



Full wwPDB EM Validation Report ⓘ

Mar 5, 2026 – 10:32 AM UTC

PDB ID : 8CCS / pdb_00008ccs
EMDB ID : EMD-16563
Title : 80S *S. cerevisiae* ribosome with ligands in hybrid-1 pre-translocation (PRE-H1) complex
Authors : Milicevic, N.; Jenner, L.; Myasnikov, A.; Yusupov, M.; Yusupova, G.
Deposited on : 2023-01-27
Resolution : 1.97 Å(reported)

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

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

A user guide is available at

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

The types of validation reports are described at

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

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

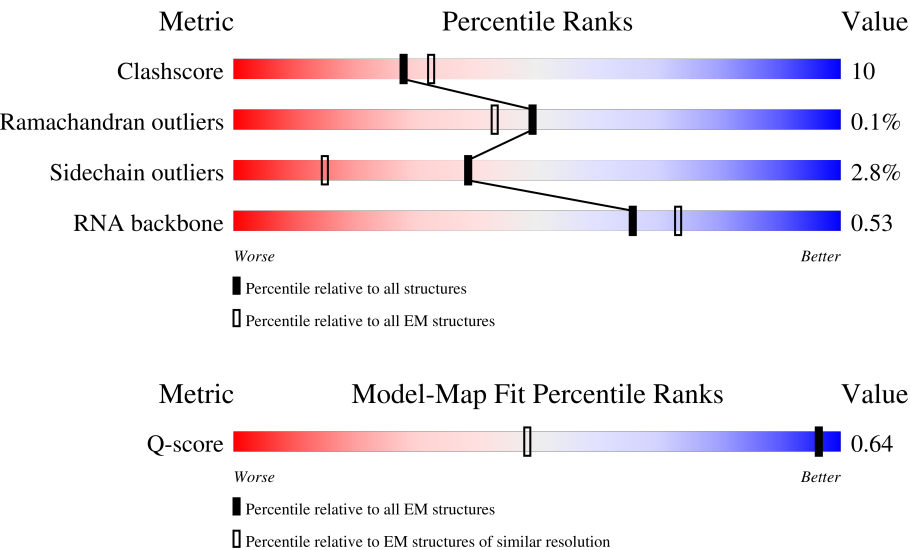
EMDB validation analysis : 0.0.1.dev132
Mogul : 2022.3.0, CSD as543be (2022)
MolProbity : 4-5-2 with Phenix2.0
Percentile statistics : 20250101.v01 (using entries in the PDB archive January 1st 2025)
EM percentile statistics : 202505.v01 (Using data in the EMDB archive up until May 2025)
MapQ : 1.9.13
Ideal geometry (proteins) : Engh & Huber (2001)
Ideal geometry (DNA, RNA) : Parkinson et al. (1996)
Validation Pipeline (wwPDB-VP) : 2.49

1 Overall quality at a glance i

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

The reported resolution of this entry is 1.97 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	229148	23984	-
Ramachandran outliers	224038	23583	-
Sidechain outliers	223484	23102	-
RNA backbone	8273	3508	-
Q-score	-	25397	1339 (1.50 - 2.46)

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	0	135	7% 67% 33% .
2	1	108	22% 37% 27% 35% .
3	2	119	60% 20% 18% .

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Mol	Chain	Length	Quality of chain
4	3	82	
5	4	67	
6	5	56	
7	6	63	
8	7	319	
9	8	152	
10	A	199	
11	AA	3396	
12	B	184	
13	BB	121	
14	Bb	76	
15	C	186	
16	CC	158	
17	Cc	77	
18	D	189	
19	DD	312	
20	Dd	39	
21	E	172	
22	EE	254	
23	Ee	165	
24	F	160	
25	FF	387	
26	G	121	
27	GG	362	
28	H	137	

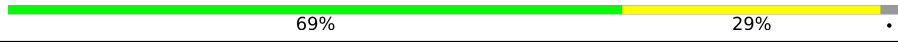
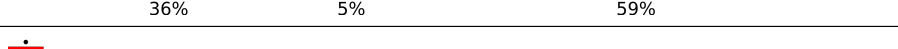
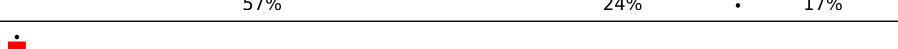
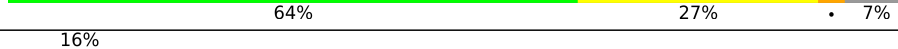
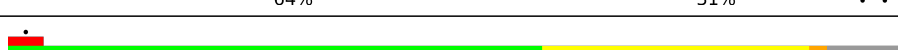
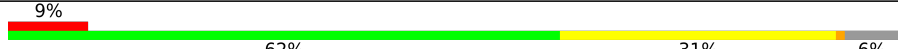
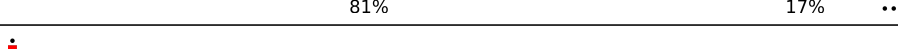
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Mol	Chain	Length	Quality of chain
29	HH	297	
30	I	155	
31	II	176	
32	J	142	
33	JJ	244	
34	K	127	
35	KK	256	
36	L	136	
37	LL	191	
38	M	149	
39	MM	221	
40	N	59	
41	NN	174	
42	O	105	
43	OO	199	
44	P	113	
45	PP	138	
46	Pp	2	
47	Q	130	
48	QQ	204	
49	R	107	
50	S	121	
51	T	120	
52	U	100	
53	V	88	

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Mol	Chain	Length	Quality of chain
54	W	78	
55	X	51	
56	Y	128	
57	Z	25	
58	a	106	
59	b	92	
60	c	1800	
61	d	252	
62	e	255	
63	f	254	
64	g	240	
65	h	261	
66	i	225	
67	j	236	
68	k	190	
69	l	200	
70	m	197	
71	n	105	
72	o	156	
73	p	151	
74	q	137	
75	r	142	
76	s	143	
77	t	136	
78	u	146	

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Mol	Chain	Length	Quality of chain
79	v	144	
80	w	121	
81	x	87	
82	y	130	
83	z	145	

2 Entry composition

There are 88 unique types of molecules in this entry. The entry contains 201697 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 40S ribosomal protein S24-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
1	0	134	Total	C	N	O	0	0
			1073	676	208	189		

- Molecule 2 is a protein called 40S ribosomal protein S25-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
2	1	70	Total	C	N	O	0	0
			563	360	104	99		

- Molecule 3 is a protein called 40S ribosomal protein S26.

Mol	Chain	Residues	Atoms					AltConf	Trace
3	2	97	Total	C	N	O	S	0	0
			769	475	160	129	5		

- Molecule 4 is a protein called 40S ribosomal protein S27-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
4	3	81	Total	C	N	O	S	0	0
			610	382	110	113	5		

- Molecule 5 is a protein called 40S ribosomal protein S28-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
5	4	63	Total	C	N	O	S	0	0
			497	306	99	91	1		

- Molecule 6 is a protein called HLJ1_G0030400.mRNA.1.CDS.1.

Mol	Chain	Residues	Atoms					AltConf	Trace
6	5	53	Total	C	N	O	S	0	0
			442	274	92	72	4		

- Molecule 7 is a protein called 40S ribosomal protein S30-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
7	6	53	Total	C	N	O	S	0	0
			427	269	88	69	1		

- Molecule 8 is a protein called Guanine nucleotide-binding protein subunit beta-like protein.

Mol	Chain	Residues	Atoms					AltConf	Trace
8	7	318	Total	C	N	O	S	0	0
			2436	1541	418	469	8		

- Molecule 9 is a protein called Ubiquitin-40S ribosomal protein S31.

Mol	Chain	Residues	Atoms					AltConf	Trace
9	8	36	Total	C	N	O	S	0	0
			276	173	54	45	4		

- Molecule 10 is a protein called 60S ribosomal protein L16-A.

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

- Molecule 11 is a RNA chain called 25S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
11	AA	3190	Total	C	N	O	P	0	0
			68285	30524	12313	22258	3190		

- Molecule 12 is a protein called 60S ribosomal protein L17-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
12	B	154	Total	C	N	O	0	0
			1222	761	237	224		

- Molecule 13 is a RNA chain called 5S ribosomal RNA.

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

- Molecule 14 is a RNA chain called Transfer RNA Phe.

Mol	Chain	Residues	Atoms					AltConf	Trace
14	Bb	76	Total	C	N	O	P	0	0
			1638	736	294	533	75		

- Molecule 15 is a protein called 60S ribosomal protein L18-A.

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

- Molecule 16 is a RNA chain called 5.8S ribosomal RNA.

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

- Molecule 17 is a RNA chain called Transfer RNA fMet.

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

There is a discrepancy between the modelled and reference sequences:

Chain	Residue	Modelled	Actual	Comment	Reference
Cc	18	C	U	conflict	GB 170517292

- Molecule 18 is a protein called 60S ribosomal protein L19-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
18	D	176	Total	C	N	O		0	0
			1423	875	308	240			

- Molecule 19 is a protein called 60S acidic ribosomal protein P0.

Mol	Chain	Residues	Atoms					AltConf	Trace
19	DD	197	Total	C	N	O	S	0	0
			1531	980	266	281	4		

- Molecule 20 is a RNA chain called Messenger RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
20	Dd	13	Total	C	N	O	P	0	0
			278	125	50	90	13		

- Molecule 21 is a protein called 60S ribosomal protein L20-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
21	E	172	Total	C	N	O	S	0	0
			1445	930	267	244	4		

- Molecule 22 is a protein called 60S ribosomal protein L2-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
22	EE	252	Total	C	N	O	S	0	0
			1914	1191	388	334	1		

- Molecule 23 is a protein called 60S ribosomal protein L12-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
23	Ee	158	Total	C	N	O	S	0	0
			1196	750	216	228	2		

- Molecule 24 is a protein called 60S ribosomal protein L21-A.

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

- Molecule 25 is a protein called 60S ribosomal protein L3.

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

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

Mol	Chain	Residues	Atoms				AltConf	Trace
26	G	97	Total	C	N	O	0	0
			770	499	126	145		

- Molecule 27 is a protein called 60S ribosomal protein L4-A.

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

- Molecule 28 is a protein called 60S ribosomal protein L23-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
28	H	129	Total	C	N	O	S	0	0
			963	607	180	169	7		

- Molecule 29 is a protein called 60S ribosomal protein L5.

Mol	Chain	Residues	Atoms					AltConf	Trace
29	HH	296	Total	C	N	O	S	0	0
			2375	1501	414	458	2		

- Molecule 30 is a protein called 60S ribosomal protein L24-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
30	I	63	Total	C	N	O	S	0	0
			521	336	102	82	1		

- Molecule 31 is a protein called 60S ribosomal protein L6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
31	II	155	Total	C	N	O	S	0	0
			1230	795	221	213	1		

- Molecule 32 is a protein called 60S ribosomal protein L25.

Mol	Chain	Residues	Atoms					AltConf	Trace
32	J	120	Total	C	N	O	S	0	0
			959	617	168	172	2		

- Molecule 33 is a protein called 60S ribosomal protein L7-A.

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

- Molecule 34 is a protein called 60S ribosomal protein L26-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
34	K	126	Total	C	N	O	0	0
			993	625	192	176		

- Molecule 35 is a protein called 60S ribosomal protein L8-A.

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

- Molecule 36 is a protein called 60S ribosomal protein L27-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
36	L	135	Total	C	N	O	0	0
			1092	710	202	180		

- Molecule 37 is a protein called 60S ribosomal protein L9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
37	LL	191	Total	C	N	O	S	0	0
			1518	963	274	277	4		

- Molecule 38 is a protein called 60S ribosomal protein L28.

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

- Molecule 39 is a protein called 60S ribosomal protein L10.

Mol	Chain	Residues	Atoms					AltConf	Trace
39	MM	215	Total	C	N	O	S	0	0
			1743	1102	331	303	7		

- Molecule 40 is a protein called 60S ribosomal protein L29.

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

- Molecule 41 is a protein called 60S ribosomal protein L11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
41	NN	169	Total	C	N	O	S	0	0
			1353	847	253	249	4		

- Molecule 42 is a protein called 60S ribosomal protein L30.

Mol	Chain	Residues	Atoms					AltConf	Trace
42	O	97	Total	C	N	O	S	0	0
			742	479	124	138	1		

- Molecule 43 is a protein called 60S ribosomal protein L13-A.

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

- Molecule 44 is a protein called 60S ribosomal protein L31-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
44	P	109	Total	C	N	O	S	0	0
			883	559	167	156	1		

- Molecule 45 is a protein called 60S ribosomal protein L14-A.

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

- Molecule 46 is a protein called di-peptide.

Mol	Chain	Residues	Atoms					AltConf	Trace
46	Pp	2	Total	C	N	O	S	0	0
			19	14	2	2	1		

- Molecule 47 is a protein called 60S ribosomal protein L32.

Mol	Chain	Residues	Atoms					AltConf	Trace
47	Q	127	Total	C	N	O	S	0	0
			1020	647	205	167	1		

- Molecule 48 is a protein called 60S ribosomal protein L15-A.

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

- Molecule 49 is a protein called 60S ribosomal protein L33-A.

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

- Molecule 50 is a protein called 60S ribosomal protein L34-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
50	S	109	Total	C	N	O	S	0	0
			861	533	175	149	4		

- Molecule 51 is a protein called 60S ribosomal protein L35-A.

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

- Molecule 52 is a protein called 60S ribosomal protein L36-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
52	U	99	Total	C	N	O	S	0	0
			771	481	156	132	2		

- Molecule 53 is a protein called 60S ribosomal protein L37-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
53	V	84	Total	C	N	O	S	0	0
			665	405	145	110	5		

- Molecule 54 is a protein called 60S ribosomal protein L38.

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

- Molecule 55 is a protein called 60S ribosomal protein L39.

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

- Molecule 56 is a protein called Ubiquitin-60S ribosomal protein L40.

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

- Molecule 57 is a protein called 60S ribosomal protein L41-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
57	Z	25	Total	C	N	O	S	0	0
			233	142	63	27	1		

- Molecule 58 is a protein called 60S ribosomal protein L42-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
58	a	102	Total	C	N	O	S	0	0
			819	514	166	134	5		

- Molecule 59 is a protein called 60S ribosomal protein L43-A.

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

- Molecule 60 is a RNA chain called 18S ribosomal RNA.

Mol	Chain	Residues	Atoms					AltConf	Trace
60	c	1604	Total	C	N	O	P	0	0
			34236	15322	6079	11231	1604		

- Molecule 61 is a protein called 40S ribosomal protein S0-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
61	d	206	Total	C	N	O	S	0	0
			1583	1017	281	283	2		

- Molecule 62 is a protein called 40S ribosomal protein S1-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
62	e	212	Total	C	N	O	S	0	0
			1689	1073	303	309	4		

- Molecule 63 is a protein called 40S ribosomal protein S2.

Mol	Chain	Residues	Atoms					AltConf	Trace
63	f	217	Total	C	N	O	S	0	0
			1635	1047	289	297	2		

- Molecule 64 is a protein called RPS3 isoform 1.

Mol	Chain	Residues	Atoms					AltConf	Trace
64	g	206	Total	C	N	O	S	0	0
			1601	1014	294	287	6		

- Molecule 65 is a protein called 40S ribosomal protein S4-A.

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

- Molecule 66 is a protein called 40S ribosomal protein S5.

Mol	Chain	Residues	Atoms					AltConf	Trace
66	i	199	Total	C	N	O	S	0	0
			1572	987	290	292	3		

- Molecule 67 is a protein called 40S ribosomal protein S6-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
67	j	219	Total	C	N	O	S	0	0
			1766	1108	341	314	3		

- Molecule 68 is a protein called 40S ribosomal protein S7-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
68	k	184	Total	C	N	O		0	0
			1481	951	265	265			

- Molecule 69 is a protein called 40S ribosomal protein S8-B.

Mol	Chain	Residues	Atoms					AltConf	Trace
69	l	184	Total	C	N	O	S	0	0
			1457	906	291	258	2		

- Molecule 70 is a protein called 40S ribosomal protein S9-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
70	m	185	Total	C	N	O	S	0	0
			1494	943	289	261	1		

- Molecule 71 is a protein called 40S ribosomal protein S10-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
71	n	91	Total	C	N	O	S	0	0
			772	503	123	144	2		

- Molecule 72 is a protein called 40S ribosomal protein S11-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
72	o	142	Total	C	N	O	S	0	0
			1146	735	217	191	3		

- Molecule 73 is a protein called 40S ribosomal protein S13.

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

- Molecule 74 is a protein called 40S ribosomal protein S14-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
74	q	127	Total	C	N	O	S	0	0
			891	545	182	163	1		

- Molecule 75 is a protein called 40S ribosomal protein S15.

Mol	Chain	Residues	Atoms					AltConf	Trace
75	r	104	Total	C	N	O	S	0	0
			837	533	155	143	6		

- Molecule 76 is a protein called 40S ribosomal protein S16-A.

Mol	Chain	Residues	Atoms				AltConf	Trace
76	s	137	Total	C	N	O		
			1080	692	199	189	0	0

- Molecule 77 is a protein called 40S ribosomal protein S17-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
77	t	121	Total	C	N	O	S		
			961	599	182	178	2	0	0

- Molecule 78 is a protein called 40S ribosomal protein S18-A.

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

- Molecule 79 is a protein called 40S ribosomal protein S19-A.

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

- Molecule 80 is a protein called 40S ribosomal protein S20.

Mol	Chain	Residues	Atoms					AltConf	Trace
80	w	100	Total	C	N	O	S		
			800	509	144	146	1	0	0

- Molecule 81 is a protein called 40S ribosomal protein S21-A.

Mol	Chain	Residues	Atoms					AltConf	Trace
81	x	87	Total	C	N	O	S		
			684	420	125	137	2	0	0

- Molecule 82 is a protein called 40S ribosomal protein S22-A.

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

- Molecule 83 is a protein called 40S ribosomal protein S23-A.

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

- Molecule 84 is ZINC ION (CCD ID: ZN) (formula: Zn).

Mol	Chain	Residues	Atoms		AltConf
84	2	1	Total	Zn	0
			1	1	
84	5	1	Total	Zn	0
			1	1	
84	8	1	Total	Zn	0
			1	1	
84	S	1	Total	Zn	0
			1	1	
84	V	1	Total	Zn	0
			1	1	
84	Y	1	Total	Zn	0
			1	1	
84	a	1	Total	Zn	0
			1	1	
84	b	1	Total	Zn	0
			1	1	

- Molecule 85 is MAGNESIUM ION (CCD ID: MG) (formula: Mg).

Mol	Chain	Residues	Atoms		AltConf
85	AA	205	Total	Mg	0
			205	205	
85	B	1	Total	Mg	0
			1	1	
85	BB	5	Total	Mg	0
			5	5	
85	Bb	1	Total	Mg	0
			1	1	
85	CC	3	Total	Mg	0
			3	3	
85	Cc	1	Total	Mg	0
			1	1	
85	Dd	1	Total	Mg	0
			1	1	
85	FF	1	Total	Mg	0
			1	1	
85	H	1	Total	Mg	0
			1	1	

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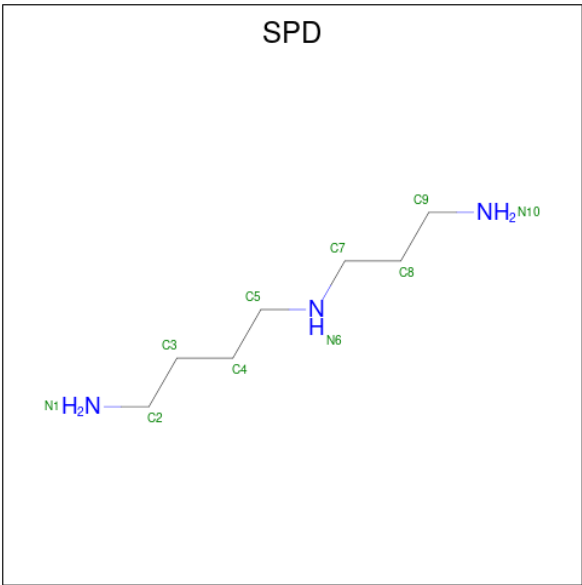
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Mol	Chain	Residues	Atoms		AltConf
85	QQ	1	Total 1	Mg 1	0
85	V	1	Total 1	Mg 1	0
85	c	60	Total 60	Mg 60	0

- Molecule 86 is POTASSIUM ION (CCD ID: K) (formula: K).

Mol	Chain	Residues	Atoms		AltConf
86	AA	12	Total 12	K 12	0
86	EE	1	Total 1	K 1	0
86	MM	1	Total 1	K 1	0
86	Q	1	Total 1	K 1	0
86	S	1	Total 1	K 1	0
86	a	1	Total 1	K 1	0
86	c	4	Total 4	K 4	0
86	q	1	Total 1	K 1	0

- Molecule 87 is SPERMIDINE (CCD ID: SPD) (formula: C₇H₁₉N₃).



Mol	Chain	Residues	Atoms			AltConf
87	AA	1	Total	C	N	0
			10	7	3	
87	AA	1	Total	C	N	0
			10	7	3	
87	AA	1	Total	C	N	0
			10	7	3	
87	c	1	Total	C	N	0
			10	7	3	

- Molecule 88 is water.

Mol	Chain	Residues	Atoms		AltConf
88	2	1	Total	O	0
			1	1	
88	A	2	Total	O	0
			2	2	
88	AA	877	Total	O	0
			877	877	
88	B	3	Total	O	0
			3	3	
88	BB	12	Total	O	0
			12	12	
88	Bb	5	Total	O	0
			5	5	
88	CC	18	Total	O	0
			18	18	
88	Cc	6	Total	O	0
			6	6	

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Mol	Chain	Residues	Atoms		AltConf
88	D	4	Total 4	O 4	0
88	Dd	4	Total 4	O 4	0
88	EE	9	Total 9	O 9	0
88	F	4	Total 4	O 4	0
88	FF	4	Total 4	O 4	0
88	GG	3	Total 3	O 3	0
88	H	3	Total 3	O 3	0
88	HH	1	Total 1	O 1	0
88	J	1	Total 1	O 1	0
88	JJ	2	Total 2	O 2	0
88	LL	1	Total 1	O 1	0
88	M	3	Total 3	O 3	0
88	MM	2	Total 2	O 2	0
88	N	1	Total 1	O 1	0
88	Q	4	Total 4	O 4	0
88	QQ	9	Total 9	O 9	0
88	S	2	Total 2	O 2	0
88	V	3	Total 3	O 3	0
88	a	2	Total 2	O 2	0
88	c	226	Total 226	O 226	0
88	h	2	Total 2	O 2	0

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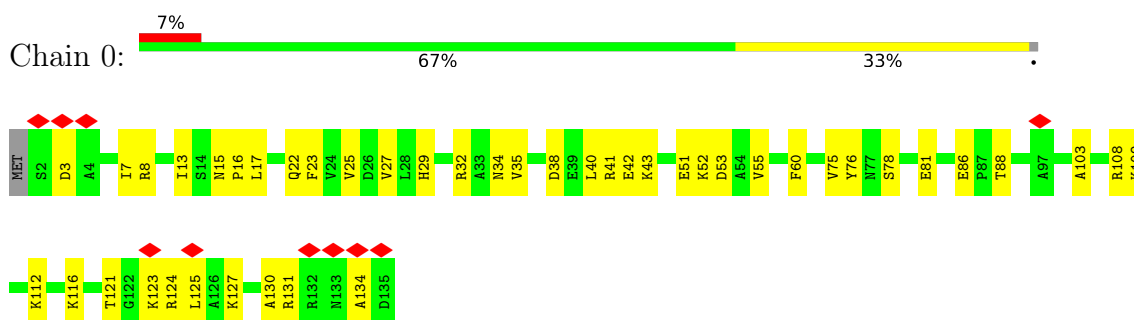
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Mol	Chain	Residues	Atoms		AltConf
88	o	2	Total 2	O 2	0
88	p	2	Total 2	O 2	0
88	q	2	Total 2	O 2	0
88	v	3	Total 3	O 3	0
88	z	1	Total 1	O 1	0

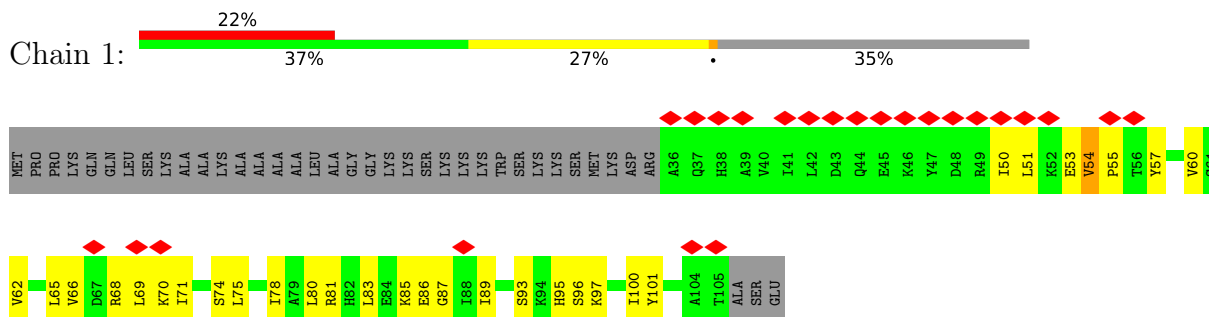
3 Residue-property plots [i](#)

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.

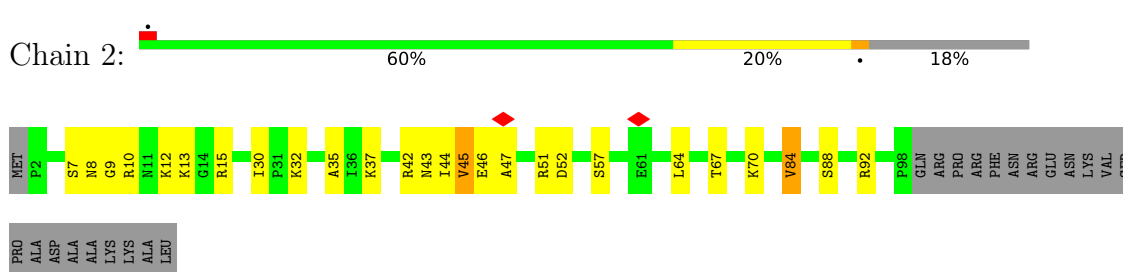
- Molecule 1: 40S ribosomal protein S24-A



- Molecule 2: 40S ribosomal protein S25-A



- Molecule 3: 40S ribosomal protein S26



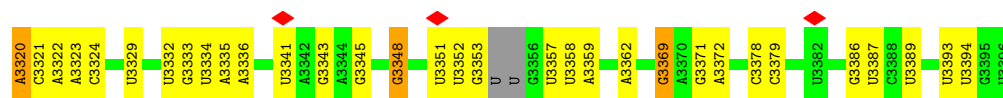
- Molecule 4: 40S ribosomal protein S27-A



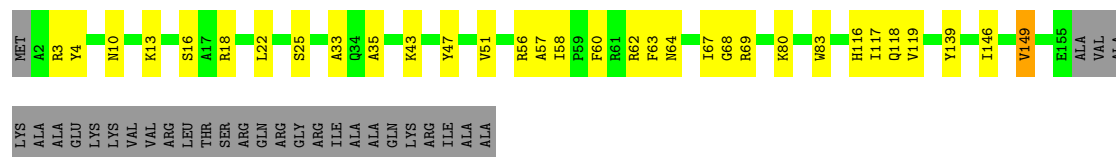








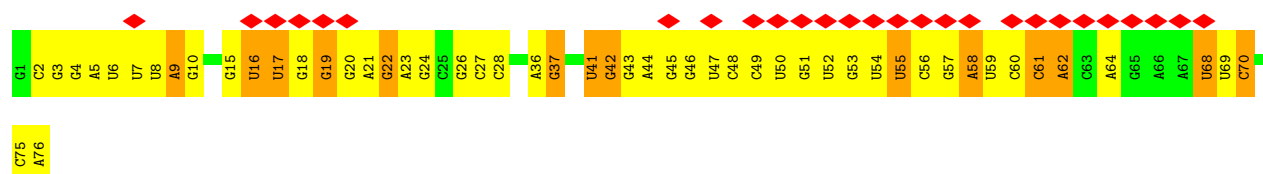
• Molecule 12: 60S ribosomal protein L17-A



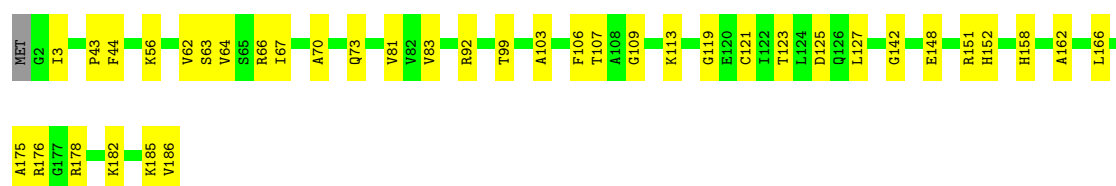
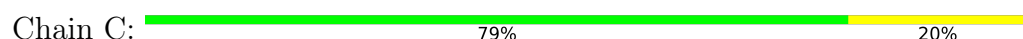
• Molecule 13: 5S ribosomal RNA



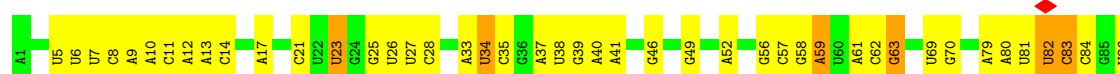
• Molecule 14: Transfer RNA Phe

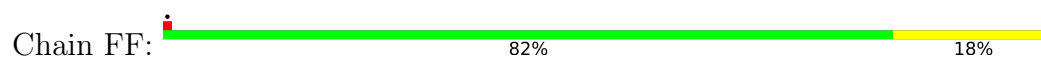


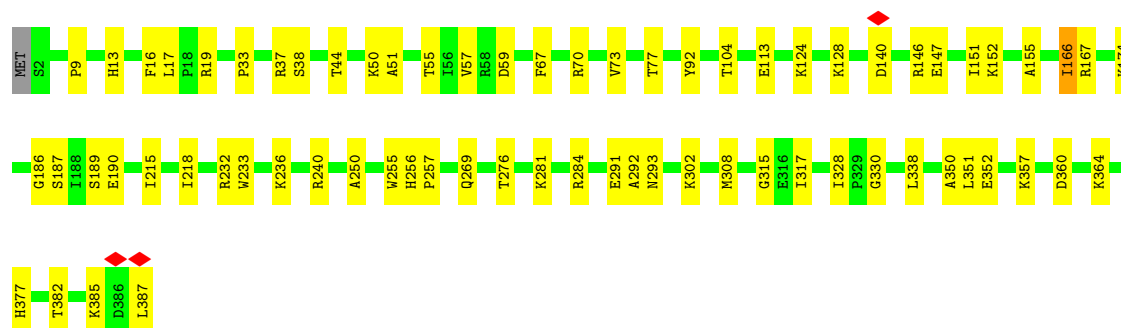
• Molecule 15: 60S ribosomal protein L18-A



• Molecule 16: 5.8S ribosomal RNA



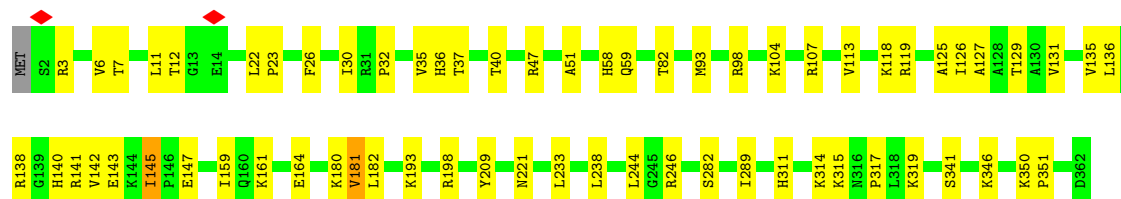
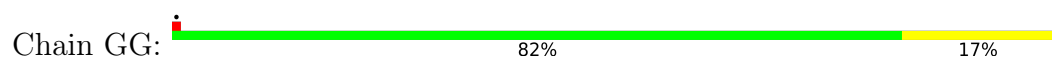




- Molecule 26: 60S ribosomal protein L22-A



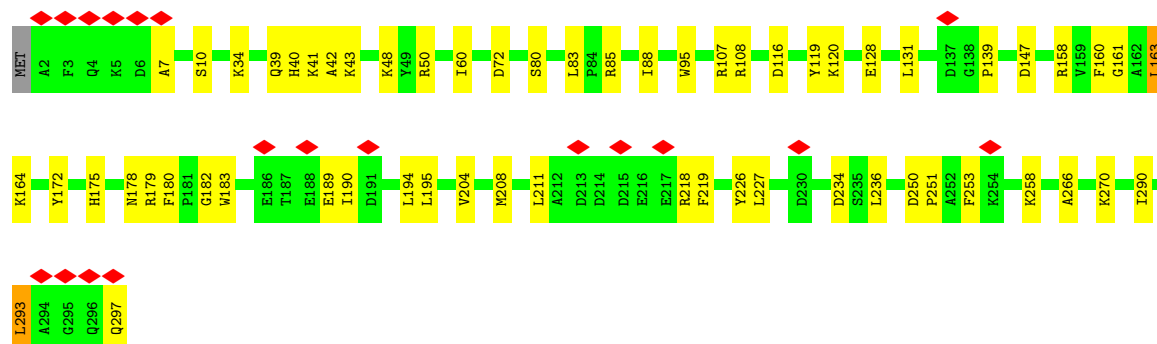
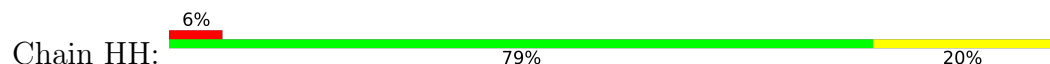
- Molecule 27: 60S ribosomal protein L4-A



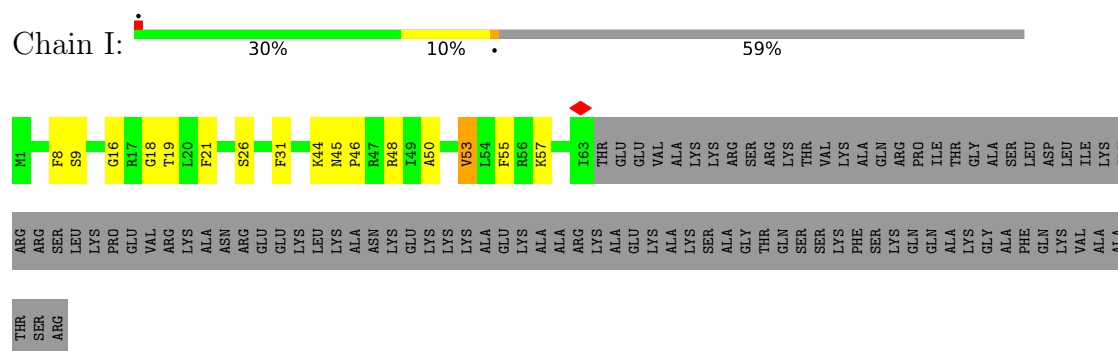
- Molecule 28: 60S ribosomal protein L23-A



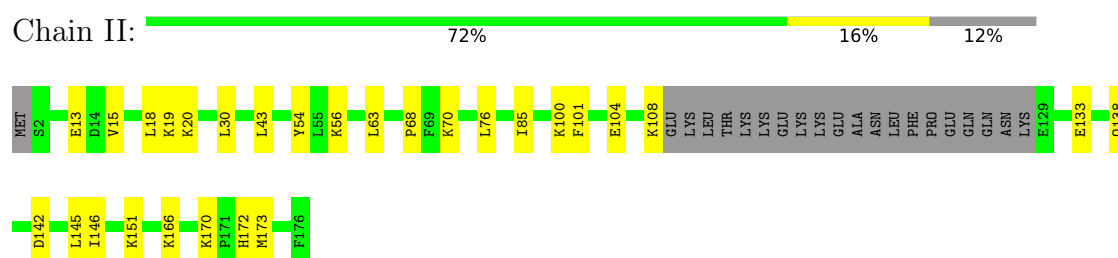
- Molecule 29: 60S ribosomal protein L5



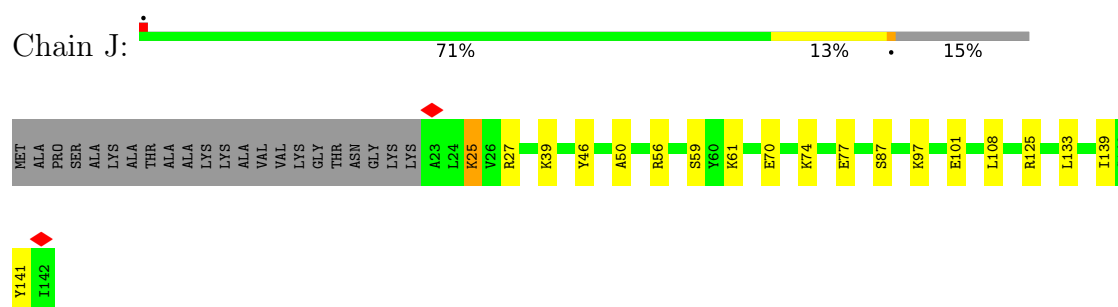
- Molecule 30: 60S ribosomal protein L24-A



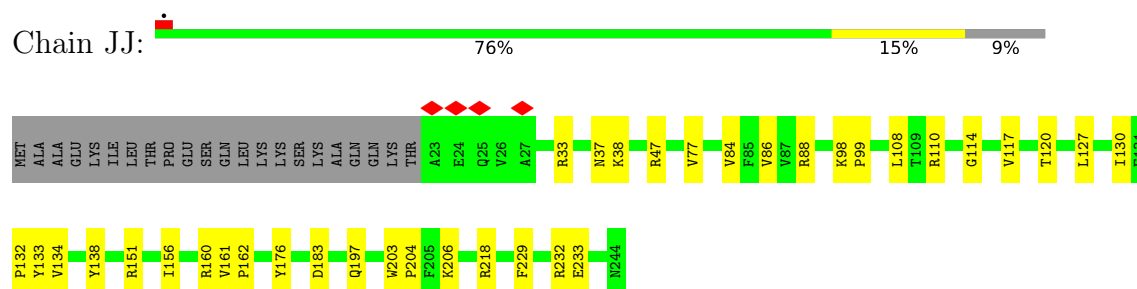
- Molecule 31: 60S ribosomal protein L6-A



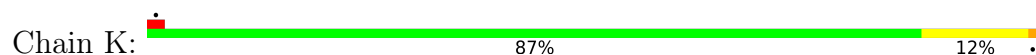
- Molecule 32: 60S ribosomal protein L25



- Molecule 33: 60S ribosomal protein L7-A



- Molecule 34: 60S ribosomal protein L26-A





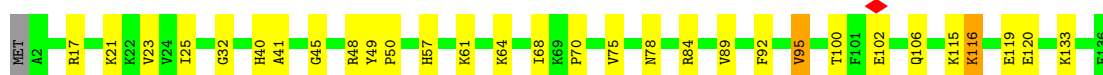
- Molecule 35: 60S ribosomal protein L8-A

Chain KK: 77% 14% 9%



- Molecule 36: 60S ribosomal protein L27-A

Chain L: 77% 21% ..



- Molecule 37: 60S ribosomal protein L9-A

Chain LL: 81% 18% .



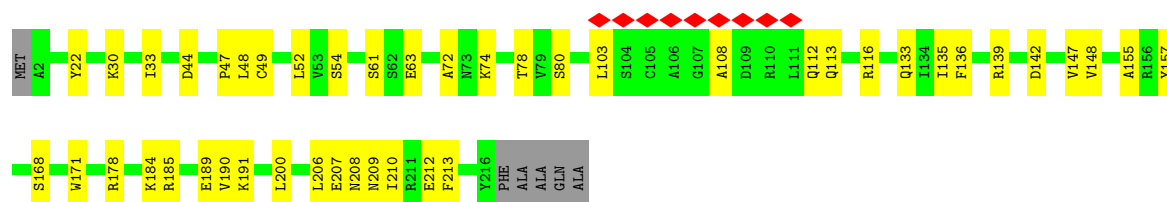
- Molecule 38: 60S ribosomal protein L28

Chain M: 74% 23% ..

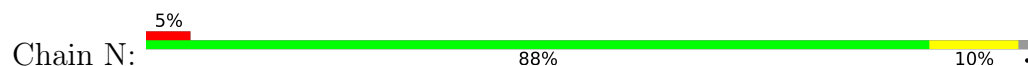


- Molecule 39: 60S ribosomal protein L10

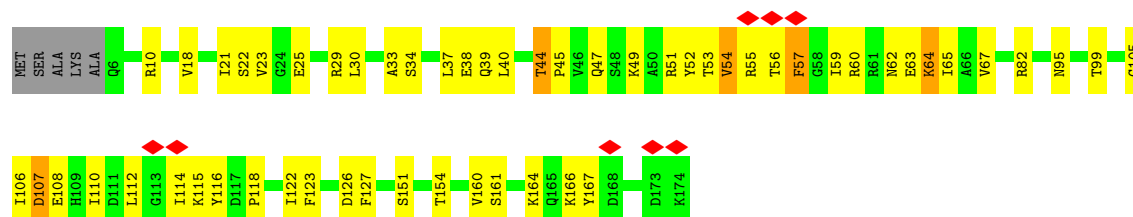
Chain MM: 77% 20% .



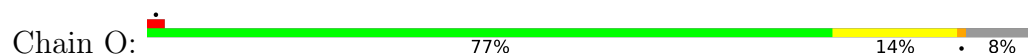
- Molecule 40: 60S ribosomal protein L29



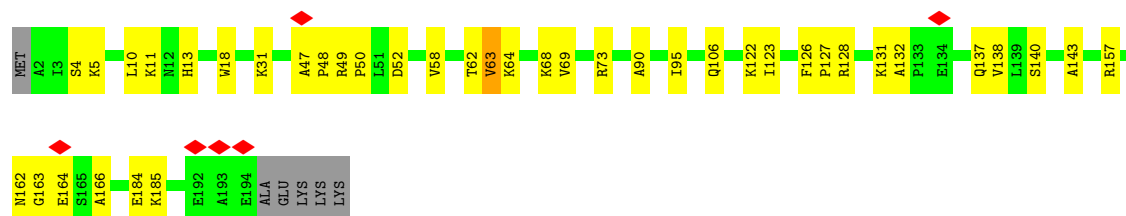
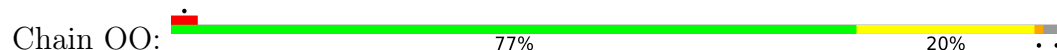
- Molecule 41: 60S ribosomal protein L11-A



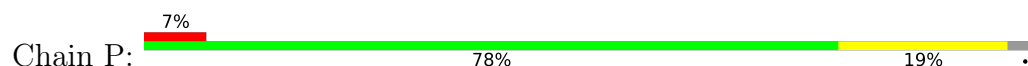
- Molecule 42: 60S ribosomal protein L30

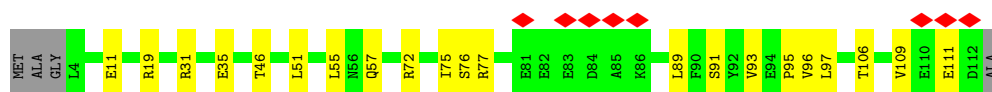


- Molecule 43: 60S ribosomal protein L13-A

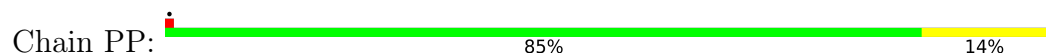


- Molecule 44: 60S ribosomal protein L31-A





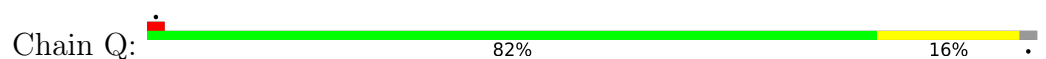
- Molecule 45: 60S ribosomal protein L14-A



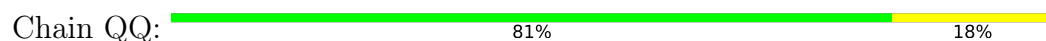
- Molecule 46: di-peptide



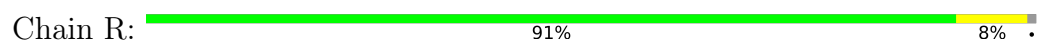
- Molecule 47: 60S ribosomal protein L32



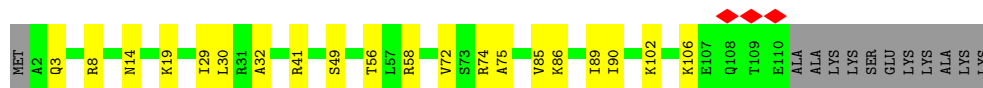
- Molecule 48: 60S ribosomal protein L15-A



- Molecule 49: 60S ribosomal protein L33-A



- Molecule 50: 60S ribosomal protein L34-A



• Molecule 51: 60S ribosomal protein L35-A

Chain T:  80% 19%

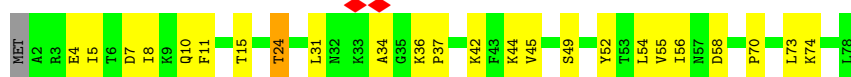
• Molecule 52: 60S ribosomal protein L36-A

Chain U:  81% 17%

• Molecule 53: 60S ribosomal protein L37-A

Chain V:  76% 19% 5%

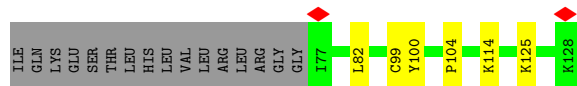
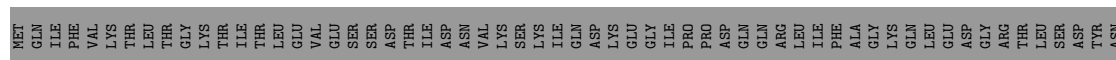
• Molecule 54: 60S ribosomal protein L38

Chain W:  68% 29%

• Molecule 55: 60S ribosomal protein L39

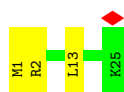
Chain X:  69% 29%

• Molecule 56: Ubiquitin-60S ribosomal protein L40

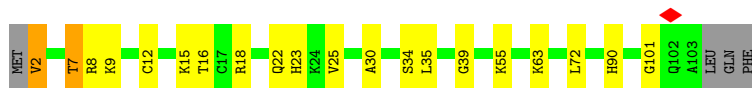
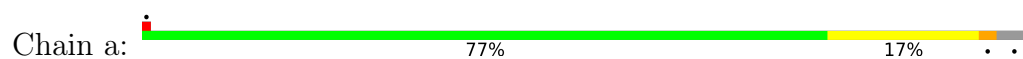
Chain Y:  36% 5% 59%

• Molecule 57: 60S ribosomal protein L41-A

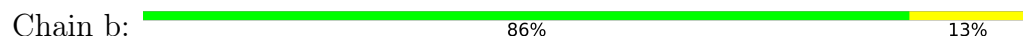
Chain Z:  88% 12%



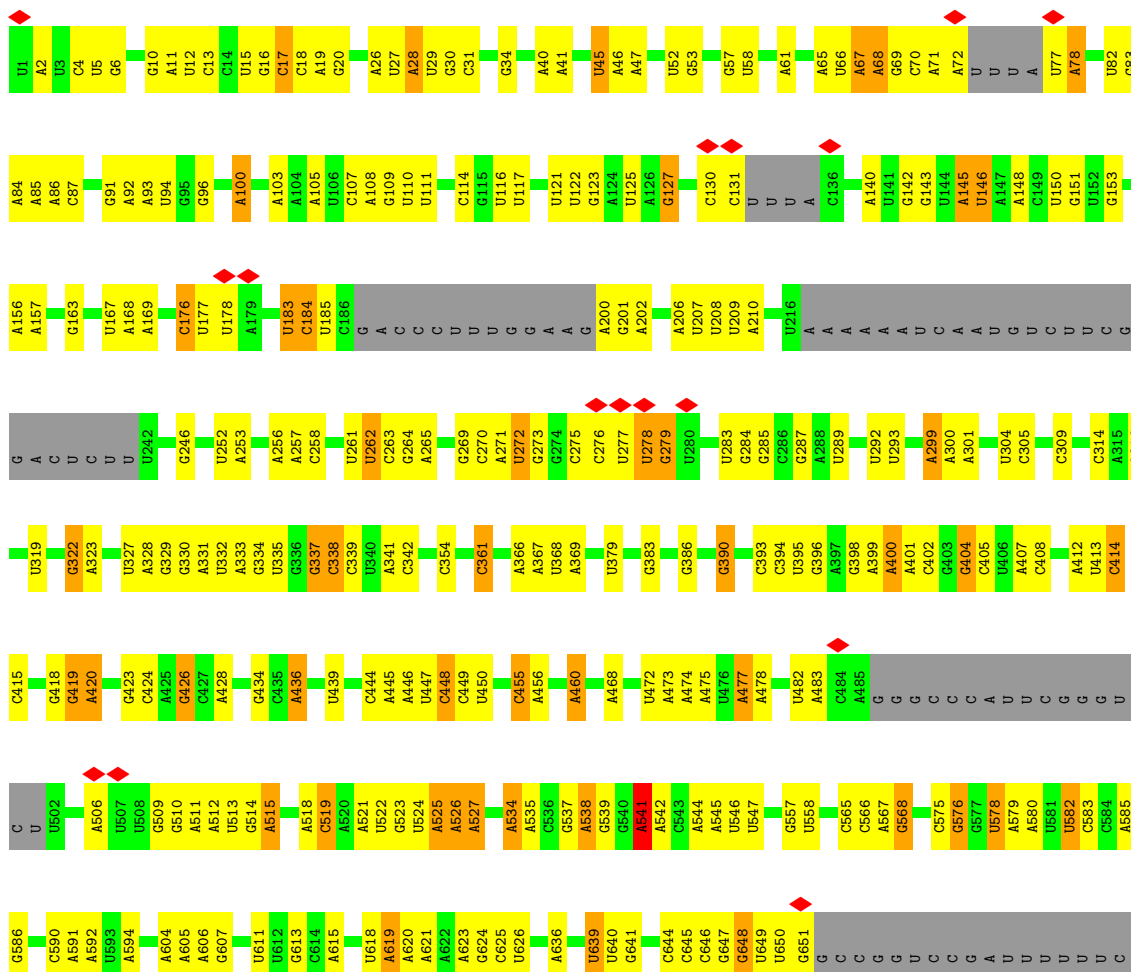
- Molecule 58: 60S ribosomal protein L42-A



