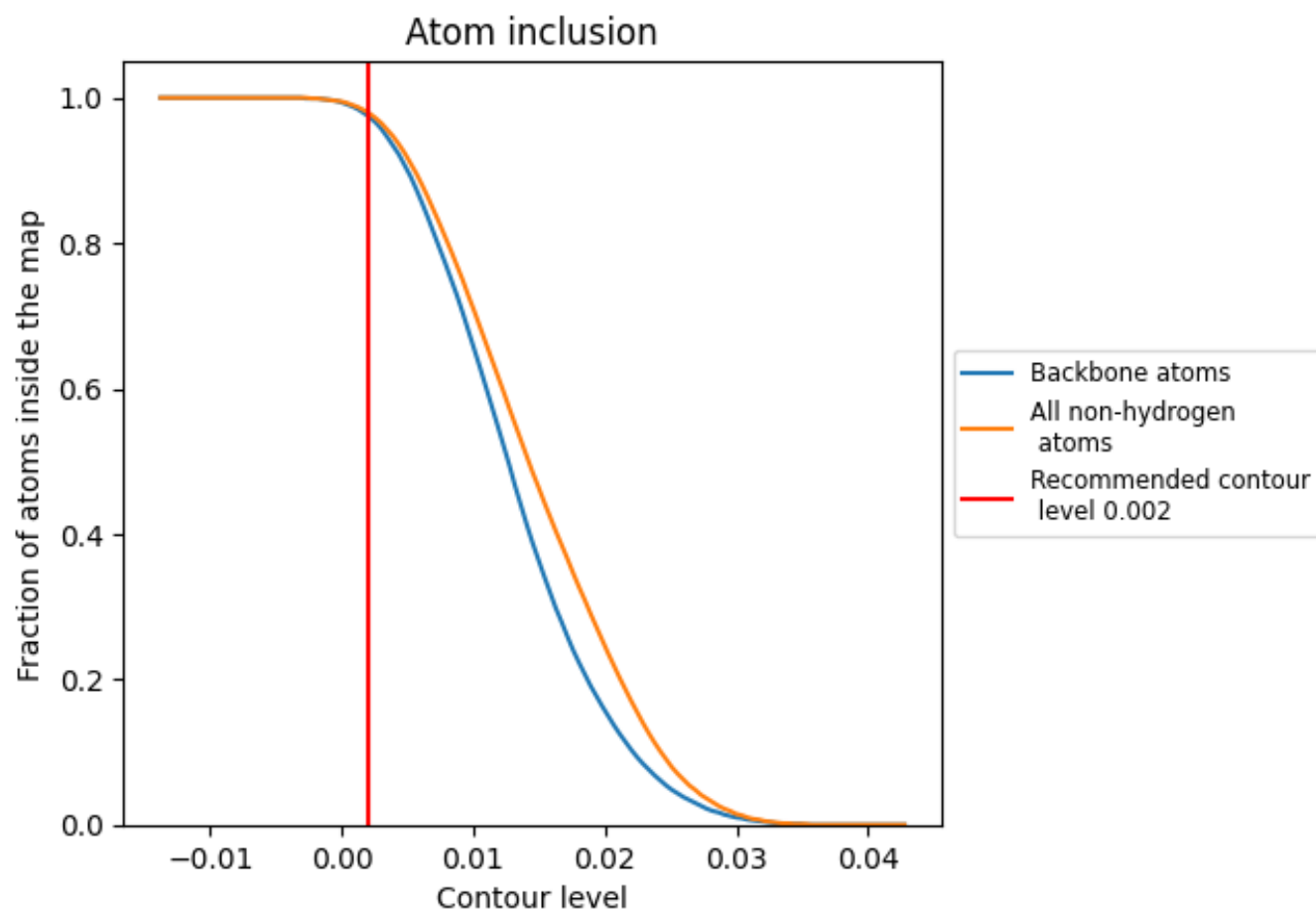
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions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

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



The images above show the model with each residue coloured according to its atom inclusion. This shows to what extent they are inside the map at the recommended contour level (0.002).

9.4 Atom inclusion ⓘ



At the recommended contour level, 98% of all backbone atoms, 98% 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 (0.002) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.9800	 0.3110
A5	 0.9920	 0.3290
A6	 0.9940	 0.3680
A7	 0.9920	 0.3220
A8	 0.9930	 0.3570
AA	 0.9730	 0.2710
AB	 0.9630	 0.2590
AC	 0.9520	 0.2840
AD	 0.9730	 0.2530
AE	 0.9790	 0.2230
AF	 0.9730	 0.2280
AG	 0.9900	 0.2010
AH	 0.9730	 0.2200
AI	 0.9770	 0.2300
AJ	 0.9690	 0.1940
AK	 0.9930	 0.2050
AL	 0.9480	 0.2810
AM	 0.9670	 0.1390
AN	 0.9580	 0.2920
AO	 0.9470	 0.2740
AP	 0.9560	 0.2060
AQ	 0.9790	 0.2250
AR	 0.9670	 0.2310
AS	 0.9850	 0.2330
AT	 0.9910	 0.2210
AU	 0.9810	 0.2400
AV	 0.9360	 0.2320
AW	 0.9610	 0.3070
AX	 0.9860	 0.3340
AY	 0.9800	 0.1660
AZ	 0.9670	 0.1930
Aa	 0.9570	 0.2990
Ab	 0.9410	 0.2390
Ac	 0.9630	 0.2050
Ad	 0.9700	 0.2470



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Chain	Atom inclusion	Q-score
Ae	 0.9630	 0.2330
Af	 0.9650	 0.1430
Ag	 0.9900	 0.2280
B2	 0.9940	 0.3190
Bb	 0.8880	 0.2280
CA	 0.9450	 0.3850
CB	 0.9690	 0.3220
CC	 0.9650	 0.3300
CD	 0.9940	 0.2670
CE	 0.9240	 0.1570
CF	 0.9700	 0.3360
CG	 0.9340	 0.2440
CH	 0.9650	 0.2910
CI	 0.9450	 0.3200
CJ	 0.9460	 0.1860
CL	 0.9570	 0.2650
CM	 0.9690	 0.2750
CN	 0.9610	 0.3600
CO	 0.9580	 0.3290
CP	 0.9770	 0.3830
CQ	 0.9480	 0.3360
CR	 0.9750	 0.3210
CS	 0.9700	 0.3010
CT	 0.9450	 0.3130
CU	 0.8800	 0.1730
CV	 0.9620	 0.3530
CW	 0.9630	 0.2390
CX	 0.9700	 0.3020
CY	 0.9860	 0.3250
CZ	 0.9240	 0.1980
Ca	 0.9790	 0.3710
Cb	 0.9510	 0.2990
Cc	 0.9780	 0.2870
Cd	 0.9760	 0.3120
Ce	 0.9690	 0.4000
Cf	 0.9630	 0.3780
Cg	 0.9710	 0.3090
Ch	 0.9780	 0.2890
Ci	 0.9370	 0.2460
Cj	 0.9770	 0.3830
Ck	 0.9170	 0.2320
Cl	 0.9760	 0.3630

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Chain	Atom inclusion	Q-score
Cm	 0.9560	 0.3310
Cn	 0.9600	 0.3630
Co	 0.9640	 0.3390
Cp	 0.9330	 0.3600
Cr	 0.9180	 0.2270
Cz	 0.9740	 0.1350
Dd	 0.9850	 0.3430