- Molecule 59: 60S ribosomal protein L43-A

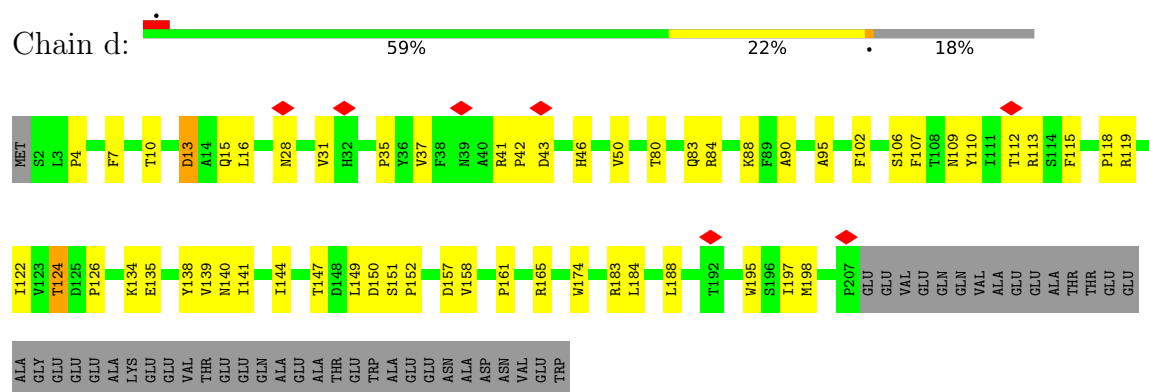


- Molecule 60: 18S ribosomal RNA

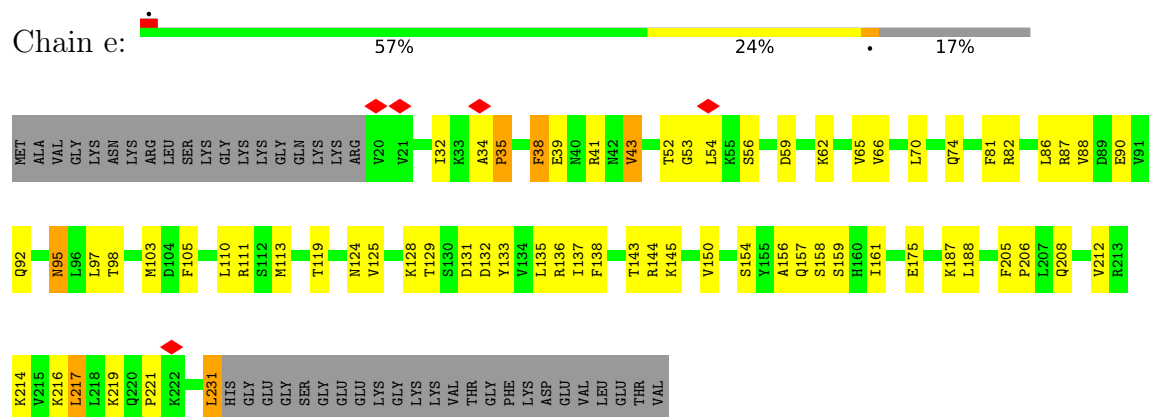




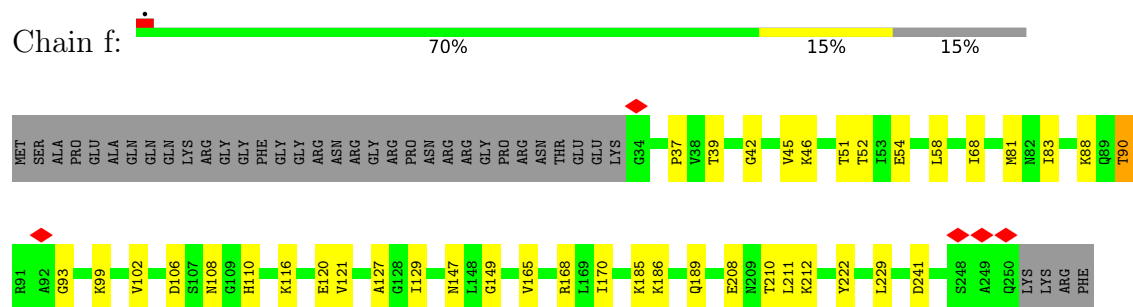
- Molecule 61: 40S ribosomal protein S0-A



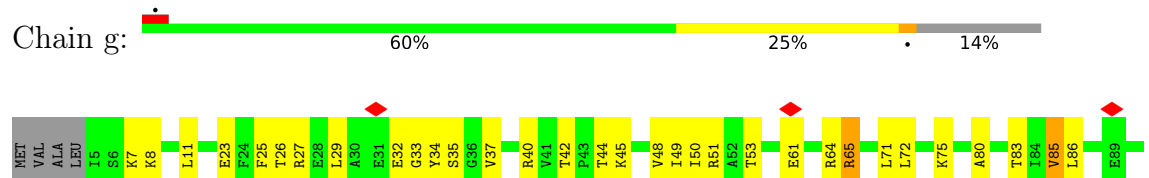
- Molecule 62: 40S ribosomal protein S1-A

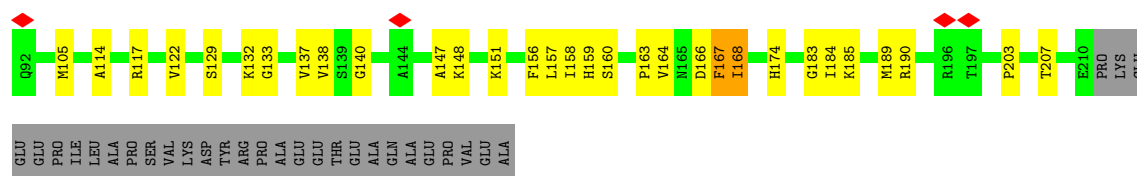


- Molecule 63: 40S ribosomal protein S2



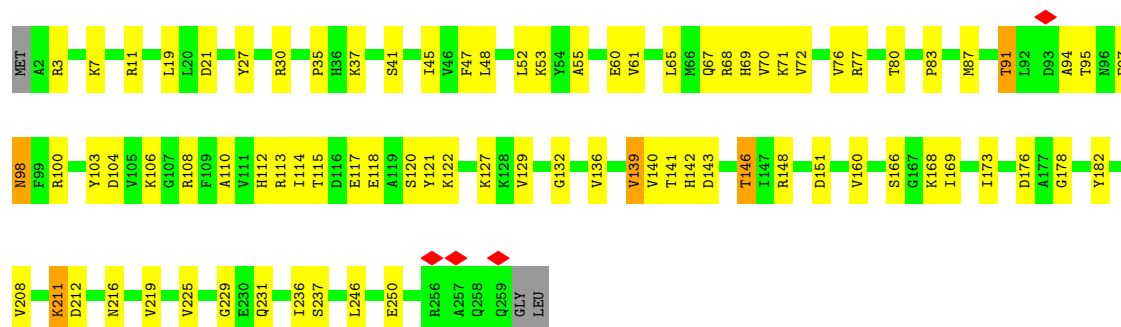
- Molecule 64: RPS3 isoform 1





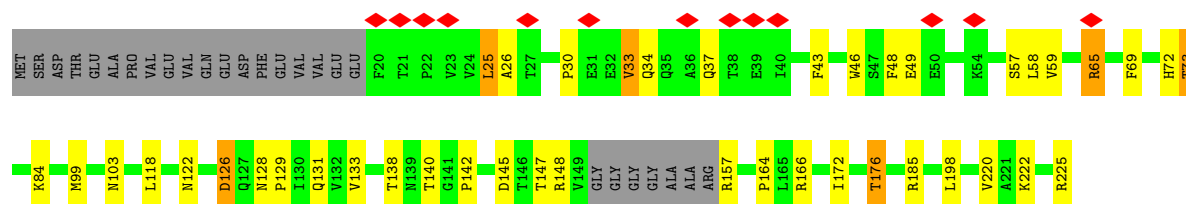
• Molecule 65: 40S ribosomal protein S4-A

Chain h: 67% 30% ..



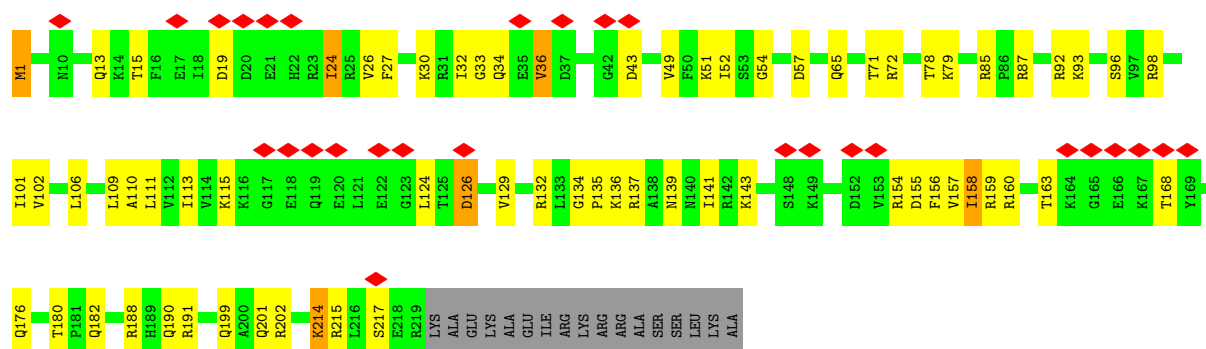
• Molecule 66: 40S ribosomal protein S5

Chain i: 6% 69% 16% 12%



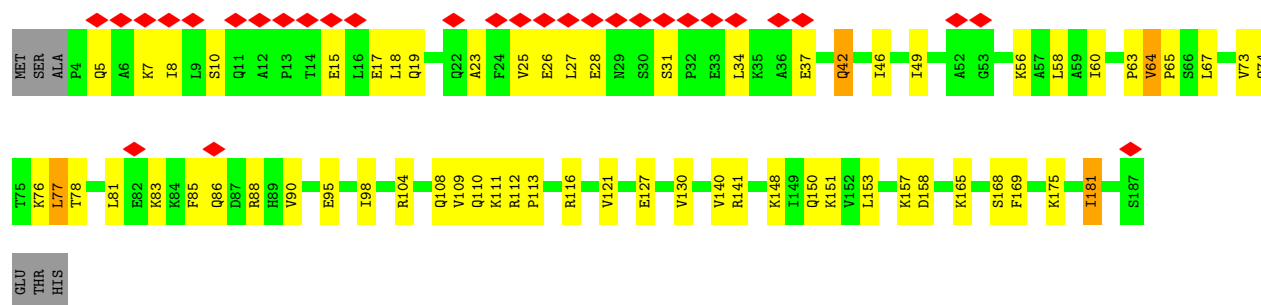
• Molecule 67: 40S ribosomal protein S6-A

Chain j: 12% 64% 27% 7%



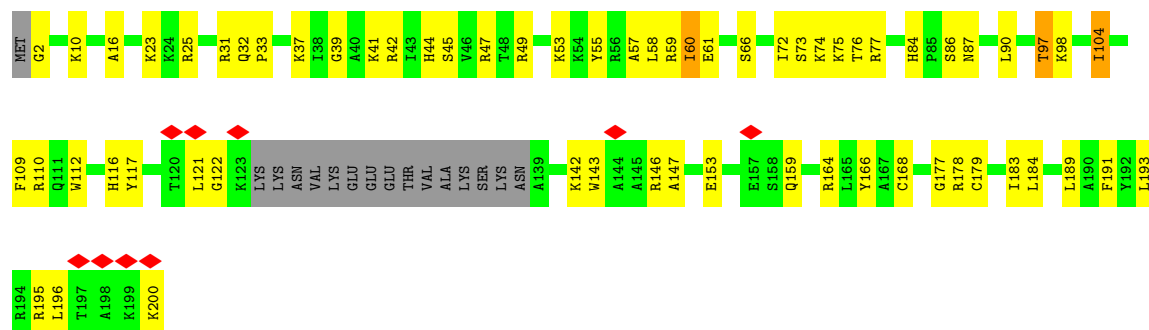
• Molecule 68: 40S ribosomal protein S7-A

Chain k: 16% 64% 31% ..



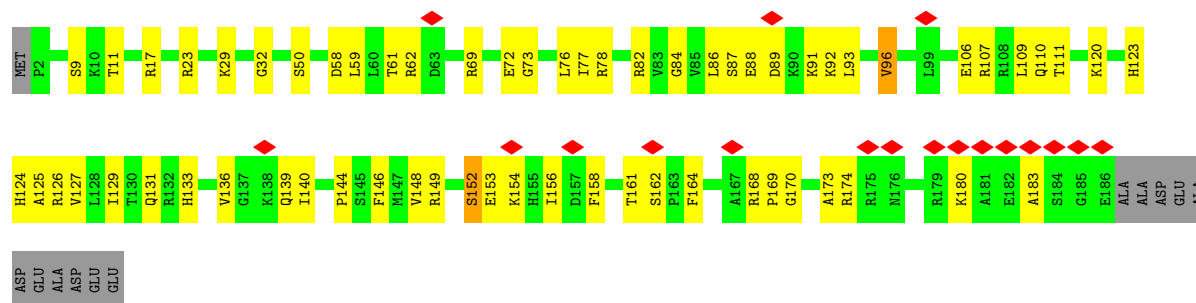
• Molecule 69: 40S ribosomal protein S8-B

Chain l: 60% 30% 8%



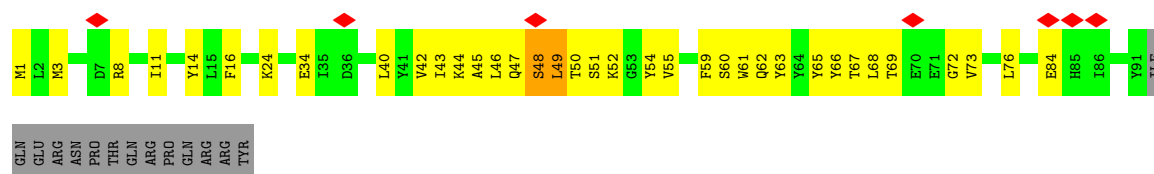
• Molecule 70: 40S ribosomal protein S9-A

Chain m: 9% 62% 31% 6%

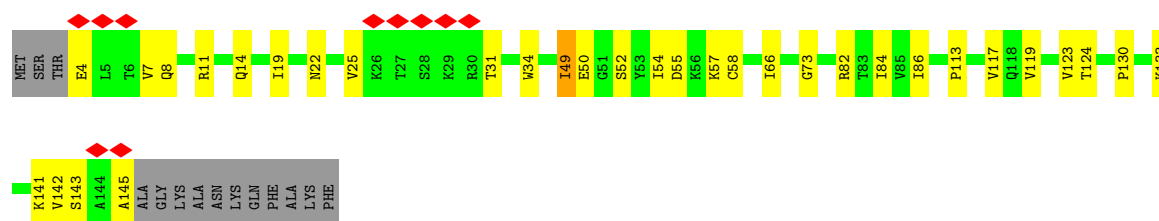


• Molecule 71: 40S ribosomal protein S10-A

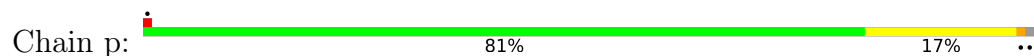
Chain n: 7% 52% 32% 13%



• Molecule 72: 40S ribosomal protein S11-A



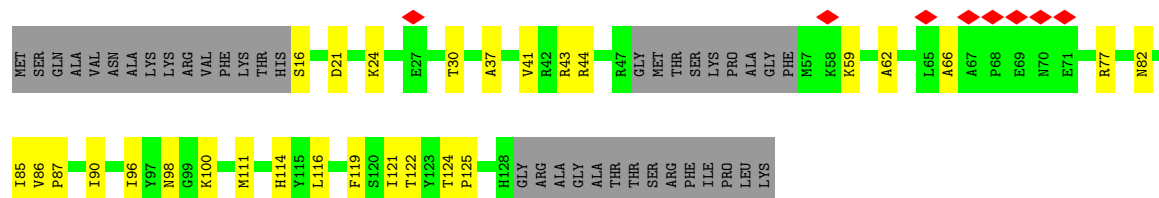
- Molecule 73: 40S ribosomal protein S13



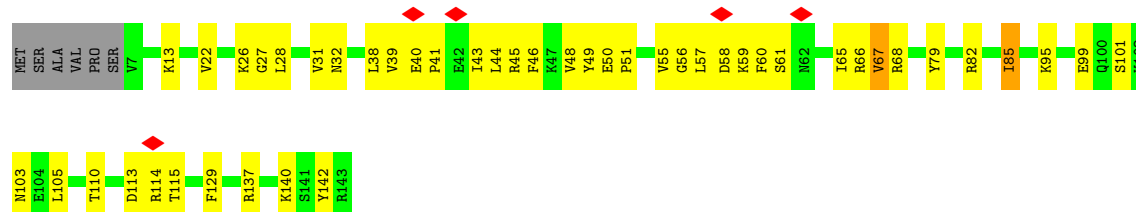
- Molecule 74: 40S ribosomal protein S14-A



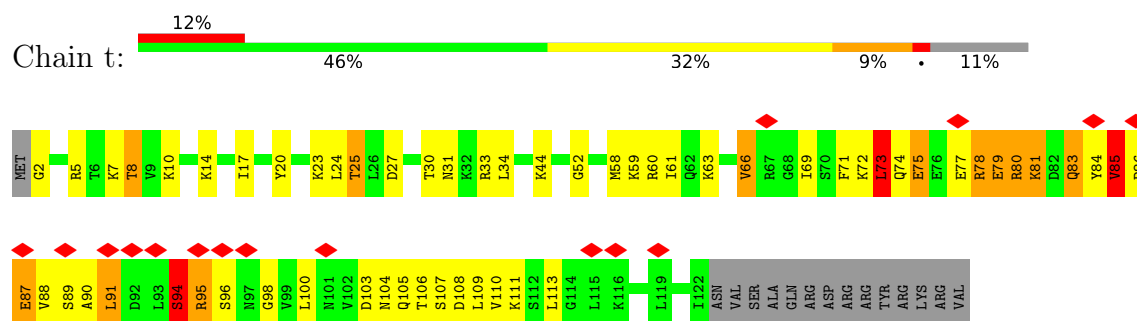
- Molecule 75: 40S ribosomal protein S15



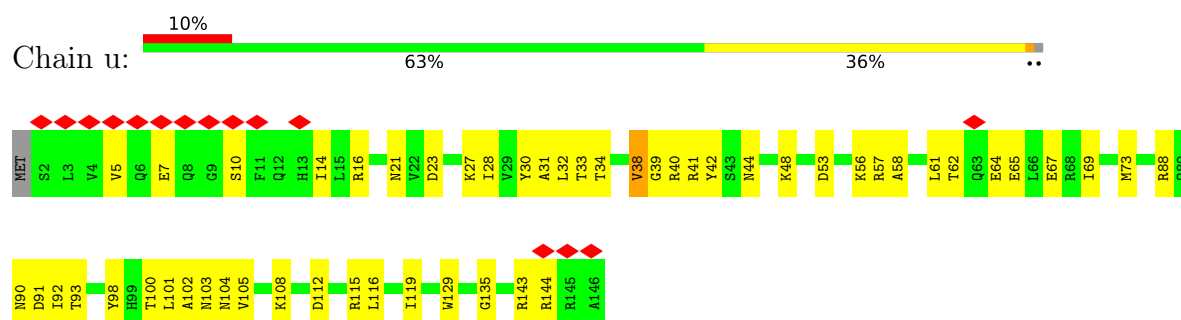
- Molecule 76: 40S ribosomal protein S16-A



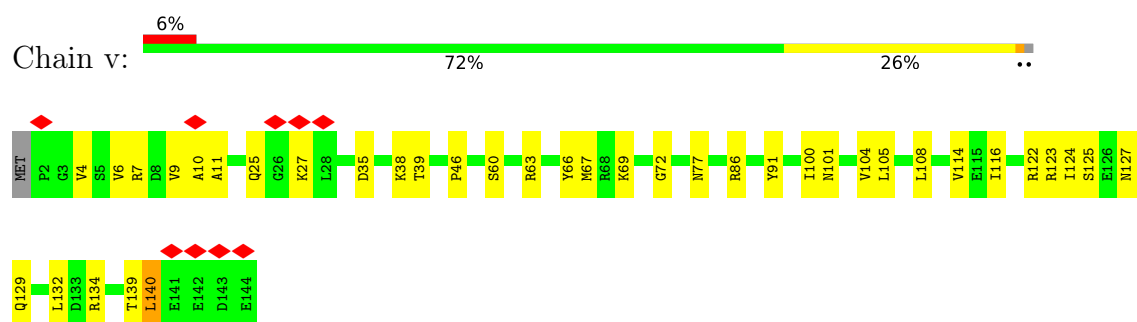
- Molecule 77: 40S ribosomal protein S17-A



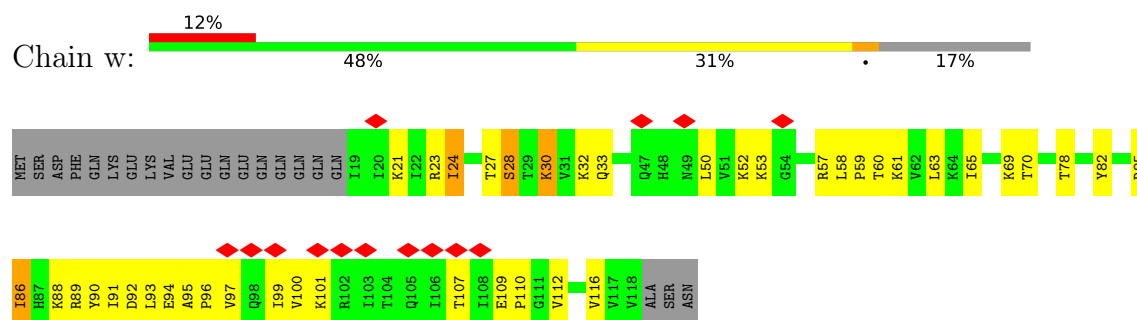
- Molecule 78: 40S ribosomal protein S18-A



- Molecule 79: 40S ribosomal protein S19-A

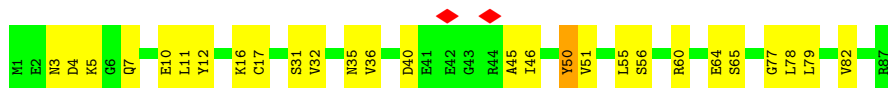


- Molecule 80: 40S ribosomal protein S20



- Molecule 81: 40S ribosomal protein S21-A





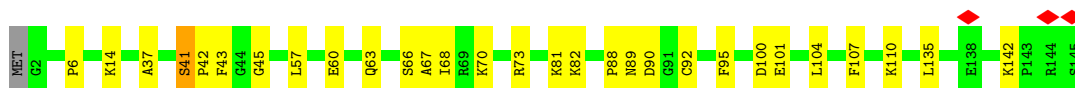
- Molecule 82: 40S ribosomal protein S22-A

Chain y: 81% 18% ..



- Molecule 83: 40S ribosomal protein S23-A

Chain z: 79% 19% ..



4 Experimental information

Property	Value	Source
EM reconstruction method	SINGLE PARTICLE	Depositor
Imposed symmetry	POINT, Not provided	
Number of particles used	55455	Depositor
Resolution determination method	FSC 0.143 CUT-OFF	Depositor
CTF correction method	PHASE FLIPPING AND AMPLITUDE CORRECTION	Depositor
Microscope	FEI TITAN KRIOS	Depositor
Voltage (kV)	300	Depositor
Electron dose ($e^-/\text{\AA}^2$)	40	Depositor
Minimum defocus (nm)	400	Depositor
Maximum defocus (nm)	1000	Depositor
Magnification	270000	Depositor
Image detector	FEI FALCON IV (4k x 4k)	Depositor
Maximum map value	1.773	Depositor
Minimum map value	-0.532	Depositor
Average map value	-0.001	Depositor
Map value standard deviation	0.047	Depositor
Recommended contour level	0.164	Depositor
Map size (Å)	540.0, 540.0, 540.0	wwPDB
Map dimensions	600, 600, 600	wwPDB
Map angles (°)	90.0, 90.0, 90.0	wwPDB
Pixel spacing (Å)	0.9, 0.9, 0.9	Depositor

5 Model quality

5.1 Standard geometry

Bond lengths and bond angles in the following residue types are not validated in this section: 1MA, B8N, 5MC, ZN, OMC, K, G7M, OMG, MG, 4AC, OMU, A2M, MA6, YYG, SPD, UR3

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	0	0.16	0/1087	0.33	0/1449
2	1	0.19	0/571	0.56	0/768
3	2	0.22	0/782	0.45	0/1047
4	3	0.17	0/620	0.39	0/838
5	4	0.18	0/499	0.41	0/670
6	5	0.19	0/452	0.32	0/600
7	6	0.16	0/433	0.43	0/575
8	7	0.17	0/2489	0.46	0/3389
9	8	0.12	0/279	0.46	0/369
10	A	0.25	0/1585	0.39	0/2128
11	AA	0.27	0/75384	0.32	0/117530
12	B	0.23	0/1245	0.37	0/1676
13	BB	0.23	0/2883	0.27	0/4491
14	Bb	0.14	0/1788	0.29	0/2786
15	C	0.22	0/1465	0.35	0/1965
16	CC	0.27	0/3746	0.31	0/5832
17	Cc	0.16	0/1836	0.23	0/2859
18	D	0.20	0/1440	0.36	0/1921
19	DD	0.17	0/1558	0.44	0/2107
20	Dd	0.22	0/311	0.24	0/482
21	E	0.22	0/1481	0.37	0/1990
22	EE	0.23	0/1948	0.37	0/2617
23	Ee	0.16	0/1210	0.43	0/1627
24	F	0.21	0/1300	0.34	0/1743
25	FF	0.22	0/3146	0.36	0/4228
26	G	0.18	0/786	0.34	0/1065
27	GG	0.21	0/2800	0.37	0/3790
28	H	0.23	0/978	0.36	0/1316
29	HH	0.18	0/2425	0.34	0/3271
30	I	0.20	0/533	0.31	0/707
31	II	0.20	0/1251	0.35	0/1682
32	J	0.21	0/974	0.38	0/1314

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
33	JJ	0.23	0/1821	0.35	0/2451
34	K	0.20	0/1004	0.33	0/1341
35	KK	0.20	0/1836	0.35	0/2481
36	L	0.21	0/1118	0.37	0/1497
37	LL	0.21	0/1539	0.37	0/2073
38	M	0.24	0/1204	0.41	0/1612
39	MM	0.20	0/1779	0.35	0/2386
40	N	0.21	0/473	0.35	0/629
41	NN	0.20	0/1374	0.41	0/1842
42	O	0.18	0/750	0.30	0/1008
43	OO	0.21	0/1568	0.40	0/2106
44	P	0.21	0/897	0.35	0/1205
45	PP	0.20	0/1068	0.31	0/1438
46	Pp	0.29	0/19	1.43	0/23
47	Q	0.21	0/1041	0.29	0/1394
48	QQ	0.24	0/1757	0.38	0/2354
49	R	0.25	0/868	0.34	0/1168
50	S	0.22	0/871	0.32	0/1164
51	T	0.19	0/978	0.33	0/1301
52	U	0.18	0/778	0.37	0/1034
53	V	0.24	0/680	0.41	0/901
54	W	0.21	0/618	0.42	0/826
55	X	0.24	0/443	0.45	0/588
56	Y	0.17	0/423	0.29	0/562
57	Z	0.19	0/234	0.27	0/300
58	a	0.22	0/831	0.44	0/1097
59	b	0.21	0/701	0.34	0/934
60	c	0.24	0/37665	0.32	0/58663
61	d	0.20	0/1623	0.41	0/2222
62	e	0.21	0/1714	0.40	0/2308
63	f	0.21	0/1665	0.41	0/2263
64	g	0.18	0/1622	0.38	0/2180
65	h	0.17	0/2097	0.36	0/2823
66	i	0.17	0/1591	0.41	0/2151
67	j	0.15	0/1790	0.37	0/2393
68	k	0.17	0/1506	0.40	0/2028
69	l	0.17	0/1482	0.37	0/1980
70	m	0.16	0/1519	0.35	0/2035
71	n	0.21	0/792	0.53	0/1071
72	o	0.18	0/1172	0.34	0/1580
73	p	0.19	0/1215	0.34	0/1638
74	q	0.21	0/901	0.47	0/1217
75	r	0.17	0/853	0.33	0/1145

Mol	Chain	Bond lengths		Bond angles	
		RMSZ	# Z >5	RMSZ	# Z >5
76	s	0.18	0/1099	0.46	0/1473
77	t	0.37	0/971	0.68	3/1303 (0.2%)
78	u	0.17	0/1211	0.38	0/1628
79	v	0.18	0/1130	0.37	0/1517
80	w	0.22	0/810	0.44	0/1095
81	x	0.20	0/693	0.44	0/935
82	y	0.24	0/1038	0.42	0/1395
83	z	0.20	0/1139	0.41	0/1518
All	All	0.24	0/213256	0.35	3/313108 (0.0%)

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

Mol	Chain	#Chirality outliers	#Planarity outliers
33	JJ	0	1
36	L	0	1
58	a	0	1
62	e	0	2
66	i	0	2
68	k	0	1
73	p	0	1
74	q	0	2
76	s	0	1
78	u	0	1
83	z	0	1
All	All	0	14

There are no bond length outliers.

All (3) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
77	t	73	LEU	N-CA-C	-8.52	102.88	113.18
77	t	94	SER	N-CA-C	-6.18	97.63	110.80
77	t	75	GLU	N-CA-C	-5.06	107.05	113.43

There are no chirality outliers.

All (14) planarity outliers are listed below:

Mol	Chain	Res	Type	Group
33	JJ	232	ARG	Peptide
36	L	102	GLU	Peptide
58	a	7	THR	Peptide
62	e	35	PRO	Peptide
62	e	38	PHE	Peptide
66	i	220	VAL	Peptide
66	i	65	ARG	Peptide
68	k	64	VAL	Peptide
73	p	105	ASN	Peptide
74	q	123	SER	Peptide
74	q	124	ASP	Peptide
76	s	40	GLU	Peptide
78	u	90	ASN	Peptide
83	z	88	PRO	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	0	1073	0	1132	37	0
2	1	563	0	603	25	0
3	2	769	0	814	21	0
4	3	610	0	633	18	0
5	4	497	0	535	16	0
6	5	442	0	429	16	0
7	6	427	0	476	16	0
8	7	2436	0	2386	106	0
9	8	276	0	288	9	0
10	A	1555	0	1659	26	0
11	AA	68285	0	34369	1001	0
12	B	1222	0	1231	22	0
13	BB	2579	0	1304	26	0
14	Bb	1638	0	835	40	0
15	C	1441	0	1543	30	0
16	CC	3353	0	1695	45	0
17	Cc	1644	0	837	30	0
18	D	1423	0	1510	34	0
19	DD	1531	0	1571	76	0
20	Dd	278	0	138	3	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
21	E	1445	0	1487	28	0
22	EE	1914	0	1981	33	0
23	Ee	1196	0	1257	60	0
24	F	1276	0	1323	22	0
25	FF	3075	0	3142	46	0
26	G	770	0	780	10	0
27	GG	2748	0	2859	46	0
28	H	963	0	1015	21	0
29	HH	2375	0	2325	45	0
30	I	521	0	551	13	0
31	II	1230	0	1320	23	0
32	J	959	0	1023	14	0
33	JJ	1784	0	1862	26	0
34	K	993	0	1081	14	0
35	KK	1804	0	1877	19	0
36	L	1092	0	1155	20	0
37	LL	1518	0	1587	23	0
38	M	1173	0	1215	31	0
39	MM	1743	0	1785	31	0
40	N	462	0	491	4	0
41	NN	1353	0	1383	42	0
42	O	742	0	797	12	0
43	OO	1543	0	1608	34	0
44	P	883	0	918	12	0
45	PP	1053	0	1149	12	0
46	Pp	19	0	20	19	0
47	Q	1020	0	1090	15	0
48	QQ	1720	0	1779	30	0
49	R	850	0	880	6	0
50	S	861	0	918	12	0
51	T	969	0	1078	21	0
52	U	771	0	849	17	0
53	V	665	0	668	12	0
54	W	612	0	682	19	0
55	X	436	0	475	13	0
56	Y	417	0	455	6	0
57	Z	233	0	284	3	0
58	a	819	0	886	14	0
59	b	694	0	734	7	0
60	c	34236	0	17248	618	0
61	d	1583	0	1578	39	0
62	e	1689	0	1763	52	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
63	f	1635	0	1723	25	0
64	g	1601	0	1682	49	0
65	h	2056	0	2140	59	0
66	i	1572	0	1639	35	0
67	j	1766	0	1859	63	0
68	k	1481	0	1572	48	0
69	l	1457	0	1488	58	0
70	m	1494	0	1573	47	0
71	n	772	0	760	28	0
72	o	1146	0	1213	20	0
73	p	1192	0	1255	18	0
74	q	891	0	883	30	0
75	r	837	0	868	19	0
76	s	1080	0	1140	34	0
77	t	961	0	999	51	0
78	u	1192	0	1222	48	0
79	v	1112	0	1124	29	0
80	w	800	0	869	32	0
81	x	684	0	672	25	0
82	y	1021	0	1060	21	0
83	z	1121	0	1196	19	0
84	2	1	0	0	0	0
84	5	1	0	0	0	0
84	8	1	0	0	0	0
84	S	1	0	0	0	0
84	V	1	0	0	0	0
84	Y	1	0	0	0	0
84	a	1	0	0	0	0
84	b	1	0	0	0	0
85	AA	205	0	0	0	0
85	B	1	0	0	0	0
85	BB	5	0	0	0	0
85	Bb	1	0	0	0	0
85	CC	3	0	0	0	0
85	Cc	1	0	0	0	0
85	Dd	1	0	0	0	0
85	FF	1	0	0	0	0
85	H	1	0	0	0	0
85	QQ	1	0	0	0	0
85	V	1	0	0	0	0
85	c	60	0	0	0	0
86	AA	12	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
86	EE	1	0	0	0	0
86	MM	1	0	0	0	0
86	Q	1	0	0	0	0
86	S	1	0	0	0	0
86	a	1	0	0	0	0
86	c	4	0	0	0	0
86	q	1	0	0	0	0
87	AA	30	0	57	4	0
87	c	10	0	19	1	0
88	2	1	0	0	0	0
88	A	2	0	0	0	0
88	AA	877	0	0	9	0
88	B	3	0	0	0	0
88	BB	12	0	0	0	0
88	Bb	5	0	0	0	0
88	CC	18	0	0	0	0
88	Cc	6	0	0	1	0
88	D	4	0	0	0	0
88	Dd	4	0	0	0	0
88	EE	9	0	0	0	0
88	F	4	0	0	0	0
88	FF	4	0	0	0	0
88	GG	3	0	0	0	0
88	H	3	0	0	0	0
88	HH	1	0	0	0	0
88	J	1	0	0	0	0
88	JJ	2	0	0	0	0
88	LL	1	0	0	0	0
88	M	3	0	0	0	0
88	MM	2	0	0	0	0
88	N	1	0	0	1	0
88	Q	4	0	0	0	0
88	QQ	9	0	0	0	0
88	S	2	0	0	0	0
88	V	3	0	0	0	0
88	a	2	0	0	0	0
88	c	226	0	0	5	0
88	h	2	0	0	0	0
88	o	2	0	0	0	0
88	p	2	0	0	0	0
88	q	2	0	0	1	0
88	v	3	0	0	0	0

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Mol	Chain	Non-H	H(model)	H(added)	Clashes	Symm-Clashes
88	z	1	0	0	0	0
All	All	201697	0	148359	3314	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 10.

All (3314) 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)
11:AA:1018:G:OP1	11:AA:1035:G:N2	1.63	1.32
5:4:60:GLU:HG3	74:q:107:ARG:HH12	1.20	1.05
11:AA:2442:G:H1	11:AA:2505:U:H3	1.11	0.99
58:a:7:THR:O	58:a:22:GLN:NE2	1.97	0.97
11:AA:1237:G:H1	11:AA:1251:A:H61	1.11	0.96
63:f:90:THR:H	63:f:93:GLY:HA2	1.31	0.94
60:c:819:G:H1	60:c:852:C:H5	1.16	0.92
8:7:115:ILE:HG13	8:7:122:ILE:HG22	1.51	0.91
8:7:19:TRP:HB3	8:7:38:ARG:HB2	1.52	0.91
11:AA:2820:A:H2'	46:Pp:1:MET:N	1.85	0.91
11:AA:2302:G:H21	60:c:1746:A:H8	1.17	0.91
60:c:1585:U:H3	60:c:1611:A:H2	1.19	0.90
11:AA:2820:A:C4	46:Pp:1:MET:HA	2.09	0.88
11:AA:2820:A:C2	46:Pp:1:MET:HE2	2.07	0.88
60:c:1588:G:H1	60:c:1608:U:H3	1.18	0.88
11:AA:542:G:H1	11:AA:549:U:H3	1.20	0.87
66:i:49:GLU:HA	66:i:65:ARG:HD3	1.55	0.87
59:b:57:CYS:SG	59:b:59:CYS:O	2.32	0.87
11:AA:3348:G:H1	11:AA:3357:U:H3	1.18	0.86
71:n:50:THR:HG22	71:n:55:VAL:HB	1.57	0.85
11:AA:1237:G:H1	11:AA:1251:A:N6	1.72	0.85
11:AA:2820:A:N3	46:Pp:1:MET:HA	1.90	0.85
61:d:15:GLN:HG3	77:t:100:LEU:HD11	1.58	0.85
11:AA:1940:G:H21	11:AA:3362:A:H8	1.25	0.85
8:7:211:ILE:HG23	8:7:225:LEU:HD11	1.56	0.84
11:AA:394:G:H22	11:AA:397:A:H5'	1.40	0.84
70:m:168:ARG:HE	70:m:169:PRO:HD2	1.43	0.84
23:Ee:127:SER:HA	23:Ee:130:LYS:HD2	1.60	0.84
8:7:189:GLU:HB3	8:7:228:LYS:HZ1	1.41	0.83
38:M:19:LYS:HG2	38:M:25:HIS:HB2	1.60	0.83
60:c:992:A:H2	60:c:1012:U:H3	1.25	0.83
60:c:868:G:H1	60:c:960:U:H3	1.26	0.83

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:MM:108:ALA:O	39:MM:112:GLN:HB2	1.79	0.83
9:8:126:CYS:HB3	9:8:130:VAL:HG21	1.60	0.83
28:H:81:GLN:O	28:H:98:ASN:ND2	2.10	0.83
11:AA:2897:A:H5''	56:Y:125:LYS:HG3	1.61	0.82
77:t:80:ARG:O	77:t:84:TYR:HE2	1.62	0.82
11:AA:2534:G:N2	11:AA:2545:C:O2	2.11	0.82
11:AA:3160:U:H3	11:AA:3290:G:H1	1.24	0.82
16:CC:58:G:O6	53:V:63:ARG:NH2	2.13	0.81
60:c:1034:C:HO2'	82:y:2:THR:N	1.78	0.81
67:j:49:VAL:HB	67:j:115:LYS:HB3	1.63	0.80
11:AA:2449:A:N6	11:AA:2498:U:O2	2.15	0.79
68:k:56:LYS:O	68:k:88:ARG:HA	1.81	0.79
39:MM:44:ASP:OD1	39:MM:185:ARG:NH1	2.16	0.79
75:r:96:ILE:HG12	75:r:116:LEU:HG	1.65	0.78
11:AA:2489:C:H3'	11:AA:2490:C:H2'	1.63	0.78
17:Cc:1:C:H42	17:Cc:73:A:H61	1.28	0.78
64:g:48:VAL:HB	64:g:86:LEU:HD23	1.66	0.78
19:DD:42:ARG:NH1	19:DD:51:VAL:O	2.17	0.78
11:AA:1261:G:O2'	11:AA:1262:G:N7	2.17	0.78
11:AA:2457:G:N3	11:AA:2459:A:N6	2.32	0.77
78:u:92:ILE:HG23	78:u:93:THR:HG23	1.65	0.77
60:c:1171:A:H2'	60:c:1172:G:C8	2.19	0.77
82:y:15:ASN:ND2	82:y:72:CYS:O	2.16	0.77
68:k:64:VAL:HG23	68:k:67:LEU:HB2	1.66	0.77
60:c:1672:G:H2'	60:c:1673:G:C8	2.20	0.77
60:c:1223:A:H2'	60:c:1224:A:C8	2.20	0.77
11:AA:1301:A:H4'	11:AA:1302:A:H5''	1.67	0.77
11:AA:240:U:H4'	11:AA:241:G:H5'	1.66	0.76
11:AA:3155:U:H5'	11:AA:3156:U:H4'	1.67	0.76
11:AA:2820:A:N1	46:Pp:1:MET:HE2	1.99	0.76
70:m:77:ILE:HG23	70:m:86:LEU:HD23	1.67	0.76
27:GG:35:VAL:HG21	27:GG:244:LEU:HD21	1.68	0.76
60:c:1461:C:H5''	78:u:144:ARG:HH12	1.50	0.76
63:f:39:THR:O	63:f:42:GLY:N	2.18	0.76
11:AA:2193:U:H5'	11:AA:2194:G:H5'	1.67	0.75
12:B:67:ILE:HD11	12:B:80:LYS:HB3	1.68	0.75
54:W:34:ALA:HB3	54:W:36:LYS:HZ2	1.50	0.75
11:AA:1034:U:H2'	11:AA:1035:G:H8	1.51	0.75
25:FF:37:ARG:HD3	25:FF:186:GLY:HA2	1.69	0.74
11:AA:3343:G:H21	11:AA:3362:A:H2	1.35	0.74
77:t:108:ASP:HA	77:t:111:LYS:HE2	1.68	0.74

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:419:G:H5'	67:j:72:ARG:HH12	1.52	0.74
60:c:1474:G:H2'	60:c:1475:A:H8	1.52	0.74
11:AA:1661:G:H2'	11:AA:1662:G:C8	2.23	0.74
60:c:1352:G:N2	60:c:1374:C:N3	2.35	0.74
61:d:119:ARG:NH1	63:f:241:ASP:OD1	2.21	0.74
8:7:126:SER:OG	8:7:128:ASP:OD1	2.05	0.74
65:h:71:LYS:HB3	65:h:91:THR:HG23	1.70	0.74
1:0:27:VAL:HG11	1:0:35:VAL:HG21	1.68	0.74
1:0:34:ASN:ND2	60:c:521:A:N3	2.35	0.74
18:D:21:LYS:HE3	18:D:55:VAL:HA	1.69	0.73
41:NN:30:LEU:HD11	41:NN:47:GLN:HG2	1.70	0.73
11:AA:1257:C:H42	11:AA:1261:G:H22	1.33	0.73
11:AA:2213:A:H2'	11:AA:2214:A:C8	2.24	0.73
65:h:151:ASP:OD1	67:j:215:ARG:NH1	2.18	0.73
23:Ee:91:ASP:HB3	23:Ee:94:LYS:HG2	1.71	0.73
17:Cc:23:G:N7	17:Cc:47:G:N2	2.31	0.73
11:AA:1268:G:H21	11:AA:1273:A:H62	1.33	0.73
14:Bb:76:A:H4'	46:Pp:2:PHE:CE1	2.24	0.73
60:c:967:A:OP2	73:p:124:ARG:NH2	2.21	0.73
3:2:32:LYS:O	3:2:37:LYS:NZ	2.21	0.73
8:7:122:ILE:HD11	8:7:134:TRP:HB2	1.71	0.73
15:C:185:LYS:HG2	15:C:186:VAL:HG23	1.70	0.73
38:M:75:LEU:HD22	38:M:78:LEU:HD22	1.71	0.73
39:MM:30:LYS:HG2	39:MM:63:GLU:HG3	1.69	0.73
25:FF:187:SER:O	25:FF:190:GLU:N	2.22	0.72
60:c:639:U:OP1	68:k:112:ARG:NH2	2.21	0.72
60:c:1296:A:OP1	61:d:138:TYR:OH	2.07	0.72
60:c:1727:G:N2	69:l:32:GLN:OE1	2.15	0.72
65:h:178:GLY:O	65:h:231:GLN:NE2	2.21	0.72
11:AA:2468:A:O2'	11:AA:2477:G:N1	2.22	0.72
60:c:795:U:H2'	60:c:796:A2M:H8	1.72	0.72
60:c:273:G:H1	60:c:283:U:H3	1.37	0.72
60:c:687:G:H5'	82:y:119:LYS:HG2	1.71	0.72
60:c:895:G:H1	60:c:917:U:H3	1.37	0.72
11:AA:1262:G:H2'	11:AA:1264:G:H1'	1.71	0.72
60:c:1474:G:H2'	60:c:1475:A:C8	2.25	0.72
78:u:41:ARG:HH11	79:v:46:PRO:HG3	1.55	0.72
15:C:158:HIS:H	15:C:186:VAL:HG12	1.53	0.72
45:PP:48:GLY:HA3	45:PP:53:VAL:HB	1.72	0.72
3:2:47:ALA:HB2	74:q:99:GLN:HE21	1.55	0.72
60:c:68:A:OP1	67:j:160:ARG:NH2	2.21	0.72

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:f:222:TYR:OH	81:x:11:LEU:O	2.07	0.72
75:r:98:ASN:ND2	75:r:121:ILE:O	2.21	0.72
12:B:116:HIS:HB3	12:B:149:VAL:HG13	1.71	0.72
62:e:35:PRO:HB3	62:e:38:PHE:HD2	1.55	0.72
18:D:176:ARG:HH22	60:c:852:C:H5'	1.55	0.71
60:c:478:A:O2'	70:m:124:HIS:ND1	2.23	0.71
60:c:1368:G:H5''	79:v:69:LYS:HG2	1.72	0.71
11:AA:269:G:H5''	48:QQ:14:LYS:HE2	1.73	0.71
11:AA:1018:G:H2'	11:AA:1019:G:O4'	1.91	0.71
17:Cc:59:A:O2'	17:Cc:61:U:OP2	2.08	0.71
60:c:992:A:O2'	60:c:1785:U:O2	2.07	0.71
60:c:1213:G:O2'	60:c:1244:A:N6	2.23	0.71
43:OO:47:ALA:HB1	51:T:115:LYS:HG3	1.72	0.71
60:c:576:G:H22	83:z:67:ALA:HB2	1.56	0.71
16:CC:150:G:OP1	32:J:27:ARG:NH2	2.23	0.71
71:n:43:ILE:HG22	71:n:44:LYS:HD3	1.73	0.71
76:s:50:GLU:OE1	76:s:114:ARG:NH1	2.23	0.71
51:T:102:GLU:OE1	51:T:105:ARG:NH2	2.18	0.71
58:a:34:SER:OG	58:a:35:LEU:O	2.08	0.71
60:c:861:U:O2'	82:y:56:HIS:O	2.09	0.71
11:AA:2960:C:H2'	11:AA:2961:G:C8	2.26	0.70
60:c:65:A:OP1	67:j:176:GLN:NE2	2.23	0.70
74:q:103:ARG:O	74:q:107:ARG:HG2	1.90	0.70
11:AA:1334:U:O2'	33:JJ:151:ARG:NH2	2.23	0.70
11:AA:2836:C:H5	11:AA:2852:C:H42	1.37	0.70
11:AA:2969:A:N7	22:EE:215:ASN:ND2	2.40	0.70
65:h:97:GLU:OE2	65:h:113:ARG:NH1	2.25	0.70
11:AA:627:U:H4'	11:AA:1399:A:H1'	1.72	0.70
60:c:591:A:H2'	60:c:592:A:C8	2.26	0.70
67:j:57:ASP:HA	67:j:106:LEU:HA	1.74	0.70
10:A:96:LYS:O	10:A:100:GLU:HG3	1.92	0.70
74:q:80:HIS:HA	74:q:113:GLY:O	1.92	0.69
3:2:45:VAL:HA	74:q:99:GLN:HE22	1.56	0.69
11:AA:266:A:OP1	48:QQ:5:LYS:NZ	2.26	0.69
11:AA:2922:OMG:H5''	11:AA:2922:OMG:H8	1.57	0.69
60:c:1219:A:O2'	71:n:47:GLN:O	2.09	0.69
67:j:98:ARG:NH1	67:j:101:ILE:O	2.25	0.69
11:AA:1097:G:N7	24:F:116:ARG:NH2	2.39	0.69
41:NN:57:PHE:HB3	41:NN:59:ILE:HG23	1.73	0.69
57:Z:2:ARG:HH22	60:c:1773:4AC:HM72	1.56	0.69
11:AA:2922:OMG:H5''	11:AA:2922:OMG:C8	2.27	0.69

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:64:HIS:CE1	8:7:84:SER:HB2	2.26	0.69
73:p:103:GLU:HA	73:p:106:ARG:HH21	1.58	0.69
19:DD:160:ASP:OD2	19:DD:163:ASN:ND2	2.26	0.69
66:i:37:GLN:H	76:s:57:LEU:HD21	1.58	0.69
17:Cc:47:G:H2'	17:Cc:48:U:H4'	1.75	0.69
47:Q:79:VAL:O	47:Q:83:GLU:HG3	1.92	0.69
57:Z:1:MET:HB2	60:c:1642:G:H5'	1.74	0.69
63:f:116:LYS:HG2	63:f:127:ALA:HB3	1.75	0.69
11:AA:289:A:O2'	48:QQ:93:LYS:O	2.11	0.69
11:AA:2820:A:H2'	46:Pp:1:MET:CA	2.22	0.69
11:AA:2820:A:H2'	46:Pp:1:MET:H2	1.58	0.69
23:Ee:148:PRO:HA	23:Ee:151:ILE:HD12	1.75	0.69
70:m:109:LEU:HB2	70:m:146:PHE:HB3	1.74	0.69
60:c:151:G:N3	67:j:13:GLN:NE2	2.42	0.69
69:l:53:LYS:NZ	69:l:55:TYR:OH	2.26	0.69
78:u:32:LEU:HD21	78:u:69:ILE:HG21	1.74	0.68
19:DD:116:PRO:HG3	19:DD:181:PHE:HA	1.75	0.68
8:7:24:ALA:HB3	8:7:34:LEU:HB3	1.74	0.68
11:AA:2697:A:H2'	11:AA:2698:G:C8	2.29	0.68
65:h:48:LEU:HD11	65:h:70:VAL:HG21	1.74	0.68
11:AA:2180:G:OP1	22:EE:174:ARG:NH2	2.27	0.68
14:Bb:9:A:H2	14:Bb:23:A:H62	1.41	0.68
76:s:129:PHE:O	76:s:137:ARG:NH1	2.23	0.68
21:E:99:ARG:NH2	21:E:126:VAL:O	2.26	0.68
72:o:4:GLU:OE1	72:o:82:ARG:NH2	2.27	0.68
8:7:109:ASP:OD2	8:7:127:ARG:NH1	2.27	0.68
80:w:96:PRO:HD2	80:w:99:ILE:HD11	1.76	0.68
2:1:57:TYR:HB3	2:1:68:ARG:HH22	1.59	0.68
43:OO:47:ALA:O	43:OO:49:ARG:N	2.27	0.68
11:AA:2219:A:H2'	11:AA:2220:A2M:H8	1.75	0.67
11:AA:3016:A:H2'	11:AA:3017:A:C8	2.29	0.67
38:M:132:LYS:O	38:M:136:GLU:HG3	1.94	0.67
2:1:83:LEU:HD12	2:1:89:ILE:HG12	1.76	0.67
78:u:88:ARG:HE	78:u:91:ASP:HB2	1.58	0.67
60:c:513:U:H2'	60:c:514:G:C8	2.29	0.67
78:u:73:MET:HB3	78:u:101:LEU:HD13	1.75	0.67
9:8:94:LYS:HB2	60:c:1247:U:H5''	1.75	0.67
19:DD:48:ARG:NH2	19:DD:95:GLU:OE1	2.27	0.67
29:HH:50:ARG:NH1	29:HH:147:ASP:OD2	2.28	0.67
64:g:157:LEU:HD23	64:g:189:MET:HB2	1.76	0.67
11:AA:2895:G:O2'	56:Y:100:TYR:O	2.11	0.67

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:900:G:H1'	11:AA:1589:A:N6	2.09	0.67
68:k:46:ILE:HD13	68:k:60:ILE:HG12	1.75	0.67
68:k:49:ILE:HD12	68:k:175:LYS:HG2	1.77	0.67
27:GG:142:VAL:HG12	27:GG:145:ILE:HD12	1.76	0.67
60:c:1414:U:OP2	77:t:2:GLY:N	2.28	0.67
11:AA:3143:C:OP2	88:AA:3703:HOH:O	2.13	0.67
62:e:82:ARG:NH2	62:e:188:LEU:O	2.25	0.67
68:k:151:LYS:HE3	68:k:153:LEU:HD21	1.76	0.67
11:AA:3016:A:H2'	11:AA:3017:A:H8	1.60	0.67
14:Bb:18:G:H21	14:Bb:61:C:H1'	1.60	0.67
61:d:10:THR:OG1	61:d:13:ASP:OD1	2.12	0.67
60:c:426:G:N7	88:c:2008:HOH:O	2.29	0.66
2:l:62:VAL:O	2:l:66:VAL:HG23	1.95	0.66
29:HH:85:ARG:NH2	29:HH:250:ASP:OD2	2.26	0.66
60:c:256:A:O2'	69:l:72:ILE:O	2.12	0.66
60:c:1218:G:N2	60:c:1444:A:OP2	2.25	0.66
70:m:17:ARG:O	70:m:23:ARG:NH1	2.28	0.66
8:7:192:PHE:HD2	8:7:230:ALA:H	1.42	0.66
11:AA:2467:G:N2	11:AA:2489:C:O2'	2.29	0.66
66:i:48:PHE:O	66:i:65:ARG:NH1	2.29	0.66
11:AA:544:C:O2	11:AA:547:G:N2	2.26	0.66
11:AA:1717:U:H2'	11:AA:1718:G:C8	2.30	0.66
28:H:32:ARG:HD3	60:c:1734:U:H5''	1.78	0.66
70:m:73:GLY:O	70:m:77:ILE:HD12	1.96	0.66
60:c:45:U:O2'	60:c:46:A:H2'	1.96	0.66
60:c:1601:G:OP1	79:v:86:ARG:NH1	2.23	0.66
78:u:53:ASP:HB3	78:u:56:LYS:HE3	1.78	0.66
11:AA:1258:U:OP1	19:DD:42:ARG:NH1	2.29	0.66
11:AA:3111:U:OP2	88:AA:3704:HOH:O	2.14	0.66
23:Ee:18:VAL:HG13	23:Ee:21:GLU:HB2	1.77	0.66
62:e:34:ALA:HA	62:e:98:THR:OG1	1.95	0.66
8:7:289:ALA:HA	8:7:305:TYR:HA	1.78	0.66
14:Bb:18:G:N2	14:Bb:61:C:O2	2.29	0.66
37:LL:57:VAL:HG23	37:LL:68:LEU:HD13	1.78	0.66
68:k:15:GLU:O	68:k:19:GLN:NE2	2.29	0.66
8:7:59:ARG:NH2	76:s:95:LYS:O	2.28	0.65
11:AA:1103:A:N6	11:AA:1363:A:O2'	2.28	0.65
64:g:61:GLU:OE1	64:g:64:ARG:NH2	2.29	0.65
1:0:112:LYS:NZ	60:c:57:G:OP1	2.28	0.65
21:E:13:ARG:HD3	21:E:51:VAL:HG23	1.78	0.65
60:c:1533:C:H4'	60:c:1539:G:C6	2.31	0.65

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2681:U:H5'	41:NN:65:ILE:HD11	1.78	0.65
14:Bb:76:A:H4'	46:Pp:2:PHE:CD1	2.30	0.65
60:c:257:A:O2'	69:l:73:SER:O	2.11	0.65
60:c:319:U:H4'	60:c:323:A:C8	2.32	0.65
68:k:98:ILE:HG12	68:k:121:VAL:HG21	1.78	0.65
69:l:84:HIS:O	72:o:11:ARG:NH2	2.29	0.65
11:AA:1364:C:OP1	33:JJ:110:ARG:NH2	2.30	0.65
11:AA:2810:C:OP2	11:AA:2955:U:O2'	2.14	0.65
1:0:103:ALA:O	1:0:108:ARG:NH1	2.29	0.65
3:2:70:LYS:NZ	60:c:933:A:OP1	2.28	0.65
11:AA:2700:G:H5''	24:F:17:ARG:HG2	1.79	0.65
19:DD:159:VAL:HG11	19:DD:165:VAL:HG22	1.78	0.65
11:AA:683:U:OP1	48:QQ:204:LYS:NZ	2.30	0.65
11:AA:785:G:O6	38:M:77:LYS:NZ	2.29	0.65
11:AA:2534:G:N1	11:AA:2545:C:N3	2.31	0.65
19:DD:46:ARG:NH2	23:Ee:121:PHE:O	2.29	0.65
41:NN:108:GLU:HG3	41:NN:122:ILE:HD11	1.77	0.65
60:c:1559:A:H5''	78:u:135:GLY:HA3	1.79	0.65
79:v:39:THR:HA	79:v:100:ILE:HD12	1.77	0.65
83:z:6:PRO:HG3	83:z:14:LYS:HG2	1.79	0.65
11:AA:2471:U:C4	11:AA:2473:C:C4	2.84	0.65
65:h:112:HIS:NE2	65:h:237:SER:O	2.30	0.65
70:m:170:GLY:O	70:m:174:ARG:NE	2.29	0.65
11:AA:1257:C:H42	11:AA:1261:G:N2	1.94	0.65
60:c:567:A:OP1	83:z:70:LYS:NZ	2.30	0.65
60:c:1471:A:H2	60:c:1474:G:N3	1.95	0.65
80:w:24:ILE:HG23	80:w:116:VAL:HG22	1.77	0.65
11:AA:1696:A:H2'	11:AA:1697:A:C8	2.30	0.65
11:AA:2261:G:O2'	11:AA:2262:A:N7	2.26	0.65
11:AA:2461:A:OP1	11:AA:2486:A:N6	2.30	0.65
60:c:998:A:N7	88:c:2010:HOH:O	2.29	0.65
60:c:1564:U:OP1	79:v:38:LYS:NZ	2.29	0.65
11:AA:2489:C:H2'	11:AA:2490:C:C2	2.32	0.64
27:GG:350:LYS:HE3	27:GG:351:PRO:HD2	1.79	0.64
60:c:66:U:O2	67:j:160:ARG:NH1	2.26	0.64
11:AA:1222:G:C8	19:DD:57:THR:HG21	2.32	0.64
16:CC:49:G:OP2	51:T:48:ARG:NH2	2.31	0.64
50:S:85:VAL:O	50:S:89:ILE:HG12	1.97	0.64
60:c:163:G:OP2	60:c:163:G:N2	2.24	0.64
11:AA:1169:A:OP1	88:AA:3705:HOH:O	2.14	0.64
11:AA:1206:G:OP1	39:MM:157:TYR:OH	2.14	0.64

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:123:G:H21	65:h:146:THR:HG21	1.61	0.64
60:c:1654:G:H21	60:c:1746:A:H2	1.43	0.64
68:k:34:LEU:HD11	68:k:76:LYS:HD2	1.80	0.64
8:7:132:LYS:HD3	8:7:143:THR:HG23	1.79	0.64
8:7:149:ASP:H	8:7:175:ASP:HB3	1.61	0.64
11:AA:2270:A:H2'	11:AA:2271:A:C8	2.32	0.64
60:c:509:G:H2'	60:c:510:G:C8	2.33	0.64
11:AA:1437:OMC:HM22	27:GG:93:MET:HG3	1.79	0.64
11:AA:2457:G:N2	11:AA:2486:A:N1	2.46	0.64
19:DD:38:MET:HE1	19:DD:42:ARG:HE	1.61	0.64
60:c:895:G:H21	74:q:38:THR:HG21	1.63	0.64
60:c:1674:C:OP1	67:j:92:ARG:NH1	2.26	0.64
67:j:65:GLN:NE2	67:j:65:GLN:O	2.31	0.64
73:p:45:LEU:HB3	73:p:49:GLN:HG3	1.80	0.64
11:AA:72:C:H5''	43:OO:63:VAL:HG13	1.80	0.64
11:AA:2897:A:H2'	11:AA:2899:C:H5''	1.78	0.64
33:JJ:138:TYR:CE2	33:JJ:233:GLU:HB3	2.32	0.64
41:NN:49:LYS:HB3	41:NN:62:ASN:HA	1.80	0.64
67:j:26:VAL:O	67:j:30:LYS:NZ	2.31	0.64
74:q:16:VAL:O	74:q:30:VAL:HA	1.98	0.64
11:AA:2406:C:H2'	11:AA:2407:C:C6	2.33	0.64
60:c:12:U:H2'	60:c:13:C:C6	2.33	0.64
60:c:538:A:H1'	60:c:541:A2M:HM'2	1.79	0.64
70:m:136:VAL:HG13	70:m:152:SER:HB3	1.79	0.64
11:AA:664:U:H2'	11:AA:665:A:C8	2.33	0.63
11:AA:1863:G:N1	11:AA:1866:C:OP2	2.25	0.63
6:5:14:TYR:OH	60:c:1553:G:O2'	2.13	0.63
11:AA:2476:C:H2'	11:AA:2477:G:H4'	1.80	0.63
11:AA:2767:U:O2'	58:a:30:ALA:O	2.13	0.63
17:Cc:22:A:N6	17:Cc:48:U:O2'	2.32	0.63
31:II:56:LYS:NZ	31:II:101:PHE:O	2.31	0.63
37:LL:120:ASP:OD2	37:LL:124:ARG:NH2	2.32	0.63
62:e:35:PRO:HD2	62:e:41:ARG:HA	1.79	0.63
11:AA:655:C:H2'	11:AA:656:A:H8	1.61	0.63
29:HH:211:LEU:HD21	29:HH:218:ARG:HG3	1.79	0.63
11:AA:394:G:N1	11:AA:397:A:OP2	2.30	0.63
11:AA:655:C:H2'	11:AA:656:A:C8	2.34	0.63
11:AA:1410:U:O2'	47:Q:95:GLU:OE1	2.16	0.63
11:AA:1596:C:H2'	11:AA:1597:C:C6	2.32	0.63
64:g:80:ALA:O	64:g:83:THR:OG1	2.16	0.63
76:s:38:LEU:HB3	79:v:10:ALA:HB2	1.80	0.63

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2683:U:H2'	11:AA:2684:C:C6	2.33	0.63
15:C:62:VAL:HG13	15:C:66:ARG:HD2	1.80	0.63
11:AA:1034:U:H2'	11:AA:1035:G:C8	2.31	0.63
43:OO:47:ALA:HB3	43:OO:49:ARG:HD3	1.80	0.63
50:S:3:GLN:HE22	50:S:29:ILE:HB	1.63	0.63
53:V:2:GLY:HA2	53:V:6:PRO:HG2	1.81	0.63
60:c:871:G:H2'	60:c:872:G:C8	2.33	0.63
60:c:1591:C:H2'	60:c:1592:A:H8	1.63	0.63
70:m:125:ALA:O	70:m:129:ILE:HG13	1.99	0.63
43:OO:62:THR:O	43:OO:64:LYS:N	2.32	0.63
60:c:354:C:H5''	69:l:16:ALA:HB2	1.79	0.63
11:AA:978:G:O2'	11:AA:980:A:N3	2.31	0.63
11:AA:2697:A:H2'	11:AA:2698:G:H8	1.64	0.63
23:Ee:110:ILE:O	23:Ee:114:ARG:HG2	1.99	0.63
39:MM:74:LYS:O	39:MM:78:THR:HG23	1.98	0.63
60:c:930:A:N3	62:e:111:ARG:NH2	2.45	0.63
60:c:1561:U:H2'	60:c:1562:G:H8	1.64	0.63
67:j:126:ASP:OD1	67:j:126:ASP:N	2.30	0.63
74:q:43:THR:H	74:q:46:MET:HE2	1.62	0.63
82:y:18:GLU:HG2	82:y:65:LEU:HD13	1.81	0.63
5:4:11:LYS:HG3	5:4:53:ILE:HG22	1.80	0.62
11:AA:662:U:H2'	11:AA:663:OMC:C6	2.34	0.62
11:AA:1203:A:H2'	11:AA:1204:A:C8	2.34	0.62
23:Ee:82:ILE:HA	23:Ee:85:LEU:HG	1.81	0.62
60:c:1755:A:O2'	60:c:1756:A:O5'	2.17	0.62
11:AA:2820:A:C4	46:Pp:1:MET:CA	2.83	0.62
23:Ee:105:GLN:HG2	23:Ee:107:ASP:H	1.64	0.62
55:X:28:ARG:HA	55:X:33:ASN:OD1	1.99	0.62
60:c:1676:U:OP1	69:l:44:HIS:ND1	2.29	0.62
14:Bb:2:C:H2'	14:Bb:3:G:H8	1.64	0.62
14:Bb:43:G:H2'	14:Bb:44:A:C8	2.35	0.62
23:Ee:80:LEU:HB3	23:Ee:112:ILE:HD13	1.81	0.62
66:i:72:HIS:O	76:s:79:TYR:OH	2.17	0.62
11:AA:1241:U:H1'	11:AA:1248:C:H42	1.65	0.62
11:AA:3295:A:H2'	11:AA:3296:A:C8	2.34	0.62
60:c:1382:A:HO2'	60:c:1383:G:H8	1.47	0.62
39:MM:72:ALA:HB2	39:MM:155:ALA:HB2	1.82	0.62
67:j:135:PRO:HB2	67:j:141:ILE:HG12	1.81	0.62
13:BB:10:C:OP2	24:F:26:HIS:ND1	2.31	0.62
22:EE:149:ARG:HG3	22:EE:155:LYS:HE3	1.82	0.62
60:c:924:A:H2'	60:c:925:G:C8	2.34	0.62

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
13:BB:39:C:H4'	41:NN:44:THR:HG23	1.79	0.62
23:Ee:137:GLN:HB2	23:Ee:148:PRO:HB2	1.80	0.62
25:FF:218:ILE:HG12	25:FF:276:THR:HG23	1.80	0.62
82:y:29:PRO:HB2	82:y:58:SER:HB2	1.81	0.62
28:H:40:LYS:HG3	28:H:57:MET:HG2	1.82	0.62
60:c:1041:G:H2'	60:c:1042:G:C8	2.35	0.62
70:m:77:ILE:HG21	70:m:91:LYS:HB3	1.81	0.62
8:7:240:VAL:HG12	8:7:256:THR:HG22	1.80	0.62
27:GG:7:THR:N	27:GG:147:GLU:OE2	2.30	0.62
60:c:902:G:OP1	74:q:90:ARG:NH2	2.32	0.62
64:g:140:GLY:O	64:g:147:ALA:HA	2.00	0.62
11:AA:2674:A:H5''	41:NN:105:GLY:HA3	1.80	0.62
14:Bb:58:A:H1'	14:Bb:60:C:H41	1.65	0.62
22:EE:3:ARG:HB2	22:EE:207:VAL:HG22	1.82	0.62
60:c:907:A:H2'	60:c:908:U:H6	1.65	0.62
60:c:1524:A:H2'	60:c:1525:A:C8	2.35	0.62
62:e:34:ALA:HA	62:e:98:THR:HG1	1.65	0.62
67:j:32:ILE:HD11	67:j:54:GLY:H	1.64	0.62
21:E:77:VAL:HG11	21:E:106:LEU:HD22	1.80	0.61
42:O:17:VAL:HG11	42:O:92:ILE:HD12	1.82	0.61
60:c:788:A:H2'	65:h:19:LEU:HD22	1.82	0.61
67:j:85:ARG:O	67:j:87:ARG:NH1	2.32	0.61
71:n:68:LEU:HD21	71:n:76:LEU:HD12	1.81	0.61
8:7:85:TRP:HA	8:7:109:ASP:HB3	1.81	0.61
39:MM:189:GLU:HB2	39:MM:200:LEU:HB3	1.81	0.61
77:t:14:LYS:HD3	77:t:69:ILE:HD11	1.82	0.61
13:BB:112:G:H2'	13:BB:113:C:C6	2.36	0.61
37:LL:9:GLN:HB3	37:LL:52:LEU:HD11	1.81	0.61
39:MM:52:LEU:HB3	39:MM:136:PHE:HB2	1.82	0.61
62:e:88:VAL:HA	62:e:98:THR:HG22	1.81	0.61
69:l:39:GLY:HA2	69:l:61:GLU:HB3	1.83	0.61
76:s:56:GLY:HA3	76:s:59:LYS:HD3	1.82	0.61
3:2:51:ARG:NH1	5:4:37:SER:O	2.30	0.61
11:AA:2795:U:OP2	58:a:63:LYS:HG2	2.01	0.61
11:AA:3306:U:OP1	25:FF:269:GLN:NE2	2.34	0.61
23:Ee:65:GLN:O	23:Ee:68:GLN:NE2	2.34	0.61
11:AA:507:U:H2'	11:AA:508:U:C6	2.35	0.61
34:K:3:LYS:HD3	34:K:8:VAL:HG23	1.82	0.61
48:QQ:33:LYS:O	48:QQ:65:ARG:NH2	2.34	0.61
60:c:1229:G:N2	60:c:1255:G:O2'	2.34	0.61
4:3:67:THR:HG22	4:3:68:GLY:H	1.65	0.61

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
10:A:23:VAL:O	10:A:27:LEU:HG	2.00	0.61
11:AA:104:G:OP1	43:OO:68:LYS:NZ	2.32	0.61
14:Bb:37:YYG:H1'	14:Bb:37:YYG:H31	1.82	0.61
11:AA:309:U:OP1	52:U:84:LYS:NZ	2.26	0.61
11:AA:1219:C:O2'	11:AA:1286:A:N1	2.28	0.61
11:AA:2820:A:C2	46:Pp:1:MET:CE	2.82	0.61
60:c:1716:C:O2'	60:c:1717:G:O5'	2.18	0.61
82:y:23:ARG:HG3	82:y:23:ARG:HH11	1.64	0.61
11:AA:12:A:H2'	11:AA:13:A:C8	2.36	0.61
60:c:1492:A:O2'	60:c:1493:A:N7	2.32	0.61
65:h:166:SER:O	65:h:168:LYS:NZ	2.30	0.61
11:AA:1812:G:N7	36:L:64:LYS:NZ	2.43	0.61
19:DD:128:MET:HG3	19:DD:132:LYS:HB2	1.81	0.61
25:FF:187:SER:HB3	25:FF:190:GLU:HB2	1.82	0.61
60:c:899:G:H4'	74:q:46:MET:HG2	1.81	0.61
60:c:1606:C:H2'	60:c:1607:G:C8	2.35	0.61
61:d:198:MET:HE3	77:t:83:GLN:HE22	1.64	0.61
69:l:39:GLY:O	69:l:59:ARG:HB3	2.01	0.60
1:O:16:PRO:HB2	65:h:94:ALA:HB1	1.82	0.60
19:DD:53:MET:SD	19:DD:54:GLY:N	2.74	0.60
26:G:19:VAL:O	26:G:23:THR:OG1	2.16	0.60
27:GG:36:HIS:O	27:GG:40:THR:HG23	2.01	0.60
64:g:32:GLU:OE2	64:g:65:ARG:NH1	2.34	0.60
7:6:40:TYR:HE1	70:m:29:LYS:HA	1.67	0.60
11:AA:876:A2M:HM'2	11:AA:877:C:H5'	1.82	0.60
19:DD:132:LYS:HG3	19:DD:175:LEU:HD22	1.83	0.60
50:S:41:ARG:HG2	50:S:56:THR:HG21	1.82	0.60
60:c:445:A:H1'	60:c:525:A:O5'	2.01	0.60
75:r:44:ARG:NH1	75:r:82:ASN:O	2.32	0.60
77:t:20:TYR:HD1	77:t:23:LYS:HG3	1.66	0.60
3:2:44:ILE:HG13	3:2:67:THR:HG23	1.84	0.60
11:AA:114:A:OP1	48:QQ:54:LYS:NZ	2.33	0.60
11:AA:2442:G:O6	11:AA:2505:U:O4	2.19	0.60
48:QQ:159:ARG:HB2	48:QQ:164:LEU:HB2	1.84	0.60
60:c:265:A:H62	60:c:289:U:H3	1.47	0.60
11:AA:129:U:H2'	11:AA:130:A:C8	2.36	0.60
11:AA:1252:A:H2'	11:AA:1253:U:O4'	2.00	0.60
11:AA:2196:C:O2'	11:AA:2270:A:H8	1.84	0.60
11:AA:2228:A:H2'	11:AA:2229:A:C8	2.36	0.60
66:i:118:LEU:HD22	66:i:129:PRO:HB2	1.82	0.60
11:AA:1635:G:N2	11:AA:1638:A:OP2	2.31	0.60

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3214:U:C4	45:PP:121:MET:HG3	2.36	0.60
78:u:14:ILE:HG22	78:u:23:ASP:HA	1.82	0.60
11:AA:980:A:H2'	11:AA:981:U:C2	2.35	0.60
14:Bb:60:C:H5''	14:Bb:62:A:H62	1.67	0.60
19:DD:104:ARG:HG2	19:DD:184:GLY:HA3	1.84	0.60
78:u:44:ASN:OD1	78:u:48:LYS:NZ	2.26	0.60
2:1:89:ILE:HD12	2:1:101:TYR:CG	2.36	0.60
8:7:266:ASP:N	8:7:266:ASP:OD1	2.35	0.60
25:FF:360:ASP:OD2	25:FF:364:LYS:NZ	2.35	0.60
60:c:1346:A:H4'	60:c:1347:U:H5'	1.83	0.60
77:t:80:ARG:O	77:t:84:TYR:CE2	2.50	0.60
1:0:16:PRO:HD2	65:h:95:THR:HG22	1.84	0.60
6:5:46:LYS:NZ	64:g:23:GLU:OE1	2.30	0.60
11:AA:173:G:H1	11:AA:245:U:H3	1.49	0.60
11:AA:1257:C:N4	11:AA:1261:G:H22	1.99	0.60
11:AA:2876:C:H5''	46:Pp:2:PHE:CZ	2.36	0.60
23:Ee:66:ASN:OD1	23:Ee:67:ARG:NH2	2.35	0.60
41:NN:107:ASP:OD1	41:NN:107:ASP:N	2.34	0.60
42:O:99:ASP:O	42:O:103:THR:OG1	2.17	0.60
60:c:110:U:OP1	60:c:753:A:O2'	2.19	0.60
60:c:789:A:OP1	65:h:108:ARG:NH1	2.35	0.60
11:AA:1551:C:HO2'	11:AA:2170:U:HO2'	1.48	0.60
11:AA:3080:G:OP1	88:AA:3706:HOH:O	2.17	0.60
23:Ee:11:LYS:HB2	23:Ee:64:ILE:HB	1.84	0.60
60:c:647:G:H2'	60:c:648:G:C8	2.37	0.60
71:n:60:SER:HB3	71:n:65:TYR:HE1	1.67	0.60
8:7:13:LEU:HD22	8:7:310:ILE:HB	1.83	0.59
41:NN:59:ILE:HG22	41:NN:65:ILE:HG21	1.83	0.59
60:c:980:G:H4'	60:c:1776:A:H4'	1.84	0.59
60:c:1381:U:H4'	80:w:59:PRO:HG3	1.84	0.59
11:AA:1724:U:H1'	11:AA:1725:C:C6	2.36	0.59
60:c:1358:G:N2	60:c:1366:U:O2	2.34	0.59
60:c:1591:C:H2'	60:c:1592:A:C8	2.37	0.59
61:d:41:ARG:NH1	77:t:103:ASP:OD2	2.36	0.59
69:l:121:LEU:HD12	69:l:122:GLY:N	2.17	0.59
11:AA:1277:C:H2'	11:AA:1278:A:H8	1.66	0.59
11:AA:2714:G:H5'	11:AA:2716:U:C6	2.37	0.59
14:Bb:54:U:H3	14:Bb:62:A:H2	1.51	0.59
19:DD:48:ARG:HH12	19:DD:99:VAL:HG11	1.65	0.59
68:k:7:LYS:HD2	68:k:8:ILE:HG13	1.83	0.59
4:3:19:HIS:HB3	4:3:22:LYS:HG3	1.84	0.59

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:674:G:O6	15:C:56:LYS:NZ	2.35	0.59
11:AA:1232:C:H5	11:AA:1261:G:H2'	1.67	0.59
11:AA:3252:G:H2'	11:AA:3253:G:C8	2.37	0.59
12:B:33:ALA:HB1	12:B:117:ILE:HG12	1.85	0.59
60:c:1421:A:H5'	64:g:160:SER:HB2	1.83	0.59
70:m:76:LEU:HD23	70:m:93:LEU:HD11	1.85	0.59
11:AA:2471:U:C4	11:AA:2473:C:N3	2.70	0.59
11:AA:3068:U:OP2	18:D:62:ARG:NH2	2.29	0.59
60:c:393:C:OP2	69:l:2:GLY:N	2.36	0.59
71:n:54:TYR:HB3	71:n:72:GLY:HA2	1.84	0.59
77:t:71:PHE:O	77:t:74:GLN:HG2	2.02	0.59
82:y:30:SER:O	82:y:30:SER:OG	2.10	0.59
11:AA:2371:G:N1	11:AA:2375:G:OP1	2.24	0.59
60:c:1366:U:H2'	60:c:1367:G:O4'	2.02	0.59
11:AA:2820:A:C2'	46:Pp:1:MET:N	2.62	0.59
60:c:67:A:N6	60:c:83:G:O2'	2.36	0.59
60:c:455:C:H3'	60:c:456:A:H8	1.67	0.59
60:c:1356:U:O2'	60:c:1368:G:N2	2.36	0.59
60:c:1449:U:H2'	60:c:1450:U:C6	2.38	0.59
11:AA:799:G:O2'	43:OO:18:TRP:NE1	2.35	0.59
11:AA:895:A:O2'	11:AA:896:A:OP2	2.20	0.59
11:AA:964:G:H5'	38:M:29:PRO:HB2	1.85	0.59
14:Bb:2:C:H2'	14:Bb:3:G:C8	2.38	0.59
31:II:104:GLU:H	31:II:104:GLU:CD	2.10	0.59
62:e:52:THR:HG22	62:e:53:GLY:H	1.66	0.59
11:AA:29:C:H4'	11:AA:62:A:H4'	1.85	0.59
11:AA:2677:G:O6	11:AA:2680:A:C6	2.56	0.59
11:AA:2768:U:H2'	11:AA:2769:A:H8	1.68	0.59
21:E:6:GLU:OE2	21:E:99:ARG:NH1	2.36	0.59
64:g:40:ARG:HE	80:w:110:PRO:HG3	1.67	0.59
11:AA:912:G:OP2	22:EE:9:ARG:NH2	2.32	0.59
11:AA:1281:G:H5'	19:DD:55:LYS:HG3	1.84	0.59
17:Cc:72:C:H2'	17:Cc:73:A:H8	1.67	0.59
60:c:472:U:O2'	60:c:769:A:N3	2.33	0.59
60:c:1081:A:H2	60:c:1082:C:H41	1.50	0.59
6:5:52:PHE:HB3	80:w:82:TYR:HB3	1.85	0.58
11:AA:2356:A:H61	11:AA:2983:C:H5	1.50	0.58
11:AA:2676:A:N1	41:NN:22:SER:OG	2.35	0.58
11:AA:3013:U:H2'	11:AA:3014:U:C6	2.38	0.58
48:QQ:94:TYR:O	48:QQ:96:ARG:N	2.36	0.58
11:AA:170:G:H2'	11:AA:171:G:C8	2.37	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1110:U:H2'	11:AA:1111:U:C6	2.39	0.58
25:FF:152:LYS:HG2	25:FF:189:SER:HA	1.84	0.58
35:KK:128:LYS:NZ	35:KK:202:GLU:OE1	2.35	0.58
60:c:1297:G:N2	60:c:1300:A:OP2	2.31	0.58
62:e:131:ASP:N	62:e:131:ASP:OD1	2.37	0.58
82:y:31:SER:H	82:y:34:ILE:HD12	1.68	0.58
7:6:25:GLU:OE2	60:c:542:A:N6	2.35	0.58
11:AA:1024:G:N1	11:AA:1027:A:OP2	2.35	0.58
32:J:50:ALA:O	51:T:66:VAL:HG21	2.03	0.58
41:NN:62:ASN:HD22	58:a:101:GLY:HA2	1.68	0.58
60:c:96:G:N7	88:c:2013:HOH:O	2.31	0.58
60:c:1650:U:H2'	60:c:1651:A:C8	2.37	0.58
82:y:28:ARG:HD3	82:y:60:LYS:HE2	1.84	0.58
8:7:26:SER:OG	8:7:74:THR:O	2.20	0.58
11:AA:1237:G:N2	23:Ee:138:SER:HB3	2.18	0.58
55:X:9:ILE:O	55:X:13:MET:HG3	2.03	0.58
60:c:125:U:OP1	67:j:201:GLN:NE2	2.35	0.58
60:c:1071:U:H2'	60:c:1072:C:C6	2.38	0.58
11:AA:528:U:H2'	11:AA:529:A:C8	2.39	0.58
19:DD:35:SER:OG	19:DD:39:HIS:NE2	2.36	0.58
60:c:1365:C:OP1	76:s:66:ARG:NH2	2.35	0.58
71:n:16:PHE:HB2	71:n:76:LEU:HD13	1.84	0.58
8:7:221:MET:HB2	8:7:223:TRP:CH2	2.38	0.58
11:AA:549:U:H2'	11:AA:550:A:H8	1.66	0.58
68:k:141:ARG:HG2	82:y:51:GLU:OE1	2.04	0.58
11:AA:307:A:H2'	11:AA:308:A:C8	2.39	0.58
11:AA:417:A:H2'	11:AA:418:A:C8	2.39	0.58
11:AA:591:G:C2	31:II:18:LEU:HD22	2.39	0.58
11:AA:2945:G:O2'	11:AA:2948:OMC:OP2	2.21	0.58
14:Bb:19:G:H5'	14:Bb:57:G:H22	1.67	0.58
60:c:1347:U:OP2	80:w:23:ARG:NH2	2.32	0.58
63:f:147:ASN:ND2	81:x:3:ASN:HA	2.19	0.58
80:w:58:LEU:HD21	80:w:90:TYR:HE2	1.67	0.58
81:x:4:ASP:O	81:x:5:LYS:HG2	2.04	0.58
8:7:89:LEU:HB2	8:7:103:PHE:HE1	1.69	0.58
11:AA:656:A:H2'	11:AA:657:A:C8	2.39	0.58
11:AA:2821:C:H4'	46:Pp:2:PHE:HB3	1.86	0.58
37:LL:91:ARG:HD2	37:LL:143:GLU:HG3	1.86	0.58
60:c:300:A:H2'	60:c:301:A:C8	2.39	0.58
11:AA:2129:U:H2'	11:AA:2130:G:C8	2.38	0.58
11:AA:2561:A:H2'	11:AA:2562:A:H8	1.69	0.58

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
20:Dd:15:G:N2	74:q:52:ARG:HH22	2.01	0.58
35:KK:161:GLU:HA	35:KK:164:VAL:HG22	1.86	0.58
60:c:127:G:O6	67:j:202:ARG:NH2	2.37	0.58
60:c:207:U:O2	69:l:178:ARG:NH2	2.36	0.58
60:c:1614:A:OP2	66:i:84:LYS:NZ	2.36	0.58
11:AA:824:C:H5''	22:EE:21:ARG:HD3	1.85	0.58
60:c:1182:U:H4'	75:r:124:THR:HB	1.86	0.58
60:c:1641:C:H2'	60:c:1642:G:C8	2.39	0.58
67:j:102:VAL:HG13	67:j:106:LEU:HD12	1.86	0.58
69:l:66:SER:HA	69:l:73:SER:HA	1.85	0.58
77:t:104:ASN:O	77:t:107:SER:OG	2.15	0.58
11:AA:1238:C:OP1	23:Ee:57:LYS:NZ	2.33	0.57
11:AA:2471:U:N3	11:AA:2473:C:N4	2.52	0.57
11:AA:2713:U:OP1	58:a:9:LYS:HE2	2.04	0.57
14:Bb:51:G:H2'	14:Bb:52:U:C6	2.39	0.57
29:HH:131:LEU:HD23	29:HH:172:TYR:HE1	1.69	0.57
47:Q:123:LYS:HA	47:Q:126:LEU:HD12	1.86	0.57
60:c:939:A:H2'	60:c:940:A:C8	2.38	0.57
60:c:1594:G:OP2	60:c:1596:C:N4	2.37	0.57
67:j:199:GLN:HG3	67:j:202:ARG:HH21	1.69	0.57
1:O:23:PHE:HE2	1:O:75:VAL:HG23	1.68	0.57
11:AA:1083:G:H2'	11:AA:1084:A:C8	2.39	0.57
11:AA:351:A:N6	55:X:37:TYR:O	2.36	0.57
11:AA:1057:A:OP1	33:JJ:98:LYS:NZ	2.32	0.57
11:AA:1254:C:H2'	11:AA:1255:C:C6	2.38	0.57
11:AA:1495:U:H5	11:AA:1835:A:N1	2.02	0.57
16:CC:9:A:H2'	16:CC:10:A:C8	2.39	0.57
19:DD:157:LYS:NZ	19:DD:160:ASP:OD1	2.37	0.57
32:J:139:ILE:HD11	32:J:141:TYR:HE1	1.68	0.57
33:JJ:84:VAL:HG23	33:JJ:117:VAL:HB	1.86	0.57
54:W:11:PHE:O	54:W:15:THR:HG23	2.05	0.57
60:c:103:A:H4'	60:c:105:A:C8	2.39	0.57
60:c:788:A:OP2	65:h:108:ARG:NH2	2.34	0.57
60:c:1357:A:H61	60:c:1367:G:H2'	1.70	0.57
60:c:1413:U:O2'	60:c:1416:G:OP1	2.18	0.57
65:h:104:ASP:HB3	65:h:110:ALA:HB2	1.85	0.57
77:t:83:GLN:HB3	77:t:86:PRO:HD3	1.87	0.57
19:DD:93:LEU:HD23	19:DD:93:LEU:H	1.70	0.57
60:c:94:U:H1'	65:h:7:LYS:HD2	1.85	0.57
60:c:447:U:H2'	60:c:448:C:O4'	2.04	0.57
83:z:60:GLU:HA	83:z:68:ILE:HG22	1.86	0.57

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:131:ILE:HB	8:7:144:LEU:HB2	1.87	0.57
11:AA:1213:G:OP1	21:E:139:TYR:OH	2.20	0.57
11:AA:2201:G:OP1	11:AA:2418:G:N1	2.34	0.57
11:AA:2426:U:H2'	11:AA:2427:U:C6	2.40	0.57
19:DD:25:LEU:HG	19:DD:191:TYR:HB3	1.85	0.57
29:HH:293:LEU:HD12	29:HH:297:GLN:H	1.69	0.57
60:c:1477:G:H2'	60:c:1478:G:H8	1.70	0.57
60:c:1535:U:O2'	60:c:1536:G:N3	2.37	0.57
79:v:25:GLN:O	79:v:27:LYS:NZ	2.37	0.57
80:w:61:LYS:HB2	80:w:86:ILE:CG1	2.34	0.57
11:AA:2376:G:H2'	11:AA:2377:G:C8	2.39	0.57
11:AA:2961:G:H2'	11:AA:2962:U:C6	2.40	0.57
19:DD:146:ALA:O	19:DD:149:THR:OG1	2.16	0.57
41:NN:110:ILE:HG21	41:NN:116:TYR:HA	1.87	0.57
60:c:1677:C:OP1	69:l:42:ARG:NH1	2.37	0.57
62:e:97:LEU:HD13	62:e:231:LEU:HD11	1.87	0.57
63:f:99:LYS:HD3	63:f:208:GLU:OE1	2.05	0.57
64:g:160:SER:HB3	64:g:164:VAL:HG21	1.85	0.57
75:r:111:MET:HG3	78:u:119:ILE:HG13	1.87	0.57
25:FF:140:ASP:OD1	25:FF:140:ASP:N	2.37	0.57
27:GG:136:LEU:HD21	27:GG:143:GLU:HG3	1.86	0.57
69:l:191:PHE:CZ	69:l:195:ARG:HD2	2.39	0.57
18:D:136:ARG:O	18:D:140:GLU:HG3	2.05	0.57
41:NN:60:ARG:N	41:NN:63:GLU:OE1	2.36	0.57
60:c:169:A:OP2	67:j:137:ARG:NH1	2.37	0.57
60:c:332:U:OP1	69:l:31:ARG:NH1	2.29	0.57
63:f:45:VAL:HG21	63:f:68:ILE:HG23	1.87	0.57
11:AA:2960:C:H2'	11:AA:2961:G:H8	1.70	0.57
11:AA:3322:A:H2'	11:AA:3323:A:C8	2.40	0.57
60:c:1628:U:H2'	60:c:1629:G:C8	2.40	0.57
11:AA:1798:A:H2'	11:AA:1799:A:C8	2.40	0.57
33:JJ:156:ILE:HD12	33:JJ:161:VAL:HB	1.87	0.57
60:c:436:A2M:H8	60:c:436:A2M:O5'	2.05	0.57
60:c:647:G:H21	60:c:687:G:H1	1.52	0.57
62:e:145:LYS:HG2	62:e:154:SER:HB3	1.87	0.57
67:j:32:ILE:HG21	67:j:65:GLN:NE2	2.20	0.57
11:AA:567:G:H2'	11:AA:568:G:C8	2.40	0.56
11:AA:1786:G:H2'	11:AA:1787:A:C8	2.40	0.56
11:AA:2557:A:OP1	22:EE:69:TYR:OH	2.16	0.56
11:AA:2927:C:H2'	11:AA:2928:C:C6	2.40	0.56
11:AA:3379:C:H4'	25:FF:315:GLY:HA2	1.87	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:DD:118:ASP:HA	19:DD:160:ASP:HA	1.86	0.56
24:F:49:GLN:HA	24:F:52:MET:HE2	1.86	0.56
55:X:25:GLN:OE1	55:X:28:ARG:NH1	2.37	0.56
60:c:1539:G:H4'	78:u:40:ARG:NH2	2.19	0.56
11:AA:966:U:OP1	38:M:44:ASN:ND2	2.37	0.56
11:AA:2679:A:H8	41:NN:54:VAL:HG11	1.70	0.56
11:AA:2880:U:H1'	25:FF:250:ALA:HB3	1.86	0.56
83:z:100:ASP:OD2	83:z:142:LYS:NZ	2.38	0.56
2:1:74:SER:HB3	78:u:57:ARG:HH22	1.67	0.56
8:7:152:SER:H	8:7:173:GLY:HA2	1.71	0.56
11:AA:1176:C:H2'	11:AA:1177:G:N2	2.20	0.56
11:AA:1255:C:H2'	11:AA:1256:G:H8	1.70	0.56
11:AA:3308:C:O2'	12:B:69:ARG:O	2.23	0.56
60:c:278:U:O2	60:c:279:G:N1	2.38	0.56
60:c:625:C:H2'	60:c:626:U:C6	2.40	0.56
60:c:1001:A:H2'	60:c:1002:G:C8	2.40	0.56
60:c:1482:C:OP2	60:c:1521:G:N1	2.29	0.56
64:g:7:LYS:HD2	80:w:27:THR:HG21	1.88	0.56
70:m:162:SER:O	70:m:162:SER:OG	2.19	0.56
77:t:86:PRO:O	77:t:88:VAL:HG23	2.06	0.56
1:0:121:THR:HG22	1:0:123:LYS:HG2	1.86	0.56
11:AA:649:A2M:OP2	11:AA:2868:U:O2'	2.23	0.56
11:AA:776:U:H5	11:AA:2719:U:O2	1.88	0.56
11:AA:1117:G:OP1	40:N:4:SER:HB2	2.06	0.56
11:AA:1498:A:H2'	11:AA:1499:C:C6	2.40	0.56
11:AA:1666:G:H2'	11:AA:1667:A:H8	1.71	0.56
42:O:57:GLU:OE2	42:O:69:TYR:OH	2.21	0.56
60:c:1360:A:H2'	60:c:1361:U:H4'	1.86	0.56
65:h:160:VAL:HB	65:h:169:ILE:HD12	1.87	0.56
8:7:156:VAL:HG12	8:7:169:ILE:HG22	1.88	0.56
8:7:179:LYS:NZ	8:7:191:ASP:OD2	2.37	0.56
11:AA:1631:C:OP2	36:L:48:ARG:NH2	2.37	0.56
54:W:8:ILE:HD13	54:W:54:LEU:HD21	1.88	0.56
60:c:209:U:H2'	60:c:210:A:H8	1.71	0.56
60:c:751:G:H2'	60:c:752:A:C8	2.41	0.56
62:e:124:ASN:HA	62:e:137:ILE:O	2.05	0.56
11:AA:2882:U:H2'	11:AA:2883:U:C6	2.40	0.56
11:AA:3294:A:OP1	25:FF:128:LYS:NZ	2.36	0.56
23:Ee:99:LYS:NZ	23:Ee:100:HIS:O	2.38	0.56
60:c:1483:A:H2'	60:c:1484:G:C8	2.40	0.56
11:AA:1232:C:C5	11:AA:1261:G:H2'	2.40	0.56

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1237:G:H21	23:Ee:138:SER:HB3	1.71	0.56
11:AA:1659:U:H2'	11:AA:1660:C:C6	2.41	0.56
11:AA:2180:G:H2'	11:AA:2181:C:C6	2.41	0.56
11:AA:2234:G:N7	88:AA:3743:HOH:O	2.32	0.56
11:AA:2477:G:N2	11:AA:2478:C:O4'	2.38	0.56
26:G:38:ILE:HG13	26:G:56:VAL:HB	1.88	0.56
11:AA:1615:C:H2'	11:AA:1616:U:C6	2.39	0.56
19:DD:51:VAL:HG22	19:DD:87:VAL:HG22	1.87	0.56
60:c:322:G:O2'	69:l:10:LYS:NZ	2.34	0.56
60:c:894:U:H2'	60:c:895:G:C8	2.41	0.56
11:AA:945:C:H2'	11:AA:946:U:C6	2.41	0.56
11:AA:1322:U:O2	21:E:108:GLN:NE2	2.35	0.56
38:M:76:ASP:HB3	38:M:116:GLY:HA3	1.88	0.56
60:c:66:U:OP2	67:j:136:LYS:NZ	2.39	0.56
60:c:1160:A:H2'	60:c:1161:C:C6	2.41	0.56
60:c:1681:A:N6	60:c:1720:G:O2'	2.28	0.56
1:0:32:ARG:HH21	1:0:35:VAL:HA	1.70	0.56
5:4:12:VAL:HG13	5:4:28:VAL:HB	1.88	0.56
11:AA:1799:A:H2'	11:AA:1800:A:C8	2.41	0.56
39:MM:191:LYS:HE2	39:MM:212:GLU:HB2	1.87	0.56
11:AA:968:G:H2'	11:AA:969:C:H6	1.71	0.55
11:AA:1009:A:H2'	11:AA:1010:G:C8	2.41	0.55
17:Cc:19:G:N2	17:Cc:59:A:O4'	2.39	0.55
49:R:14:LEU:HD11	49:R:31:LYS:HB2	1.88	0.55
52:U:34:SER:OG	52:U:37:THR:HG23	2.05	0.55
60:c:1251:U:O2'	60:c:1252:C:O5'	2.24	0.55
11:AA:1666:G:H2'	11:AA:1667:A:C8	2.41	0.55
14:Bb:22:G:H2'	14:Bb:23:A:H8	1.70	0.55
41:NN:55:ARG:HD2	41:NN:56:THR:OG1	2.06	0.55
59:b:87:ARG:O	59:b:91:GLU:HG3	2.06	0.55
62:e:56:SER:HB3	62:e:59:ASP:HB2	1.89	0.55
66:i:73:THR:OG1	66:i:73:THR:O	2.24	0.55
10:A:12:LYS:HA	10:A:40:GLU:HB2	1.89	0.55
11:AA:627:U:H2'	11:AA:628:A:C8	2.41	0.55
11:AA:1254:C:H2'	11:AA:1255:C:H6	1.71	0.55
15:C:67:ILE:HG12	15:C:81:VAL:HG11	1.89	0.55
16:CC:8:C:H2'	16:CC:9:A:C8	2.42	0.55
29:HH:119:TYR:OH	29:HH:139:PRO:O	2.13	0.55
60:c:1486:G:N2	60:c:1522:U:O4	2.39	0.55
2:1:57:TYR:HE1	2:1:60:VAL:HG22	1.71	0.55
5:4:58:GLU:HG3	5:4:61:ARG:HH11	1.70	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:585:A:H2'	11:AA:586:C:C6	2.41	0.55
75:r:125:PRO:HG3	78:u:129:TRP:CH2	2.42	0.55
79:v:134:ARG:HH11	79:v:134:ARG:HG3	1.71	0.55
11:AA:643:U:O2'	11:AA:1153:A:N1	2.40	0.55
11:AA:2611:U:H2'	11:AA:2612:U:C6	2.41	0.55
11:AA:3050:U:O2'	30:I:16:GLY:O	2.24	0.55
60:c:1356:U:H1'	60:c:1368:G:H22	1.70	0.55
61:d:106:SER:O	61:d:115:PHE:HA	2.07	0.55
81:x:3:ASN:OD1	81:x:7:GLN:HG2	2.07	0.55
11:AA:3113:A:OP1	37:LL:73:SER:OG	2.21	0.55
11:AA:3233:C:H2'	11:AA:3234:A:C8	2.42	0.55
23:Ee:11:LYS:HE3	23:Ee:35:LEU:HD22	1.87	0.55
60:c:1058:U:O2'	60:c:1060:U:OP2	2.24	0.55
66:i:30:PRO:HG2	66:i:33:VAL:HG13	1.89	0.55
11:AA:72:C:H4'	43:OO:63:VAL:HG13	1.87	0.55
11:AA:591:G:N3	31:II:19:LYS:HG2	2.21	0.55
11:AA:1711:C:OP1	36:L:78:ASN:ND2	2.39	0.55
32:J:70:GLU:H	32:J:70:GLU:CD	2.15	0.55
47:Q:41:VAL:HG22	47:Q:46:PHE:HB2	1.89	0.55
51:T:76:GLN:HG3	51:T:81:ARG:HG2	1.89	0.55
54:W:7:ASP:HB3	54:W:10:GLN:HB3	1.89	0.55
11:AA:3294:A:H2'	11:AA:3295:A:O4'	2.07	0.55
19:DD:112:GLY:N	19:DD:165:VAL:O	2.36	0.55
60:c:337:G:H3'	72:o:133:LYS:HB2	1.89	0.55
71:n:59:PHE:CZ	71:n:62:GLN:HA	2.42	0.55
75:r:16:SER:HB2	75:r:21:ASP:HA	1.89	0.55
78:u:61:LEU:O	78:u:62:THR:OG1	2.24	0.55
11:AA:1032:C:H2'	11:AA:1033:U:C6	2.41	0.55
11:AA:1813:A:H2'	11:AA:1814:A:C8	2.42	0.55
11:AA:1940:G:N2	11:AA:3362:A:H8	2.00	0.55
11:AA:2427:U:H2'	11:AA:2428:U:C6	2.41	0.55
11:AA:2768:U:H2'	11:AA:2769:A:C8	2.41	0.55
18:D:167:ARG:HG2	18:D:167:ARG:HH11	1.72	0.55
19:DD:43:LYS:NZ	23:Ee:120:SER:O	2.28	0.55
45:PP:24:LYS:HG3	45:PP:25:LYS:HE3	1.89	0.55
60:c:415:C:O2'	60:c:418:G:O6	2.17	0.55
11:AA:2094:C:H2'	11:AA:2095:G:H8	1.72	0.55
11:AA:2467:G:N1	11:AA:2479:C:OP1	2.40	0.55
17:Cc:77:A:N1	88:Cc:201:HOH:O	2.33	0.55
22:EE:80:GLU:HG3	59:b:66:GLY:HA2	1.87	0.55
60:c:209:U:H2'	60:c:210:A:C8	2.41	0.55

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:l:189:LEU:O	69:l:193:LEU:HG	2.07	0.55
11:AA:19:U:H2'	11:AA:20:A:C8	2.42	0.54
11:AA:894:G:H4'	11:AA:895:A:H5'	1.89	0.54
11:AA:1534:A:H2'	11:AA:1535:A:C8	2.42	0.54
11:AA:2367:A:H2'	11:AA:2368:A:C8	2.42	0.54
60:c:177:U:O2	67:j:191:ARG:NH1	2.40	0.54
60:c:968:U:H2'	60:c:969:C:O4'	2.07	0.54
60:c:1776:A:H2'	60:c:1777:G:C8	2.42	0.54
71:n:45:ALA:O	71:n:48:SER:HB3	2.07	0.54
73:p:115:LEU:O	73:p:119:GLU:HG3	2.07	0.54
11:AA:1255:C:H2'	11:AA:1256:G:C8	2.42	0.54
60:c:68:A:N6	67:j:132:ARG:HG3	2.22	0.54
60:c:108:A:H2'	60:c:109:G:C8	2.42	0.54
60:c:272:U:H2'	60:c:273:G:H8	1.72	0.54
60:c:1592:A:H2'	60:c:1593:A:H8	1.72	0.54
7:6:33:ARG:NH2	60:c:477:A:O2'	2.40	0.54
11:AA:1667:A:H2'	11:AA:1668:G:C8	2.42	0.54
11:AA:2450:G:H1	11:AA:2497:U:H3	1.54	0.54
11:AA:3121:U:H1'	11:AA:3122:A:H5''	1.89	0.54
16:CC:26:U:H2'	16:CC:27:U:C6	2.42	0.54
29:HH:60:ILE:HB	29:HH:80:SER:HB3	1.89	0.54
60:c:885:G:H2'	60:c:886:U:C6	2.43	0.54
60:c:1198:G:OP1	60:c:1199:G:O2'	2.13	0.54
60:c:1521:G:O2'	60:c:1523:G:OP2	2.18	0.54
72:o:22:ASN:HB3	72:o:25:VAL:HG22	1.88	0.54
11:AA:2947:G:C2	25:FF:250:ALA:HB1	2.43	0.54
16:CC:142:C:H2'	16:CC:143:U:C6	2.42	0.54
19:DD:92:PRO:HB2	19:DD:95:GLU:HG3	1.89	0.54
25:FF:57:VAL:HG22	25:FF:73:VAL:HG22	1.89	0.54
54:W:5:ILE:HD13	54:W:52:TYR:HB3	1.89	0.54
60:c:93:A:H1'	65:h:3:ARG:HB3	1.88	0.54
60:c:1356:U:H1'	60:c:1368:G:N2	2.22	0.54
83:z:43:PHE:O	83:z:45:GLY:N	2.37	0.54
10:A:80:PHE:CE2	10:A:84:LEU:HD11	2.42	0.54
11:AA:3206:C:OP1	21:E:166:LYS:NZ	2.41	0.54
15:C:107:THR:HG22	15:C:109:GLY:H	1.73	0.54
60:c:763:G:H5''	70:m:78:ARG:HH21	1.72	0.54
61:d:157:ASP:OD1	81:x:60:ARG:NE	2.39	0.54
11:AA:696:C:OP2	27:GG:119:ARG:NH2	2.39	0.54
11:AA:1350:A:H2'	11:AA:1351:U:H5	1.73	0.54
41:NN:10:ARG:NH2	41:NN:151:SER:O	2.36	0.54

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
52:U:97:SER:OG	52:U:98:ARG:N	2.41	0.54
60:c:256:A:H2'	60:c:257:A:O4'	2.08	0.54
60:c:407:A:H2'	60:c:408:C:C6	2.43	0.54
62:e:144:ARG:HD3	62:e:208:GLN:HB3	1.89	0.54
74:q:18:ARG:HB2	74:q:29:HIS:O	2.08	0.54
11:AA:663:OMC:HM21	27:GG:104:LYS:HB2	1.89	0.54
19:DD:43:LYS:HE3	23:Ee:121:PHE:HA	1.89	0.54
48:QQ:65:ARG:HG3	48:QQ:129:TYR:CE2	2.43	0.54
59:b:26:VAL:O	59:b:30:GLU:HG3	2.07	0.54
60:c:335:U:O2'	72:o:130:PRO:O	2.25	0.54
60:c:1471:A:C8	60:c:1540:G:H1'	2.42	0.54
60:c:1540:G:OP2	78:u:40:ARG:NH2	2.41	0.54
62:e:154:SER:O	62:e:154:SER:OG	2.22	0.54
64:g:23:GLU:CD	71:n:61:TRP:HE1	2.14	0.54
67:j:1:MET:HG2	67:j:24:ILE:HD13	1.90	0.54
71:n:48:SER:O	71:n:50:THR:N	2.41	0.54
8:7:122:ILE:HD12	8:7:122:ILE:O	2.08	0.54
11:AA:426:G:OP1	47:Q:15:LYS:NZ	2.40	0.54
23:Ee:12:TYR:CE1	23:Ee:63:LYS:HE2	2.42	0.54
23:Ee:41:LYS:HG3	23:Ee:69:ALA:HB3	1.89	0.54
28:H:68:GLU:CD	28:H:68:GLU:H	2.15	0.54
38:M:77:LYS:C	38:M:79:TRP:H	2.15	0.54
39:MM:54:SER:HB2	39:MM:135:ILE:HD11	1.88	0.54
60:c:1557:U:OP2	60:c:1559:A:O2'	2.14	0.54
11:AA:2389:C:H2'	11:AA:2390:A:C8	2.43	0.54
13:BB:4:U:H2'	13:BB:5:G:H8	1.73	0.54
22:EE:133:TYR:HB3	22:EE:168:VAL:HG12	1.90	0.54
60:c:258:C:O2	69:l:178:ARG:NH1	2.41	0.54
61:d:140:ASN:ND2	81:x:31:SER:O	2.29	0.54
70:m:162:SER:O	70:m:164:PHE:N	2.34	0.54
1:0:17:LEU:HD12	65:h:94:ALA:HB3	1.90	0.54
6:5:6:VAL:HG12	6:5:7:TRP:HD1	1.73	0.54
11:AA:691:A:N1	16:CC:28:C:O2'	2.40	0.54
11:AA:847:A:H2'	11:AA:848:A:C8	2.42	0.54
11:AA:3296:A:H2'	11:AA:3297:U:H6	1.73	0.54
45:PP:112:LEU:HD22	45:PP:116:GLU:HB3	1.90	0.54
57:Z:2:ARG:HH22	60:c:1773:4AC:CM7	2.21	0.54
65:h:212:ASP:OD1	65:h:216:ASN:N	2.39	0.54
71:n:49:LEU:HA	71:n:52:LYS:HE2	1.89	0.54
73:p:105:ASN:O	73:p:107:LYS:N	2.41	0.54
11:AA:156:G:OP2	52:U:25:LYS:HB3	2.08	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1108:U:H2'	11:AA:1109:U:C6	2.43	0.53
11:AA:1132:C:H2'	11:AA:1133:A2M:H8	1.89	0.53
11:AA:1203:A:H2'	11:AA:1204:A:H8	1.73	0.53
41:NN:49:LYS:HG2	41:NN:64:LYS:HG3	1.91	0.53
60:c:1171:A:H2'	60:c:1172:G:H8	1.68	0.53
71:n:46:LEU:O	71:n:50:THR:OG1	2.25	0.53
77:t:106:THR:O	77:t:110:VAL:HG23	2.08	0.53
8:7:31:ASN:HA	8:7:47:LEU:HB2	1.90	0.53
11:AA:1301:A:H4'	11:AA:1302:A:C5'	2.38	0.53
11:AA:2396:G:N7	88:AA:3752:HOH:O	2.34	0.53
36:L:116:LYS:O	36:L:120:GLU:HG2	2.08	0.53
37:LL:41:ILE:HD12	37:LL:71:VAL:HG22	1.89	0.53
60:c:447:U:O2'	65:h:27:TYR:O	2.23	0.53
60:c:1226:A:H5'	60:c:1230:A:H5'	1.90	0.53
60:c:1477:G:H2'	60:c:1478:G:C8	2.44	0.53
60:c:1564:U:H2'	60:c:1565:C:C6	2.43	0.53
69:l:57:ALA:HB2	69:l:177:GLY:HA2	1.89	0.53
83:z:43:PHE:HZ	83:z:104:LEU:HB2	1.73	0.53
3:2:45:VAL:HA	74:q:99:GLN:NE2	2.21	0.53
11:AA:1128:U:H2'	11:AA:1129:A:O4'	2.08	0.53
11:AA:2477:G:H2'	11:AA:2488:A:H8	1.73	0.53
11:AA:2679:A:N6	41:NN:55:ARG:HH21	2.04	0.53
16:CC:57:C:H4'	16:CC:63:G:N7	2.23	0.53
20:Dd:13:A:H2'	20:Dd:14:A:H8	1.74	0.53
60:c:1035:G:OP2	73:p:9:LYS:NZ	2.41	0.53
11:AA:370:U:H4'	11:AA:404:G:H5'	1.90	0.53
11:AA:438:A:OP1	47:Q:118:LYS:NZ	2.42	0.53
11:AA:619:A:O2'	11:AA:620:U:OP2	2.21	0.53
11:AA:1915:A:H2'	11:AA:1916:U:C6	2.44	0.53
19:DD:172:LEU:HD12	19:DD:175:LEU:HD11	1.90	0.53
38:M:77:LYS:O	38:M:79:TRP:N	2.41	0.53
38:M:112:ILE:HB	38:M:130:VAL:HG12	1.90	0.53
44:P:55:LEU:HB2	44:P:95:PRO:HD3	1.91	0.53
68:k:78:THR:HG23	68:k:90:VAL:HB	1.89	0.53
69:l:45:SER:HB2	69:l:53:LYS:HD2	1.90	0.53
11:AA:1631:C:H5''	11:AA:1632:A:H5''	1.91	0.53
60:c:1770:U:H2'	60:c:1771:U:C6	2.44	0.53
62:e:34:ALA:HB1	62:e:86:LEU:HD22	1.91	0.53
63:f:165:VAL:HG11	63:f:210:THR:HA	1.91	0.53
74:q:84:ARG:HB3	74:q:118:VAL:HG23	1.90	0.53
76:s:31:VAL:HA	76:s:67:VAL:HG22	1.89	0.53

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:89:LEU:HB2	8:7:103:PHE:CE1	2.43	0.53
11:AA:314:U:H2'	11:AA:315:C:C6	2.43	0.53
11:AA:2459:A:H61	11:AA:2483:G:N2	2.05	0.53
21:E:71:LYS:O	21:E:73:LYS:NZ	2.40	0.53
27:GG:126:ILE:O	27:GG:129:THR:OG1	2.18	0.53
60:c:30:G:H2'	60:c:31:C:C6	2.43	0.53
60:c:1610:G:OP1	66:i:72:HIS:NE2	2.42	0.53
60:c:1738:U:H2'	60:c:1739:C:C6	2.43	0.53
77:t:20:TYR:O	77:t:23:LYS:HB2	2.09	0.53
81:x:4:ASP:OD1	81:x:4:ASP:N	2.41	0.53
11:AA:2631:U:OP1	11:AA:2757:U:O2'	2.26	0.53
35:KK:90:THR:HG23	35:KK:214:LEU:HD21	1.91	0.53
45:PP:4:ASP:OD1	45:PP:4:ASP:N	2.39	0.53
60:c:1250:U:O2'	60:c:1251:U:O4'	2.23	0.53
69:l:110:ARG:HE	69:l:121:LEU:HD11	1.74	0.53
11:AA:130:A:H2'	11:AA:131:C:C6	2.43	0.53
11:AA:2152:A:H2'	11:AA:2153:U:H6	1.74	0.53
11:AA:3042:U:OP2	11:AA:3092:C:N4	2.39	0.53
60:c:77:U:O2'	60:c:78:A:OP2	2.21	0.53
60:c:1345:A:H5'	80:w:53:LYS:HG3	1.91	0.53
60:c:1511:U:H2'	60:c:1512:G:C8	2.43	0.53
81:x:77:GLY:O	81:x:79:LEU:N	2.42	0.53
1:0:8:ARG:NH1	60:c:779:U:O4	2.42	0.53
8:7:263:PHE:HB3	8:7:270:LEU:HA	1.90	0.53
10:A:49:ARG:NH2	11:AA:1193:A:OP1	2.39	0.53
11:AA:968:G:H2'	11:AA:969:C:C6	2.43	0.53
11:AA:3047:U:O2'	11:AA:3048:A:H5'	2.09	0.53
28:H:109:MET:SD	28:H:114:ILE:HD11	2.48	0.53
38:M:36:GLY:HA3	38:M:40:HIS:CE1	2.44	0.53
11:AA:528:U:H2'	11:AA:529:A:H8	1.73	0.53
11:AA:872:U:H2'	11:AA:873:C:C6	2.43	0.53
28:H:66:LYS:HB3	28:H:68:GLU:OE1	2.08	0.53
60:c:284:G:O6	67:j:188:ARG:NH2	2.42	0.53
60:c:1175:U:H2'	60:c:1176:G:C8	2.44	0.53
60:c:1478:G:OP1	79:v:39:THR:OG1	2.27	0.53
60:c:1480:G:H4'	79:v:11:ALA:HB1	1.90	0.53
69:l:196:LEU:O	69:l:200:LYS:HB3	2.08	0.53
11:AA:629:U:H2'	11:AA:630:A:C8	2.44	0.52
11:AA:2218:G:H2'	11:AA:2219:A:H8	1.74	0.52
11:AA:2551:U:OP1	50:S:102:LYS:NZ	2.42	0.52
11:AA:3006:A:H2'	11:AA:3007:U:O4'	2.10	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:CC:63:G:H22	16:CC:97:A:H2	1.56	0.52
19:DD:133:THR:HA	19:DD:136:PHE:HD2	1.74	0.52
35:KK:33:ASN:O	35:KK:39:ALA:HB3	2.10	0.52
60:c:275:C:H2'	60:c:276:C:O4'	2.09	0.52
62:e:35:PRO:HB3	62:e:38:PHE:CD2	2.39	0.52
11:AA:1657:C:O2'	11:AA:1797:A:OP2	2.19	0.52
22:EE:135:ILE:HD13	22:EE:149:ARG:HH21	1.74	0.52
43:OO:123:ILE:HG22	51:T:118:ILE:HG12	1.91	0.52
53:V:14:LYS:HD3	55:X:51:ILE:HD11	1.90	0.52
60:c:1357:A:N3	79:v:129:GLN:NE2	2.52	0.52
65:h:11:ARG:NE	65:h:21:ASP:O	2.30	0.52
65:h:103:TYR:O	65:h:182:TYR:OH	2.23	0.52
65:h:127:LYS:N	65:h:140:VAL:O	2.41	0.52
65:h:129:VAL:HG12	65:h:139:VAL:HG22	1.90	0.52
65:h:173:ILE:HD13	65:h:229:GLY:HA2	1.91	0.52
4:3:2:VAL:N	81:x:64:GLU:OE2	2.42	0.52
8:7:17:ASN:HA	8:7:308:ASN:HD22	1.75	0.52
8:7:225:LEU:H	8:7:225:LEU:HD12	1.74	0.52
11:AA:874:U:N3	11:AA:2978:U:OP1	2.36	0.52
11:AA:952:A:H4'	11:AA:968:G:N2	2.24	0.52
11:AA:2389:C:H2'	11:AA:2390:A:H8	1.74	0.52
11:AA:3170:A:H2'	11:AA:3171:U:C6	2.43	0.52
19:DD:129:GLU:HG2	19:DD:131:GLY:H	1.74	0.52
23:Ee:85:LEU:HD13	23:Ee:102:GLY:H	1.74	0.52
33:JJ:138:TYR:CD2	33:JJ:233:GLU:HB3	2.44	0.52
60:c:86:A:H2'	60:c:87:C:H6	1.74	0.52
60:c:782:U:H4'	60:c:783:G:O5'	2.09	0.52
60:c:1535:U:O2'	60:c:1536:G:H5''	2.09	0.52
65:h:100:ARG:HH12	65:h:122:LYS:HA	1.74	0.52
70:m:120:LYS:H	70:m:124:HIS:HD2	1.55	0.52
70:m:180:LYS:HA	70:m:183:ALA:HB3	1.92	0.52
5:4:60:GLU:HG3	74:q:107:ARG:NH1	2.05	0.52
6:5:13:ARG:NH2	60:c:1554:U:OP1	2.31	0.52
11:AA:593:C:H5''	31:II:20:LYS:HD3	1.91	0.52
11:AA:853:G:O6	59:b:2:ALA:N	2.43	0.52
11:AA:1119:C:H2'	11:AA:1120:A:H8	1.73	0.52
11:AA:3119:U:H4'	56:Y:104:PRO:HG2	1.91	0.52
11:AA:3192:U:H2'	11:AA:3193:C:C6	2.45	0.52
19:DD:97:LYS:NZ	19:DD:199:SER:OG	2.26	0.52
60:c:1223:A:H2'	60:c:1224:A:H8	1.70	0.52
60:c:1352:G:O2'	60:c:1353:U:O5'	2.26	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
5:4:46:GLY:HA3	66:i:166:ARG:HB2	1.92	0.52
11:AA:1704:A:H2'	11:AA:1705:U:C6	2.44	0.52
11:AA:1764:U:OP1	18:D:43:LYS:NZ	2.28	0.52
14:Bb:9:A:C8	14:Bb:45:G:H2'	2.45	0.52
19:DD:98:ASN:O	19:DD:102:SER:HB3	2.10	0.52
26:G:50:LEU:HB3	26:G:54:VAL:HB	1.91	0.52
29:HH:204:VAL:O	29:HH:208:MET:HG3	2.09	0.52
32:J:56:ARG:O	32:J:61:LYS:HD2	2.09	0.52
60:c:329:G:H2'	60:c:330:G:H8	1.74	0.52
60:c:1174:C:O2'	60:c:1196:A:N6	2.43	0.52
79:v:105:LEU:HB3	79:v:122:ARG:HE	1.74	0.52
1:0:130:ALA:O	1:0:134:ALA:CB	2.57	0.52
11:AA:247:C:H2'	11:AA:248:U:O4'	2.10	0.52
11:AA:787:G:H2'	11:AA:788:C:C6	2.45	0.52
11:AA:1120:A:H2'	11:AA:1121:U:C6	2.45	0.52
11:AA:3072:C:H2'	11:AA:3073:A:O4'	2.09	0.52
11:AA:3132:C:H2'	11:AA:3133:C:C6	2.44	0.52
29:HH:50:ARG:NH2	29:HH:72:ASP:OD2	2.42	0.52
41:NN:23:VAL:HG11	41:NN:29:ARG:HG2	1.90	0.52
60:c:743:U:H5''	68:k:108:GLN:CD	2.35	0.52
11:AA:733:G:N2	11:AA:736:A:OP2	2.41	0.52
11:AA:1119:C:H2'	11:AA:1120:A:C8	2.45	0.52
11:AA:1120:A:H2'	11:AA:1121:U:H6	1.73	0.52
11:AA:2094:C:H2'	11:AA:2095:G:C8	2.45	0.52
23:Ee:46:ILE:HG12	23:Ee:60:VAL:HG21	1.90	0.52
29:HH:116:ASP:OD1	29:HH:116:ASP:N	2.41	0.52
31:II:68:PRO:HG3	31:II:145:LEU:HD23	1.92	0.52
60:c:183:U:H2'	60:c:184:C:C6	2.45	0.52
67:j:109:LEU:HD23	67:j:110:ALA:H	1.75	0.52
68:k:17:GLU:HG3	68:k:46:ILE:HG13	1.92	0.52
68:k:63:PRO:HB2	68:k:65:PRO:HD2	1.92	0.52
3:2:43:ASN:HB2	3:2:46:GLU:HG3	1.92	0.52
11:AA:831:G:O2'	11:AA:1864:A:N3	2.32	0.52
11:AA:1046:A:H2'	11:AA:1049:C:C5	2.45	0.52
11:AA:1555:U:H5'	11:AA:1556:C:OP2	2.09	0.52
11:AA:2344:U:H2'	11:AA:2345:A:C8	2.45	0.52
11:AA:3214:U:O2'	31:II:166:LYS:NZ	2.42	0.52
17:Cc:66:C:H2'	17:Cc:67:C:H6	1.73	0.52
34:K:39:LEU:HD22	34:K:43:TYR:HE2	1.75	0.52
49:R:16:TYR:OH	49:R:89:LEU:O	2.22	0.52
51:T:27:GLU:OE2	51:T:43:LYS:NZ	2.43	0.52

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
54:W:34:ALA:HB3	54:W:36:LYS:NZ	2.22	0.52
60:c:1087:A:H2'	60:c:1088:A:C8	2.45	0.52
60:c:1525:A:H2'	60:c:1526:A:C8	2.45	0.52
65:h:35:PRO:HD2	65:h:83:PRO:HG2	1.91	0.52
65:h:115:THR:OG1	65:h:117:GLU:OE1	2.27	0.52
69:l:166:TYR:HB3	69:l:184:LEU:HD12	1.91	0.52
71:n:1:MET:HE1	71:n:40:LEU:HG	1.92	0.52
78:u:115:ARG:O	78:u:119:ILE:HG22	2.09	0.52
8:7:34:LEU:HD22	8:7:73:LEU:HG	1.91	0.52
11:AA:2415:C:OP1	22:EE:2:GLY:HA3	2.10	0.52
11:AA:2681:U:H2'	11:AA:2682:C:H6	1.74	0.52
18:D:153:LYS:O	18:D:157:GLU:HG2	2.10	0.52
22:EE:111:THR:HB	22:EE:136:ILE:HD13	1.90	0.52
26:G:22:PRO:HB2	26:G:28:PHE:HB2	1.91	0.52
60:c:52:U:H2'	60:c:53:G:C8	2.45	0.52
60:c:618:U:OP1	88:c:2002:HOH:O	2.19	0.52
66:i:140:THR:O	66:i:142:PRO:HD3	2.09	0.52
11:AA:1630:U:H5''	11:AA:1813:A:H62	1.75	0.52
11:AA:2458:A:H3'	11:AA:2459:A:H8	1.75	0.52
11:AA:2508:U:H2'	11:AA:2509:U:C6	2.45	0.52
25:FF:166:ILE:HD13	25:FF:174:LYS:HA	1.91	0.52
47:Q:3:SER:HB3	47:Q:71:HIS:CE1	2.45	0.52
60:c:1252:C:H2'	60:c:1253:U:H6	1.74	0.52
60:c:1579:U:H2'	60:c:1580:C:C6	2.45	0.52
60:c:1592:A:H2'	60:c:1593:A:C8	2.44	0.52
80:w:61:LYS:HB2	80:w:86:ILE:HG13	1.92	0.52
10:A:87:MET:HG2	11:AA:1312:C:O2	2.09	0.51
11:AA:1236:G:O2'	23:Ee:16:ARG:NH2	2.42	0.51
11:AA:1907:C:O2	25:FF:240:ARG:NH2	2.38	0.51
11:AA:2213:A:H2'	11:AA:2214:A:H8	1.74	0.51
11:AA:2471:U:H5	11:AA:2473:C:OP2	1.93	0.51
11:AA:2673:A:O2'	41:NN:126:ASP:OD1	2.21	0.51
11:AA:2723:U:H2'	11:AA:2724:OMU:H6	1.92	0.51
11:AA:2904:U:H2'	11:AA:2905:U:C6	2.45	0.51
14:Bb:19:G:H5''	14:Bb:60:C:H42	1.75	0.51
24:F:68:THR:O	29:HH:41:LYS:HB2	2.10	0.51
25:FF:17:LEU:HD21	25:FF:233:TRP:HH2	1.74	0.51
60:c:684:A:H2'	60:c:685:A:C8	2.45	0.51
60:c:751:G:H2'	60:c:752:A:H8	1.75	0.51
60:c:887:A:H1'	74:q:122:PRO:HB3	1.92	0.51
66:i:147:THR:O	66:i:157:ARG:N	2.43	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:l:104:ILE:HD12	69:l:109:PHE:HE2	1.75	0.51
3:2:52:ASP:OD2	74:q:107:ARG:NE	2.42	0.51
11:AA:785:G:H5'	15:C:92:ARG:HH22	1.75	0.51
11:AA:792:G:H2'	11:AA:793:C:C6	2.45	0.51
11:AA:871:U:H2'	11:AA:872:U:C6	2.46	0.51
11:AA:1063:G:C6	24:F:109:VAL:HG22	2.45	0.51
11:AA:2101:C:O2'	11:AA:2102:U:OP1	2.28	0.51
11:AA:3092:C:O2'	11:AA:3094:A:OP2	2.18	0.51
11:AA:3358:U:H2'	11:AA:3359:A:H8	1.74	0.51
12:B:67:ILE:HG13	12:B:68:GLY:H	1.75	0.51
15:C:64:VAL:HG21	15:C:113:LYS:HD2	1.92	0.51
19:DD:115:ALA:HB3	19:DD:160:ASP:O	2.10	0.51
21:E:8:GLN:HB3	21:E:64:ILE:HD11	1.92	0.51
41:NN:38:GLU:HB2	41:NN:45:PRO:HD3	1.92	0.51
60:c:116:U:H2'	60:c:117:U:C6	2.45	0.51
76:s:82:ARG:HH22	76:s:114:ARG:HB2	1.75	0.51
2:1:53:GLU:OE1	2:1:57:TYR:OH	2.17	0.51
11:AA:911:C:N4	22:EE:3:ARG:HD3	2.25	0.51
11:AA:1478:C:H2'	11:AA:1479:U:C6	2.45	0.51
11:AA:2497:U:H2'	11:AA:2498:U:O4'	2.10	0.51
24:F:28:SER:O	24:F:32:LYS:HG2	2.10	0.51
62:e:205:PHE:CD1	62:e:206:PRO:HD2	2.45	0.51
67:j:137:ARG:O	67:j:141:ILE:HG13	2.09	0.51
2:1:65:LEU:HA	2:1:70:LYS:HE3	1.93	0.51
3:2:57:SER:O	74:q:111:ARG:NH2	2.42	0.51
11:AA:966:U:H2'	11:AA:967:A:C8	2.45	0.51
11:AA:1250:G:H2'	11:AA:1251:A:H8	1.75	0.51
11:AA:2406:C:H2'	11:AA:2407:C:H6	1.73	0.51
11:AA:3198:U:O2	37:LL:21:LYS:N	2.40	0.51
11:AA:3298:C:C2	11:AA:3299:A:C8	2.98	0.51
23:Ee:12:TYR:HE1	23:Ee:63:LYS:HE2	1.76	0.51
24:F:75:ILE:HD13	24:F:88:ARG:HG2	1.92	0.51
60:c:580:A:O2'	60:c:582:U:OP1	2.29	0.51
60:c:884:A:H2'	60:c:885:G:C8	2.45	0.51
8:7:249:ARG:HD2	8:7:251:TRP:CD1	2.45	0.51
8:7:261:LYS:NZ	8:7:273:ASP:OD2	2.44	0.51
11:AA:1290:A:H2'	11:AA:1291:A:C8	2.45	0.51
11:AA:1615:C:H2'	11:AA:1616:U:H6	1.76	0.51
11:AA:2947:G:N3	25:FF:250:ALA:HB1	2.26	0.51
27:GG:317:PRO:C	27:GG:319:LYS:H	2.18	0.51
44:P:109:VAL:HG12	44:P:111:GLU:H	1.76	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1279:C:OP2	64:g:185:LYS:NZ	2.44	0.51
60:c:1462:G:OP1	78:u:144:ARG:NH2	2.44	0.51
65:h:87:MET:SD	65:h:236:ILE:HD13	2.50	0.51
71:n:11:ILE:HG12	71:n:42:VAL:HG22	1.93	0.51
78:u:91:ASP:CG	78:u:92:ILE:H	2.18	0.51
11:AA:547:G:H2'	11:AA:548:G:C8	2.46	0.51
11:AA:2389:C:O2'	11:AA:3307:A:N1	2.44	0.51
60:c:395:U:H2'	60:c:396:G:O4'	2.11	0.51
60:c:538:A:O2'	60:c:541:A2M:H8	2.11	0.51
60:c:1390:U:O2'	60:c:1391:A:N7	2.42	0.51
60:c:1515:A:O2'	60:c:1517:U:OP2	2.17	0.51
60:c:1533:C:H4'	60:c:1539:G:N1	2.25	0.51
76:s:26:LYS:HA	76:s:61:SER:O	2.10	0.51
11:AA:358:G:N2	11:AA:361:A:OP2	2.37	0.51
11:AA:1688:U:H2'	11:AA:1689:U:C6	2.45	0.51
11:AA:1805:C:H2'	11:AA:1806:A:H8	1.76	0.51
11:AA:2696:A:H2'	11:AA:2697:A:C8	2.46	0.51
11:AA:3160:U:H2'	11:AA:3161:C:C6	2.45	0.51
18:D:25:ASP:HB3	18:D:28:GLU:HB2	1.93	0.51
24:F:103:GLN:O	24:F:107:GLU:HG2	2.10	0.51
54:W:44:LYS:HA	54:W:52:TYR:O	2.11	0.51
60:c:1449:U:H2'	60:c:1450:U:H6	1.75	0.51
62:e:110:LEU:HA	62:e:113:MET:HE2	1.91	0.51
66:i:58:LEU:HD12	66:i:138:THR:HA	1.92	0.51
77:t:89:SER:C	77:t:91:LEU:H	2.18	0.51
11:AA:406:G:OP1	11:AA:1415:U:O2'	2.18	0.51
11:AA:501:A:H2'	11:AA:502:U:C6	2.44	0.51
11:AA:2488:A:H2'	11:AA:2488:A:N3	2.26	0.51
11:AA:3324:C:OP1	44:P:19:ARG:NH1	2.38	0.51
17:Cc:68:C:H2'	17:Cc:69:C:H6	1.73	0.51
53:V:54:LYS:O	53:V:58:THR:HB	2.11	0.51
60:c:82:U:H2'	60:c:83:G:O4'	2.10	0.51
60:c:482:U:H2'	60:c:483:A:H8	1.76	0.51
60:c:1144:U:H2'	60:c:1145:U:C6	2.45	0.51
60:c:1338:C:HO2'	60:c:1339:C:H6	1.58	0.51
60:c:1673:G:O6	60:c:1728:A:N1	2.44	0.51
77:t:5:ARG:O	77:t:10:LYS:NZ	2.43	0.51
4:3:82:LYS:HE2	73:p:25:TRP:CE3	2.46	0.51
11:AA:1448:U:H2'	11:AA:1449:A2M:H8	1.93	0.51
11:AA:2765:C:O3'	58:a:39:GLY:HA3	2.11	0.51
14:Bb:50:U:H2'	14:Bb:51:G:C8	2.45	0.51

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
16:CC:95:G:C6	53:V:83:ALA:HA	2.46	0.51
33:JJ:130:ILE:HD12	33:JJ:134:VAL:HG11	1.93	0.51
60:c:1145:U:O2'	63:f:88:LYS:NZ	2.43	0.51
60:c:1350:U:H2'	60:c:1351:G:C8	2.46	0.51
68:k:19:GLN:H	68:k:19:GLN:CD	2.19	0.51
69:l:168:CYS:HB2	69:l:184:LEU:HD21	1.93	0.51
11:AA:428:A:H2'	11:AA:429:U:C6	2.46	0.51
11:AA:759:U:H2'	11:AA:760:G:O4'	2.11	0.51
11:AA:1157:G:H2'	11:AA:1158:A:O4'	2.11	0.51
23:Ee:144:ASP:O	23:Ee:146:LYS:HD2	2.11	0.51
60:c:607:G:H5'	60:c:613:G:N2	2.26	0.51
60:c:1352:G:O2'	60:c:1353:U:O4'	2.21	0.51
65:h:95:THR:O	65:h:95:THR:OG1	2.27	0.51
71:n:60:SER:HB3	71:n:65:TYR:CE1	2.46	0.51
77:t:90:ALA:O	77:t:91:LEU:C	2.54	0.51
8:7:116:ASP:CG	8:7:121:MET:HB2	2.36	0.50
8:7:227:ALA:HB1	8:7:229:LYS:HE3	1.92	0.50
11:AA:2455:U:H3	11:AA:2483:G:H4'	1.76	0.50
11:AA:2971:A:H4'	11:AA:2972:G:O5'	2.10	0.50
18:D:21:LYS:HG2	18:D:53:LYS:O	2.11	0.50
36:L:115:LYS:O	36:L:119:GLU:HG3	2.11	0.50
60:c:15:U:H2'	60:c:16:G:O4'	2.11	0.50
61:d:184:LEU:HB3	81:x:45:ALA:HB2	1.93	0.50
62:e:34:ALA:HB3	62:e:35:PRO:HD3	1.93	0.50
70:m:62:ARG:O	70:m:69:ARG:NH1	2.45	0.50
80:w:52:LYS:HB3	80:w:93:LEU:HB3	1.91	0.50
8:7:206:PRO:HD3	8:7:245:PHE:HB3	1.92	0.50
11:AA:947:G:H5''	47:Q:55:ILE:HB	1.92	0.50
13:BB:27:A:H2'	13:BB:28:C:C6	2.46	0.50
14:Bb:58:A:H8	14:Bb:58:A:OP2	1.94	0.50
35:KK:246:MET:HA	35:KK:249:ARG:HG2	1.93	0.50
60:c:418:G:O2'	67:j:72:ARG:NH2	2.37	0.50
62:e:158:SER:HA	62:e:161:ILE:HB	1.92	0.50
77:t:94:SER:O	77:t:95:ARG:C	2.55	0.50
78:u:88:ARG:O	78:u:98:TYR:N	2.41	0.50
6:5:42:CYS:O	6:5:46:LYS:HG2	2.11	0.50
16:CC:37:A:H5''	16:CC:39:G:O4'	2.12	0.50
48:QQ:5:LYS:HG3	52:U:40:VAL:HG11	1.94	0.50
58:a:2:VAL:N	58:a:90:HIS:O	2.44	0.50
60:c:636:A:H5''	82:y:31:SER:HB3	1.93	0.50
60:c:788:A:OP1	65:h:106:LYS:NZ	2.33	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:g:40:ARG:HH12	64:g:49:ILE:HD11	1.77	0.50
8:7:209:THR:O	8:7:224:ASN:HA	2.11	0.50
10:A:21:SER:N	10:A:87:MET:HE1	2.27	0.50
11:AA:269:G:N2	11:AA:295:A:OP2	2.35	0.50
11:AA:669:U:H1'	11:AA:1110:U:H4'	1.92	0.50
11:AA:1766:G:H2'	11:AA:1767:C:O4'	2.11	0.50
11:AA:2723:U:H2'	11:AA:2724:OMU:C6	2.42	0.50
11:AA:2881:C:H2'	11:AA:2882:U:C6	2.46	0.50
11:AA:3291:G:H2'	11:AA:3292:A:C8	2.46	0.50
13:BB:26:C:H2'	13:BB:27:A:O4'	2.11	0.50
16:CC:38:U:O2'	51:T:83:LYS:NZ	2.44	0.50
19:DD:23:LYS:N	19:DD:90:ASN:OD1	2.29	0.50
48:QQ:99:ARG:O	48:QQ:103:GLU:HG3	2.11	0.50
60:c:127:G:N3	60:c:178:U:O2'	2.36	0.50
62:e:35:PRO:HB2	62:e:38:PHE:H	1.75	0.50
77:t:71:PHE:C	77:t:73:LEU:H	2.20	0.50
77:t:78:ARG:HG2	77:t:81:LYS:HZ3	1.75	0.50
11:AA:1801:U:H2'	11:AA:1802:C:C6	2.46	0.50
11:AA:2232:A:H2'	11:AA:2233:A:C8	2.47	0.50
11:AA:2676:A:H4'	11:AA:2677:G:O4'	2.10	0.50
11:AA:2898:G:O6	56:Y:125:LYS:NZ	2.45	0.50
15:C:125:ASP:OD2	27:GG:282:SER:OG	2.28	0.50
23:Ee:50:THR:HA	23:Ee:53:PHE:HD2	1.77	0.50
60:c:420:A2M:OP1	67:j:96:SER:OG	2.23	0.50
60:c:968:U:OP1	60:c:1033:C:O2'	2.29	0.50
60:c:1554:U:H2'	60:c:1555:A:O4'	2.11	0.50
61:d:135:GLU:O	61:d:139:VAL:HG22	2.12	0.50
62:e:129:THR:OG1	62:e:131:ASP:OD1	2.26	0.50
68:k:25:VAL:O	68:k:28:GLU:HG3	2.11	0.50
71:n:40:LEU:HD12	71:n:44:LYS:HG2	1.93	0.50
75:r:30:THR:HG23	75:r:86:VAL:HG11	1.93	0.50
83:z:92:CYS:HA	83:z:95:PHE:CD2	2.47	0.50
6:5:45:GLU:CD	60:c:1433:G:H22	2.19	0.50
11:AA:955:U:H2'	11:AA:956:U:C6	2.46	0.50
11:AA:1597:C:H2'	11:AA:1598:G:C8	2.47	0.50
11:AA:2469:G:H2'	11:AA:2474:G:C2	2.46	0.50
11:AA:2947:G:H4'	11:AA:2947:G:OP2	2.12	0.50
23:Ee:116:MET:HG2	23:Ee:132:ILE:HD11	1.93	0.50
60:c:329:G:H5''	69:l:98:LYS:HB3	1.93	0.50
60:c:361:C:N4	60:c:379:U:OP1	2.42	0.50
60:c:474:A:H5''	70:m:144:PRO:HD2	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1096:C:OP2	82:y:71:LYS:NZ	2.30	0.50
60:c:1170:G:C2	60:c:1171:A:C8	3.00	0.50
61:d:50:VAL:HG22	77:t:109:LEU:HD21	1.94	0.50
1:0:78:SER:HB3	1:0:81:GLU:OE1	2.12	0.50
1:0:124:ARG:HA	1:0:127:LYS:HE3	1.92	0.50
11:AA:907:G:H2'	11:AA:926:A:H62	1.76	0.50
11:AA:1364:C:H5''	15:C:3:ILE:HD13	1.92	0.50
11:AA:2344:U:H2'	11:AA:2345:A:H8	1.76	0.50
11:AA:2930:A:H2'	11:AA:2931:C:C6	2.46	0.50
25:FF:50:LYS:NZ	25:FF:330:GLY:O	2.38	0.50
60:c:327:U:OP2	72:o:57:LYS:NZ	2.39	0.50
60:c:590:C:H2'	60:c:591:A:C8	2.47	0.50
60:c:1164:G:H2'	60:c:1165:G:C8	2.46	0.50
60:c:1220:C:OP1	71:n:48:SER:OG	2.23	0.50
60:c:1585:U:N3	60:c:1611:A:H2	2.00	0.50
62:e:35:PRO:CD	62:e:41:ARG:HA	2.42	0.50
73:p:110:ASP:O	73:p:114:ARG:HG2	2.11	0.50
78:u:30:TYR:O	78:u:33:THR:OG1	2.29	0.50
2:1:89:ILE:HB	2:1:101:TYR:HB3	1.92	0.50
11:AA:407:A:C2	16:CC:17:A:H1'	2.46	0.50
11:AA:2459:A:H61	11:AA:2483:G:H22	1.60	0.50
11:AA:2901:G:O2'	11:AA:3024:A:N1	2.41	0.50
11:AA:3153:U:H4'	11:AA:3155:U:O4	2.12	0.50
26:G:57:THR:HG22	26:G:64:THR:HB	1.92	0.50
61:d:118:PRO:HG2	61:d:141:ILE:HD13	1.93	0.50
64:g:158:ILE:O	64:g:158:ILE:HD12	2.12	0.50
82:y:23:ARG:HG3	82:y:23:ARG:NH1	2.27	0.50
8:7:272:ASP:HB2	8:7:274:LEU:HD23	1.93	0.50
11:AA:1280:C:C2	11:AA:1281:G:C8	3.00	0.50
11:AA:2167:A:H2'	11:AA:2168:A:C8	2.47	0.50
13:BB:4:U:H2'	13:BB:5:G:C8	2.47	0.50
17:Cc:44:A:H2'	17:Cc:45:A:C8	2.46	0.50
18:D:97:ARG:O	18:D:101:VAL:HG13	2.12	0.50
27:GG:138:ARG:HE	27:GG:140:HIS:CD2	2.30	0.50
29:HH:40:HIS:HB3	29:HH:43:LYS:HG3	1.93	0.50
60:c:460:A:O2'	65:h:27:TYR:OH	2.17	0.50
60:c:482:U:H2'	60:c:483:A:C8	2.46	0.50
60:c:1202:A:H1'	60:c:1207:C:N4	2.27	0.50
60:c:1358:G:C2	60:c:1366:U:O2	2.65	0.50
62:e:132:ASP:HB3	62:e:221:PRO:HB3	1.93	0.50
63:f:81:MET:HE1	63:f:186:LYS:HB3	1.94	0.50

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
65:h:100:ARG:HB2	65:h:114:ILE:HD13	1.94	0.50
77:t:61:ILE:HD11	77:t:69:ILE:HG21	1.94	0.50
83:z:37:ALA:HA	83:z:41:SER:HB3	1.94	0.50
83:z:42:PRO:HA	83:z:81:LYS:HD2	1.94	0.50
2:1:66:VAL:HA	2:1:71:ILE:O	2.12	0.49
11:AA:1188:U:OP1	11:AA:1210:U:O2'	2.26	0.49
11:AA:1621:A:H2'	11:AA:1622:U:H6	1.77	0.49
11:AA:1718:G:H2'	11:AA:1719:G:C8	2.47	0.49
11:AA:1811:G:O6	36:L:64:LYS:NZ	2.36	0.49
11:AA:2545:C:H2'	11:AA:2546:C:C6	2.47	0.49
30:I:50:ALA:HA	30:I:55:PHE:CG	2.47	0.49
60:c:800:U:H2'	60:c:801:G:C8	2.47	0.49
69:l:74:LYS:HE2	69:l:112:TRP:HB2	1.93	0.49
76:s:39:VAL:HG21	76:s:48:VAL:HG21	1.94	0.49
2:1:80:LEU:HD13	2:1:101:TYR:CE2	2.47	0.49
2:1:93:SER:HB3	2:1:100:ILE:HD12	1.94	0.49
8:7:132:LYS:HG2	8:7:134:TRP:CZ2	2.47	0.49
11:AA:114:A:N1	11:AA:266:A:O2'	2.42	0.49
11:AA:1256:G:C2'	11:AA:1257:C:H5'	2.42	0.49
11:AA:1477:A:OP1	11:AA:3075:G:O2'	2.25	0.49
11:AA:1560:G:O2'	11:AA:1561:G:O4'	2.31	0.49
11:AA:1719:G:N7	18:D:121:HIS:HE1	2.09	0.49
11:AA:2452:G:H2'	11:AA:2462:A:H1'	1.94	0.49
11:AA:2453:U:N3	11:AA:2462:A:OP1	2.45	0.49
18:D:165:LYS:NZ	60:c:850:A:H5'	2.27	0.49
19:DD:143:THR:HG22	19:DD:152:ILE:HA	1.94	0.49
27:GG:125:ALA:O	27:GG:129:THR:HG23	2.12	0.49
33:JJ:47:ARG:NH1	33:JJ:183:ASP:OD2	2.44	0.49
36:L:50:PRO:HD3	36:L:68:ILE:HG12	1.94	0.49
60:c:891:A:H2'	60:c:892:A:C8	2.48	0.49
60:c:1590:G:OP1	79:v:91:TYR:HB2	2.13	0.49
60:c:1755:A:O2'	60:c:1756:A:O4'	2.27	0.49
64:g:25:PHE:CD2	64:g:37:VAL:HG11	2.47	0.49
8:7:38:ARG:HG2	8:7:67:ILE:HD13	1.95	0.49
8:7:206:PRO:HG3	8:7:247:PRO:HA	1.92	0.49
11:AA:13:A:H4'	32:J:39:LYS:HD2	1.92	0.49
11:AA:362:U:P	53:V:45:ARG:HH22	2.35	0.49
11:AA:1646:G:O2'	11:AA:1808:G:N2	2.34	0.49
11:AA:2357:A:H2'	11:AA:2358:A:C8	2.48	0.49
11:AA:2478:C:OP1	11:AA:2488:A:H5''	2.12	0.49
19:DD:80:VAL:O	19:DD:80:VAL:HG13	2.13	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
29:HH:182:GLY:HA2	29:HH:194:LEU:HD23	1.93	0.49
31:II:170:LYS:HB3	31:II:172:HIS:CE1	2.47	0.49
36:L:23:VAL:HG12	36:L:45:GLY:HA3	1.95	0.49
54:W:42:LYS:HG2	54:W:55:VAL:HG22	1.93	0.49
60:c:304:U:H2'	60:c:305:C:C6	2.48	0.49
60:c:472:U:H2'	60:c:473:A:H8	1.78	0.49
60:c:800:U:H2'	60:c:801:G:H8	1.77	0.49
64:g:167:PHE:O	64:g:168:ILE:HG12	2.12	0.49
79:v:6:VAL:HB	79:v:66:TYR:CE1	2.48	0.49
1:0:131:ARG:NH2	60:c:153:G:H5'	2.27	0.49
11:AA:631:U:H2'	11:AA:632:G:C8	2.47	0.49
11:AA:929:A:H2'	11:AA:930:U:C6	2.47	0.49
11:AA:1228:C:H2'	11:AA:1229:G:H8	1.77	0.49
11:AA:1240:A:H61	11:AA:1244:A:H3'	1.77	0.49
11:AA:2419:A:H2'	11:AA:2420:C:C6	2.47	0.49
11:AA:3271:G:C5	31:II:108:LYS:HD3	2.46	0.49
11:AA:3296:A:H2'	11:AA:3297:U:C6	2.48	0.49
11:AA:3322:A:H2'	11:AA:3323:A:H8	1.77	0.49
29:HH:290:ILE:HG13	39:MM:206:LEU:HD21	1.93	0.49
36:L:95:VAL:O	36:L:100:THR:OG1	2.26	0.49
39:MM:208:ASN:O	39:MM:212:GLU:HG2	2.12	0.49
60:c:803:A:C4	68:k:104:ARG:HG3	2.47	0.49
64:g:157:LEU:CD2	64:g:189:MET:HB2	2.42	0.49
66:i:25:LEU:HB2	76:s:27:GLY:HA3	1.92	0.49
11:AA:818:C:H2'	11:AA:819:U:O4'	2.13	0.49
11:AA:1268:G:N2	11:AA:1273:A:H62	2.08	0.49
11:AA:2550:U:H5	22:EE:40:TYR:O	1.95	0.49
11:AA:2592:G:H4'	11:AA:2594:C:C2	2.48	0.49
11:AA:2745:G:N2	11:AA:2748:A:OP2	2.39	0.49
18:D:165:LYS:HZ3	60:c:850:A:H5'	1.76	0.49
27:GG:311:HIS:CE1	27:GG:314:LYS:HA	2.47	0.49
60:c:329:G:H2'	60:c:330:G:C8	2.46	0.49
60:c:1382:A:H1'	80:w:57:ARG:HD2	1.93	0.49
1:0:42:GLU:HG2	1:0:52:LYS:HE2	1.93	0.49
4:3:34:ASP:OD1	4:3:82:LYS:NZ	2.32	0.49
6:5:4:GLU:HG3	60:c:1215:C:H5'	1.94	0.49
8:7:207:ASP:OD1	8:7:207:ASP:N	2.45	0.49
10:A:101:ARG:HD3	11:AA:3173:G:OP2	2.13	0.49
11:AA:935:U:O4	88:AA:3708:HOH:O	2.19	0.49
11:AA:2916:U:H5	11:AA:2935:U:HO2'	1.60	0.49
11:AA:3193:C:H2'	11:AA:3194:C:C6	2.47	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
15:C:175:ALA:O	15:C:182:LYS:HB2	2.12	0.49
60:c:419:G:H5'	67:j:72:ARG:NH1	2.25	0.49
60:c:1222:C:H2'	60:c:1223:A:C4	2.47	0.49
61:d:110:TYR:HA	61:d:115:PHE:CG	2.47	0.49
62:e:175:GLU:OE1	62:e:187:LYS:NZ	2.39	0.49
64:g:114:ALA:HB3	64:g:117:ARG:HG3	1.93	0.49
11:AA:507:U:H2'	11:AA:508:U:H6	1.78	0.49
11:AA:1565:G:H3'	11:AA:1566:A:C8	2.47	0.49
11:AA:2883:U:H2'	11:AA:2884:C:C6	2.48	0.49
11:AA:3198:U:H1'	37:LL:21:LYS:HB2	1.95	0.49
60:c:58:U:OP1	60:c:456:A:O2'	2.27	0.49
60:c:1044:U:H2'	60:c:1045:C:C6	2.48	0.49
60:c:1619:C:H2'	60:c:1620:C:H6	1.77	0.49
67:j:132:ARG:HG2	67:j:132:ARG:HH11	1.78	0.49
77:t:94:SER:C	77:t:96:SER:N	2.69	0.49
11:AA:714:G:O2'	11:AA:753:C:O2'	2.28	0.49
25:FF:166:ILE:HD12	25:FF:167:ARG:N	2.27	0.49
43:OO:50:PRO:O	43:OO:52:ASP:N	2.45	0.49
60:c:327:U:H2'	60:c:328:A:C8	2.48	0.49
60:c:1280:4AC:O2'	80:w:70:THR:HB	2.13	0.49
64:g:35:SER:N	64:g:51:ARG:O	2.42	0.49
67:j:24:ILE:HG13	67:j:27:PHE:HD2	1.76	0.49
76:s:22:VAL:HG22	76:s:65:ILE:HG23	1.94	0.49
8:7:170:ILE:HG21	8:7:211:ILE:HG21	1.93	0.49
11:AA:2676:A:H4'	11:AA:2677:G:H5''	1.94	0.49
11:AA:3066:U:H2'	11:AA:3067:C:C6	2.47	0.49
11:AA:3164:C:H2'	11:AA:3165:A:C8	2.48	0.49
13:BB:3:U:H2'	13:BB:4:U:C6	2.48	0.49
15:C:158:HIS:H	15:C:186:VAL:CG1	2.22	0.49
18:D:126:GLU:O	18:D:131:ALA:HB3	2.12	0.49
18:D:130:ASN:O	18:D:132:PHE:N	2.45	0.49
27:GG:26:PHE:HA	27:GG:127:ALA:HA	1.95	0.49
28:H:81:GLN:HG2	28:H:83:LYS:H	1.78	0.49
31:II:70:LYS:HB3	31:II:146:ILE:HD11	1.94	0.49
60:c:1490:C:N3	60:c:1492:A:N6	2.60	0.49
63:f:185:LYS:O	63:f:189:GLN:HG2	2.12	0.49
65:h:47:PHE:CE1	65:h:52:LEU:HD11	2.48	0.49
68:k:10:SER:OG	68:k:42:GLN:NE2	2.38	0.49
70:m:106:GLU:HA	70:m:111:THR:HG21	1.95	0.49
75:r:87:PRO:HA	75:r:90:ILE:HG13	1.94	0.49
11:AA:1054:A:H5''	11:AA:2637:A:H61	1.78	0.49

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2282:U:O2	11:AA:2310:U:H4'	2.13	0.49
11:AA:2820:A:H2'	46:Pp:1:MET:H1	1.76	0.49
11:AA:2820:A:C2'	46:Pp:1:MET:H1	2.26	0.49
11:AA:3204:C:H2'	11:AA:3205:G:C8	2.48	0.49
11:AA:3281:U:H2'	11:AA:3282:U:C6	2.48	0.49
60:c:17:C:H2'	60:c:18:C:C6	2.48	0.49
60:c:590:C:H2'	60:c:591:A:H8	1.77	0.49
76:s:51:PRO:HG2	76:s:85:ILE:HD11	1.94	0.49
77:t:85:VAL:N	77:t:86:PRO:CD	2.75	0.49
78:u:16:ARG:NH1	78:u:21:ASN:OD1	2.41	0.49
79:v:127:ASN:OD1	79:v:127:ASN:N	2.45	0.49
7:6:42:ARG:HA	7:6:47:VAL:HG21	1.95	0.48
8:7:19:TRP:O	8:7:21:THR:HG23	2.12	0.48
9:8:130:VAL:HA	60:c:1253:U:H5''	1.95	0.48
11:AA:235:A:H2'	11:AA:236:G:C8	2.48	0.48
11:AA:1718:G:H2'	11:AA:1719:G:H8	1.78	0.48
22:EE:65:ASP:HB3	22:EE:68:LYS:O	2.13	0.48
27:GG:3:ARG:NE	27:GG:22:LEU:O	2.38	0.48
60:c:262:U:H2'	60:c:263:C:C6	2.48	0.48
60:c:1258:U:O2'	60:c:1259:U:O5'	2.31	0.48
60:c:1552:U:OP2	75:r:43:ARG:NH2	2.46	0.48
64:g:72:LEU:HD22	71:n:65:TYR:HB3	1.94	0.48
69:l:109:PHE:CZ	69:l:183:ILE:HD11	2.48	0.48
78:u:48:LYS:HE3	79:v:35:ASP:HB3	1.95	0.48
78:u:62:THR:HB	78:u:65:GLU:H	1.78	0.48
81:x:36:VAL:HB	81:x:51:VAL:HG22	1.95	0.48
3:2:7:SER:OG	3:2:8:ASN:N	2.45	0.48
8:7:135:THR:HG23	8:7:141:LEU:HD11	1.95	0.48
10:A:62:THR:HA	11:AA:1306:G:C6	2.48	0.48
11:AA:226:C:H2'	11:AA:227:G:O4'	2.13	0.48
11:AA:1222:G:H8	19:DD:57:THR:HG21	1.77	0.48
13:BB:22:A:H2'	13:BB:23:A:C8	2.48	0.48
15:C:148:GLU:O	15:C:151:ARG:HG2	2.13	0.48
60:c:575:C:H4'	60:c:582:U:C4	2.48	0.48
60:c:886:U:OP2	62:e:216:LYS:NZ	2.46	0.48
64:g:42:THR:HB	64:g:45:LYS:O	2.13	0.48
70:m:139:GLN:NE2	70:m:140:ILE:O	2.37	0.48
75:r:111:MET:HG2	75:r:119:PHE:CZ	2.49	0.48
81:x:35:ASN:HB3	81:x:50:TYR:CG	2.47	0.48
11:AA:1084:A:H2'	11:AA:1085:A:C8	2.48	0.48
11:AA:2520:A:H2'	11:AA:2521:U:C6	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2569:A:O2'	11:AA:2570:U:H5''	2.13	0.48
22:EE:206:PRO:HG3	22:EE:213:GLY:HA3	1.93	0.48
60:c:455:C:H3'	60:c:456:A:C8	2.46	0.48
60:c:947:U:H2'	60:c:948:G:C8	2.49	0.48
60:c:1719:A:H2'	60:c:1720:G:O4'	2.13	0.48
67:j:113:ILE:HD11	67:j:124:LEU:HD13	1.95	0.48
83:z:57:LEU:HD11	83:z:73:ARG:HB2	1.96	0.48
11:AA:1258:U:N3	11:AA:1261:G:OP2	2.34	0.48
13:BB:118:A:H5''	29:HH:253:PHE:CZ	2.48	0.48
19:DD:20:GLU:OE1	19:DD:20:GLU:HA	2.13	0.48
33:JJ:176:TYR:CZ	33:JJ:197:GLN:HG2	2.48	0.48
42:O:22:LYS:HB2	42:O:94:GLU:HB2	1.96	0.48
43:OO:126:PHE:CD2	51:T:115:LYS:HG2	2.48	0.48
60:c:777:C:H2'	60:c:778:G:C8	2.48	0.48
72:o:73:GLY:HA3	72:o:86:ILE:HD12	1.96	0.48
77:t:66:VAL:HG22	77:t:69:ILE:HG12	1.96	0.48
8:7:16:HIS:CE1	8:7:37:SER:HG	2.25	0.48
8:7:132:LYS:HG2	8:7:134:TRP:CE2	2.49	0.48
11:AA:435:C:H2'	11:AA:436:A:C8	2.48	0.48
11:AA:967:A:OP1	38:M:47:LYS:NZ	2.46	0.48
11:AA:1525:G:H5'	11:AA:1830:G:OP2	2.13	0.48
11:AA:1709:C:H2'	11:AA:1710:C:C6	2.49	0.48
11:AA:2767:U:H2'	11:AA:2768:U:C6	2.48	0.48
13:BB:113:C:H2'	13:BB:114:U:O4'	2.13	0.48
23:Ee:56:ILE:HD12	23:Ee:83:THR:HG22	1.95	0.48
24:F:30:TYR:CE1	29:HH:34:LYS:HE3	2.49	0.48
36:L:84:ARG:HG2	42:O:58:TYR:OH	2.13	0.48
41:NN:118:PRO:HD2	78:u:103:ASN:HB2	1.95	0.48
60:c:1410:A:O2'	60:c:1411:A:OP1	2.30	0.48
61:d:37:VAL:HG22	61:d:149:LEU:HD13	1.95	0.48
61:d:122:ILE:HA	61:d:144:ILE:O	2.13	0.48
61:d:147:THR:HG23	61:d:151:SER:HB2	1.94	0.48
11:AA:8:C:H2'	11:AA:9:U:C6	2.49	0.48
11:AA:1699:A:H2'	11:AA:1700:G:C8	2.49	0.48
11:AA:1709:C:H2'	11:AA:1710:C:H6	1.77	0.48
11:AA:2103:U:H2'	11:AA:2104:A:C8	2.49	0.48
11:AA:2254:U:H2'	11:AA:2261:G:N2	2.28	0.48
11:AA:2262:A:N1	60:c:1758:U:O2'	2.39	0.48
11:AA:2545:C:H2'	11:AA:2546:C:H6	1.79	0.48
12:B:35:ALA:HB2	12:B:58:ILE:HG23	1.96	0.48
13:BB:71:G:H2'	13:BB:72:A:C8	2.48	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:DD:59:VAL:HG21	19:DD:80:VAL:HG21	1.95	0.48
24:F:132:PRO:HB2	33:JJ:120:THR:HB	1.95	0.48
60:c:1650:U:H2'	60:c:1651:A:H8	1.79	0.48
64:g:8:LYS:HG2	80:w:63:LEU:HD11	1.94	0.48
67:j:180:THR:HG22	67:j:182:GLN:H	1.78	0.48
68:k:140:VAL:HB	82:y:52:TYR:HB3	1.96	0.48
69:l:191:PHE:O	69:l:195:ARG:HG3	2.14	0.48
73:p:40:TYR:HB3	73:p:45:LEU:HD12	1.96	0.48
11:AA:373:A:N1	11:AA:394:G:H4'	2.29	0.48
11:AA:1746:U:O2'	54:W:4:GLU:OE2	2.30	0.48
11:AA:2662:G:H2'	11:AA:2663:G:C8	2.49	0.48
17:Cc:8:U:H4'	17:Cc:49:C:H4'	1.94	0.48
17:Cc:72:C:H2'	17:Cc:73:A:C8	2.46	0.48
29:HH:218:ARG:HG2	29:HH:218:ARG:HH11	1.78	0.48
30:I:18:GLY:HA3	30:I:31:PHE:O	2.14	0.48
37:LL:103:ILE:HD11	37:LL:134:ILE:HG21	1.95	0.48
60:c:27:U:H2'	60:c:28:A2M:H8	1.96	0.48
60:c:876:G:H1'	60:c:944:A:O4'	2.13	0.48
60:c:1107:G:O2'	60:c:1108:G:H5'	2.14	0.48
1:0:130:ALA:O	1:0:134:ALA:HB3	2.14	0.48
11:AA:1627:U:H2'	11:AA:1814:A:H61	1.78	0.48
11:AA:2228:A:H2'	11:AA:2229:A:H8	1.78	0.48
11:AA:2651:G:H5''	11:AA:2652:U:O4'	2.13	0.48
14:Bb:27:C:H2'	14:Bb:28:C:H6	1.78	0.48
16:CC:104:A:C8	16:CC:105:A:C8	3.02	0.48
32:J:77:GLU:HG2	32:J:133:LEU:HD13	1.95	0.48
33:JJ:38:LYS:HB3	33:JJ:38:LYS:HE2	1.64	0.48
36:L:57:HIS:HB3	36:L:61:LYS:HG2	1.96	0.48
37:LL:113:GLU:OE2	37:LL:115:ARG:NE	2.43	0.48
60:c:907:A:H2'	60:c:908:U:C6	2.47	0.48
78:u:31:ALA:O	78:u:34:THR:HG22	2.13	0.48
79:v:7:ARG:HG2	79:v:67:MET:HE2	1.94	0.48
3:2:45:VAL:HG13	3:2:64:LEU:HD12	1.95	0.48
8:7:23:LEU:HD13	8:7:302:PHE:HB2	1.94	0.48
8:7:179:LYS:HG3	8:7:180:ALA:H	1.78	0.48
8:7:201:THR:HG21	8:7:242:SER:HA	1.95	0.48
8:7:227:ALA:O	8:7:229:LYS:HG3	2.13	0.48
11:AA:129:U:H2'	11:AA:130:A:H8	1.78	0.48
11:AA:422:A:C2	11:AA:2363:A:H4'	2.49	0.48
11:AA:2269:U:O2	11:AA:2269:U:H2'	2.13	0.48
11:AA:2747:A:H5'	29:HH:175:HIS:HA	1.95	0.48

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
22:EE:127:ALA:HB2	22:EE:134:VAL:HG23	1.94	0.48
22:EE:145:LYS:HD2	22:EE:157:VAL:HG12	1.95	0.48
25:FF:385:LYS:HE2	25:FF:385:LYS:HB2	1.61	0.48
42:O:19:LYS:HD3	42:O:19:LYS:HA	1.53	0.48
43:OO:127:PRO:HD2	43:OO:132:ALA:HB2	1.96	0.48
60:c:1219:A:H2'	60:c:1220:C:O4'	2.14	0.48
61:d:31:VAL:HG23	61:d:150:ASP:HA	1.94	0.48
64:g:105:MET:HB2	64:g:122:VAL:HG21	1.95	0.48
68:k:141:ARG:O	68:k:148:LYS:HA	2.13	0.48
69:l:87:ASN:HB3	69:l:90:LEU:HG	1.96	0.48
8:7:234:LEU:H	8:7:234:LEU:HD23	1.79	0.48
11:AA:1073:U:H2'	11:AA:1074:U:C6	2.49	0.48
11:AA:2491:A:H2'	11:AA:2492:C:O4'	2.13	0.48
11:AA:3000:A:H2'	11:AA:3001:C:C6	2.49	0.48
11:AA:3275:U:O2'	49:R:99:ARG:NH1	2.47	0.48
11:AA:3295:A:H2'	11:AA:3296:A:H8	1.76	0.48
16:CC:149:A:H2'	16:CC:150:G:C8	2.49	0.48
17:Cc:68:C:H2'	17:Cc:69:C:C6	2.49	0.48
23:Ee:37:LEU:HD21	23:Ee:67:ARG:C	2.39	0.48
24:F:126:VAL:HG23	24:F:127:GLN:H	1.79	0.48
60:c:1091:A:H4'	60:c:1092:A:O4'	2.14	0.48
60:c:1392:U:H2'	60:c:1393:C:C6	2.49	0.48
3:2:84:VAL:HG22	60:c:1797:A:C6	2.49	0.47
11:AA:715:A:N1	11:AA:781:G:O2'	2.39	0.47
11:AA:849:C:H2'	11:AA:850:U:H6	1.79	0.47
11:AA:1640:G:OP1	88:AA:3709:HOH:O	2.20	0.47
11:AA:3160:U:H2'	11:AA:3161:C:H6	1.79	0.47
23:Ee:19:GLY:H	23:Ee:57:LYS:HA	1.79	0.47
34:K:126:LEU:HD12	34:K:126:LEU:O	2.14	0.47
42:O:74:ASN:HB2	42:O:86:ARG:HB3	1.96	0.47
60:c:142:G:H2'	60:c:143:G:C8	2.49	0.47
60:c:393:C:H2'	60:c:394:C:C6	2.49	0.47
60:c:1236:A:H2'	60:c:1237:G:H8	1.78	0.47
60:c:1358:G:H1	60:c:1366:U:H3	1.61	0.47
64:g:167:PHE:HB3	64:g:190:ARG:CZ	2.43	0.47
65:h:127:LYS:HG2	65:h:142:HIS:HA	1.95	0.47
11:AA:209:A:H4'	11:AA:211:A:C8	2.49	0.47
11:AA:1808:G:OP2	36:L:133:LYS:NZ	2.46	0.47
11:AA:2218:G:H2'	11:AA:2219:A:C8	2.50	0.47
11:AA:2430:A:H2'	11:AA:2431:C:C6	2.49	0.47
18:D:152:GLU:HG3	18:D:153:LYS:N	2.29	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:DD:8:LYS:HD3	19:DD:58:MET:HE1	1.96	0.47
23:Ee:105:GLN:HG2	23:Ee:107:ASP:N	2.27	0.47
37:LL:150:SER:OG	37:LL:153:ASP:HB2	2.14	0.47
52:U:62:ARG:HE	52:U:99:ARG:HH12	1.61	0.47
60:c:1603:U:H2'	60:c:1604:U:C6	2.50	0.47
64:g:29:LEU:HB2	64:g:34:TYR:HB2	1.95	0.47
68:k:113:PRO:HG2	68:k:116:ARG:HD3	1.96	0.47
11:AA:650:OMC:H2'	11:AA:651:G:C8	2.48	0.47
11:AA:821:U:H2'	11:AA:822:G:H8	1.78	0.47
27:GG:233:LEU:HB3	27:GG:238:LEU:HD11	1.96	0.47
29:HH:219:PHE:HE2	29:HH:227:LEU:HD21	1.79	0.47
39:MM:191:LYS:HG2	39:MM:213:PHE:CE1	2.49	0.47
42:O:94:GLU:HA	42:O:94:GLU:OE2	2.14	0.47
44:P:75:ILE:HG12	44:P:93:VAL:HG13	1.97	0.47
50:S:19:LYS:HD3	50:S:19:LYS:HA	1.69	0.47
55:X:30:ARG:HH21	55:X:33:ASN:HD22	1.63	0.47
60:c:29:U:H2'	60:c:30:G:H8	1.78	0.47
60:c:1317:C:H2'	60:c:1318:G:O4'	2.15	0.47
69:l:142:LYS:O	69:l:146:ARG:HG2	2.15	0.47
4:3:2:VAL:HB	4:3:3:LEU:H	1.47	0.47
8:7:62:LYS:HE3	8:7:62:LYS:HB3	1.62	0.47
8:7:173:GLY:O	8:7:199:ILE:HB	2.13	0.47
11:AA:887:G:H2'	11:AA:888:A:C8	2.49	0.47
11:AA:1234:G:O2'	23:Ee:116:MET:HE2	2.14	0.47
11:AA:1241:U:H1'	11:AA:1248:C:N4	2.28	0.47
11:AA:1277:C:C2	11:AA:1278:A:C8	3.02	0.47
11:AA:2150:G:O2'	11:AA:2189:U:OP1	2.29	0.47
13:BB:47:C:OP2	29:HH:158:ARG:HD3	2.15	0.47
14:Bb:27:C:H2'	14:Bb:28:C:C6	2.49	0.47
19:DD:53:MET:HG2	19:DD:85:GLY:HA3	1.95	0.47
35:KK:134:TYR:HB3	35:KK:190:VAL:HG11	1.97	0.47
39:MM:80:SER:HB3	39:MM:147:VAL:HG11	1.96	0.47
48:QQ:45:PRO:O	48:QQ:49:ARG:HG3	2.14	0.47
54:W:15:THR:HG22	54:W:45:VAL:HG11	1.94	0.47
60:c:1271:OMG:HM23	60:c:1271:OMG:H1'	1.71	0.47
60:c:1308:G:H2'	60:c:1309:C:H6	1.79	0.47
60:c:1338:C:O2'	60:c:1339:C:H6	1.97	0.47
60:c:1514:U:H5''	60:c:1515:A:O4'	2.14	0.47
60:c:1617:U:H2'	60:c:1618:C:C6	2.48	0.47
60:c:1772:C:C4	60:c:1773:4AC:HM73	2.48	0.47
63:f:106:ASP:C	63:f:108:ASN:H	2.21	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
64:g:164:VAL:O	64:g:168:ILE:HB	2.14	0.47
72:o:8:GLN:OE1	72:o:14:GLN:N	2.36	0.47
75:r:37:ALA:HB1	75:r:41:VAL:HG11	1.97	0.47
76:s:140:LYS:HD3	76:s:142:TYR:CZ	2.48	0.47
79:v:104:VAL:O	79:v:108:LEU:HG	2.13	0.47
80:w:30:LYS:HD3	80:w:33:GLN:OE1	2.14	0.47
7:6:31:LYS:H	7:6:31:LYS:HG2	1.39	0.47
11:AA:59:G:H2'	16:CC:33:A:O2'	2.15	0.47
11:AA:662:U:OP1	38:M:8:THR:HG21	2.14	0.47
11:AA:2585:G:N3	11:AA:2585:G:H2'	2.30	0.47
13:BB:23:A:H2'	13:BB:24:A:C8	2.50	0.47
23:Ee:37:LEU:HD23	23:Ee:37:LEU:HA	1.68	0.47
32:J:25:LYS:HB2	32:J:25:LYS:HE3	1.68	0.47
60:c:514:G:O2'	60:c:515:A:H5'	2.14	0.47
60:c:858:G:O3'	68:k:113:PRO:HB3	2.15	0.47
60:c:1398:U:H3'	60:c:1399:C:H2'	1.96	0.47
65:h:68:ARG:HD3	65:h:76:VAL:HG11	1.96	0.47
65:h:122:LYS:NZ	65:h:143:ASP:OD2	2.31	0.47
70:m:133:HIS:HA	70:m:162:SER:HB2	1.96	0.47
75:r:62:ALA:O	75:r:66:ALA:HB3	2.15	0.47
76:s:41:PRO:HG2	76:s:44:LEU:HB2	1.96	0.47
77:t:86:PRO:O	77:t:87:GLU:C	2.56	0.47
81:x:17:CYS:HB2	81:x:56:SER:HB3	1.96	0.47
3:2:42:ARG:NH2	3:2:46:GLU:OE1	2.48	0.47
6:5:14:TYR:CE2	60:c:1553:G:H4'	2.50	0.47
8:7:240:VAL:HA	8:7:256:THR:HA	1.96	0.47
11:AA:1022:U:H2'	11:AA:1023:C:C6	2.50	0.47
11:AA:1597:C:H5'	11:AA:1696:A:H1'	1.96	0.47
11:AA:2812:C:H2'	11:AA:2813:A:C8	2.50	0.47
14:Bb:54:U:H4'	39:MM:33:ILE:HD11	1.96	0.47
19:DD:80:VAL:O	19:DD:81:LYS:HD2	2.15	0.47
23:Ee:162:ILE:HG22	23:Ee:164:GLU:HG2	1.97	0.47
56:Y:99:CYS:HB2	56:Y:114:LYS:HD2	1.96	0.47
60:c:929:A:C8	74:q:123:SER:O	2.67	0.47
60:c:934:C:C5	60:c:1077:C:H4'	2.50	0.47
63:f:54:GLU:CD	81:x:11:LEU:HD12	2.39	0.47
66:i:37:GLN:HG3	76:s:57:LEU:HD11	1.97	0.47
66:i:128:ASN:O	66:i:131:GLN:N	2.48	0.47
77:t:96:SER:C	77:t:98:GLY:H	2.21	0.47
4:3:34:ASP:OD2	4:3:82:LYS:HD3	2.15	0.47
8:7:260:ILE:HD12	8:7:292:LEU:HD21	1.96	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:38:U:H2'	11:AA:39:A:O4'	2.15	0.47
11:AA:289:A:H2'	11:AA:290:G:H8	1.80	0.47
11:AA:548:G:H2'	11:AA:549:U:H6	1.80	0.47
11:AA:616:G:H2'	11:AA:617:G:C8	2.50	0.47
11:AA:629:U:H2'	11:AA:630:A:H8	1.79	0.47
11:AA:677:A:OP2	15:C:107:THR:HG21	2.15	0.47
11:AA:1194:G:H2'	11:AA:1195:A:C8	2.50	0.47
11:AA:1196:C:OP2	11:AA:1309:U:O2'	2.29	0.47
11:AA:1262:G:O6	11:AA:1264:G:N2	2.46	0.47
11:AA:1306:G:O2'	11:AA:1307:G:H5''	2.15	0.47
11:AA:1658:G:H2'	11:AA:1659:U:C6	2.49	0.47
11:AA:1831:U:O2'	16:CC:114:G:OP1	2.20	0.47
11:AA:2552:C:H2'	42:O:50:VAL:HG11	1.97	0.47
11:AA:2904:U:H2'	11:AA:2905:U:H6	1.78	0.47
11:AA:2959:OMC:HM22	11:AA:2960:C:O4'	2.15	0.47
11:AA:3348:G:O6	11:AA:3357:U:O4	2.32	0.47
19:DD:104:ARG:NH2	19:DD:182:THR:HG23	2.29	0.47
23:Ee:85:LEU:HD22	23:Ee:102:GLY:HA3	1.96	0.47
48:QQ:71:ARG:HB2	48:QQ:94:TYR:HB2	1.96	0.47
59:b:59:CYS:O	59:b:60:CYS:SG	2.73	0.47
60:c:299:A:OP1	65:h:30:ARG:NH2	2.48	0.47
60:c:366:A:OP1	60:c:758:U:O2'	2.29	0.47
60:c:526:A:H2'	60:c:527:A:O4'	2.15	0.47
60:c:811:A:N6	68:k:110:GLN:O	2.47	0.47
60:c:1241:G:OP1	75:r:77:ARG:NH2	2.32	0.47
60:c:1389:C:O2'	77:t:52:GLY:HA3	2.15	0.47
60:c:1580:C:H4'	76:s:137:ARG:HB2	1.97	0.47
61:d:42:PRO:O	61:d:43:ASP:HB3	2.14	0.47
62:e:81:PHE:CD2	62:e:82:ARG:HG3	2.49	0.47
68:k:5:GLN:HG3	68:k:18:LEU:HD23	1.96	0.47
68:k:81:LEU:HB3	68:k:90:VAL:HG21	1.96	0.47
69:l:10:LYS:HG3	72:o:133:LYS:HE3	1.97	0.47
79:v:123:ARG:HG2	79:v:124:ILE:N	2.29	0.47
81:x:11:LEU:HD23	81:x:11:LEU:H	1.79	0.47
1:0:38:ASP:O	1:0:42:GLU:HG3	2.15	0.47
6:5:31:ILE:HD13	60:c:1199:G:H1	1.80	0.47
8:7:19:TRP:CH2	8:7:306:THR:HB	2.50	0.47
8:7:101:GLN:NE2	8:7:137:LYS:O	2.48	0.47
8:7:288:HIS:O	8:7:306:THR:HG23	2.15	0.47
11:AA:1083:G:H2'	11:AA:1084:A:H8	1.80	0.47
12:B:62:ARG:NH1	16:CC:5:U:OP2	2.47	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
19:DD:157:LYS:HZ1	19:DD:160:ASP:HB3	1.79	0.47
27:GG:140:HIS:O	27:GG:142:VAL:N	2.45	0.47
43:OO:5:LYS:HD2	43:OO:5:LYS:H	1.78	0.47
43:OO:48:PRO:HA	43:OO:137:GLN:HB2	1.96	0.47
53:V:18:LEU:HD11	55:X:12:LYS:HD2	1.96	0.47
60:c:804:A:C8	82:y:107:SER:HA	2.50	0.47
60:c:1552:U:O2'	60:c:1597:A:N3	2.43	0.47
72:o:143:SER:O	72:o:145:ALA:N	2.47	0.47
77:t:24:LEU:HB3	77:t:34:LEU:CD2	2.44	0.47
8:7:30:PRO:HB3	8:7:296:ALA:HB2	1.96	0.47
11:AA:728:G:H5''	15:C:43:PRO:HB2	1.95	0.47
11:AA:2578:U:H2'	11:AA:2579:G:O4'	2.15	0.47
11:AA:2835:U:H2'	11:AA:2836:C:O2	2.15	0.47
12:B:22:LEU:HD12	12:B:146:ILE:HD12	1.96	0.47
14:Bb:43:G:H2'	14:Bb:44:A:H8	1.80	0.47
14:Bb:52:U:H2'	14:Bb:53:G:C8	2.49	0.47
15:C:44:PHE:HZ	15:C:127:LEU:HD21	1.80	0.47
23:Ee:62:LEU:HG	23:Ee:64:ILE:HG13	1.97	0.47
31:II:43:LEU:HD11	31:II:85:ILE:HG13	1.97	0.47
32:J:46:TYR:HB3	51:T:75:TYR:O	2.15	0.47
34:K:55:GLU:HG3	34:K:108:LYS:HB3	1.97	0.47
38:M:76:ASP:OD1	38:M:77:LYS:N	2.48	0.47
41:NN:49:LYS:HA	41:NN:64:LYS:H	1.80	0.47
50:S:86:LYS:O	50:S:90:ILE:HG13	2.15	0.47
60:c:329:G:O3'	69:l:97:THR:HG23	2.14	0.47
60:c:615:A:O2'	60:c:621:A:N1	2.42	0.47
60:c:817:A:H2'	60:c:818:C:C6	2.49	0.47
60:c:1164:G:H2'	60:c:1165:G:H8	1.80	0.47
65:h:127:LYS:HD2	65:h:127:LYS:HA	1.59	0.47
66:i:148:ARG:HA	66:i:148:ARG:HD3	1.69	0.47
3:2:15:ARG:O	60:c:942:G:O6	2.33	0.47
4:3:46:VAL:HG22	4:3:54:VAL:HG11	1.97	0.47
6:5:15:GLY:HA3	60:c:1204:A:H61	1.79	0.47
8:7:64:HIS:HE1	8:7:84:SER:HB2	1.79	0.47
8:7:123:ILE:HG12	8:7:169:ILE:HG21	1.96	0.47
9:8:97:LYS:HE2	60:c:1232:U:O4	2.15	0.47
11:AA:123:A:C6	11:AA:150:A:C5	3.03	0.47
11:AA:661:G:N7	38:M:25:HIS:ND1	2.59	0.47
11:AA:675:C:O2'	11:AA:679:U:OP1	2.33	0.47
11:AA:849:C:H2'	11:AA:850:U:C6	2.50	0.47
11:AA:2762:A:H2'	11:AA:2763:U:H6	1.79	0.47

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3386:G:H2'	11:AA:3387:U:C6	2.50	0.47
23:Ee:18:VAL:HA	23:Ee:57:LYS:HA	1.96	0.47
25:FF:59:ASP:OD1	25:FF:357:LYS:HD2	2.15	0.47
25:FF:291:GLU:CG	25:FF:302:LYS:HD3	2.45	0.47
33:JJ:88:ARG:HB2	33:JJ:108:LEU:HB3	1.95	0.47
37:LL:124:ARG:HB3	37:LL:164:ILE:HG12	1.96	0.47
65:h:148:ARG:NH1	67:j:201:GLN:OE1	2.49	0.47
72:o:49:ILE:HG22	72:o:50:GLU:HG3	1.96	0.47
76:s:129:PHE:CE1	80:w:78:THR:HA	2.50	0.47
77:t:78:ARG:HH21	77:t:79:GLU:HB2	1.80	0.47
8:7:170:ILE:HD13	8:7:211:ILE:HG22	1.97	0.46
9:8:134:ASN:OD1	9:8:134:ASN:N	2.46	0.46
11:AA:1282:G:H4'	19:DD:82:GLY:HA2	1.97	0.46
11:AA:2465:G:H2'	11:AA:2491:A:H2	1.79	0.46
11:AA:2466:G:H21	11:AA:2490:C:H42	1.63	0.46
11:AA:3232:G:H1	11:AA:3255:U:H3	1.62	0.46
31:II:13:GLU:HA	47:Q:4:LEU:HD11	1.97	0.46
35:KK:158:ASP:HB3	35:KK:159:PRO:HD3	1.97	0.46
60:c:811:A:N7	68:k:111:LYS:HB3	2.30	0.46
60:c:947:U:H2'	60:c:948:G:H8	1.78	0.46
67:j:143:LYS:HB3	67:j:143:LYS:HE3	1.56	0.46
11:AA:39:A:H5''	38:M:35:ALA:HB2	1.97	0.46
11:AA:547:G:O2'	11:AA:548:G:O4'	2.26	0.46
11:AA:1062:A:H4'	24:F:105:PHE:CD1	2.50	0.46
11:AA:2160:G:H2'	11:AA:2161:G:H8	1.80	0.46
11:AA:3066:U:H2'	11:AA:3067:C:H6	1.79	0.46
11:AA:3291:G:H2'	11:AA:3292:A:H8	1.79	0.46
21:E:22:PRO:O	24:F:146:ASN:ND2	2.23	0.46
28:H:40:LYS:HE3	28:H:40:LYS:HB3	1.74	0.46
29:HH:178:ASN:HA	29:HH:183:TRP:CD2	2.50	0.46
37:LL:88:TYR:CE2	37:LL:184:LYS:HE2	2.50	0.46
60:c:386:G:OP1	69:l:23:LYS:HG2	2.15	0.46
60:c:884:A:H2'	60:c:885:G:H8	1.80	0.46
60:c:989:U:H2'	60:c:990:C:C6	2.51	0.46
62:e:65:VAL:HG22	62:e:87:ARG:HB3	1.97	0.46
68:k:58:LEU:HD22	68:k:85:PHE:CE2	2.50	0.46
8:7:131:ILE:HG22	8:7:131:ILE:O	2.15	0.46
11:AA:397:A:H5''	11:AA:399:A:OP1	2.16	0.46
11:AA:818:C:O2'	11:AA:2138:A:N1	2.43	0.46
11:AA:1348:U:H4'	11:AA:1349:G:OP1	2.15	0.46
11:AA:1621:A:H2'	11:AA:1622:U:C6	2.50	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2486:A:O2'	11:AA:2487:U:H5'	2.16	0.46
41:NN:22:SER:OG	41:NN:22:SER:O	2.31	0.46
52:U:47:ILE:HG13	52:U:48:ALA:H	1.80	0.46
64:g:163:PRO:HA	64:g:166:ASP:HB2	1.97	0.46
81:x:40:ASP:HB3	81:x:46:ILE:HD11	1.97	0.46
1:0:109:LYS:O	1:0:112:LYS:HG3	2.15	0.46
8:7:70:ASP:OD2	8:7:155:ARG:NH2	2.49	0.46
11:AA:273:A:H2'	11:AA:274:G:C8	2.51	0.46
11:AA:540:U:H2'	11:AA:541:U:C6	2.51	0.46
11:AA:1234:G:H2'	11:AA:1235:U:C5	2.51	0.46
11:AA:2457:G:H21	11:AA:2483:G:H21	1.64	0.46
11:AA:2465:G:H2'	11:AA:2491:A:C2	2.51	0.46
11:AA:2487:U:H4'	11:AA:2488:A:OP2	2.12	0.46
11:AA:2492:C:H2'	11:AA:2493:U:O4'	2.16	0.46
11:AA:2500:A:O2'	11:AA:2501:U:OP1	2.28	0.46
11:AA:2781:U:H4'	43:OO:185:LYS:HD3	1.98	0.46
11:AA:3259:U:H5'	11:AA:3261:C:H5	1.80	0.46
11:AA:3297:U:O4	25:FF:124:LYS:NZ	2.36	0.46
19:DD:43:LYS:HG3	23:Ee:121:PHE:CE2	2.50	0.46
37:LL:21:LYS:HG3	37:LL:22:SER:H	1.81	0.46
60:c:252:U:H2'	60:c:253:A:H8	1.80	0.46
60:c:863:A:O5'	82:y:57:ARG:HD2	2.15	0.46
61:d:28:ASN:HA	61:d:46:HIS:NE2	2.31	0.46
61:d:90:ALA:HA	61:d:95:ALA:HB3	1.97	0.46
62:e:158:SER:HA	62:e:161:ILE:HD12	1.96	0.46
65:h:246:LEU:HB3	65:h:250:GLU:HG3	1.97	0.46
80:w:28:SER:HB2	80:w:112:VAL:HA	1.97	0.46
1:0:123:LYS:NZ	60:c:150:U:OP1	2.43	0.46
11:AA:164:A:N1	11:AA:258:G:C6	2.84	0.46
11:AA:1255:C:C2	11:AA:1256:G:C8	3.03	0.46
11:AA:2407:C:H2'	11:AA:2408:U:H6	1.79	0.46
11:AA:2503:G:H2'	11:AA:2504:U:C6	2.51	0.46
11:AA:2600:C:OP1	48:QQ:93:LYS:NZ	2.48	0.46
25:FF:256:HIS:HA	25:FF:257:PRO:C	2.39	0.46
28:H:96:GLU:HG3	30:I:21:PHE:HZ	1.80	0.46
29:HH:39:GLN:HA	29:HH:48:LYS:HD2	1.97	0.46
43:OO:11:LYS:O	43:OO:13:HIS:ND1	2.45	0.46
60:c:78:A:H4'	67:j:159:ARG:HH12	1.80	0.46
60:c:153:G:OP1	67:j:15:THR:OG1	2.24	0.46
67:j:199:GLN:HG3	67:j:202:ARG:NH2	2.30	0.46
70:m:148:VAL:HG13	70:m:152:SER:HB2	1.97	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
78:u:28:ILE:HA	78:u:58:ALA:HB2	1.97	0.46
5:4:12:VAL:HG23	5:4:52:ASP:O	2.15	0.46
11:AA:400:G:H4'	11:AA:401:U:H5''	1.98	0.46
11:AA:1066:G:H2'	11:AA:1067:U:C6	2.51	0.46
11:AA:1226:G:H2'	11:AA:1227:C:C6	2.50	0.46
11:AA:2455:U:H3'	11:AA:2456:A:C8	2.51	0.46
11:AA:2471:U:N3	11:AA:2473:C:C4	2.83	0.46
11:AA:2612:U:H2'	11:AA:2613:U:O4'	2.15	0.46
21:E:12:ARG:HB2	21:E:59:VAL:HG23	1.97	0.46
60:c:258:C:H5''	69:l:75:LYS:HB2	1.97	0.46
60:c:886:U:C2	60:c:887:A:C8	3.04	0.46
60:c:1542:G:N2	60:c:1568:C:H1'	2.30	0.46
8:7:39:ASP:C	8:7:40:LYS:HG2	2.40	0.46
9:8:94:LYS:N	60:c:1247:U:OP1	2.48	0.46
10:A:126:VAL:O	21:E:154:HIS:NE2	2.45	0.46
11:AA:130:A:H2'	11:AA:131:C:H6	1.80	0.46
11:AA:1282:G:C5	11:AA:1283:C:C5	3.04	0.46
11:AA:1750:A:OP1	54:W:44:LYS:NZ	2.46	0.46
11:AA:1805:C:H2'	11:AA:1806:A:C8	2.51	0.46
11:AA:2843:U:OP2	11:AA:2844:C:N4	2.29	0.46
11:AA:2943:G:H2'	11:AA:2944:U:O4'	2.15	0.46
11:AA:3165:A:H2'	11:AA:3166:C:C6	2.51	0.46
16:CC:21:C:OP1	27:GG:193:LYS:NZ	2.34	0.46
23:Ee:147:ASN:OD1	23:Ee:150:ASP:HB2	2.16	0.46
31:II:173:MET:HB2	31:II:173:MET:HE2	1.77	0.46
33:JJ:84:VAL:HG21	33:JJ:127:LEU:HD11	1.97	0.46
38:M:135:GLU:OE2	43:OO:166:ALA:N	2.48	0.46
51:T:96:GLU:C	51:T:98:SER:H	2.24	0.46
54:W:24:THR:HG23	54:W:44:LYS:HB2	1.98	0.46
58:a:8:ARG:HB2	58:a:25:VAL:CG2	2.45	0.46
60:c:472:U:H5''	70:m:11:THR:HG23	1.97	0.46
60:c:890:C:H2'	60:c:891:A:H8	1.79	0.46
60:c:1600:A:H2'	60:c:1600:A:N3	2.30	0.46
60:c:1631:A:N1	60:c:1763:A:O2'	2.43	0.46
65:h:67:GLN:OE1	65:h:69:HIS:NE2	2.49	0.46
10:A:15:LEU:HB2	10:A:123:ALA:O	2.16	0.46
11:AA:514:G:N3	27:GG:341:SER:OG	2.47	0.46
11:AA:761:A:C2	11:AA:771:A:H1'	2.50	0.46
11:AA:827:A:H5''	50:S:14:ASN:O	2.16	0.46
11:AA:1240:A:P	23:Ee:92:ARG:HH12	2.38	0.46
11:AA:1619:A:H2'	11:AA:1620:U:O4'	2.16	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1836:C:H41	55:X:3:ALA:HB2	1.80	0.46
11:AA:2357:A:H2'	11:AA:2358:A:H8	1.80	0.46
11:AA:2820:A:H2'	46:Pp:1:MET:C	2.41	0.46
11:AA:2876:C:H2'	11:AA:2877:G:O4'	2.15	0.46
12:B:10:ASN:HD22	12:B:13:LYS:HD2	1.80	0.46
13:BB:72:A:O2'	13:BB:73:C:OP1	2.29	0.46
16:CC:91:C:H2'	16:CC:92:A:C8	2.51	0.46
18:D:86:GLU:OE1	18:D:91:SER:OG	2.30	0.46
19:DD:23:LYS:HA	19:DD:23:LYS:HD2	1.64	0.46
29:HH:183:TRP:HA	29:HH:190:ILE:HA	1.98	0.46
31:II:151:LYS:HB3	31:II:151:LYS:HE2	1.76	0.46
45:PP:23:ILE:O	45:PP:30:GLY:N	2.49	0.46
60:c:646:C:H2'	60:c:647:G:O4'	2.16	0.46
60:c:885:G:OP1	62:e:216:LYS:NZ	2.37	0.46
60:c:897:C:O2'	60:c:914:G:N2	2.49	0.46
60:c:1407:U:H2'	60:c:1408:G:C8	2.51	0.46
60:c:1735:U:H2'	60:c:1736:G:C8	2.51	0.46
66:i:73:THR:HG22	76:s:114:ARG:NH2	2.30	0.46
74:q:19:ILE:HA	74:q:27:PHE:O	2.16	0.46
78:u:62:THR:HG22	78:u:64:GLU:H	1.80	0.46
11:AA:943:U:OP1	38:M:15:VAL:HA	2.16	0.46
11:AA:1528:G:O2'	11:AA:1588:A:N3	2.44	0.46
11:AA:2206:G:H2'	11:AA:2207:A:O4'	2.16	0.46
11:AA:3107:U:H2'	11:AA:3108:G:C8	2.50	0.46
12:B:60:PHE:HB3	12:B:64:ASN:HB3	1.97	0.46
15:C:83:VAL:O	15:C:103:ALA:HA	2.16	0.46
28:H:74:MET:HE2	28:H:74:MET:HB3	1.75	0.46
29:HH:40:HIS:CE1	29:HH:42:ALA:HB3	2.51	0.46
41:NN:115:LYS:HD3	41:NN:115:LYS:HA	1.65	0.46
60:c:974:A2M:H8	60:c:974:A2M:O5'	2.16	0.46
60:c:1471:A:P	66:i:185:ARG:HE	2.38	0.46
63:f:149:GLY:HA2	81:x:3:ASN:HB2	1.97	0.46
64:g:34:TYR:HE1	64:g:37:VAL:HG13	1.80	0.46
69:l:72:ILE:HG13	69:l:73:SER:H	1.81	0.46
70:m:88:GLU:O	70:m:91:LYS:HG3	2.15	0.46
1:O:15:ASN:N	1:O:15:ASN:OD1	2.47	0.46
3:2:30:ILE:HD13	3:2:35:ALA:HA	1.98	0.46
8:7:149:ASP:HB3	8:7:174:ASN:OD1	2.16	0.46
11:AA:243:G:H2'	11:AA:244:G:H8	1.80	0.46
11:AA:291:C:H2'	11:AA:292:U:C6	2.50	0.46
11:AA:1495:U:C5	11:AA:1835:A:N1	2.84	0.46

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2196:C:O2'	11:AA:2270:A:C8	2.68	0.46
14:Bb:10:G:N2	14:Bb:26:G:H1'	2.31	0.46
14:Bb:56:C:H2'	14:Bb:57:G:H8	1.80	0.46
16:CC:143:U:H2'	16:CC:144:G:O4'	2.16	0.46
41:NN:37:LEU:HD11	41:NN:67:VAL:HG22	1.98	0.46
45:PP:32:LEU:HD11	45:PP:94:TRP:CG	2.51	0.46
60:c:292:U:H2'	60:c:293:U:C6	2.51	0.46
60:c:1280:4AC:H5'	80:w:69:LYS:HB3	1.96	0.46
60:c:1462:G:N7	78:u:143:ARG:NH1	2.52	0.46
61:d:144:ILE:HG12	61:d:158:VAL:HB	1.98	0.46
64:g:40:ARG:HH22	64:g:49:ILE:HD12	1.80	0.46
67:j:1:MET:HG2	67:j:24:ILE:CD1	2.46	0.46
77:t:96:SER:C	77:t:98:GLY:N	2.74	0.46
3:2:12:LYS:HG3	3:2:15:ARG:HB3	1.98	0.45
8:7:208:GLY:O	8:7:209:THR:OG1	2.33	0.45
11:AA:46:U:OP2	87:AA:3618:SPD:H92	2.16	0.45
11:AA:673:U:H2'	11:AA:674:G:C8	2.51	0.45
11:AA:985:U:H2'	11:AA:986:U:H6	1.81	0.45
11:AA:1091:A:H2'	11:AA:1092:C:C6	2.51	0.45
11:AA:1326:A:H2'	11:AA:1327:C:O4'	2.16	0.45
11:AA:2451:G:H2'	11:AA:2452:G:C8	2.50	0.45
16:CC:6:U:H2'	16:CC:7:U:C6	2.50	0.45
19:DD:172:LEU:O	19:DD:175:LEU:HG	2.16	0.45
23:Ee:9:GLU:O	23:Ee:9:GLU:HG2	2.16	0.45
25:FF:292:ALA:HB2	25:FF:302:LYS:HG2	1.98	0.45
60:c:518:A:H2'	60:c:519:C:H5''	1.98	0.45
62:e:133:TYR:HD2	62:e:217:LEU:HD21	1.80	0.45
65:h:72:VAL:HB	65:h:77:ARG:HG3	1.97	0.45
5:4:26:THR:HG23	5:4:44:VAL:HG13	1.98	0.45
6:5:6:VAL:HG12	6:5:7:TRP:CD1	2.51	0.45
8:7:109:ASP:OD2	77:t:33:ARG:HD2	2.16	0.45
10:A:16:VAL:HG23	10:A:80:PHE:HD1	1.81	0.45
11:AA:11:A:H2'	11:AA:12:A:C8	2.51	0.45
11:AA:1048:A:H2'	39:MM:22:TYR:CZ	2.51	0.45
11:AA:2153:U:OP1	22:EE:246:LEU:HB2	2.16	0.45
11:AA:2413:A:H2'	11:AA:2414:G:H8	1.80	0.45
11:AA:2686:A:H2'	11:AA:2687:G:O4'	2.16	0.45
11:AA:2815:OMG:H2'	11:AA:2870:5MC:HM51	1.97	0.45
11:AA:3183:A:H2	11:AA:3188:G:H4'	1.80	0.45
12:B:67:ILE:HG13	12:B:68:GLY:N	2.31	0.45
14:Bb:61:C:H2'	14:Bb:62:A:C5	2.50	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:Bb:69:U:H2'	14:Bb:70:C:C6	2.51	0.45
18:D:173:ARG:NH2	60:c:854:U:OP2	2.25	0.45
19:DD:37:GLN:NE2	19:DD:183:PHE:O	2.49	0.45
25:FF:350:ALA:O	25:FF:351:LEU:HB2	2.16	0.45
30:I:8:PHE:CD1	30:I:46:PRO:HG3	2.51	0.45
31:II:54:TYR:CE1	31:II:63:LEU:HB3	2.52	0.45
36:L:25:ILE:HG23	36:L:41:ALA:HB1	1.98	0.45
41:NN:21:ILE:HG13	41:NN:37:LEU:HD23	1.97	0.45
41:NN:82:ARG:HG2	41:NN:112:LEU:HD13	1.98	0.45
54:W:31:LEU:HD23	54:W:37:PRO:HA	1.98	0.45
60:c:368:U:H2'	60:c:369:A:O4'	2.16	0.45
60:c:404:G:H2'	60:c:405:C:C6	2.51	0.45
60:c:953:G:H2'	60:c:954:G:H8	1.81	0.45
63:f:106:ASP:O	63:f:108:ASN:N	2.49	0.45
68:k:86:GLN:O	68:k:88:ARG:HG2	2.16	0.45
7:6:14:VAL:HG21	60:c:567:A:N3	2.31	0.45
11:AA:273:A:H2'	11:AA:274:G:H8	1.82	0.45
11:AA:1284:C:H2'	11:AA:1285:G:C4	2.51	0.45
11:AA:1553:U:H4'	11:AA:1554:U:H5'	1.98	0.45
11:AA:1604:G:H4'	11:AA:1835:A:H4'	1.98	0.45
11:AA:3023:U:H2'	11:AA:3024:A:H8	1.81	0.45
14:Bb:54:U:N3	14:Bb:62:A:H2	2.13	0.45
52:U:62:ARG:NE	52:U:99:ARG:HH12	2.14	0.45
58:a:12:CYS:O	58:a:18:ARG:HA	2.15	0.45
60:c:895:G:H2'	60:c:896:U:C6	2.51	0.45
60:c:1308:G:H2'	60:c:1309:C:C6	2.52	0.45
60:c:1348:A:H2'	60:c:1349:G:O4'	2.16	0.45
60:c:1776:A:H2'	60:c:1777:G:H8	1.80	0.45
64:g:129:SER:O	64:g:129:SER:OG	2.31	0.45
67:j:163:THR:HG22	67:j:168:THR:HG22	1.98	0.45
70:m:59:LEU:HD22	70:m:69:ARG:HA	1.97	0.45
75:r:24:LYS:HD3	75:r:24:LYS:HA	1.64	0.45
7:6:37:ARG:HG3	70:m:123:HIS:CD2	2.51	0.45
8:7:33:LEU:O	8:7:44:SER:HA	2.16	0.45
8:7:46:LYS:O	8:7:46:LYS:HG3	2.17	0.45
8:7:231:MET:HE3	8:7:232:TYR:H	1.80	0.45
11:AA:393:U:H2'	11:AA:394:G:O4'	2.16	0.45
11:AA:776:U:O2	40:N:37:PRO:HG3	2.15	0.45
11:AA:908:OMG:C2	87:AA:3620:SPD:H42	2.51	0.45
11:AA:993:G:N3	11:AA:2637:A:H2'	2.32	0.45
11:AA:1256:G:H4'	23:Ee:127:SER:HB3	1.97	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1281:G:N3	11:AA:1282:G:C8	2.84	0.45
11:AA:1669:C:H5'	50:S:30:LEU:HD11	1.97	0.45
11:AA:1695:U:O2'	11:AA:1749:A:N1	2.39	0.45
11:AA:1810:A:H2'	11:AA:1811:G:C8	2.51	0.45
11:AA:2369:G:H2'	11:AA:2370:G:C8	2.51	0.45
11:AA:2747:A:H2'	11:AA:2748:A:C8	2.51	0.45
13:BB:6:C:O2'	29:HH:50:ARG:NH2	2.48	0.45
14:Bb:61:C:H2'	14:Bb:62:A:C4	2.52	0.45
17:Cc:24:C:H2'	17:Cc:25:U:C6	2.51	0.45
26:G:56:VAL:HG22	26:G:65:VAL:HG22	1.98	0.45
41:NN:53:THR:HA	41:NN:59:ILE:O	2.16	0.45
60:c:107:C:OP1	60:c:383:G:O2'	2.27	0.45
60:c:585:A:H2'	60:c:586:G:C8	2.52	0.45
60:c:1488:G:O2'	60:c:1494:C:O2	2.32	0.45
62:e:103:MET:HE1	62:e:212:VAL:O	2.16	0.45
81:x:12:TYR:O	81:x:12:TYR:CG	2.70	0.45
83:z:41:SER:OG	83:z:43:PHE:O	2.33	0.45
11:AA:1312:C:H2'	11:AA:1313:G:O4'	2.16	0.45
11:AA:1334:U:H2'	11:AA:1335:C:C6	2.52	0.45
11:AA:1648:A:H2'	11:AA:1649:U:O4'	2.16	0.45
11:AA:1722:U:O4'	18:D:96:ILE:HG12	2.17	0.45
11:AA:2840:C:H2'	11:AA:2841:G:O4'	2.16	0.45
11:AA:2911:A:H4'	11:AA:2912:G:C8	2.52	0.45
11:AA:3096:C:H2'	11:AA:3097:C:C6	2.52	0.45
28:H:90:GLY:O	30:I:16:GLY:HA2	2.17	0.45
41:NN:166:LYS:HD3	41:NN:167:TYR:CZ	2.51	0.45
48:QQ:36:ILE:HD11	48:QQ:105:ARG:HB3	1.98	0.45
48:QQ:158:HIS:HB3	48:QQ:161:ALA:HB3	1.99	0.45
54:W:34:ALA:CB	54:W:36:LYS:HZ2	2.26	0.45
60:c:206:A:H1'	60:c:262:U:C2	2.51	0.45
60:c:898:A:N3	60:c:899:G:H1'	2.31	0.45
60:c:1147:A:O2'	60:c:1636:C:OP2	2.31	0.45
60:c:1235:C:C2	60:c:1236:A:C8	3.04	0.45
67:j:141:ILE:HD13	67:j:157:VAL:HG13	1.99	0.45
71:n:55:VAL:HG11	71:n:66:TYR:HB3	1.97	0.45
1:0:43:LYS:HE2	1:0:43:LYS:HB3	1.82	0.45
2:1:83:LEU:O	2:1:87:GLY:HA3	2.16	0.45
11:AA:651:G:O2'	11:AA:1435:A:OP1	2.33	0.45
11:AA:1470:U:H2'	11:AA:1471:U:C6	2.52	0.45
11:AA:2861:U:H2'	11:AA:2862:U:O4'	2.16	0.45
19:DD:22:TYR:CG	19:DD:88:PHE:HB3	2.52	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
21:E:12:ARG:O	21:E:22:PRO:HB2	2.17	0.45
27:GG:30:ILE:O	27:GG:32:PRO:HD3	2.16	0.45
28:H:96:GLU:HG3	30:I:21:PHE:CZ	2.52	0.45
48:QQ:10:LEU:HD13	52:U:47:ILE:HD11	1.99	0.45
48:QQ:70:ASN:HB3	48:QQ:92:LEU:O	2.16	0.45
60:c:1244:A:H2'	60:c:1244:A:N3	2.31	0.45
60:c:1295:G:O6	88:c:2003:HOH:O	2.20	0.45
60:c:1354:G:H3'	60:c:1355:C:H6	1.82	0.45
60:c:1400:A:H4'	77:t:60:ARG:NH2	2.31	0.45
60:c:1450:U:H2'	60:c:1451:C:C6	2.51	0.45
66:i:34:GLN:O	76:s:57:LEU:HD22	2.17	0.45
66:i:122:ASN:HA	66:i:126:ASP:HA	1.99	0.45
67:j:32:ILE:HG21	67:j:65:GLN:HE21	1.82	0.45
73:p:128:TYR:O	73:p:132:VAL:HG22	2.17	0.45
76:s:110:THR:HA	76:s:113:ASP:HB2	1.99	0.45
78:u:42:TYR:CE2	78:u:101:LEU:HD11	2.51	0.45
80:w:21:LYS:HB3	80:w:21:LYS:HE2	1.69	0.45
11:AA:118:U:O2	11:AA:121:A:H5''	2.16	0.45
11:AA:191:U:H2'	11:AA:192:C:H6	1.82	0.45
11:AA:594:U:H2'	11:AA:609:G:O6	2.17	0.45
11:AA:987:U:H2'	11:AA:988:U:C6	2.50	0.45
11:AA:1023:C:H2'	11:AA:1024:G:O4'	2.16	0.45
11:AA:1246:G:H1'	11:AA:1264:G:C5	2.51	0.45
11:AA:1523:U:OP2	11:AA:1604:G:O2'	2.33	0.45
11:AA:1740:U:H1'	11:AA:1741:A:H2	1.81	0.45
11:AA:1941:C:H2'	11:AA:1942:U:C6	2.52	0.45
11:AA:2663:G:H2'	11:AA:2664:C:O4'	2.16	0.45
16:CC:81:U:H5''	16:CC:82:U:H5'	1.97	0.45
23:Ee:109:ILE:HG12	23:Ee:133:LEU:HG	1.99	0.45
27:GG:140:HIS:NE2	27:GG:246:ARG:HD2	2.31	0.45
36:L:89:VAL:HG12	36:L:92:PHE:CE2	2.51	0.45
37:LL:21:LYS:O	37:LL:22:SER:C	2.60	0.45
41:NN:160:VAL:O	41:NN:164:LYS:HG2	2.16	0.45
43:OO:131:LYS:HA	43:OO:131:LYS:HD3	1.74	0.45
60:c:52:U:H2'	60:c:53:G:H8	1.81	0.45
60:c:809:A:H2'	60:c:810:G:C8	2.52	0.45
60:c:1565:C:OP1	78:u:41:ARG:NE	2.38	0.45
65:h:87:MET:HG3	65:h:100:ARG:HH11	1.82	0.45
1:O:34:ASN:HD21	60:c:522:U:C1'	2.30	0.45
1:O:76:TYR:CE2	1:O:86:GLU:HG2	2.52	0.45
4:3:56:CYS:HB3	4:3:59:CYS:HB3	1.98	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:221:MET:HB2	8:7:223:TRP:CZ3	2.51	0.45
11:AA:523:A:O2'	21:E:69:PRO:HD2	2.17	0.45
11:AA:549:U:H2'	11:AA:550:A:C8	2.50	0.45
11:AA:601:U:O2'	11:AA:602:A:OP1	2.31	0.45
11:AA:671:U:H2'	11:AA:672:A:H8	1.81	0.45
11:AA:1196:C:H4'	11:AA:1197:A:OP1	2.17	0.45
11:AA:1354:G:H2'	11:AA:1357:G:H4'	1.97	0.45
11:AA:1497:C:H2'	11:AA:1498:A:H8	1.81	0.45
11:AA:1497:C:H2'	11:AA:1498:A:C8	2.52	0.45
11:AA:3027:A:H2'	11:AA:3028:G:O4'	2.17	0.45
21:E:24:LEU:O	24:F:148:PRO:HA	2.17	0.45
22:EE:52:SER:HB3	22:EE:191:LEU:HD22	1.98	0.45
37:LL:129:ARG:NH1	37:LL:160:ASP:OD2	2.50	0.45
37:LL:151:VAL:HA	37:LL:154:VAL:HG22	1.99	0.45
60:c:1087:A:H5'	60:c:1298:U:C5	2.52	0.45
60:c:1096:C:O2	60:c:1096:C:H2'	2.17	0.45
62:e:132:ASP:CB	62:e:221:PRO:HB3	2.47	0.45
64:g:11:LEU:HD22	80:w:86:ILE:HG22	1.99	0.45
72:o:124:THR:HB	72:o:141:LYS:HB2	1.99	0.45
76:s:32:ASN:O	76:s:68:ARG:NH2	2.50	0.45
80:w:57:ARG:HG2	80:w:89:ARG:HD3	1.98	0.45
11:AA:20:A:H2'	11:AA:21:G:C8	2.52	0.45
11:AA:113:C:P	48:QQ:147:ARG:HE	2.40	0.45
11:AA:275:U:H2'	11:AA:276:U:C6	2.52	0.45
11:AA:1250:G:C2	11:AA:1251:A:N7	2.85	0.45
11:AA:2452:G:H3'	11:AA:2462:A:C8	2.52	0.45
11:AA:2727:A:C2	38:M:43:ILE:HG23	2.51	0.45
11:AA:3371:G:H2'	11:AA:3372:A:C8	2.52	0.45
13:BB:84:A:H2'	13:BB:85:G:C8	2.52	0.45
15:C:125:ASP:HB2	27:GG:289:ILE:HD13	1.98	0.45
16:CC:26:U:O2'	27:GG:51:ALA:O	2.34	0.45
19:DD:27:VAL:HG13	19:DD:86:PHE:HE1	1.81	0.45
25:FF:146:ARG:HB2	25:FF:146:ARG:NH1	2.32	0.45
29:HH:179:ARG:HA	29:HH:179:ARG:HD3	1.75	0.45
29:HH:226:TYR:HE2	29:HH:236:LEU:HD11	1.82	0.45
38:M:77:LYS:C	38:M:79:TRP:N	2.75	0.45
50:S:74:ARG:HG2	50:S:75:ALA:H	1.82	0.45
54:W:70:PRO:HD2	54:W:73:LEU:HD22	1.99	0.45
55:X:44:TRP:CE2	55:X:45:ARG:HG3	2.52	0.45
60:c:568:G:H4'	83:z:90:ASP:HA	1.99	0.45
60:c:1330:G:H21	77:t:8:THR:HG21	1.82	0.45

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
61:d:195:TRP:CZ2	61:d:197:ILE:HD12	2.51	0.45
62:e:143:THR:HG21	62:e:156:ALA:HB2	1.99	0.45
65:h:45:ILE:HA	65:h:61:VAL:HG11	1.99	0.45
67:j:27:PHE:HD1	67:j:52:ILE:HD11	1.82	0.45
69:l:37:LYS:HA	69:l:37:LYS:HD3	1.82	0.45
11:AA:1246:G:H1'	11:AA:1264:G:N7	2.31	0.45
11:AA:1265:U:H2'	11:AA:1266:G:C8	2.52	0.45
11:AA:1583:A:H2'	11:AA:1584:U:O4'	2.17	0.45
11:AA:1623:G:H2'	11:AA:1624:G:O4'	2.17	0.45
11:AA:1804:A:H2'	11:AA:1805:C:C6	2.52	0.45
11:AA:2111:G:O2'	30:I:44:LYS:NZ	2.49	0.45
11:AA:2111:G:H1'	30:I:44:LYS:HD2	1.99	0.45
11:AA:3227:A:H4'	45:PP:133:LYS:NZ	2.32	0.45
13:BB:3:U:H2'	13:BB:4:U:H6	1.81	0.45
13:BB:16:U:H4'	29:HH:7:ALA:H	1.82	0.45
14:Bb:55:U:O2	14:Bb:61:C:N4	2.50	0.45
16:CC:5:U:H2'	16:CC:6:U:C6	2.52	0.45
19:DD:22:TYR:CB	19:DD:88:PHE:HB3	2.47	0.45
19:DD:87:VAL:HG11	19:DD:100:ILE:HD11	1.99	0.45
25:FF:382:THR:HA	25:FF:387:LEU:C	2.42	0.45
27:GG:161:LYS:HB2	27:GG:164:GLU:HG2	1.98	0.45
31:II:76:LEU:N	31:II:138:GLN:OE1	2.40	0.45
33:JJ:98:LYS:HB3	33:JJ:99:PRO:HD3	1.99	0.45
35:KK:149:LYS:O	35:KK:176:PRO:HG2	2.17	0.45
60:c:167:U:H5''	67:j:135:PRO:HA	1.99	0.45
60:c:862:A:OP2	73:p:64:ARG:NH2	2.50	0.45
60:c:891:A:H2'	60:c:892:A:H8	1.82	0.45
60:c:923:A:H2'	60:c:924:A:C8	2.51	0.45
60:c:1183:A:C4	75:r:100:LYS:HD3	2.51	0.45
60:c:1429:G:H2'	60:c:1430:U:C6	2.52	0.45
60:c:1469:A:H2'	60:c:1470:C:C6	2.51	0.45
60:c:1681:A:H2	60:c:1720:G:H21	1.65	0.45
61:d:80:THR:HA	61:d:83:GLN:HG3	1.98	0.45
68:k:58:LEU:HD13	68:k:88:ARG:HB3	1.98	0.45
70:m:58:ASP:O	70:m:61:THR:HG22	2.17	0.45
76:s:46:PHE:HA	76:s:49:TYR:HB2	1.98	0.45
76:s:99:GLU:OE1	76:s:103:ASN:ND2	2.50	0.45
79:v:140:LEU:HD23	79:v:140:LEU:HA	1.73	0.45
1:0:29:HIS:CE1	1:0:34:ASN:H	2.35	0.44
8:7:121:MET:HE2	8:7:133:VAL:HG21	1.99	0.44
11:AA:72:C:C5'	43:OO:63:VAL:HG13	2.46	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:947:G:H2'	11:AA:948:C:C6	2.52	0.44
11:AA:2526:C:H2'	11:AA:2527:G:C8	2.52	0.44
11:AA:2615:G:H2'	11:AA:2616:C:H6	1.82	0.44
11:AA:3320:A:H2'	11:AA:3321:C:C6	2.52	0.44
19:DD:104:ARG:NE	19:DD:182:THR:O	2.40	0.44
42:O:10:ILE:HD12	42:O:10:ILE:HA	1.87	0.44
60:c:449:C:H2'	60:c:450:U:C6	2.53	0.44
60:c:992:A:OP2	60:c:1011:G:N1	2.38	0.44
60:c:1203:A:C2	60:c:1556:A:C4	3.05	0.44
60:c:1330:G:H2'	60:c:1331:A:O4'	2.17	0.44
60:c:1785:U:H2'	60:c:1786:G:H8	1.82	0.44
62:e:70:LEU:HB2	62:e:82:ARG:O	2.17	0.44
67:j:134:GLY:HA3	67:j:158:ILE:HD12	1.99	0.44
68:k:17:GLU:OE1	68:k:17:GLU:N	2.50	0.44
68:k:23:ALA:HA	68:k:26:GLU:CD	2.42	0.44
8:7:116:ASP:HB3	8:7:121:MET:HB2	1.99	0.44
8:7:181:TRP:CD1	8:7:182:ASN:H	2.36	0.44
8:7:191:ASP:N	8:7:191:ASP:OD1	2.50	0.44
11:AA:381:U:H2'	11:AA:382:U:C6	2.52	0.44
11:AA:663:OMC:HM23	11:AA:663:OMC:H1'	1.74	0.44
11:AA:976:U:H2'	11:AA:977:C:O4'	2.17	0.44
11:AA:1033:U:H2'	11:AA:1034:U:C6	2.52	0.44
11:AA:1039:U:H2'	11:AA:1040:A:C8	2.53	0.44
11:AA:2138:A:C4	53:V:3:LYS:HB3	2.53	0.44
11:AA:2379:U:H2'	11:AA:2380:U:C6	2.53	0.44
11:AA:2530:G:H2'	11:AA:2531:C:H6	1.82	0.44
11:AA:3284:G:H2'	11:AA:3285:C:C6	2.52	0.44
27:GG:314:LYS:HD2	33:JJ:162:PRO:HB3	1.98	0.44
60:c:1147:A:H2'	60:c:1148:C:C6	2.52	0.44
60:c:1358:G:N1	60:c:1366:U:N3	2.63	0.44
60:c:1498:G:H5''	79:v:72:GLY:HA3	2.00	0.44
70:m:161:THR:HG22	70:m:162:SER:H	1.82	0.44
72:o:7:VAL:HG21	72:o:52:SER:O	2.17	0.44
11:AA:94:G:H2'	11:AA:95:A:C8	2.52	0.44
11:AA:1226:G:H2'	11:AA:1227:C:H6	1.82	0.44
11:AA:1724:U:O4	18:D:125:LYS:NZ	2.51	0.44
11:AA:2118:C:H2'	11:AA:2119:A:O4'	2.17	0.44
11:AA:2191:U:H2'	11:AA:2192:C:O4'	2.18	0.44
11:AA:2974:U:H2'	11:AA:2975:U:C6	2.52	0.44
11:AA:3232:G:C6	11:AA:3256:G:C6	3.05	0.44
13:BB:90:U:H2'	13:BB:91:G:O4'	2.16	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
14:Bb:50:U:H2'	14:Bb:51:G:H8	1.82	0.44
15:C:151:ARG:O	15:C:162:ALA:HB3	2.18	0.44
16:CC:40:A:H2'	16:CC:41:A:C8	2.52	0.44
24:F:19:PHE:CZ	24:F:20:ARG:HG3	2.52	0.44
28:H:38:ALA:HB3	28:H:59:MET:HB2	1.99	0.44
44:P:77:ARG:HD2	44:P:89:LEU:HD13	1.99	0.44
51:T:70:TYR:HA	51:T:73:LYS:HD3	1.98	0.44
58:a:8:ARG:HA	58:a:8:ARG:HD2	1.69	0.44
60:c:11:A:N1	60:c:1143:A:H2	2.15	0.44
60:c:333:A:C5	69:l:49:ARG:HD3	2.52	0.44
60:c:518:A:C2'	60:c:519:C:H5''	2.47	0.44
60:c:771:A:OP1	70:m:9:SER:OG	2.31	0.44
87:c:1965:SPD:H42	87:c:1965:SPD:H72	1.70	0.44
66:i:99:MET:O	66:i:103:ASN:HB2	2.18	0.44
67:j:214:LYS:O	67:j:217:SER:OG	2.30	0.44
68:k:63:PRO:O	68:k:64:VAL:HG12	2.17	0.44
74:q:122:PRO:HG3	74:q:125:SER:HB3	1.99	0.44
77:t:78:ARG:HG2	77:t:81:LYS:NZ	2.32	0.44
81:x:4:ASP:C	81:x:5:LYS:HG2	2.42	0.44
82:y:37:PHE:CZ	82:y:103:ILE:HD12	2.53	0.44
2:1:50:ILE:HG13	2:1:51:LEU:HG	1.98	0.44
9:8:95:HIS:NE2	60:c:1247:U:OP2	2.50	0.44
11:AA:677:A:H4'	11:AA:678:G:H5'	1.99	0.44
11:AA:916:G:H5'	11:AA:917:A:OP1	2.18	0.44
11:AA:960:U:H4'	11:AA:963:G:C2	2.52	0.44
11:AA:1184:A:H2'	11:AA:1185:C:C6	2.52	0.44
11:AA:2167:A:OP1	48:QQ:72:LYS:NZ	2.50	0.44
11:AA:2724:OMU:H1'	11:AA:2724:OMU:HM23	1.57	0.44
11:AA:3393:U:H2'	11:AA:3394:U:C6	2.53	0.44
16:CC:83:C:H41	34:K:52:ARG:HH12	1.65	0.44
25:FF:13:HIS:HB3	25:FF:16:PHE:HD2	1.82	0.44
27:GG:113:VAL:HB	27:GG:118:LYS:HE2	1.99	0.44
28:H:66:LYS:HE2	28:H:67:PRO:HD2	2.00	0.44
30:I:45:ASN:HB3	30:I:48:ARG:HG2	2.00	0.44
31:II:172:HIS:CD2	31:II:173:MET:HG3	2.53	0.44
35:KK:82:LEU:HD13	35:KK:222:PHE:HE2	1.83	0.44
39:MM:113:GLN:HB3	39:MM:116:ARG:HD2	2.00	0.44
60:c:792:U:H2'	60:c:793:A:C8	2.52	0.44
60:c:953:G:H2'	60:c:954:G:C8	2.52	0.44
69:l:60:ILE:HG21	69:l:179:CYS:HB2	1.99	0.44
71:n:14:TYR:CE2	71:n:34:GLU:HB3	2.53	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:t:91:LEU:HD13	77:t:91:LEU:HA	1.64	0.44
78:u:112:ASP:O	78:u:115:ARG:HG3	2.17	0.44
5:4:32:PHE:HD2	5:4:38:ARG:HD3	1.83	0.44
11:AA:168:U:H2'	11:AA:169:U:C6	2.53	0.44
11:AA:874:U:H5''	11:AA:2950:G:OP1	2.18	0.44
11:AA:1029:G:H2'	11:AA:1030:A:H8	1.82	0.44
11:AA:1332:A:H2'	11:AA:1333:C:C6	2.52	0.44
11:AA:1385:C:OP1	27:GG:141:ARG:NH1	2.43	0.44
11:AA:1597:C:H2'	11:AA:1598:G:H8	1.82	0.44
11:AA:1670:C:H4'	11:AA:1859:A:O3'	2.18	0.44
11:AA:1809:A:H2'	11:AA:1810:A:O4'	2.17	0.44
11:AA:2186:U:H2'	11:AA:2187:G:O4'	2.18	0.44
11:AA:2216:G:H22	11:AA:2229:A:H2	1.66	0.44
11:AA:3343:G:O2'	11:AA:3362:A:N6	2.50	0.44
29:HH:108:ARG:CZ	29:HH:253:PHE:HB2	2.48	0.44
39:MM:207:GLU:OE1	39:MM:208:ASN:ND2	2.51	0.44
52:U:43:LEU:O	52:U:47:ILE:HG23	2.18	0.44
60:c:86:A:H2'	60:c:87:C:C6	2.51	0.44
60:c:791:A:H2'	60:c:792:U:C6	2.53	0.44
60:c:885:G:N3	74:q:123:SER:OG	2.47	0.44
60:c:906:A:H2'	60:c:907:A:C8	2.53	0.44
60:c:1332:C:H4'	64:g:203:PRO:HB3	2.00	0.44
68:k:83:LYS:O	68:k:86:GLN:NE2	2.48	0.44
69:l:143:TRP:O	69:l:147:ALA:HB2	2.18	0.44
80:w:23:ARG:HB2	80:w:92:ASP:HB3	1.99	0.44
1:0:15:ASN:ND2	1:0:22:GLN:OE1	2.51	0.44
2:1:54:VAL:HG22	2:1:55:PRO:HD3	1.99	0.44
10:A:62:THR:H	10:A:69:GLY:HA3	1.83	0.44
11:AA:63:A:H5''	48:QQ:174:ILE:HG21	1.98	0.44
11:AA:1045:C:OP1	39:MM:133:GLN:NE2	2.50	0.44
11:AA:1350:A:H2'	11:AA:1351:U:C5	2.52	0.44
11:AA:1699:A:H2'	11:AA:1700:G:H8	1.82	0.44
11:AA:1799:A:H2'	11:AA:1800:A:H8	1.82	0.44
11:AA:2477:G:H2'	11:AA:2477:G:N3	2.33	0.44
11:AA:2677:G:N7	11:AA:2679:A:N6	2.65	0.44
11:AA:2830:G:H1'	11:AA:2861:U:C2	2.52	0.44
16:CC:34:U:H4'	51:T:85:THR:HG21	1.99	0.44
17:Cc:71:G:H2'	17:Cc:72:C:H6	1.81	0.44
21:E:109:ASP:OD1	21:E:113:ARG:NE	2.36	0.44
28:H:87:ARG:HB3	28:H:89:ASP:OD1	2.18	0.44
60:c:399:A:P	69:l:49:ARG:HH12	2.41	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:525:A:O2'	60:c:526:A:OP1	2.32	0.44
60:c:912:U:O2	60:c:914:G:N1	2.51	0.44
60:c:918:U:H4'	74:q:18:ARG:HD3	2.00	0.44
60:c:1528:U:H2'	60:c:1529:C:C6	2.52	0.44
65:h:98:ASN:HB2	65:h:114:ILE:HG13	2.00	0.44
67:j:19:ASP:OD1	67:j:19:ASP:N	2.51	0.44
68:k:7:LYS:HD2	68:k:8:ILE:N	2.33	0.44
79:v:7:ARG:HG2	79:v:67:MET:CE	2.48	0.44
79:v:77:ASN:OD1	79:v:101:ASN:ND2	2.46	0.44
79:v:125:SER:O	79:v:129:GLN:HG3	2.17	0.44
5:4:53:ILE:CG1	66:i:57:SER:HA	2.48	0.44
10:A:55:HIS:O	10:A:59:ARG:HG2	2.17	0.44
11:AA:761:A:H2'	11:AA:762:U:C6	2.53	0.44
11:AA:2130:G:O4'	11:AA:2144:A:H4'	2.17	0.44
11:AA:2561:A:C4	35:KK:32:LYS:HD2	2.52	0.44
11:AA:3329:U:H5''	25:FF:308:MET:HE2	1.99	0.44
16:CC:23:U:H5''	34:K:13:ARG:HG3	1.99	0.44
16:CC:59:A:H5''	16:CC:61:A:C8	2.53	0.44
16:CC:125:U:C3'	16:CC:126:A:H5'	2.48	0.44
21:E:10:ILE:O	21:E:59:VAL:N	2.48	0.44
23:Ee:76:SER:OG	23:Ee:79:SER:HB3	2.18	0.44
34:K:39:LEU:HD22	34:K:43:TYR:CE2	2.52	0.44
37:LL:27:VAL:HG12	37:LL:82:VAL:HG21	1.99	0.44
43:OO:126:PHE:HB2	51:T:115:LYS:HB3	1.99	0.44
60:c:125:U:H5'	65:h:148:ARG:HD2	1.99	0.44
60:c:327:U:H2'	60:c:328:A:H8	1.80	0.44
60:c:1450:U:H2'	60:c:1451:C:H6	1.82	0.44
60:c:1511:U:H2'	60:c:1512:G:H8	1.82	0.44
63:f:106:ASP:OD1	63:f:110:HIS:HB2	2.18	0.44
68:k:63:PRO:C	68:k:65:PRO:HD2	2.43	0.44
69:l:74:LYS:HB2	69:l:109:PHE:CE1	2.53	0.44
73:p:119:GLU:O	73:p:123:HIS:ND1	2.51	0.44
75:r:98:ASN:HB2	75:r:122:THR:HA	1.99	0.44
77:t:113:LEU:HD12	77:t:113:LEU:O	2.18	0.44
80:w:97:VAL:O	80:w:100:VAL:HG12	2.18	0.44
6:5:7:TRP:NE1	60:c:1244:A:OP1	2.51	0.44
7:6:31:LYS:NZ	60:c:544:A:O3'	2.51	0.44
10:A:20:ALA:HA	10:A:84:LEU:HD23	1.99	0.44
11:AA:817:A2M:HM'3	11:AA:920:A:C4	2.53	0.44
11:AA:830:A:H2'	11:AA:831:G:O4'	2.18	0.44
11:AA:900:G:H1'	11:AA:1589:A:H61	1.82	0.44

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1717:U:H2'	11:AA:1718:G:H8	1.82	0.44
11:AA:2352:A:H5''	12:B:83:TRP:O	2.17	0.44
16:CC:25:G:N7	34:K:13:ARG:NH1	2.57	0.44
17:Cc:67:C:H2'	17:Cc:68:C:C6	2.53	0.44
29:HH:95:TRP:CZ2	29:HH:161:GLY:HA2	2.53	0.44
35:KK:230:LYS:HB3	35:KK:230:LYS:HE2	1.69	0.44
38:M:139:ARG:HH21	43:OO:163:GLY:HA2	1.83	0.44
39:MM:142:ASP:CG	39:MM:178:ARG:HH22	2.26	0.44
60:c:647:G:H2'	60:c:648:G:H8	1.83	0.44
60:c:1146:G:H2'	60:c:1147:A:C8	2.52	0.44
60:c:1178:G:H5'	60:c:1190:C:H42	1.83	0.44
64:g:40:ARG:NE	80:w:110:PRO:HG3	2.33	0.44
66:i:58:LEU:HD12	66:i:138:THR:HG22	1.99	0.44
71:n:24:LYS:HD2	71:n:63:TYR:CZ	2.52	0.44
78:u:108:LYS:HE2	78:u:108:LYS:HA	1.99	0.44
6:5:11:PRO:HB3	6:5:13:ARG:NH1	2.33	0.44
8:7:123:ILE:HG22	8:7:133:VAL:HB	1.99	0.44
8:7:216:LYS:HE2	77:t:25:THR:HG23	2.00	0.44
11:AA:271:C:O2	52:U:82:ARG:NH2	2.43	0.44
11:AA:506:U:H2'	11:AA:507:U:O4'	2.18	0.44
11:AA:595:G:OP1	33:JJ:33:ARG:NH2	2.50	0.44
11:AA:612:U:H2'	11:AA:613:G:C8	2.53	0.44
11:AA:1478:C:H2'	11:AA:1479:U:H6	1.83	0.44
11:AA:2186:U:OP2	22:EE:200:ARG:HD2	2.17	0.44
11:AA:2407:C:H2'	11:AA:2408:U:C6	2.53	0.44
12:B:47:TYR:OH	12:B:57:ALA:O	2.35	0.44
18:D:98:ARG:O	18:D:101:VAL:HG22	2.17	0.44
25:FF:67:PHE:HA	25:FF:70:ARG:HG3	2.00	0.44
32:J:59:SER:OG	32:J:101:GLU:OE1	2.25	0.44
38:M:7:LYS:HA	38:M:7:LYS:HD3	1.79	0.44
60:c:534:A:H2'	60:c:535:A:O4'	2.18	0.44
60:c:909:U:H2'	60:c:910:C:C6	2.53	0.44
60:c:1382:A:O2'	60:c:1383:G:H8	2.00	0.44
60:c:1561:U:H4'	60:c:1599:C:H4'	2.00	0.44
70:m:93:LEU:HA	70:m:96:VAL:HB	2.00	0.44
77:t:94:SER:O	77:t:96:SER:N	2.51	0.44
5:4:45:LYS:HE3	66:i:145:ASP:HB3	2.00	0.43
7:6:20:LYS:HA	7:6:20:LYS:HD2	1.80	0.43
11:AA:1228:C:H2'	11:AA:1229:G:C8	2.53	0.43
11:AA:1240:A:OP1	23:Ee:92:ARG:NH1	2.37	0.43
11:AA:1447:G:N7	12:B:25:SER:OG	2.43	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:1506:A:H1'	11:AA:1848:G:C6	2.53	0.43
11:AA:2619:OMG:HM23	11:AA:2619:OMG:H1'	1.66	0.43
11:AA:3231:U:H2'	11:AA:3232:G:H8	1.83	0.43
11:AA:3358:U:H2'	11:AA:3359:A:C8	2.51	0.43
18:D:105:LEU:HD13	18:D:135:LYS:HE3	2.00	0.43
28:H:18:PRO:HA	28:H:51:ALA:HA	2.00	0.43
31:II:100:LYS:NZ	31:II:133:GLU:OE2	2.44	0.43
39:MM:212:GLU:HG3	39:MM:213:PHE:CD2	2.53	0.43
43:OO:90:ALA:HB1	43:OO:95:ILE:HB	1.98	0.43
43:OO:122:LYS:HZ3	51:T:120:ALA:HA	1.82	0.43
60:c:874:C:H2'	60:c:875:G:C8	2.53	0.43
60:c:876:G:H2'	60:c:936:G:N2	2.33	0.43
60:c:1284:C:OP2	60:c:1623:C:H5''	2.18	0.43
62:e:136:ARG:HG2	62:e:138:PHE:CZ	2.53	0.43
68:k:127:GLU:O	68:k:130:VAL:O	2.36	0.43
10:A:65:ASN:HB3	10:A:68:ARG:HD2	2.00	0.43
11:AA:144:A:H2'	11:AA:145:G:O4'	2.19	0.43
11:AA:435:C:H2'	11:AA:436:A:H8	1.83	0.43
11:AA:612:U:H2'	11:AA:613:G:H8	1.83	0.43
11:AA:879:U:H3'	11:AA:880:G:H5'	1.99	0.43
11:AA:1323:G:O3'	21:E:2:ALA:HA	2.17	0.43
11:AA:1463:U:H2'	11:AA:1464:G:O4'	2.17	0.43
11:AA:1895:A:O2'	11:AA:3053:G:H4'	2.18	0.43
11:AA:3164:C:H2'	11:AA:3165:A:H8	1.83	0.43
17:Cc:8:U:O2'	17:Cc:22:A:N1	2.41	0.43
18:D:116:ASP:OD1	18:D:118:HIS:N	2.50	0.43
23:Ee:38:SER:O	23:Ee:42:VAL:HG23	2.19	0.43
23:Ee:75:PRO:HG2	23:Ee:119:LYS:HE2	1.99	0.43
24:F:52:MET:HG2	24:F:53:PRO:HD2	2.00	0.43
25:FF:19:ARG:HB2	25:FF:232:ARG:NH2	2.33	0.43
27:GG:181:VAL:O	27:GG:182:LEU:HB2	2.18	0.43
39:MM:47:PRO:HB3	39:MM:171:TRP:CZ2	2.53	0.43
39:MM:48:LEU:O	39:MM:139:ARG:HA	2.17	0.43
41:NN:106:ILE:HG12	41:NN:127:PHE:HE1	1.83	0.43
50:S:8:ARG:HD2	50:S:32:ALA:O	2.18	0.43
60:c:604:A:H2'	60:c:605:A:O4'	2.18	0.43
60:c:1298:U:O3'	63:f:212:LYS:NZ	2.51	0.43
60:c:1552:U:H2'	60:c:1553:G:O4'	2.18	0.43
62:e:157:GLN:C	62:e:159:SER:H	2.26	0.43
67:j:33:GLY:HA2	67:j:51:LYS:HE3	1.99	0.43
69:l:41:LYS:HA	69:l:59:ARG:O	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
69:l:116:HIS:HD1	69:l:117:TYR:HE1	1.64	0.43
78:u:14:ILE:HD12	78:u:14:ILE:O	2.18	0.43
1:0:51:GLU:H	1:0:51:GLU:CD	2.26	0.43
2:1:81:ARG:NH2	60:c:1532:U:OP1	2.51	0.43
10:A:11:GLY:O	10:A:14:HIS:HB2	2.18	0.43
11:AA:262:U:H2'	11:AA:263:C:O4'	2.18	0.43
11:AA:422:A:N1	11:AA:2362:C:O2'	2.47	0.43
11:AA:1024:G:H1'	11:AA:1029:G:N1	2.33	0.43
11:AA:1276:U:H2'	11:AA:1277:C:H6	1.83	0.43
11:AA:1332:A:H2'	11:AA:1333:C:H6	1.82	0.43
11:AA:1517:G:OP1	55:X:22:PRO:HG3	2.19	0.43
11:AA:2714:G:H8	11:AA:2751:G:H2'	1.82	0.43
11:AA:2812:C:H2'	11:AA:2813:A:H8	1.82	0.43
11:AA:3186:A:OP1	21:E:154:HIS:ND1	2.50	0.43
11:AA:3271:G:C4	31:II:108:LYS:HD3	2.53	0.43
11:AA:3333:G:N2	11:AA:3369:G:O2'	2.51	0.43
13:BB:87:G:OP1	33:JJ:218:ARG:NE	2.51	0.43
15:C:70:ALA:O	15:C:73:GLN:HB2	2.18	0.43
27:GG:346:LYS:HD2	27:GG:346:LYS:HA	1.65	0.43
47:Q:32:TRP:CZ2	47:Q:53:PRO:HD2	2.53	0.43
54:W:36:LYS:HA	54:W:37:PRO:HD3	1.74	0.43
60:c:85:A:N3	60:c:148:A:O2'	2.48	0.43
60:c:1626:U:H2'	60:c:1627:U:C6	2.54	0.43
61:d:4:PRO:HD2	61:d:7:PHE:CD2	2.54	0.43
77:t:25:THR:O	77:t:31:ASN:ND2	2.42	0.43
79:v:10:ALA:O	79:v:63:ARG:NH2	2.51	0.43
4:3:3:LEU:HD12	82:y:22:LYS:HD3	2.00	0.43
11:AA:656:A:H2'	11:AA:657:A:H8	1.82	0.43
11:AA:2961:G:H2'	11:AA:2962:U:H6	1.81	0.43
19:DD:48:ARG:HH12	19:DD:99:VAL:HG21	1.83	0.43
27:GG:23:PRO:HD2	27:GG:26:PHE:CD2	2.53	0.43
29:HH:160:PHE:HA	29:HH:163:LEU:HB3	1.99	0.43
29:HH:258:LYS:HD3	29:HH:258:LYS:HA	1.86	0.43
37:LL:81:GLY:HA3	37:LL:149:ASN:O	2.18	0.43
44:P:31:ARG:O	44:P:35:GLU:HG2	2.18	0.43
47:Q:63:THR:HA	47:Q:66:LEU:HD22	2.00	0.43
60:c:16:G:H2'	60:c:17:C:C6	2.53	0.43
60:c:341:A:H2'	60:c:342:C:C6	2.53	0.43
60:c:640:U:H2'	60:c:641:G:O4'	2.18	0.43
60:c:1189:A:N3	60:c:1194:A:O2'	2.44	0.43
60:c:1319:A:H2'	60:c:1320:U:O4'	2.18	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1508:U:H2'	60:c:1509:C:C6	2.54	0.43
62:e:135:LEU:HD23	62:e:217:LEU:HA	2.00	0.43
67:j:30:LYS:HD2	67:j:36:VAL:HG13	2.01	0.43
71:n:69:THR:O	71:n:73:VAL:HG23	2.19	0.43
80:w:88:LYS:C	80:w:89:ARG:HG2	2.43	0.43
1:0:16:PRO:CD	65:h:95:THR:HG22	2.48	0.43
3:2:88:SER:O	3:2:92:ARG:HG3	2.18	0.43
7:6:37:ARG:O	7:6:41:THR:HG23	2.18	0.43
8:7:31:ASN:CA	8:7:47:LEU:HB2	2.48	0.43
10:A:130:LYS:HB3	10:A:133:ARG:HG2	2.01	0.43
11:AA:371:G:H4'	11:AA:396:A:N1	2.33	0.43
11:AA:411:U:H2'	11:AA:412:G:H8	1.83	0.43
11:AA:1660:C:H2'	11:AA:1661:G:H8	1.84	0.43
11:AA:2185:G:H5'	22:EE:219:ILE:HD11	2.00	0.43
11:AA:2230:C:H2'	11:AA:2231:C:O4'	2.18	0.43
11:AA:2312:A:OP1	11:AA:2314:U:H5	2.01	0.43
11:AA:2476:C:C2'	11:AA:2477:G:H4'	2.48	0.43
17:Cc:10:G:H2'	17:Cc:11:A:C8	2.54	0.43
17:Cc:10:G:H2'	17:Cc:11:A:H8	1.83	0.43
60:c:1278:G:H2'	60:c:1279:C:O4'	2.18	0.43
60:c:1516:A:O2'	60:c:1517:U:H5'	2.18	0.43
66:i:172:ILE:O	66:i:176:THR:OG1	2.34	0.43
68:k:27:LEU:O	68:k:31:SER:OG	2.28	0.43
68:k:73:VAL:HG13	68:k:77:LEU:HD22	2.00	0.43
70:m:84:GLY:HA3	70:m:107:ARG:HE	1.82	0.43
72:o:14:GLN:HB3	72:o:54:ILE:HG13	2.00	0.43
74:q:86:THR:HB	74:q:91:THR:HG22	2.01	0.43
4:3:32:PHE:CE1	73:p:61:THR:HG22	2.54	0.43
11:AA:810:A:H2'	11:AA:811:U:C6	2.54	0.43
11:AA:2341:A:O3'	11:AA:3090:U:H4'	2.18	0.43
11:AA:2659:G:H4'	11:AA:2751:G:O2'	2.19	0.43
11:AA:2922:OMG:H1'	11:AA:2951:G:N3	2.33	0.43
19:DD:64:ARG:HG3	19:DD:77:LEU:HD11	2.00	0.43
35:KK:226:TYR:HA	35:KK:229:VAL:HG22	2.00	0.43
38:M:28:HIS:CD2	38:M:32:ARG:HG2	2.54	0.43
39:MM:206:LEU:O	39:MM:210:ILE:HG12	2.18	0.43
43:OO:62:THR:O	43:OO:62:THR:OG1	2.33	0.43
44:P:46:THR:OG1	44:P:91:SER:OG	2.26	0.43
66:i:26:ALA:HB3	76:s:28:LEU:HB2	2.00	0.43
66:i:133:VAL:HG22	66:i:198:LEU:HD13	2.01	0.43
67:j:155:ASP:OD1	67:j:156:PHE:N	2.49	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
76:s:101:SER:O	76:s:105:LEU:HG	2.19	0.43
78:u:102:ALA:C	78:u:104:ASN:H	2.27	0.43
11:AA:26:A:H2'	11:AA:27:C:H6	1.83	0.43
11:AA:327:A:OP2	43:OO:31:LYS:NZ	2.47	0.43
11:AA:897:U:H2'	11:AA:898:OMU:H6	2.01	0.43
11:AA:908:OMG:HM21	11:AA:2608:G:O3'	2.19	0.43
11:AA:1257:C:H5''	23:Ee:123:ARG:HG2	2.01	0.43
11:AA:1472:U:H5''	18:D:24:LEU:HD12	2.01	0.43
11:AA:2419:A:H2'	11:AA:2420:C:H6	1.82	0.43
11:AA:2599:U:H2'	11:AA:2600:C:C6	2.54	0.43
14:Bb:41:U:H5'	14:Bb:42:G:OP2	2.19	0.43
37:LL:93:VAL:O	37:LL:177:ASP:HA	2.17	0.43
48:QQ:9:GLU:HB3	52:U:44:VAL:HG21	2.00	0.43
52:U:71:LYS:HE2	52:U:71:LYS:HB3	1.66	0.43
54:W:5:ILE:HD11	54:W:11:PHE:HD1	1.84	0.43
60:c:412:A:O2'	60:c:413:U:H5'	2.18	0.43
60:c:902:G:N1	74:q:51:ASP:OD1	2.34	0.43
60:c:1188:G:O2'	60:c:1430:U:OP1	2.28	0.43
60:c:1294:G:O2'	60:c:1321:A:N1	2.41	0.43
60:c:1334:U:O2'	80:w:85:ARG:NH2	2.51	0.43
62:e:34:ALA:HB1	62:e:86:LEU:HD13	2.01	0.43
62:e:119:THR:HG21	62:e:161:ILE:HD11	2.00	0.43
68:k:74:GLN:HA	68:k:77:LEU:HD23	2.00	0.43
2:1:96:SER:HB3	60:c:1530:C:OP2	2.18	0.43
4:3:47:PHE:CD2	73:p:55:ARG:HD2	2.54	0.43
8:7:48:THR:HG22	8:7:55:GLY:N	2.34	0.43
11:AA:165:A:H2'	11:AA:166:C:C6	2.54	0.43
11:AA:785:G:OP2	15:C:63:SER:OG	2.26	0.43
11:AA:1915:A:H2'	11:AA:1916:U:H6	1.82	0.43
11:AA:2193:U:O2'	11:AA:2313:A:OP2	2.23	0.43
11:AA:2660:G:OP1	11:AA:2750:U:O2'	2.36	0.43
11:AA:2820:A:C2	46:Pp:1:MET:HA	2.53	0.43
16:CC:69:U:H2'	16:CC:70:G:O4'	2.19	0.43
17:Cc:76:C:H2'	17:Cc:77:A:H4'	2.01	0.43
24:F:73:GLY:HA2	24:F:89:LEU:O	2.19	0.43
29:HH:120:LYS:HD3	29:HH:120:LYS:HA	1.87	0.43
60:c:30:G:H2'	60:c:31:C:H6	1.82	0.43
60:c:184:C:H2'	60:c:185:U:C6	2.54	0.43
60:c:201:G:H2'	60:c:202:A:C8	2.54	0.43
60:c:338:C:H2'	60:c:339:C:C6	2.53	0.43
60:c:1008:G:H2'	60:c:1009:U:C6	2.54	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1277:G:O3'	64:g:183:GLY:HA3	2.19	0.43
62:e:125:VAL:O	62:e:136:ARG:HA	2.18	0.43
70:m:110:GLN:NE2	70:m:126:ARG:HB2	2.34	0.43
74:q:137:LEU:O	88:q:301:HOH:O	2.21	0.43
80:w:21:LYS:HG2	80:w:94:GLU:CG	2.49	0.43
2:l:97:LYS:NZ	60:c:1531:G:O6	2.52	0.43
3:2:7:SER:HB2	3:2:13:LYS:HE3	2.01	0.43
10:A:18:ARG:O	10:A:22:VAL:HG23	2.19	0.43
11:AA:195:U:H2'	11:AA:196:G:O4'	2.19	0.43
11:AA:230:U:H2'	11:AA:231:G:O4'	2.18	0.43
11:AA:546:C:C5	11:AA:547:G:H1'	2.54	0.43
11:AA:912:G:H2'	11:AA:914:A:N7	2.34	0.43
11:AA:1282:G:C4	11:AA:1283:C:C5	3.07	0.43
11:AA:1503:A:C4	11:AA:1504:A:C8	3.07	0.43
11:AA:1572:U:H2'	11:AA:1573:G:H8	1.84	0.43
11:AA:2361:A:H2'	11:AA:2362:C:C6	2.53	0.43
11:AA:2711:C:O2'	11:AA:2744:U:OP1	2.33	0.43
11:AA:3185:U:O2'	21:E:170:THR:OG1	2.34	0.43
18:D:155:LEU:HD22	18:D:155:LEU:HA	1.90	0.43
19:DD:146:ALA:O	19:DD:149:THR:N	2.52	0.43
26:G:55:THR:HG23	26:G:66:VAL:HB	2.01	0.43
38:M:79:TRP:O	38:M:87:ARG:NE	2.52	0.43
39:MM:200:LEU:HB2	39:MM:213:PHE:CG	2.54	0.43
51:T:71:LYS:HE3	51:T:71:LYS:HB3	1.74	0.43
53:V:25:ARG:HD3	55:X:50:ASN:O	2.19	0.43
53:V:39:TYR:CD1	53:V:40:PRO:HA	2.54	0.43
60:c:10:G:OP1	60:c:1633:A:O2'	2.31	0.43
60:c:29:U:H2'	60:c:30:G:C8	2.54	0.43
60:c:130:C:H4'	60:c:176:C:H5'	2.01	0.43
60:c:263:C:H2'	60:c:264:G:O4'	2.19	0.43
60:c:448:C:H2'	60:c:449:C:H6	1.83	0.43
60:c:1513:G:H1'	60:c:1518:C:O2	2.19	0.43
60:c:1669:U:H2'	60:c:1670:G:O4'	2.18	0.43
69:l:159:GLN:HB3	69:l:164:ARG:O	2.19	0.43
72:o:19:ILE:HD12	72:o:34:TRP:HB2	2.00	0.43
74:q:19:ILE:O	74:q:83:ILE:HD12	2.19	0.43
76:s:114:ARG:O	76:s:115:THR:OG1	2.26	0.43
78:u:38:VAL:HB	78:u:101:LEU:HD21	2.00	0.43
7:6:37:ARG:HG3	70:m:123:HIS:NE2	2.34	0.43
8:7:157:VAL:HB	8:7:168:THR:HG23	2.01	0.43
10:A:138:LEU:HD12	10:A:138:LEU:HA	1.86	0.43

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:293:C:H2'	11:AA:294:U:O4'	2.19	0.43
11:AA:374:A:N3	11:AA:376:G:H5''	2.33	0.43
11:AA:640:U:H2'	11:AA:641:C:C6	2.54	0.43
11:AA:1167:U:OP1	88:AA:3710:HOH:O	2.21	0.43
11:AA:1551:C:O2'	11:AA:2170:U:O2'	2.25	0.43
11:AA:2532:U:H2'	11:AA:2533:G:H8	1.83	0.43
12:B:43:LYS:HB2	12:B:43:LYS:HE3	1.76	0.43
14:Bb:59:U:H2'	14:Bb:60:C:O4'	2.19	0.43
15:C:123:THR:OG1	15:C:125:ASP:OD1	2.23	0.43
18:D:47:ASN:C	18:D:47:ASN:OD1	2.61	0.43
19:DD:73:PHE:HA	19:DD:76:LEU:HD13	2.00	0.43
19:DD:95:GLU:HA	19:DD:98:ASN:OD1	2.19	0.43
22:EE:39:GLY:HA2	22:EE:93:LYS:HG2	2.01	0.43
29:HH:226:TYR:CE2	29:HH:236:LEU:HD11	2.54	0.43
35:KK:52:TRP:NE1	35:KK:60:ARG:HH12	2.17	0.43
36:L:70:PRO:HG3	36:L:115:LYS:HB2	2.00	0.43
38:M:146:GLU:CD	43:OO:157:ARG:HH22	2.26	0.43
60:c:446:A:C6	60:c:447:U:C4	3.06	0.43
60:c:1575:G7M:H2'	60:c:1576:A:C8	2.53	0.43
60:c:1739:C:H2'	60:c:1740:A:C8	2.54	0.43
61:d:112:THR:HG23	61:d:113:ARG:HG3	2.00	0.43
62:e:32:ILE:HD13	62:e:66:VAL:HG11	2.01	0.43
62:e:32:ILE:HB	62:e:43:VAL:HG22	2.00	0.43
82:y:111:MET:HE2	82:y:111:MET:HB3	1.84	0.43
83:z:89:ASN:HB2	83:z:92:CYS:SG	2.59	0.43
3:2:8:ASN:C	3:2:10:ARG:H	2.27	0.42
8:7:91:LEU:O	8:7:100:TYR:N	2.45	0.42
11:AA:671:U:H2'	11:AA:672:A:C8	2.54	0.42
11:AA:996:A:H2'	11:AA:997:A:O4'	2.19	0.42
11:AA:1109:U:H2'	11:AA:1110:U:O4'	2.19	0.42
11:AA:1135:A:H5'	40:N:7:HIS:O	2.19	0.42
11:AA:1207:G:O2'	11:AA:1209:G:OP2	2.30	0.42
11:AA:2160:G:H2'	11:AA:2161:G:C8	2.53	0.42
11:AA:3094:A:H2'	11:AA:3095:U:C6	2.54	0.42
12:B:62:ARG:HD2	12:B:63:PHE:CZ	2.53	0.42
15:C:176:ARG:N	38:M:51:GLY:HA2	2.34	0.42
17:Cc:24:C:H2'	17:Cc:25:U:H6	1.83	0.42
17:Cc:42:C:H2'	17:Cc:43:G:C8	2.54	0.42
41:NN:33:ALA:HB2	41:NN:123:PHE:CE1	2.54	0.42
41:NN:64:LYS:HB3	41:NN:64:LYS:HE2	1.88	0.42
60:c:269:G:H2'	60:c:270:C:C6	2.54	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:330:G:HO2'	69:l:33:PRO:HB3	1.84	0.42
60:c:331:A:H5'	69:l:33:PRO:HA	2.01	0.42
60:c:1117:U:H2'	60:c:1118:G:C8	2.54	0.42
60:c:1660:A:H2'	60:c:1661:U:C6	2.54	0.42
60:c:1772:C:H2'	60:c:1773:4AC:H6	2.00	0.42
63:f:58:LEU:HA	81:x:12:TYR:CE1	2.54	0.42
2:1:89:ILE:HD12	2:1:101:TYR:CD1	2.54	0.42
4:3:67:THR:HG22	4:3:68:GLY:N	2.33	0.42
9:8:135:HIS:HD1	9:8:138:ARG:HH11	1.65	0.42
10:A:22:VAL:HG21	10:A:120:VAL:HG11	2.01	0.42
11:AA:664:U:H5'	27:GG:107:ARG:HA	2.01	0.42
11:AA:1255:C:O2	23:Ee:131:GLU:HG2	2.19	0.42
11:AA:2469:G:C6	11:AA:2477:G:C8	3.07	0.42
11:AA:2477:G:H2'	11:AA:2488:A:C8	2.53	0.42
11:AA:2526:C:H2'	11:AA:2527:G:H8	1.85	0.42
11:AA:2561:A:H2'	11:AA:2562:A:C8	2.51	0.42
11:AA:2679:A:H62	41:NN:55:ARG:HH21	1.66	0.42
11:AA:2930:A:H2'	11:AA:2931:C:H6	1.84	0.42
11:AA:3332:U:H2'	11:AA:3333:G:O4'	2.19	0.42
12:B:119:VAL:HG22	12:B:146:ILE:HG23	2.01	0.42
15:C:166:LEU:HD11	43:OO:10:LEU:HD23	2.01	0.42
17:Cc:76:C:O2	58:a:55:LYS:HD3	2.20	0.42
19:DD:110:ARG:HD2	19:DD:110:ARG:HA	1.61	0.42
22:EE:10:LYS:HA	22:EE:16:PHE:CD2	2.54	0.42
22:EE:44:ILE:HD11	22:EE:85:GLY:HA2	2.01	0.42
22:EE:116:VAL:HB	22:EE:126:LEU:HB2	2.01	0.42
23:Ee:87:GLU:OE2	23:Ee:102:GLY:N	2.52	0.42
27:GG:59:GLN:O	53:V:52:LYS:NZ	2.40	0.42
38:M:100:PRO:HG2	38:M:123:VAL:HG22	2.00	0.42
59:b:89:MET:O	62:e:219:LYS:HE3	2.18	0.42
60:c:888:U:H2'	60:c:889:U:C6	2.54	0.42
60:c:1561:U:H2'	60:c:1562:G:C8	2.49	0.42
60:c:1648:A:H2'	60:c:1649:G:C8	2.54	0.42
60:c:1649:G:H2'	60:c:1650:U:C6	2.54	0.42
60:c:1674:C:P	67:j:92:ARG:HH12	2.40	0.42
60:c:1732:A:H2'	60:c:1733:C:C6	2.55	0.42
60:c:1753:A:H2'	60:c:1754:A:C8	2.53	0.42
69:l:37:LYS:H	69:l:59:ARG:H	1.67	0.42
77:t:89:SER:C	77:t:91:LEU:N	2.75	0.42
83:z:68:ILE:C	83:z:68:ILE:HD12	2.44	0.42
83:z:135:LEU:HD21	83:z:142:LYS:N	2.34	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:38:ARG:HH12	77:t:27:ASP:CG	2.28	0.42
8:7:47:LEU:HD11	8:7:302:PHE:HE2	1.84	0.42
11:AA:1097:G:O2'	24:F:108:ARG:NH2	2.48	0.42
11:AA:1279:C:H2'	11:AA:1280:C:H6	1.84	0.42
11:AA:1284:C:H2'	11:AA:1285:G:N9	2.33	0.42
11:AA:1472:U:H5'	18:D:4:LEU:HB2	2.02	0.42
11:AA:1475:A:H4'	44:P:57:GLN:HG2	2.00	0.42
11:AA:1660:C:H2'	11:AA:1661:G:C8	2.54	0.42
11:AA:1694:U:O2'	11:AA:1695:U:H5'	2.19	0.42
11:AA:1914:G:O2'	18:D:82:LYS:O	2.31	0.42
11:AA:2222:A:H2'	11:AA:2223:A:C8	2.55	0.42
11:AA:2883:U:H2'	11:AA:2884:C:H6	1.82	0.42
11:AA:2890:A:O2'	11:AA:2933:A:N3	2.49	0.42
11:AA:3084:C:O2'	11:AA:3332:U:OP1	2.37	0.42
87:AA:3620:SPD:H41	87:AA:3620:SPD:H71	1.84	0.42
14:Bb:44:A:H2'	14:Bb:45:G:O4'	2.19	0.42
16:CC:56:G:H2'	16:CC:57:C:O4'	2.20	0.42
17:Cc:69:C:H2'	17:Cc:70:C:C6	2.54	0.42
19:DD:146:ALA:O	19:DD:147:ARG:HG2	2.18	0.42
29:HH:189:GLU:OE1	29:HH:189:GLU:N	2.52	0.42
60:c:901:G:H2'	60:c:902:G:C8	2.54	0.42
60:c:1175:U:H2'	60:c:1176:G:H8	1.82	0.42
60:c:1438:G:H2'	60:c:1439:C:C6	2.54	0.42
61:d:134:LYS:HB3	61:d:134:LYS:HE2	1.68	0.42
64:g:23:GLU:O	64:g:27:ARG:HG3	2.19	0.42
64:g:50:ILE:HD11	64:g:86:LEU:HD22	2.00	0.42
77:t:24:LEU:HD13	77:t:34:LEU:HD23	2.00	0.42
2:1:60:VAL:HB	2:1:101:TYR:HB2	2.01	0.42
8:7:44:SER:HB3	8:7:61:PHE:HE1	1.84	0.42
8:7:264:SER:O	8:7:268:GLN:HA	2.20	0.42
10:A:113:ASP:OD1	10:A:113:ASP:N	2.52	0.42
11:AA:388:G:H4'	12:B:18:ARG:O	2.19	0.42
11:AA:915:A:H8	11:AA:2136:C:O2'	2.02	0.42
11:AA:2361:A:H2'	11:AA:2362:C:H6	1.84	0.42
11:AA:2684:C:H2'	11:AA:2685:C:C6	2.54	0.42
11:AA:3065:G:H2'	11:AA:3066:U:C6	2.53	0.42
16:CC:10:A:H2'	16:CC:11:C:C6	2.55	0.42
17:Cc:67:C:H2'	17:Cc:68:C:H6	1.84	0.42
19:DD:45:LEU:HD22	19:DD:49:ALA:HB3	2.01	0.42
20:Dd:15:G:H22	74:q:52:ARG:HH22	1.68	0.42
22:EE:68:LYS:HD3	22:EE:70:ARG:HD3	2.00	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
27:GG:22:LEU:HA	27:GG:23:PRO:HD3	1.83	0.42
31:II:30:LEU:H	31:II:30:LEU:HD23	1.84	0.42
35:KK:128:LYS:HZ1	35:KK:202:GLU:CD	2.24	0.42
39:MM:49:CYS:HB3	39:MM:168:SER:HB3	2.01	0.42
41:NN:23:VAL:HG12	41:NN:25:GLU:H	1.84	0.42
52:U:47:ILE:HG13	52:U:48:ALA:N	2.35	0.42
60:c:246:G:N1	72:o:66:ILE:O	2.50	0.42
60:c:399:A:H4'	65:h:3:ARG:HG2	2.01	0.42
60:c:1333:C:H2'	60:c:1334:U:H6	1.85	0.42
60:c:1735:U:H2'	60:c:1736:G:H8	1.84	0.42
64:g:133:GLY:HA3	64:g:156:PHE:O	2.20	0.42
66:i:222:LYS:HG2	66:i:225:ARG:NH2	2.34	0.42
70:m:107:ARG:HA	70:m:107:ARG:HD2	1.82	0.42
71:n:84:GLU:N	71:n:84:GLU:OE1	2.52	0.42
75:r:59:LYS:HG2	75:r:62:ALA:HB3	2.01	0.42
76:s:59:LYS:HG3	76:s:59:LYS:O	2.18	0.42
79:v:128:GLY:O	79:v:132:LEU:HD23	2.19	0.42
81:x:51:VAL:HG21	81:x:78:LEU:HD21	2.01	0.42
1:O:22:GLN:NE2	65:h:53:LYS:O	2.51	0.42
2:1:85:LYS:HD2	2:1:86:GLU:OE1	2.18	0.42
11:AA:1782:U:H2'	11:AA:1783:U:O4'	2.19	0.42
11:AA:2451:G:H2'	11:AA:2452:G:H8	1.84	0.42
11:AA:2453:U:H5''	11:AA:2461:A:H5''	2.01	0.42
11:AA:2667:A:H2'	11:AA:2668:U:O4'	2.20	0.42
11:AA:2726:C:O2'	11:AA:2727:A:H2'	2.20	0.42
11:AA:3033:A:H2'	11:AA:3034:C:H6	1.84	0.42
11:AA:3306:U:H2'	11:AA:3307:A:H5''	2.00	0.42
19:DD:73:PHE:HD1	19:DD:76:LEU:HD22	1.84	0.42
22:EE:181:LYS:HB2	22:EE:184:ARG:HG3	2.02	0.42
23:Ee:127:SER:O	23:Ee:131:GLU:HG3	2.18	0.42
27:GG:233:LEU:HD23	27:GG:233:LEU:HA	1.90	0.42
44:P:11:GLU:O	44:P:106:THR:HA	2.19	0.42
60:c:472:U:H2'	60:c:473:A:C8	2.55	0.42
60:c:567:A:H5''	83:z:70:LYS:HZ3	1.84	0.42
60:c:1374:C:H2'	60:c:1375:A:C8	2.55	0.42
60:c:1479:A:H5''	79:v:60:SER:HB2	2.01	0.42
62:e:62:LYS:NZ	62:e:90:GLU:OE2	2.52	0.42
64:g:33:GLY:O	64:g:53:THR:HG23	2.18	0.42
67:j:57:ASP:HB3	67:j:98:ARG:HG3	2.00	0.42
68:k:81:LEU:HD23	68:k:85:PHE:HZ	1.85	0.42
69:l:84:HIS:HD1	69:l:86:SER:H	1.67	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
77:t:59:LYS:O	77:t:63:LYS:HD2	2.20	0.42
1:0:7:ILE:HD13	1:0:40:LEU:HD23	2.00	0.42
11:AA:235:A:H2'	11:AA:236:G:H8	1.83	0.42
11:AA:266:A:H2'	52:U:30:LYS:HE3	2.00	0.42
11:AA:1060:U:O2	24:F:101:CYS:HB2	2.19	0.42
11:AA:1784:G:H2'	11:AA:1785:U:O4'	2.19	0.42
11:AA:2148:U:H2'	11:AA:2149:A:C5	2.55	0.42
11:AA:2219:A:H2'	11:AA:2220:A2M:C8	2.48	0.42
11:AA:2568:C:O2'	11:AA:2569:A:O5'	2.38	0.42
11:AA:3286:G:H2'	11:AA:3287:U:C6	2.55	0.42
15:C:178:ARG:HD2	15:C:178:ARG:HA	1.88	0.42
21:E:167:ARG:HA	21:E:167:ARG:HD3	1.90	0.42
25:FF:236:LYS:HB2	25:FF:236:LYS:HE2	1.85	0.42
27:GG:58:HIS:NE2	27:GG:98:ARG:HD3	2.35	0.42
28:H:125:LEU:HA	28:H:125:LEU:HD23	1.78	0.42
37:LL:41:ILE:HD12	37:LL:71:VAL:CG2	2.49	0.42
38:M:94:ALA:HB2	38:M:121:VAL:HG22	2.02	0.42
58:a:7:THR:HA	58:a:23:HIS:O	2.19	0.42
60:c:5:U:H2'	60:c:6:G:H8	1.84	0.42
60:c:762:A:C8	60:c:789:A:N6	2.88	0.42
60:c:1259:U:H2'	60:c:1260:U:C6	2.55	0.42
61:d:107:PHE:HB3	61:d:139:VAL:HG21	2.02	0.42
65:h:118:GLU:HA	65:h:121:TYR:CE1	2.55	0.42
67:j:52:ILE:HG12	67:j:109:LEU:HD21	2.02	0.42
71:n:3:MET:SD	71:n:8:ARG:NE	2.93	0.42
78:u:33:THR:HG22	78:u:39:GLY:C	2.45	0.42
8:7:9:LEU:HD23	8:7:9:LEU:HA	1.88	0.42
8:7:123:ILE:HD12	8:7:123:ILE:O	2.18	0.42
11:AA:191:U:H2'	11:AA:192:C:C6	2.55	0.42
11:AA:873:C:H5''	11:AA:874:U:O5'	2.19	0.42
11:AA:1630:U:H5''	11:AA:1813:A:N6	2.35	0.42
11:AA:2416:U:H2'	11:AA:2417:OMU:C6	2.50	0.42
11:AA:2914:G:H5''	25:FF:9:PRO:HG3	2.02	0.42
23:Ee:110:ILE:HD13	23:Ee:163:PRO:HD2	2.01	0.42
25:FF:51:ALA:CB	25:FF:317:ILE:HD11	2.50	0.42
27:GG:180:LYS:HE2	27:GG:180:LYS:HB3	1.77	0.42
28:H:72:LYS:HE3	28:H:72:LYS:HB3	1.70	0.42
29:HH:128:GLU:O	29:HH:164:LYS:NZ	2.51	0.42
48:QQ:183:THR:HG22	48:QQ:187:ARG:HB2	2.02	0.42
49:R:49:ILE:HD11	49:R:71:VAL:HG22	2.02	0.42
60:c:156:A:H2'	60:c:157:A:O4'	2.19	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:817:A:H2'	60:c:818:C:H6	1.83	0.42
60:c:1587:A:H2'	60:c:1588:G:C8	2.54	0.42
60:c:1587:A:H2'	60:c:1588:G:H8	1.84	0.42
60:c:1739:C:H2'	60:c:1740:A:H8	1.85	0.42
73:p:108:ASP:HB3	73:p:111:ALA:HB3	2.00	0.42
77:t:23:LYS:HA	77:t:23:LYS:HD2	1.78	0.42
10:A:110:PRO:N	10:A:111:PRO:HD2	2.34	0.42
11:AA:99:A:H1'	11:AA:281:G:N7	2.35	0.42
11:AA:169:U:H4'	43:OO:128:ARG:NH1	2.34	0.42
11:AA:210:U:C2	11:AA:230:U:H4'	2.54	0.42
11:AA:649:A2M:HM'3	11:AA:649:A2M:H1'	1.84	0.42
11:AA:698:U:H2'	11:AA:699:A:O4'	2.20	0.42
11:AA:1624:G:C4	11:AA:1625:A:C8	3.08	0.42
11:AA:2148:U:H2'	11:AA:2149:A:C8	2.55	0.42
11:AA:2152:A:H2'	11:AA:2153:U:C6	2.52	0.42
11:AA:2509:U:H2'	11:AA:2510:U:O4'	2.20	0.42
11:AA:2836:C:H5	11:AA:2852:C:N4	2.13	0.42
11:AA:2854:U:OP1	39:MM:61:SER:OG	2.34	0.42
18:D:176:ARG:HD2	18:D:176:ARG:C	2.45	0.42
19:DD:46:ARG:CZ	23:Ee:123:ARG:HA	2.50	0.42
29:HH:234:ASP:OD1	29:HH:234:ASP:N	2.52	0.42
38:M:69:TRP:CE3	43:OO:64:LYS:HA	2.55	0.42
42:O:14:LEU:O	42:O:18:ILE:HG12	2.20	0.42
55:X:28:ARG:HA	55:X:33:ASN:CG	2.44	0.42
60:c:19:A:H2'	60:c:20:G:O4'	2.19	0.42
60:c:121:U:H2'	60:c:122:U:C6	2.54	0.42
60:c:200:A:H2'	60:c:201:G:C8	2.55	0.42
60:c:514:G:N3	60:c:515:A:C8	2.88	0.42
60:c:1097:U:H5''	60:c:1099:U:O4'	2.19	0.42
60:c:1164:G:O2'	60:c:1612:U:O2	2.34	0.42
62:e:82:ARG:HG2	62:e:105:PHE:CE1	2.55	0.42
63:f:229:LEU:O	81:x:16:LYS:NZ	2.42	0.42
64:g:45:LYS:HD2	64:g:85:VAL:HG21	2.01	0.42
64:g:137:VAL:HG22	64:g:151:LYS:HG2	2.01	0.42
77:t:17:ILE:HG13	77:t:58:MET:HE2	2.01	0.42
1:0:34:ASN:HD21	60:c:522:U:H1'	1.85	0.42
4:3:41:LEU:HD23	4:3:41:LEU:HA	1.92	0.42
5:4:11:LYS:HA	5:4:53:ILE:HA	2.01	0.42
8:7:42:LEU:HB2	8:7:61:PHE:HB2	2.02	0.42
11:AA:1791:C:H2'	11:AA:1792:C:C6	2.54	0.42
11:AA:2813:A:H2'	11:AA:2814:G:O4'	2.20	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:3083:G:H2'	11:AA:3084:C:O4'	2.20	0.42
15:C:99:THR:O	15:C:119:GLY:HA3	2.20	0.42
17:Cc:15:G:H2'	17:Cc:60:A:N1	2.35	0.42
19:DD:104:ARG:HB3	19:DD:182:THR:OG1	2.19	0.42
25:FF:147:GLU:O	25:FF:151:ILE:HG13	2.20	0.42
25:FF:284:ARG:NH1	25:FF:293:ASN:O	2.52	0.42
28:H:117:PRO:HG3	30:I:26:SER:HA	2.01	0.42
29:HH:83:LEU:HB3	29:HH:88:ILE:HB	2.01	0.42
35:KK:255:SER:O	35:KK:255:SER:OG	2.37	0.42
39:MM:184:LYS:HB3	39:MM:190:VAL:HG23	2.01	0.42
52:U:98:ARG:O	52:U:100:HIS:ND1	2.52	0.42
58:a:8:ARG:HG2	58:a:72:LEU:HD13	2.02	0.42
60:c:541:A2M:HM'2	60:c:541:A2M:H1'	1.81	0.42
60:c:1566:U:H5''	78:u:39:GLY:H	1.85	0.42
61:d:126:PRO:HB2	61:d:152:PRO:HG2	2.02	0.42
61:d:150:ASP:OD2	61:d:165:ARG:NH2	2.47	0.42
64:g:148:LYS:H	64:g:148:LYS:HG2	1.65	0.42
65:h:141:THR:OG1	65:h:143:ASP:OD1	2.25	0.42
72:o:84:ILE:HG21	72:o:117:VAL:HG21	2.02	0.42
3:2:9:GLY:HA3	60:c:1795:U:O4	2.20	0.42
5:4:52:ASP:OD1	66:i:164:PRO:HG2	2.19	0.42
8:7:122:ILE:HD12	8:7:122:ILE:C	2.45	0.42
8:7:283:LYS:HA	8:7:283:LYS:HD2	1.79	0.42
11:AA:591:G:N3	31:II:18:LEU:HD22	2.35	0.42
11:AA:1283:C:C4	11:AA:1284:C:C4	3.08	0.42
11:AA:1378:U:H2'	11:AA:1379:G:H8	1.84	0.42
11:AA:1744:G:H2'	11:AA:1745:C:C6	2.55	0.42
11:AA:1836:C:O2'	11:AA:1842:A:N1	2.44	0.42
11:AA:2225:U:H2'	11:AA:2226:U:C6	2.55	0.42
11:AA:2640:A2M:HM'3	11:AA:2640:A2M:H1'	1.77	0.42
11:AA:2673:A:OP1	41:NN:95:ASN:ND2	2.48	0.42
11:AA:2773:C:C2	11:AA:2774:C:C5	3.08	0.42
11:AA:2966:G:H2'	11:AA:2967:A:C8	2.55	0.42
11:AA:3280:U:O2'	11:AA:3281:U:H5'	2.20	0.42
11:AA:3335:A:H2'	11:AA:3336:A:C8	2.55	0.42
13:BB:64:A:N7	39:MM:209:ASN:ND2	2.59	0.42
16:CC:46:G:O2'	16:CC:61:A:N1	2.48	0.42
17:Cc:39:A:O3'	60:c:1001:A:H5'	2.20	0.42
19:DD:48:ARG:NH1	19:DD:99:VAL:HG21	2.35	0.42
19:DD:80:VAL:HG23	19:DD:84:VAL:HG23	2.02	0.42
21:E:73:LYS:NZ	21:E:97:VAL:O	2.51	0.42

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
23:Ee:125:LEU:O	23:Ee:129:THR:HG23	2.19	0.42
27:GG:11:LEU:HD13	27:GG:159:ILE:HD11	2.02	0.42
33:JJ:203:TRP:CD1	33:JJ:204:PRO:HD2	2.55	0.42
60:c:585:A:H2'	60:c:586:G:H8	1.83	0.42
60:c:978:A:H2'	60:c:979:A:O4'	2.19	0.42
60:c:1034:C:O2'	82:y:2:THR:N	2.48	0.42
60:c:1077:C:H2'	60:c:1078:C:H6	1.85	0.42
60:c:1208:A:H5'	60:c:1209:C:OP2	2.20	0.42
78:u:48:LYS:HB2	78:u:48:LYS:HE2	1.71	0.42
80:w:32:LYS:HG2	80:w:33:GLN:N	2.34	0.42
80:w:50:LEU:HD13	80:w:95:ALA:HB2	2.01	0.42
11:AA:1498:A:H2'	11:AA:1499:C:H6	1.84	0.41
11:AA:3251:U:H2'	11:AA:3252:G:C8	2.55	0.41
13:BB:91:G:H2'	13:BB:92:A:C8	2.55	0.41
18:D:167:ARG:HG2	18:D:167:ARG:NH1	2.35	0.41
19:DD:27:VAL:HG13	19:DD:86:PHE:CE1	2.55	0.41
22:EE:113:VAL:HG12	22:EE:166:ILE:HD13	2.01	0.41
22:EE:118:GLU:HG2	22:EE:156:LYS:HE3	2.02	0.41
26:G:29:ASP:HB3	26:G:32:SER:OG	2.20	0.41
26:G:35:LYS:HA	26:G:35:LYS:HD2	1.92	0.41
29:HH:218:ARG:HG2	29:HH:218:ARG:NH1	2.35	0.41
48:QQ:140:LYS:HD2	48:QQ:140:LYS:HA	1.75	0.41
60:c:40:A:H2'	60:c:41:A:O4'	2.20	0.41
60:c:407:A:H2'	60:c:408:C:H6	1.85	0.41
60:c:513:U:H1'	70:m:131:GLN:OE1	2.20	0.41
60:c:888:U:O2	60:c:988:A:O2'	2.38	0.41
60:c:1211:A:H2'	60:c:1212:G:O4'	2.20	0.41
60:c:1277:G:O2'	64:g:174:HIS:ND1	2.52	0.41
61:d:147:THR:O	61:d:161:PRO:HA	2.20	0.41
62:e:39:GLU:HB2	62:e:74:GLN:HA	2.01	0.41
64:g:132:LYS:HG2	64:g:156:PHE:CZ	2.55	0.41
69:l:104:ILE:HD12	69:l:109:PHE:CE2	2.55	0.41
70:m:127:VAL:O	70:m:131:GLN:HG3	2.20	0.41
7:6:40:TYR:CG	70:m:32:GLY:HA3	2.54	0.41
11:AA:149:U:P	48:QQ:49:ARG:HH12	2.42	0.41
11:AA:412:G:H2'	11:AA:413:U:C6	2.54	0.41
11:AA:608:A:OP1	27:GG:315:LYS:NZ	2.51	0.41
11:AA:655:C:H5''	47:Q:26:HIS:HB3	2.02	0.41
11:AA:1620:U:H2'	11:AA:1621:A:C8	2.55	0.41
11:AA:2220:A2M:HM'3	11:AA:2220:A2M:H1'	1.84	0.41
11:AA:2429:G:H2'	11:AA:2430:A:C8	2.55	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:2618:G:O2'	11:AA:2865:U:OP1	2.33	0.41
11:AA:3084:C:H2'	11:AA:3085:G:O4'	2.21	0.41
12:B:4:TYR:CZ	12:B:16:SER:HB3	2.55	0.41
19:DD:43:LYS:HA	19:DD:46:ARG:HG3	2.02	0.41
19:DD:76:LEU:HD11	19:DD:191:TYR:CD1	2.55	0.41
19:DD:92:PRO:HB2	19:DD:95:GLU:CG	2.49	0.41
25:FF:215:ILE:HD12	25:FF:338:LEU:HB3	2.01	0.41
36:L:68:ILE:O	36:L:115:LYS:HE2	2.20	0.41
36:L:89:VAL:HG12	36:L:92:PHE:CZ	2.56	0.41
41:NN:60:ARG:HD3	41:NN:63:GLU:OE1	2.20	0.41
60:c:78:A:C2	67:j:154:ARG:HD3	2.55	0.41
60:c:207:U:H2'	60:c:208:U:C6	2.56	0.41
60:c:872:G:H2'	60:c:873:U:O4'	2.20	0.41
60:c:890:C:H2'	60:c:891:A:C8	2.56	0.41
60:c:1001:A:HO2'	60:c:1002:G:P	2.43	0.41
60:c:1280:4AC:H5	60:c:1280:4AC:CM7	2.50	0.41
68:k:64:VAL:O	68:k:64:VAL:HG13	2.20	0.41
68:k:150:GLN:O	68:k:181:ILE:HG13	2.20	0.41
70:m:154:LYS:H	70:m:154:LYS:HG2	1.70	0.41
78:u:100:THR:OG1	78:u:105:VAL:HG22	2.20	0.41
1:0:32:ARG:NE	1:0:35:VAL:HG12	2.35	0.41
7:6:31:LYS:HD2	60:c:545:A:H2'	2.03	0.41
8:7:210:LEU:HD23	8:7:210:LEU:HA	1.93	0.41
11:AA:158:G:H2'	11:AA:159:A:H8	1.85	0.41
11:AA:307:A:H2'	11:AA:308:A:H8	1.81	0.41
11:AA:540:U:H2'	11:AA:541:U:H6	1.85	0.41
11:AA:542:G:C6	11:AA:550:A:C6	3.07	0.41
11:AA:1174:G:H1'	11:AA:1181:U:N3	2.35	0.41
11:AA:1234:G:OP2	11:AA:1235:U:H3'	2.21	0.41
11:AA:1595:U:C2	11:AA:1596:C:C5	3.08	0.41
11:AA:2144:A:H1'	11:AA:2281:A2M:N6	2.35	0.41
11:AA:2416:U:H2'	11:AA:2417:OMU:H6	2.02	0.41
11:AA:2485:A:H2'	11:AA:2486:A:H8	1.84	0.41
14:Bb:3:G:H5'	39:MM:103:LEU:HD12	2.01	0.41
17:Cc:66:C:H2'	17:Cc:67:C:C6	2.54	0.41
23:Ee:135:THR:O	23:Ee:139:VAL:HG23	2.20	0.41
29:HH:41:LYS:HD3	29:HH:41:LYS:HA	1.81	0.41
30:I:57:LYS:HE2	30:I:57:LYS:HB2	1.76	0.41
41:NN:108:GLU:HG3	41:NN:122:ILE:CD1	2.47	0.41
60:c:1001:A:O2'	60:c:1002:G:OP1	2.34	0.41
60:c:1003:A:H1'	60:c:1005:A:N7	2.36	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:1294:G:H4'	61:d:109:ASN:H	1.84	0.41
60:c:1681:A:C8	67:j:65:GLN:OE1	2.73	0.41
61:d:16:LEU:HD12	61:d:16:LEU:HA	1.83	0.41
63:f:37:PRO:HD3	63:f:46:LYS:HD2	2.02	0.41
64:g:158:ILE:H	64:g:158:ILE:HG13	1.72	0.41
65:h:65:LEU:HD13	65:h:80:THR:HA	2.02	0.41
65:h:250:GLU:H	65:h:250:GLU:HG2	1.64	0.41
66:i:72:HIS:O	66:i:72:HIS:ND1	2.53	0.41
67:j:30:LYS:HB3	67:j:34:GLN:HG2	2.03	0.41
69:l:76:THR:HG22	69:l:77:ARG:H	1.85	0.41
76:s:58:ASP:O	76:s:60:PHE:N	2.53	0.41
78:u:88:ARG:NE	78:u:91:ASP:HB2	2.31	0.41
2:l:74:SER:HB3	78:u:57:ARG:NH2	2.33	0.41
11:AA:243:G:H2'	11:AA:244:G:C8	2.55	0.41
11:AA:634:C:H5'	49:R:21:ARG:O	2.20	0.41
11:AA:673:U:H2'	11:AA:674:G:H8	1.85	0.41
11:AA:744:A:H4'	15:C:142:GLY:O	2.20	0.41
11:AA:821:U:H2'	11:AA:822:G:C8	2.54	0.41
11:AA:911:C:H42	22:EE:3:ARG:HD3	1.85	0.41
11:AA:1221:A:C8	19:DD:61:ARG:HG2	2.55	0.41
11:AA:1556:C:H2'	11:AA:2169:G:H22	1.85	0.41
11:AA:2100:A:H2'	11:AA:2101:C:C6	2.55	0.41
11:AA:2471:U:H2'	11:AA:2472:U:H5	1.84	0.41
11:AA:2476:C:C2	11:AA:2477:G:H1'	2.56	0.41
11:AA:2681:U:H2'	11:AA:2682:C:C6	2.55	0.41
16:CC:146:U:H2'	16:CC:147:U:C6	2.55	0.41
19:DD:157:LYS:HD2	19:DD:157:LYS:HA	1.85	0.41
21:E:24:LEU:HD23	21:E:24:LEU:HA	1.86	0.41
25:FF:113:GLU:OE1	25:FF:167:ARG:NH1	2.53	0.41
25:FF:291:GLU:HG3	25:FF:302:LYS:HD3	2.02	0.41
31:II:138:GLN:HE21	31:II:142:ASP:CG	2.28	0.41
32:J:61:LYS:O	32:J:87:SER:HB2	2.21	0.41
34:K:32:SER:HA	34:K:49:PRO:HA	2.02	0.41
34:K:48:LEU:HD12	34:K:48:LEU:HA	1.93	0.41
41:NN:39:GLN:HE21	41:NN:114:ILE:HD12	1.86	0.41
60:c:94:U:N1	60:c:94:U:C5	2.85	0.41
60:c:330:G:O2'	69:l:33:PRO:HB3	2.20	0.41
60:c:1351:G:N1	60:c:1352:G:N2	2.69	0.41
60:c:1474:G:C2	60:c:1475:A:C5	3.08	0.41
60:c:1666:U:H2'	60:c:1667:A:C8	2.55	0.41
60:c:1755:A:H5''	83:z:63:GLN:HG2	2.03	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
62:e:128:LYS:HA	62:e:133:TYR:O	2.20	0.41
63:f:211:LEU:HD23	63:f:211:LEU:HA	1.88	0.41
68:k:98:ILE:CG1	68:k:121:VAL:HG21	2.48	0.41
71:n:76:LEU:HD23	71:n:76:LEU:HA	1.94	0.41
78:u:119:ILE:HD13	78:u:119:ILE:HG21	1.74	0.41
80:w:97:VAL:O	80:w:101:LYS:HD3	2.20	0.41
81:x:55:LEU:HD13	81:x:65:SER:HB2	2.01	0.41
2:1:75:LEU:HB2	2:1:78:ILE:HD11	2.02	0.41
4:3:82:LYS:HB3	73:p:25:TRP:CD1	2.55	0.41
11:AA:689:U:O4	27:GG:209:TYR:OH	2.33	0.41
11:AA:945:C:H2'	11:AA:946:U:H6	1.81	0.41
11:AA:1214:U:H2'	11:AA:1215:U:C6	2.55	0.41
11:AA:1639:C:N4	36:L:17:ARG:HB2	2.35	0.41
11:AA:1641:U:O2'	11:AA:1642:A:H3'	2.19	0.41
11:AA:1677:G:H5'	26:G:97:SER:CB	2.50	0.41
11:AA:2095:G:H2'	11:AA:2096:A:C8	2.55	0.41
11:AA:2095:G:H2'	11:AA:2096:A:H8	1.85	0.41
11:AA:2454:G:H2'	11:AA:2455:U:C6	2.56	0.41
11:AA:2849:C:H2'	11:AA:2850:G:O4'	2.21	0.41
15:C:152:HIS:ND1	15:C:162:ALA:O	2.36	0.41
16:CC:13:A:C5	16:CC:14:C:C4	3.09	0.41
18:D:173:ARG:HH21	18:D:177:VAL:HG23	1.84	0.41
25:FF:77:THR:HG21	25:FF:328:ILE:HG12	2.03	0.41
25:FF:377:HIS:ND1	25:FF:387:LEU:HB3	2.36	0.41
29:HH:180:PHE:HB3	29:HH:195:LEU:HD13	2.02	0.41
29:HH:266:ALA:HB1	29:HH:270:LYS:NZ	2.36	0.41
35:KK:75:ILE:HD11	48:QQ:18:VAL:HG23	2.03	0.41
41:NN:99:THR:O	41:NN:154:THR:OG1	2.33	0.41
43:OO:47:ALA:HB1	43:OO:48:PRO:HD2	2.02	0.41
54:W:56:ILE:HG22	54:W:58:ASP:H	1.85	0.41
60:c:100:A2M:HM'3	60:c:100:A2M:H1'	1.84	0.41
60:c:420:A2M:H1'	60:c:420:A2M:HM'3	1.78	0.41
60:c:886:U:O2'	74:q:121:VAL:O	2.37	0.41
60:c:1285:U:C6	60:c:1286:U:H5	2.38	0.41
64:g:71:LEU:O	64:g:75:LYS:HG2	2.21	0.41
65:h:211:LYS:HB2	65:h:211:LYS:HE3	1.77	0.41
67:j:78:THR:CG2	67:j:79:LYS:N	2.83	0.41
69:l:195:ARG:HG2	69:l:195:ARG:HH11	1.86	0.41
76:s:38:LEU:HD13	79:v:10:ALA:HB2	2.01	0.41
83:z:82:LYS:HZ3	83:z:82:LYS:HG3	1.78	0.41
1:0:13:ILE:HD13	1:0:13:ILE:HA	1.91	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
1:0:41:ARG:HG2	1:0:55:VAL:HG23	2.03	0.41
4:3:63:LEU:HA	4:3:63:LEU:HD23	1.74	0.41
11:AA:187:A:H2'	11:AA:188:U:C6	2.56	0.41
11:AA:216:G:OP1	34:K:16:ARG:NH1	2.53	0.41
11:AA:401:U:H1'	11:AA:403:C:C4	2.56	0.41
11:AA:760:G:H1'	11:AA:771:A:N6	2.36	0.41
11:AA:780:A:O4'	15:C:162:ALA:HA	2.21	0.41
11:AA:1362:G:H2'	11:AA:1363:A:C8	2.55	0.41
11:AA:2465:G:N1	11:AA:2493:U:O2	2.53	0.41
11:AA:2708:C:H2'	11:AA:2709:C:H6	1.86	0.41
11:AA:2989:U:H2'	11:AA:2990:G:O4'	2.19	0.41
21:E:7:TYR:CE2	21:E:34:GLU:HG3	2.56	0.41
25:FF:92:TYR:O	25:FF:155:ALA:HA	2.20	0.41
33:JJ:86:VAL:O	33:JJ:114:GLY:HA2	2.21	0.41
47:Q:87:MET:HE2	47:Q:87:MET:HA	2.02	0.41
60:c:512:A:H2'	60:c:513:U:O4'	2.20	0.41
60:c:525:A:H2'	60:c:526:A:H8	1.84	0.41
63:f:102:VAL:HG11	63:f:129:ILE:HG12	2.02	0.41
65:h:37:LYS:O	65:h:41:SER:HB3	2.21	0.41
68:k:127:GLU:O	68:k:130:VAL:C	2.63	0.41
70:m:136:VAL:HG21	70:m:146:PHE:CE2	2.56	0.41
72:o:55:ASP:OD2	72:o:113:PRO:HD3	2.20	0.41
8:7:281:TYR:CE2	8:7:287:PRO:HG3	2.55	0.41
10:A:20:ALA:HA	10:A:84:LEU:CD2	2.50	0.41
11:AA:263:C:H2'	11:AA:264:G:O4'	2.21	0.41
11:AA:660:A:N1	11:AA:941:G:O2'	2.50	0.41
11:AA:908:OMG:H3'	48:QQ:81:TYR:OH	2.20	0.41
11:AA:1616:U:H2'	11:AA:1617:G:C8	2.55	0.41
11:AA:1659:U:H2'	11:AA:1660:C:H6	1.85	0.41
11:AA:1723:A:OP1	18:D:128:LYS:NZ	2.52	0.41
11:AA:1757:A:H2'	11:AA:1758:G:C8	2.56	0.41
11:AA:1779:C:H1'	18:D:93:VAL:HG21	2.02	0.41
11:AA:3095:U:H2'	11:AA:3096:C:C6	2.55	0.41
12:B:51:VAL:HA	12:B:56:ARG:O	2.20	0.41
14:Bb:68:U:H2'	14:Bb:69:U:O4'	2.21	0.41
16:CC:79:A:H2'	16:CC:80:A:C8	2.54	0.41
16:CC:143:U:OP1	48:QQ:38:ARG:NH2	2.41	0.41
19:DD:48:ARG:HG2	19:DD:91:GLU:OE2	2.20	0.41
24:F:69:LYS:HA	29:HH:40:HIS:CE1	2.56	0.41
32:J:46:TYR:HD1	51:T:75:TYR:HB3	1.86	0.41
35:KK:196:ALA:O	35:KK:197:VAL:HG13	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
39:MM:184:LYS:HG2	39:MM:189:GLU:OE1	2.21	0.41
40:N:5:LYS:O	88:N:101:HOH:O	2.22	0.41
42:O:22:LYS:HE3	42:O:22:LYS:HB3	1.73	0.41
43:OO:106:GLN:HB3	52:U:18:THR:HB	2.03	0.41
45:PP:17:VAL:HG11	45:PP:74:ARG:HA	2.01	0.41
49:R:8:TYR:CG	49:R:99:ARG:HB3	2.56	0.41
60:c:887:A:H2'	60:c:888:U:H6	1.86	0.41
60:c:1022:C:O2'	60:c:1125:A:N1	2.46	0.41
60:c:1217:A:H4'	71:n:44:LYS:HE3	2.03	0.41
60:c:1316:G:OP1	77:t:7:LYS:N	2.50	0.41
64:g:138:VAL:HG22	64:g:184:ILE:HD12	2.03	0.41
78:u:116:LEU:HD23	78:u:116:LEU:HA	1.93	0.41
10:A:80:PHE:CZ	10:A:84:LEU:HD21	2.55	0.41
10:A:87:MET:HB2	10:A:87:MET:HE2	1.84	0.41
11:AA:184:U:H2'	11:AA:185:C:C6	2.56	0.41
11:AA:308:A:H1'	11:AA:2222:A:N3	2.36	0.41
11:AA:1506:A:H1'	11:AA:1848:G:O6	2.21	0.41
11:AA:2163:C:H4'	22:EE:7:ASN:O	2.21	0.41
11:AA:2426:U:H2'	11:AA:2427:U:H6	1.82	0.41
11:AA:2500:A:H2'	11:AA:2501:U:H6	1.85	0.41
11:AA:2566:C:H2'	11:AA:2567:C:C6	2.56	0.41
11:AA:2839:G:O6	11:AA:2845:A:O2'	2.36	0.41
13:BB:119:U:P	29:HH:258:LYS:HZ1	2.44	0.41
41:NN:51:ARG:HG3	41:NN:52:TYR:CD2	2.55	0.41
43:OO:140:SER:HB3	43:OO:143:ALA:HB3	2.03	0.41
50:S:106:LYS:HE3	50:S:106:LYS:HB3	1.89	0.41
60:c:1347:U:O2'	60:c:1516:A:H2'	2.21	0.41
61:d:124:THR:HG22	61:d:174:TRP:CZ2	2.56	0.41
64:g:159:HIS:HA	64:g:160:SER:HA	1.72	0.41
65:h:132:GLY:N	65:h:136:VAL:O	2.43	0.41
66:i:43:PHE:HB3	66:i:46:TRP:H	1.85	0.41
71:n:14:TYR:CD1	71:n:14:TYR:C	2.98	0.41
73:p:33:VAL:HG21	73:p:66:ILE:HG21	2.02	0.41
78:u:7:GLU:OE1	78:u:10:SER:OG	2.34	0.41
1:O:27:VAL:HG12	1:O:29:HIS:HD2	1.86	0.41
4:3:35:VAL:CG2	4:3:63:LEU:HD13	2.51	0.41
5:4:22:ARG:HG3	60:c:1619:C:C2	2.55	0.41
6:5:53:ASN:HB2	6:5:55:PHE:CE2	2.56	0.41
8:7:59:ARG:NH2	8:7:96:THR:O	2.51	0.41
8:7:114:ASP:HB3	8:7:123:ILE:HD11	2.03	0.41
8:7:115:ILE:HG13	8:7:122:ILE:CG2	2.37	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:185:GLN:OE1	8:7:185:GLN:N	2.54	0.41
8:7:287:PRO:O	8:7:305:TYR:HD2	2.03	0.41
11:AA:107:A:H2'	11:AA:108:A:O4'	2.20	0.41
11:AA:245:U:H2'	11:AA:246:U:C6	2.55	0.41
11:AA:718:G:C2	11:AA:721:G:H1'	2.55	0.41
11:AA:794:U:H2'	11:AA:795:G:H8	1.86	0.41
11:AA:946:U:H2'	11:AA:947:G:H8	1.86	0.41
11:AA:1027:A:H2'	11:AA:1029:G:C8	2.56	0.41
11:AA:1220:U:OP1	11:AA:1221:A:O2'	2.33	0.41
11:AA:1231:A:OP1	19:DD:34:SER:HB2	2.21	0.41
11:AA:1460:A:H5'	44:P:51:LEU:O	2.21	0.41
11:AA:1541:G:H1'	11:AA:1557:A:C5	2.56	0.41
11:AA:1642:A:N3	11:AA:1822:C:O2'	2.44	0.41
11:AA:1908:A:H2'	11:AA:1909:A:O4'	2.21	0.41
11:AA:1911:A:H2	11:AA:2122:G:C8	2.38	0.41
11:AA:2223:A:H2'	11:AA:2224:A:C8	2.56	0.41
11:AA:2307:G:H4'	11:AA:2308:C:OP2	2.20	0.41
11:AA:2397:A:H8	11:AA:2941:A:N1	2.18	0.41
11:AA:2413:A:H2'	11:AA:2414:G:C8	2.56	0.41
11:AA:2429:G:H2'	11:AA:2430:A:H8	1.85	0.41
11:AA:2443:A:H2'	11:AA:2444:C:C6	2.56	0.41
11:AA:2615:G:H2'	11:AA:2616:C:C6	2.56	0.41
11:AA:2689:A:H2'	11:AA:2689:A:N3	2.36	0.41
11:AA:2820:A:H2	46:Pp:1:MET:CE	2.33	0.41
11:AA:3066:U:C2	11:AA:3067:C:C5	3.09	0.41
11:AA:3278:C:H2'	11:AA:3278:C:O2	2.21	0.41
12:B:3:ARG:NE	16:CC:12:A:OP1	2.42	0.41
14:Bb:16:U:H4'	14:Bb:17:U:C5	2.56	0.41
14:Bb:56:C:H2'	14:Bb:57:G:C8	2.56	0.41
15:C:106:PHE:CE1	15:C:121:CYS:HB3	2.56	0.41
17:Cc:67:C:C2	17:Cc:68:C:C5	3.08	0.41
21:E:73:LYS:HD2	21:E:75:PHE:CZ	2.55	0.41
23:Ee:41:LYS:HA	23:Ee:41:LYS:HD2	1.86	0.41
27:GG:23:PRO:HD2	27:GG:26:PHE:CE2	2.55	0.41
28:H:15:LEU:HD13	28:H:51:ALA:HB3	2.02	0.41
30:I:9:SER:O	30:I:53:VAL:HG13	2.20	0.41
33:JJ:132:PRO:HG2	33:JJ:133:TYR:CE2	2.56	0.41
35:KK:250:ALA:O	35:KK:254:ASP:HB2	2.21	0.41
36:L:32:GLY:HA2	36:L:40:HIS:CE1	2.56	0.41
45:PP:50:LYS:HG3	45:PP:85:TRP:CD1	2.55	0.41
45:PP:94:TRP:CE2	45:PP:100:ALA:HB2	2.56	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
48:QQ:147:ARG:HG3	51:T:101:THR:HG21	2.02	0.41
48:QQ:180:PHE:O	48:QQ:184:LYS:HG3	2.20	0.41
53:V:27:PHE:HA	53:V:34:CYS:HA	2.03	0.41
60:c:69:G:H2'	60:c:70:C:H6	1.86	0.41
60:c:400:A:H5''	69:l:25:ARG:HA	2.03	0.41
60:c:525:A:HO2'	60:c:526:A:P	2.44	0.41
60:c:875:G:H2'	60:c:877:G:OP1	2.20	0.41
60:c:1163:A:H2'	60:c:1164:G:O4'	2.21	0.41
60:c:1364:G:C6	60:c:1365:C:N4	2.89	0.41
60:c:1471:A:N3	60:c:1471:A:H2'	2.36	0.41
60:c:1638:G:H2'	60:c:1639:OMC:O4'	2.21	0.41
61:d:84:ARG:HE	61:d:88:LYS:NZ	2.19	0.41
66:i:30:PRO:O	66:i:33:VAL:HG22	2.21	0.41
66:i:69:PHE:HD2	76:s:50:GLU:HG3	1.86	0.41
70:m:82:ARG:NE	70:m:149:ARG:HE	2.19	0.41
70:m:169:PRO:O	70:m:173:ALA:HB3	2.20	0.41
74:q:64:ALA:HB3	74:q:104:ALA:HB3	2.03	0.41
75:r:85:ILE:HG12	75:r:114:HIS:O	2.20	0.41
78:u:27:LYS:HG3	78:u:57:ARG:NE	2.35	0.41
78:u:67:GLU:OE1	78:u:67:GLU:N	2.44	0.41
79:v:4:VAL:HG13	79:v:140:LEU:HD12	2.03	0.41
80:w:109:GLU:HA	80:w:110:PRO:HD3	1.97	0.41
81:x:36:VAL:HG11	81:x:78:LEU:HD23	2.02	0.41
81:x:79:LEU:HD22	81:x:82:VAL:HG21	2.02	0.41
1:0:60:PHE:H	60:c:523:G:H5''	1.85	0.41
7:6:30:PRO:HB2	7:6:34:ALA:HB1	2.03	0.41
11:AA:426:G:H2'	11:AA:427:C:C6	2.56	0.41
11:AA:532:A:O2'	11:AA:533:A:H8	2.04	0.41
11:AA:628:A:H2'	11:AA:629:U:O4'	2.22	0.41
11:AA:632:G:H2'	11:AA:633:C:C6	2.56	0.41
11:AA:1302:A:N7	11:AA:2857:C:O2'	2.52	0.41
11:AA:2424:A:H2'	11:AA:2425:G:O4'	2.21	0.41
11:AA:2683:U:H2'	11:AA:2684:C:H6	1.81	0.41
11:AA:3334:U:H4'	11:AA:3335:A:H5'	2.03	0.41
16:CC:8:C:H2'	16:CC:9:A:H8	1.83	0.41
18:D:109:TYR:HB3	18:D:115:ILE:HG12	2.02	0.41
21:E:93:GLU:HB3	21:E:140:VAL:HG21	2.02	0.41
33:JJ:233:GLU:H	33:JJ:233:GLU:HG3	1.52	0.41
51:T:58:ILE:O	51:T:62:GLN:HG2	2.21	0.41
60:c:300:A:H2'	60:c:301:A:H8	1.84	0.41
60:c:390:G:O2'	60:c:1731:A:H5''	2.20	0.41

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:546:U:H2'	60:c:547:U:C6	2.55	0.41
60:c:1080:U:H2'	60:c:1081:A:H1'	2.03	0.41
60:c:1767:G:H4'	60:c:1768:G:C4	2.56	0.41
62:e:92:GLN:O	62:e:95:ASN:HB2	2.21	0.41
62:e:138:PHE:CD1	62:e:214:LYS:HB3	2.55	0.41
68:k:157:LYS:HG2	68:k:158:ASP:N	2.35	0.41
70:m:153:GLU:HA	70:m:156:ILE:HD12	2.02	0.41
70:m:158:PHE:CE2	70:m:164:PHE:HB3	2.55	0.41
73:p:55:ARG:NH1	73:p:56:ASP:OD1	2.54	0.41
77:t:44:LYS:HE2	77:t:44:LYS:HB3	1.86	0.41
78:u:32:LEU:HD12	78:u:32:LEU:HA	1.89	0.41
1:0:116:LYS:NZ	60:c:57:G:OP1	2.49	0.40
5:4:58:GLU:HG3	5:4:61:ARG:NH1	2.35	0.40
11:AA:225:C:H5'	34:K:34:PRO:HD3	2.02	0.40
11:AA:345:G:O2'	16:CC:25:G:N3	2.54	0.40
11:AA:798:G:OP1	38:M:33:GLY:N	2.47	0.40
11:AA:807:A2M:H62	11:AA:934:G:H22	1.69	0.40
11:AA:1507:G:H1'	12:B:139:TYR:CE2	2.55	0.40
11:AA:2532:U:H2'	11:AA:2533:G:C8	2.56	0.40
11:AA:2953:U:H2'	11:AA:2954:U:H2'	2.03	0.40
21:E:57:GLU:OE2	33:JJ:77:VAL:HG11	2.21	0.40
29:HH:107:ARG:HB3	29:HH:251:PRO:HG3	2.02	0.40
33:JJ:229:PHE:CD1	33:JJ:229:PHE:C	2.98	0.40
35:KK:231:LYS:HB3	35:KK:231:LYS:HE3	1.93	0.40
38:M:2:PRO:HG2	38:M:5:PHE:CD2	2.56	0.40
44:P:97:LEU:HD13	44:P:97:LEU:O	2.21	0.40
47:Q:80:LYS:O	47:Q:84:THR:HG23	2.21	0.40
50:S:58:ARG:HA	50:S:58:ARG:HD2	1.85	0.40
60:c:28:A2M:H1'	60:c:28:A2M:HM'3	1.83	0.40
60:c:772:G:H21	60:c:774:A:H1'	1.87	0.40
60:c:810:G:C5	68:k:111:LYS:HD3	2.56	0.40
60:c:872:G:N2	60:c:1047:G:H4'	2.36	0.40
60:c:1025:A:H2'	60:c:1027:A:H5''	2.03	0.40
60:c:1044:U:H2'	60:c:1045:C:H6	1.86	0.40
60:c:1438:G:H2'	60:c:1439:C:H6	1.85	0.40
66:i:126:ASP:OD1	66:i:126:ASP:N	2.42	0.40
67:j:93:LYS:HE3	67:j:93:LYS:HB2	1.86	0.40
72:o:123:VAL:HG12	72:o:142:VAL:HA	2.03	0.40
76:s:45:ARG:HG2	76:s:49:TYR:CE2	2.56	0.40
6:5:14:TYR:CD1	6:5:14:TYR:C	2.99	0.40
7:6:13:LYS:HD3	60:c:566:C:O2'	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
8:7:67:ILE:HB	8:7:85:TRP:HB2	2.04	0.40
8:7:188:ILE:HD12	8:7:188:ILE:HA	1.99	0.40
9:8:135:HIS:H	9:8:138:ARG:HD3	1.86	0.40
11:AA:110:G:OP2	43:OO:73:ARG:NH2	2.30	0.40
11:AA:211:A:OP2	27:GG:221:ASN:HB2	2.21	0.40
11:AA:616:G:H2'	11:AA:617:G:H8	1.87	0.40
11:AA:1224:C:C2	11:AA:1225:A:C8	3.09	0.40
11:AA:1567:U:H3	11:AA:1571:A:H1'	1.85	0.40
11:AA:1709:C:C2	11:AA:1710:C:C5	3.09	0.40
11:AA:1925:U:O2'	11:AA:1927:G:N7	2.50	0.40
11:AA:2130:G:H1'	11:AA:2144:A:H5''	2.03	0.40
11:AA:2364:G:H22	11:AA:2396:G:H1'	1.85	0.40
11:AA:2442:G:H2'	11:AA:2443:A:C8	2.57	0.40
11:AA:2457:G:H21	11:AA:2483:G:N2	2.20	0.40
11:AA:2461:A:O2'	11:AA:2462:A:H5''	2.21	0.40
11:AA:2661:G:H2'	11:AA:2662:G:C8	2.55	0.40
11:AA:3218:A:H5''	11:AA:3219:G:C5	2.56	0.40
13:BB:79:A:H2'	13:BB:80:G:O4'	2.21	0.40
19:DD:136:PHE:CD1	19:DD:143:THR:HG21	2.57	0.40
21:E:77:VAL:HG21	21:E:94:ILE:HD12	2.04	0.40
27:GG:193:LYS:HA	27:GG:198:ARG:HA	2.03	0.40
28:H:87:ARG:HH12	28:H:137:VAL:HG21	1.86	0.40
32:J:108:LEU:HD23	32:J:125:ARG:HG2	2.02	0.40
34:K:125:LYS:H	34:K:125:LYS:HG3	1.79	0.40
37:LL:93:VAL:HG22	56:Y:82:LEU:HB3	2.03	0.40
43:OO:162:ASN:OD1	43:OO:164:GLU:HB2	2.21	0.40
60:c:65:A:H2	60:c:84:A:H62	1.67	0.40
60:c:145:A:H1'	60:c:146:U:C6	2.56	0.40
60:c:448:C:H2'	60:c:449:C:C6	2.56	0.40
60:c:816:G:C2	60:c:817:A:C8	3.09	0.40
61:d:183:ARG:HG3	61:d:188:LEU:HD12	2.02	0.40
63:f:168:ARG:HD3	63:f:170:ILE:HD11	2.02	0.40
65:h:208:VAL:HG11	65:h:225:VAL:HG11	2.04	0.40
67:j:109:LEU:HD22	67:j:111:LEU:HD23	2.03	0.40
72:o:55:ASP:OD1	72:o:58:CYS:N	2.54	0.40
8:7:178:VAL:HG11	8:7:193:ILE:O	2.21	0.40
8:7:220:ILE:HB	8:7:234:LEU:HG	2.03	0.40
11:AA:7:C:H2'	11:AA:8:C:C6	2.56	0.40
11:AA:80:G:H2'	11:AA:81:C:H6	1.86	0.40
11:AA:93:C:OP1	87:AA:3619:SPD:N1	2.55	0.40
11:AA:338:A:OP1	27:GG:47:ARG:HA	2.21	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
11:AA:516:A:H2'	11:AA:517:G:C8	2.56	0.40
11:AA:597:G:OP1	33:JJ:37:ASN:HB3	2.20	0.40
11:AA:796:U:H2'	11:AA:797:U:C6	2.56	0.40
11:AA:1562:C:H42	11:AA:1578:C:H42	1.68	0.40
11:AA:2395:G:H5''	25:FF:255:TRP:CD1	2.57	0.40
11:AA:2447:A:C2	11:AA:2448:G:N7	2.89	0.40
11:AA:2475:G:C4	11:AA:2476:C:H1'	2.57	0.40
11:AA:2482:U:H1'	11:AA:2483:G:C2	2.56	0.40
11:AA:2655:U:H4'	11:AA:2656:A:O4'	2.21	0.40
11:AA:2662:G:H2'	11:AA:2663:G:H8	1.86	0.40
11:AA:2867:C:H2'	11:AA:2868:U:H6	1.86	0.40
11:AA:3285:C:H2'	11:AA:3286:G:C8	2.56	0.40
22:EE:137:ILE:HG12	22:EE:147:ARG:O	2.20	0.40
23:Ee:13:LEU:HD23	23:Ee:13:LEU:HA	1.81	0.40
25:FF:33:PRO:HD2	25:FF:44:THR:HB	2.03	0.40
25:FF:281:LYS:NZ	25:FF:352:GLU:O	2.47	0.40
37:LL:139:ASN:OD1	37:LL:140:VAL:HG23	2.21	0.40
47:Q:4:LEU:HD23	47:Q:4:LEU:HA	1.98	0.40
54:W:74:LYS:HD2	54:W:74:LYS:HA	1.98	0.40
60:c:93:A:H4'	60:c:94:U:OP2	2.21	0.40
60:c:142:G:P	67:j:139:ASN:HD22	2.44	0.40
60:c:1263:G:H2'	60:c:1264:G:O4'	2.22	0.40
60:c:1759:C:H2'	60:c:1760:G:O4'	2.20	0.40
61:d:41:ARG:HB3	77:t:105:GLN:HB2	2.03	0.40
64:g:7:LYS:HD3	64:g:7:LYS:HA	1.75	0.40
69:l:143:TRP:CD1	69:l:143:TRP:N	2.89	0.40
70:m:59:LEU:HD21	70:m:72:GLU:HB2	2.04	0.40
7:6:40:TYR:CE1	70:m:29:LYS:HA	2.51	0.40
11:AA:1460:A:H2'	11:AA:1461:A:C8	2.56	0.40
11:AA:1562:C:H42	11:AA:1578:C:N4	2.19	0.40
11:AA:1742:U:H2'	11:AA:1743:G:C8	2.57	0.40
11:AA:2708:C:H2'	11:AA:2709:C:C6	2.56	0.40
11:AA:2729:OMU:H1'	11:AA:2729:OMU:HM23	1.83	0.40
11:AA:3214:U:H2'	45:PP:121:MET:SD	2.61	0.40
24:F:51:GLY:HA3	24:F:92:ARG:HG3	2.04	0.40
32:J:50:ALA:HB2	51:T:77:PRO:CB	2.52	0.40
33:JJ:160:ARG:NH2	33:JJ:206:LYS:HD3	2.36	0.40
34:K:37:LYS:HD3	34:K:37:LYS:HA	1.74	0.40
44:P:72:ARG:HG3	44:P:96:VAL:HG21	2.03	0.40
51:T:77:PRO:O	51:T:81:ARG:HG3	2.21	0.40
55:X:6:SER:OG	55:X:9:ILE:HG12	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
60:c:91:G:H2'	60:c:92:A:O4'	2.22	0.40
60:c:183:U:H2'	60:c:184:C:H6	1.85	0.40
60:c:333:A:H2'	60:c:334:G:C8	2.56	0.40
60:c:367:A:H2'	60:c:368:U:O4'	2.22	0.40
60:c:398:G:OP2	69:l:47:ARG:NH2	2.42	0.40
60:c:762:A:H2'	60:c:763:G:C8	2.57	0.40
60:c:892:A:H2'	60:c:893:U:O4'	2.21	0.40
60:c:1067:C:H5''	62:e:150:VAL:HG23	2.02	0.40
60:c:1236:A:H2'	60:c:1237:G:C8	2.55	0.40
60:c:1410:A:H2'	60:c:1411:A:C8	2.57	0.40
60:c:1417:A:H2'	60:c:1418:G:O4'	2.20	0.40
61:d:4:PRO:HD2	61:d:7:PHE:HD2	1.87	0.40
61:d:102:PHE:O	61:d:102:PHE:CG	2.74	0.40
65:h:55:ALA:HB1	65:h:60:GLU:HB2	2.04	0.40
68:k:165:LYS:HG3	68:k:169:PHE:CZ	2.57	0.40
69:l:72:ILE:HG13	69:l:73:SER:N	2.36	0.40
70:m:133:HIS:ND1	70:m:162:SER:HB2	2.36	0.40
2:1:57:TYR:OH	2:1:70:LYS:NZ	2.54	0.40
2:1:95:HIS:ND1	2:1:96:SER:O	2.55	0.40
4:3:34:ASP:O	4:3:79:PHE:HA	2.22	0.40
8:7:38:ARG:O	8:7:67:ILE:HG12	2.21	0.40
8:7:214:ALA:CB	8:7:240:VAL:HG21	2.52	0.40
11:AA:68:C:OP2	11:AA:301:G:N2	2.55	0.40
11:AA:411:U:H2'	11:AA:412:G:C8	2.56	0.40
11:AA:873:C:H3'	11:AA:874:U:H4'	2.03	0.40
11:AA:1811:G:H2'	11:AA:1812:G:O4'	2.21	0.40
11:AA:2455:U:H2'	11:AA:2456:A:O4'	2.21	0.40
13:BB:24:A:H2'	13:BB:25:G:O4'	2.22	0.40
14:Bb:57:G:O2'	14:Bb:58:A:H5'	2.21	0.40
16:CC:126:A:H8	16:CC:126:A:OP2	2.05	0.40
19:DD:157:LYS:HZ1	19:DD:160:ASP:CB	2.34	0.40
23:Ee:20:GLY:O	23:Ee:54:LYS:HD2	2.21	0.40
27:GG:131:VAL:O	27:GG:135:VAL:HG23	2.22	0.40
31:II:145:LEU:HD12	31:II:145:LEU:HA	1.81	0.40
36:L:21:LYS:HD2	36:L:49:TYR:HE1	1.87	0.40
60:c:747:C:H2'	60:c:748:U:C6	2.56	0.40
60:c:821:U:H2'	60:c:822:U:C6	2.57	0.40
60:c:1133:A:H2'	60:c:1134:C:O4'	2.22	0.40
60:c:1333:C:H2'	60:c:1334:U:C6	2.57	0.40
60:c:1727:G:H2'	60:c:1728:A:C8	2.55	0.40
60:c:1756:A:H5''	60:c:1757:G:OP2	2.22	0.40

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Atom-1	Atom-2	Interatomic distance (Å)	Clash overlap (Å)
63:f:83:ILE:HG12	63:f:121:VAL:HG13	2.03	0.40
77:t:111:LYS:HE2	77:t:111:LYS:HB2	1.97	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	0	132/135 (98%)	126 (96%)	6 (4%)	0	100	100
2	1	68/108 (63%)	62 (91%)	6 (9%)	0	100	100
3	2	95/119 (80%)	87 (92%)	8 (8%)	0	100	100
4	3	79/82 (96%)	74 (94%)	5 (6%)	0	100	100
5	4	61/67 (91%)	60 (98%)	1 (2%)	0	100	100
6	5	51/56 (91%)	51 (100%)	0	0	100	100
7	6	51/63 (81%)	47 (92%)	4 (8%)	0	100	100
8	7	316/319 (99%)	297 (94%)	19 (6%)	0	100	100
9	8	32/152 (21%)	22 (69%)	10 (31%)	0	100	100
10	A	195/199 (98%)	192 (98%)	3 (2%)	0	100	100
12	B	152/184 (83%)	149 (98%)	3 (2%)	0	100	100
15	C	183/186 (98%)	181 (99%)	2 (1%)	0	100	100
18	D	174/189 (92%)	170 (98%)	3 (2%)	1 (1%)	21	12
19	DD	195/312 (62%)	187 (96%)	8 (4%)	0	100	100
21	E	170/172 (99%)	164 (96%)	6 (4%)	0	100	100
22	EE	250/254 (98%)	244 (98%)	6 (2%)	0	100	100
23	Ee	156/165 (94%)	153 (98%)	3 (2%)	0	100	100
24	F	157/160 (98%)	152 (97%)	5 (3%)	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
25	FF	384/387 (99%)	374 (97%)	10 (3%)	0	100	100
26	G	95/121 (78%)	93 (98%)	2 (2%)	0	100	100
27	GG	359/362 (99%)	342 (95%)	17 (5%)	0	100	100
28	H	127/137 (93%)	126 (99%)	1 (1%)	0	100	100
29	HH	294/297 (99%)	284 (97%)	10 (3%)	0	100	100
30	I	61/155 (39%)	61 (100%)	0	0	100	100
31	II	151/176 (86%)	147 (97%)	4 (3%)	0	100	100
32	J	118/142 (83%)	114 (97%)	4 (3%)	0	100	100
33	JJ	220/244 (90%)	217 (99%)	3 (1%)	0	100	100
34	K	124/127 (98%)	122 (98%)	2 (2%)	0	100	100
35	KK	231/256 (90%)	227 (98%)	4 (2%)	0	100	100
36	L	133/136 (98%)	127 (96%)	6 (4%)	0	100	100
37	LL	189/191 (99%)	182 (96%)	7 (4%)	0	100	100
38	M	146/149 (98%)	138 (94%)	7 (5%)	1 (1%)	18	9
39	MM	213/221 (96%)	207 (97%)	6 (3%)	0	100	100
40	N	56/59 (95%)	53 (95%)	3 (5%)	0	100	100
41	NN	167/174 (96%)	159 (95%)	8 (5%)	0	100	100
42	O	95/105 (90%)	95 (100%)	0	0	100	100
43	OO	191/199 (96%)	177 (93%)	13 (7%)	1 (0%)	24	14
44	P	107/113 (95%)	101 (94%)	6 (6%)	0	100	100
45	PP	134/138 (97%)	129 (96%)	5 (4%)	0	100	100
47	Q	125/130 (96%)	125 (100%)	0	0	100	100
48	QQ	201/204 (98%)	193 (96%)	8 (4%)	0	100	100
49	R	104/107 (97%)	103 (99%)	1 (1%)	0	100	100
50	S	107/121 (88%)	107 (100%)	0	0	100	100
51	T	117/120 (98%)	112 (96%)	5 (4%)	0	100	100
52	U	97/100 (97%)	89 (92%)	8 (8%)	0	100	100
53	V	82/88 (93%)	81 (99%)	1 (1%)	0	100	100
54	W	75/78 (96%)	71 (95%)	4 (5%)	0	100	100
55	X	48/51 (94%)	45 (94%)	3 (6%)	0	100	100
56	Y	50/128 (39%)	50 (100%)	0	0	100	100

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Mol	Chain	Analysed	Favoured	Allowed	Outliers	Percentiles	
57	Z	23/25 (92%)	23 (100%)	0	0	100	100
58	a	100/106 (94%)	96 (96%)	4 (4%)	0	100	100
59	b	89/92 (97%)	89 (100%)	0	0	100	100
61	d	204/252 (81%)	190 (93%)	14 (7%)	0	100	100
62	e	210/255 (82%)	194 (92%)	16 (8%)	0	100	100
63	f	215/254 (85%)	202 (94%)	13 (6%)	0	100	100
64	g	204/240 (85%)	195 (96%)	9 (4%)	0	100	100
65	h	256/261 (98%)	249 (97%)	7 (3%)	0	100	100
66	i	195/225 (87%)	186 (95%)	9 (5%)	0	100	100
67	j	217/236 (92%)	208 (96%)	9 (4%)	0	100	100
68	k	182/190 (96%)	172 (94%)	10 (6%)	0	100	100
69	l	180/200 (90%)	168 (93%)	12 (7%)	0	100	100
70	m	183/197 (93%)	177 (97%)	6 (3%)	0	100	100
71	n	89/105 (85%)	80 (90%)	7 (8%)	2 (2%)	5	1
72	o	140/156 (90%)	132 (94%)	8 (6%)	0	100	100
73	p	148/151 (98%)	144 (97%)	4 (3%)	0	100	100
74	q	125/137 (91%)	119 (95%)	6 (5%)	0	100	100
75	r	100/142 (70%)	96 (96%)	4 (4%)	0	100	100
76	s	135/143 (94%)	127 (94%)	8 (6%)	0	100	100
77	t	119/136 (88%)	101 (85%)	14 (12%)	4 (3%)	3	0
78	u	143/146 (98%)	133 (93%)	10 (7%)	0	100	100
79	v	141/144 (98%)	136 (96%)	5 (4%)	0	100	100
80	w	98/121 (81%)	97 (99%)	1 (1%)	0	100	100
81	x	85/87 (98%)	78 (92%)	7 (8%)	0	100	100
82	y	127/130 (98%)	125 (98%)	2 (2%)	0	100	100
83	z	142/145 (98%)	129 (91%)	13 (9%)	0	100	100
All	All	10968/12214 (90%)	10515 (96%)	444 (4%)	9 (0%)	49	41

All (9) Ramachandran outliers are listed below:

Mol	Chain	Res	Type
77	t	94	SER
38	M	78	LEU

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Mol	Chain	Res	Type
43	OO	63	VAL
71	n	48	SER
71	n	49	LEU
77	t	85	VAL
18	D	131	ALA
77	t	95	ARG
77	t	83	GLN

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	0	112/113 (99%)	107 (96%)	5 (4%)	24	13
2	1	61/89 (68%)	59 (97%)	2 (3%)	33	23
3	2	83/101 (82%)	81 (98%)	2 (2%)	43	35
4	3	70/71 (99%)	69 (99%)	1 (1%)	59	54
5	4	56/60 (93%)	50 (89%)	6 (11%)	6	1
6	5	47/49 (96%)	44 (94%)	3 (6%)	16	6
7	6	46/54 (85%)	45 (98%)	1 (2%)	45	38
8	7	259/262 (99%)	234 (90%)	25 (10%)	8	1
9	8	30/135 (22%)	29 (97%)	1 (3%)	33	23
10	A	160/162 (99%)	156 (98%)	4 (2%)	42	33
12	B	125/146 (86%)	123 (98%)	2 (2%)	55	50
15	C	150/151 (99%)	150 (100%)	0	100	100
18	D	143/154 (93%)	136 (95%)	7 (5%)	22	10
19	DD	167/254 (66%)	163 (98%)	4 (2%)	43	35
21	E	156/156 (100%)	154 (99%)	2 (1%)	61	57
22	EE	193/196 (98%)	189 (98%)	4 (2%)	47	40
23	Ee	129/136 (95%)	126 (98%)	3 (2%)	44	37
24	F	136/137 (99%)	134 (98%)	2 (2%)	57	52

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
25	FF	318/323 (98%)	314 (99%)	4 (1%)	61	57
26	G	84/107 (78%)	83 (99%)	1 (1%)	63	58
27	GG	288/289 (100%)	282 (98%)	6 (2%)	47	40
28	H	101/105 (96%)	98 (97%)	3 (3%)	36	27
29	HH	244/245 (100%)	241 (99%)	3 (1%)	63	58
30	I	55/129 (43%)	53 (96%)	2 (4%)	31	20
31	II	133/153 (87%)	132 (99%)	1 (1%)	73	71
32	J	104/118 (88%)	101 (97%)	3 (3%)	37	28
33	JJ	186/205 (91%)	186 (100%)	0	100	100
34	K	109/110 (99%)	108 (99%)	1 (1%)	70	67
35	KK	187/208 (90%)	181 (97%)	6 (3%)	34	24
36	L	115/116 (99%)	111 (96%)	4 (4%)	32	21
37	LL	171/171 (100%)	166 (97%)	5 (3%)	37	28
38	M	118/119 (99%)	117 (99%)	1 (1%)	73	71
39	MM	184/187 (98%)	183 (100%)	1 (0%)	81	79
40	N	46/47 (98%)	44 (96%)	2 (4%)	26	14
41	NN	147/150 (98%)	138 (94%)	9 (6%)	17	7
42	O	81/88 (92%)	80 (99%)	1 (1%)	63	58
43	OO	154/159 (97%)	149 (97%)	5 (3%)	34	24
44	P	94/97 (97%)	93 (99%)	1 (1%)	65	61
45	PP	107/109 (98%)	106 (99%)	1 (1%)	70	67
46	Pp	2/2 (100%)	2 (100%)	0	100	100
47	Q	109/111 (98%)	109 (100%)	0	100	100
48	QQ	175/176 (99%)	171 (98%)	4 (2%)	44	37
49	R	90/91 (99%)	90 (100%)	0	100	100
50	S	94/103 (91%)	92 (98%)	2 (2%)	47	40
51	T	104/105 (99%)	104 (100%)	0	100	100
52	U	81/82 (99%)	80 (99%)	1 (1%)	63	58
53	V	69/71 (97%)	68 (99%)	1 (1%)	59	54
54	W	68/69 (99%)	66 (97%)	2 (3%)	37	28
55	X	45/46 (98%)	45 (100%)	0	100	100

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Mol	Chain	Analysed	Rotameric	Outliers	Percentiles	
56	Y	47/116 (40%)	47 (100%)	0	100	100
57	Z	23/23 (100%)	22 (96%)	1 (4%)	26	14
58	a	87/91 (96%)	84 (97%)	3 (3%)	32	22
59	b	71/72 (99%)	69 (97%)	2 (3%)	38	29
61	d	165/210 (79%)	162 (98%)	3 (2%)	51	46
62	e	189/224 (84%)	184 (97%)	5 (3%)	40	32
63	f	176/205 (86%)	172 (98%)	4 (2%)	44	37
64	g	167/195 (86%)	160 (96%)	7 (4%)	26	15
65	h	220/222 (99%)	212 (96%)	8 (4%)	31	20
66	i	172/191 (90%)	166 (96%)	6 (4%)	32	21
67	j	188/201 (94%)	178 (95%)	10 (5%)	20	9
68	k	165/170 (97%)	158 (96%)	7 (4%)	26	15
69	l	146/161 (91%)	141 (97%)	5 (3%)	32	22
70	m	158/166 (95%)	152 (96%)	6 (4%)	29	19
71	n	84/98 (86%)	82 (98%)	2 (2%)	43	35
72	o	127/137 (93%)	124 (98%)	3 (2%)	43	35
73	p	127/128 (99%)	125 (98%)	2 (2%)	55	50
74	q	81/105 (77%)	81 (100%)	0	100	100
75	r	89/118 (75%)	89 (100%)	0	100	100
76	s	114/119 (96%)	109 (96%)	5 (4%)	25	14
77	t	105/124 (85%)	90 (86%)	15 (14%)	3	1
78	u	128/129 (99%)	126 (98%)	2 (2%)	55	50
79	v	115/116 (99%)	110 (96%)	5 (4%)	26	14
80	w	94/114 (82%)	86 (92%)	8 (8%)	10	3
81	x	74/74 (100%)	71 (96%)	3 (4%)	27	16
82	y	110/111 (99%)	109 (99%)	1 (1%)	70	67
83	z	119/120 (99%)	114 (96%)	5 (4%)	26	15
All	All	9327/10257 (91%)	9065 (97%)	262 (3%)	38	29

All (262) residues with a non-rotameric sidechain are listed below:

Mol	Chain	Res	Type
1	0	3	ASP

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Mol	Chain	Res	Type
1	0	25	VAL
1	0	53	ASP
1	0	88	THR
1	0	125	LEU
2	1	54	VAL
2	1	69	LEU
3	2	45	VAL
3	2	84	VAL
4	3	2	VAL
5	4	16	LEU
5	4	26	THR
5	4	30	VAL
5	4	44	VAL
5	4	48	VAL
5	4	53	ILE
6	5	10	HIS
6	5	39	CYS
6	5	46	LYS
7	6	50	VAL
8	7	26	SER
8	7	41	THR
8	7	56	VAL
8	7	58	VAL
8	7	60	SER
8	7	64	HIS
8	7	76	ASP
8	7	109	ASP
8	7	120	SER
8	7	123	ILE
8	7	134	TRP
8	7	136	ILE
8	7	143	THR
8	7	144	LEU
8	7	167	VAL
8	7	178	VAL
8	7	191	ASP
8	7	203	THR
8	7	213	SER
8	7	235	SER
8	7	238	ASP
8	7	243	LEU
8	7	258	THR

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Mol	Chain	Res	Type
8	7	264	SER
8	7	266	ASP
9	8	130	VAL
10	A	14	HIS
10	A	118	VAL
10	A	129	LEU
10	A	180	SER
12	B	118	GLN
12	B	149	VAL
18	D	91	SER
18	D	152	GLU
18	D	153	LYS
18	D	155	LEU
18	D	172	ARG
18	D	173	ARG
18	D	177	VAL
19	DD	27	VAL
19	DD	41	VAL
19	DD	98	ASN
19	DD	159	VAL
21	E	24	LEU
21	E	132	THR
22	EE	137	ILE
22	EE	142	ASP
22	EE	219	ILE
22	EE	249	SER
23	Ee	35	LEU
23	Ee	80	LEU
23	Ee	150	ASP
24	F	18	ASP
24	F	27	LEU
25	FF	38	SER
25	FF	55	THR
25	FF	104	THR
25	FF	166	ILE
26	G	55	THR
27	GG	6	VAL
27	GG	12	THR
27	GG	37	THR
27	GG	82	THR
27	GG	145	ILE
27	GG	181	VAL

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Mol	Chain	Res	Type
28	H	9	THR
28	H	34	LEU
28	H	84	SER
29	HH	10	SER
29	HH	163	LEU
29	HH	293	LEU
30	I	19	THR
30	I	53	VAL
31	II	15	VAL
32	J	25	LYS
32	J	74	LYS
32	J	97	LYS
34	K	39	LEU
35	KK	40	VAL
35	KK	197	VAL
35	KK	203	VAL
35	KK	215	VAL
35	KK	218	ILE
35	KK	248	LYS
36	L	75	VAL
36	L	95	VAL
36	L	106	GLN
36	L	116	LYS
37	LL	41	ILE
37	LL	50	ASN
37	LL	137	SER
37	LL	139	ASN
37	LL	191	LEU
38	M	15	VAL
39	MM	148	VAL
40	N	25	LYS
40	N	31	SER
41	NN	18	VAL
41	NN	34	SER
41	NN	40	LEU
41	NN	44	THR
41	NN	54	VAL
41	NN	57	PHE
41	NN	64	LYS
41	NN	107	ASP
41	NN	161	SER
42	O	74	ASN

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Mol	Chain	Res	Type
43	OO	4	SER
43	OO	58	VAL
43	OO	69	VAL
43	OO	138	VAL
43	OO	184	GLU
44	P	76	SER
45	PP	82	SER
48	QQ	18	VAL
48	QQ	19	LEU
48	QQ	64	VAL
48	QQ	140	LYS
50	S	49	SER
50	S	72	VAL
52	U	47	ILE
53	V	71	SER
54	W	24	THR
54	W	49	SER
57	Z	13	LEU
58	a	2	VAL
58	a	15	LYS
58	a	16	THR
59	b	62	LYS
59	b	63	THR
61	d	13	ASP
61	d	35	PRO
61	d	124	THR
62	e	43	VAL
62	e	54	LEU
62	e	95	ASN
62	e	217	LEU
62	e	231	LEU
63	f	51	THR
63	f	52	THR
63	f	90	THR
63	f	120	GLU
64	g	26	THR
64	g	44	THR
64	g	65	ARG
64	g	85	VAL
64	g	167	PHE
64	g	168	ILE
64	g	207	THR

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Mol	Chain	Res	Type
65	h	91	THR
65	h	98	ASN
65	h	120	SER
65	h	139	VAL
65	h	146	THR
65	h	176	ASP
65	h	211	LYS
65	h	219	VAL
66	i	25	LEU
66	i	33	VAL
66	i	59	VAL
66	i	73	THR
66	i	126	ASP
66	i	176	THR
67	j	1	MET
67	j	24	ILE
67	j	36	VAL
67	j	43	ASP
67	j	71	THR
67	j	126	ASP
67	j	129	VAL
67	j	158	ILE
67	j	190	GLN
67	j	214	LYS
68	k	37	GLU
68	k	42	GLN
68	k	77	LEU
68	k	95	GLU
68	k	109	VAL
68	k	168	SER
68	k	181	ILE
69	l	58	LEU
69	l	60	ILE
69	l	97	THR
69	l	104	ILE
69	l	153	GLU
70	m	50	SER
70	m	87	SER
70	m	89	ASP
70	m	92	LYS
70	m	96	VAL
70	m	152	SER

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Mol	Chain	Res	Type
71	n	51	SER
71	n	67	THR
72	o	31	THR
72	o	49	ILE
72	o	119	VAL
73	p	60	VAL
73	p	149	LEU
76	s	13	LYS
76	s	43	ILE
76	s	55	VAL
76	s	67	VAL
76	s	85	ILE
77	t	8	THR
77	t	25	THR
77	t	30	THR
77	t	66	VAL
77	t	72	LYS
77	t	73	LEU
77	t	75	GLU
77	t	77	GLU
77	t	78	ARG
77	t	79	GLU
77	t	80	ARG
77	t	81	LYS
77	t	85	VAL
77	t	87	GLU
77	t	91	LEU
78	u	5	VAL
78	u	38	VAL
79	v	9	VAL
79	v	114	VAL
79	v	116	ILE
79	v	139	THR
79	v	140	LEU
80	w	24	ILE
80	w	28	SER
80	w	30	LYS
80	w	60	THR
80	w	65	ILE
80	w	86	ILE
80	w	91	ILE
80	w	107	THR

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Mol	Chain	Res	Type
81	x	10	GLU
81	x	32	VAL
81	x	50	TYR
82	y	30	SER
83	z	41	SER
83	z	66	SER
83	z	101	GLU
83	z	107	PHE
83	z	110	LYS

Sometimes sidechains can be flipped to improve hydrogen bonding and reduce clashes. All (70) such sidechains are listed below:

Mol	Chain	Res	Type
4	3	9	HIS
4	3	26	GLN
5	4	51	ASN
6	5	53	ASN
8	7	64	HIS
8	7	101	GLN
12	B	45	GLN
12	B	54	HIS
12	B	133	HIS
18	D	166	ASN
19	DD	125	ASN
22	EE	47	GLN
22	EE	250	GLN
23	Ee	61	GLN
25	FF	109	HIS
25	FF	182	GLN
25	FF	224	HIS
26	G	87	ASN
27	GG	5	GLN
27	GG	260	GLN
28	H	47	ASN
29	HH	111	GLN
29	HH	264	GLN
29	HH	274	GLN
29	HH	297	GLN
30	I	59	HIS
31	II	57	HIS
33	JJ	225	GLN
33	JJ	231	ASN

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Mol	Chain	Res	Type
35	KK	240	ASN
37	LL	58	HIS
37	LL	163	GLN
38	M	62	HIS
39	MM	92	HIS
40	N	6	ASN
40	N	45	HIS
41	NN	20	ASN
42	O	75	ASN
43	OO	137	GLN
45	PP	41	GLN
45	PP	119	GLN
47	Q	49	ASN
51	T	99	GLN
55	X	33	ASN
56	Y	117	HIS
61	d	49	ASN
62	e	124	ASN
62	e	177	GLN
62	e	209	ASN
62	e	211	HIS
63	f	108	ASN
63	f	147	ASN
64	g	67	ASN
64	g	165	ASN
65	h	216	ASN
66	i	35	GLN
66	i	104	ASN
66	i	200	ASN
66	i	224	ASN
67	j	65	GLN
67	j	176	GLN
67	j	190	GLN
69	l	87	ASN
73	p	69	ASN
73	p	78	ASN
74	q	99	GLN
76	s	8	GLN
78	u	19	ASN
78	u	89	GLN
82	y	12	ASN

5.3.3 RNA ⓘ

Mol	Chain	Analysed	Backbone Outliers	Pucker Outliers
11	AA	3185/3396 (93%)	474 (14%)	21 (0%)
13	BB	120/121 (99%)	9 (7%)	1 (0%)
14	Bb	75/76 (98%)	29 (38%)	0
16	CC	157/158 (99%)	21 (13%)	0
17	Cc	76/77 (98%)	19 (25%)	0
20	Dd	12/39 (30%)	3 (25%)	0
60	c	1594/1800 (88%)	285 (17%)	0
All	All	5219/5667 (92%)	840 (16%)	22 (0%)

All (840) RNA backbone outliers are listed below:

Mol	Chain	Res	Type
11	AA	6	A
11	AA	26	A
11	AA	40	A
11	AA	43	A
11	AA	49	A
11	AA	59	G
11	AA	60	A
11	AA	65	A
11	AA	66	A
11	AA	72	C
11	AA	86	G
11	AA	92	G
11	AA	99	A
11	AA	110	G
11	AA	111	C
11	AA	122	A
11	AA	135	C
11	AA	136	G
11	AA	142	C
11	AA	156	G
11	AA	157	A
11	AA	165	A
11	AA	170	G
11	AA	190	U
11	AA	200	C
11	AA	206	G
11	AA	219	A
11	AA	220	G
11	AA	241	G

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Mol	Chain	Res	Type
11	AA	243	G
11	AA	247	C
11	AA	252	U
11	AA	253	A
11	AA	269	G
11	AA	286	U
11	AA	295	A
11	AA	305	U
11	AA	329	U
11	AA	374	A
11	AA	376	G
11	AA	401	U
11	AA	402	A
11	AA	403	C
11	AA	420	G
11	AA	421	G
11	AA	422	A
11	AA	520	U
11	AA	521	A
11	AA	523	A
11	AA	532	A
11	AA	533	A
11	AA	534	U
11	AA	546	C
11	AA	555	U
11	AA	557	A
11	AA	559	A
11	AA	560	G
11	AA	589	A
11	AA	592	A
11	AA	602	A
11	AA	603	A
11	AA	604	G
11	AA	607	A
11	AA	611	A
11	AA	620	U
11	AA	621	A
11	AA	636	C
11	AA	649	A2M
11	AA	660	A
11	AA	677	A
11	AA	678	G

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Mol	Chain	Res	Type
11	AA	681	U
11	AA	691	A
11	AA	705	A
11	AA	712	G
11	AA	715	A
11	AA	719	U
11	AA	758	C
11	AA	767	U
11	AA	776	U
11	AA	780	A
11	AA	781	G
11	AA	785	G
11	AA	786	A
11	AA	817	A2M
11	AA	830	A
11	AA	849	C
11	AA	861	C
11	AA	874	U
11	AA	879	U
11	AA	880	G
11	AA	896	A
11	AA	897	U
11	AA	907	G
11	AA	908	OMG
11	AA	914	A
11	AA	916	G
11	AA	917	A
11	AA	921	A
11	AA	923	C
11	AA	924	G
11	AA	925	A
11	AA	937	G
11	AA	944	C
11	AA	953	G
11	AA	959	C
11	AA	960	U
11	AA	961	C
11	AA	964	G
11	AA	974	G
11	AA	980	A
11	AA	994	G
11	AA	1006	A

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Mol	Chain	Res	Type
11	AA	1014	U
11	AA	1015	U
11	AA	1016	C
11	AA	1017	C
11	AA	1018	G
11	AA	1020	G
11	AA	1023	C
11	AA	1026	A
11	AA	1027	A
11	AA	1028	U
11	AA	1029	G
11	AA	1032	C
11	AA	1034	U
11	AA	1036	A
11	AA	1037	C
11	AA	1038	C
11	AA	1047	A
11	AA	1064	A
11	AA	1066	G
11	AA	1072	G
11	AA	1081	U
11	AA	1083	G
11	AA	1087	G
11	AA	1096	U
11	AA	1097	G
11	AA	1098	A
11	AA	1103	A
11	AA	1117	G
11	AA	1131	G
11	AA	1144	U
11	AA	1153	A
11	AA	1159	A
11	AA	1160	C
11	AA	1180	A
11	AA	1181	U
11	AA	1182	A
11	AA	1192	C
11	AA	1193	A
11	AA	1196	C
11	AA	1201	C
11	AA	1208	U
11	AA	1209	G

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Mol	Chain	Res	Type
11	AA	1217	A
11	AA	1222	G
11	AA	1230	G
11	AA	1232	C
11	AA	1235	U
11	AA	1236	G
11	AA	1237	G
11	AA	1240	A
11	AA	1244	A
11	AA	1245	A
11	AA	1246	G
11	AA	1249	G
11	AA	1250	G
11	AA	1254	C
11	AA	1257	C
11	AA	1262	G
11	AA	1263	A
11	AA	1265	U
11	AA	1272	C
11	AA	1275	C
11	AA	1276	U
11	AA	1281	G
11	AA	1284	C
11	AA	1285	G
11	AA	1286	A
11	AA	1302	A
11	AA	1307	G
11	AA	1308	A
11	AA	1309	U
11	AA	1313	G
11	AA	1330	A
11	AA	1331	U
11	AA	1345	G
11	AA	1348	U
11	AA	1349	G
11	AA	1351	U
11	AA	1352	A
11	AA	1355	A
11	AA	1356	U
11	AA	1357	G
11	AA	1386	A
11	AA	1392	G

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Mol	Chain	Res	Type
11	AA	1399	A
11	AA	1400	G
11	AA	1425	U
11	AA	1434	G
11	AA	1437	OMC
11	AA	1443	G
11	AA	1446	A
11	AA	1450	OMG
11	AA	1481	A
11	AA	1483	G
11	AA	1508	C
11	AA	1527	C
11	AA	1555	U
11	AA	1556	C
11	AA	1560	G
11	AA	1562	C
11	AA	1563	C
11	AA	1566	A
11	AA	1568	U
11	AA	1569	U
11	AA	1571	A
11	AA	1573	G
11	AA	1579	C
11	AA	1581	C
11	AA	1583	A
11	AA	1587	A
11	AA	1589	A
11	AA	1605	A
11	AA	1629	U
11	AA	1630	U
11	AA	1643	A
11	AA	1645	U
11	AA	1657	C
11	AA	1724	U
11	AA	1741	A
11	AA	1750	A
11	AA	1751	G
11	AA	1759	C
11	AA	1762	C
11	AA	1763	U
11	AA	1765	U
11	AA	1769	G

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Mol	Chain	Res	Type
11	AA	1796	G
11	AA	1797	A
11	AA	1815	U
11	AA	1816	A
11	AA	1817	G
11	AA	1821	U
11	AA	1842	A
11	AA	1878	G
11	AA	1879	A
11	AA	1880	U
11	AA	1893	A
11	AA	1906	G
11	AA	2102	U
11	AA	2112	U
11	AA	2114	C
11	AA	2122	G
11	AA	2131	A
11	AA	2140	U
11	AA	2144	A
11	AA	2158	A
11	AA	2168	A
11	AA	2169	G
11	AA	2170	U
11	AA	2171	G
11	AA	2188	A
11	AA	2204	C
11	AA	2206	G
11	AA	2207	A
11	AA	2209	U
11	AA	2223	A
11	AA	2244	A
11	AA	2254	U
11	AA	2266	U
11	AA	2267	C
11	AA	2268	U
11	AA	2271	A
11	AA	2273	G
11	AA	2279	A
11	AA	2280	A2M
11	AA	2281	A2M
11	AA	2282	U
11	AA	2307	G

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Mol	Chain	Res	Type
11	AA	2308	C
11	AA	2310	U
11	AA	2313	A
11	AA	2315	G
11	AA	2334	U
11	AA	2335	G
11	AA	2336	U
11	AA	2363	A
11	AA	2372	A
11	AA	2373	A
11	AA	2374	C
11	AA	2375	G
11	AA	2388	U
11	AA	2393	G
11	AA	2397	A
11	AA	2402	A
11	AA	2403	G
11	AA	2404	A
11	AA	2411	U
11	AA	2418	G
11	AA	2435	G
11	AA	2437	G
11	AA	2438	A
11	AA	2442	G
11	AA	2444	C
11	AA	2445	A
11	AA	2447	A
11	AA	2448	G
11	AA	2449	A
11	AA	2450	G
11	AA	2453	U
11	AA	2454	G
11	AA	2458	A
11	AA	2459	A
11	AA	2460	U
11	AA	2461	A
11	AA	2462	A
11	AA	2463	G
11	AA	2464	U
11	AA	2465	G
11	AA	2466	G
11	AA	2467	G

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Mol	Chain	Res	Type
11	AA	2470	C
11	AA	2471	U
11	AA	2472	U
11	AA	2474	G
11	AA	2475	G
11	AA	2477	G
11	AA	2478	C
11	AA	2479	C
11	AA	2480	A
11	AA	2481	G
11	AA	2486	A
11	AA	2487	U
11	AA	2488	A
11	AA	2489	C
11	AA	2490	C
11	AA	2491	A
11	AA	2492	C
11	AA	2494	A
11	AA	2495	C
11	AA	2496	C
11	AA	2499	U
11	AA	2501	U
11	AA	2503	G
11	AA	2511	A
11	AA	2514	U
11	AA	2515	A
11	AA	2550	U
11	AA	2552	C
11	AA	2554	A
11	AA	2560	C
11	AA	2561	A
11	AA	2569	A
11	AA	2570	U
11	AA	2571	U
11	AA	2572	C
11	AA	2573	G
11	AA	2585	G
11	AA	2593	A
11	AA	2606	G
11	AA	2607	G
11	AA	2614	G
11	AA	2629	U

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Mol	Chain	Res	Type
11	AA	2637	A
11	AA	2652	U
11	AA	2656	A
11	AA	2674	A
11	AA	2677	G
11	AA	2678	A
11	AA	2689	A
11	AA	2691	A
11	AA	2696	A
11	AA	2704	A
11	AA	2705	A
11	AA	2713	U
11	AA	2714	G
11	AA	2728	G
11	AA	2729	OMU
11	AA	2753	G
11	AA	2772	C
11	AA	2777	G
11	AA	2778	G
11	AA	2793	OMG
11	AA	2795	U
11	AA	2796	G
11	AA	2799	A
11	AA	2800	G
11	AA	2801	A
11	AA	2802	A
11	AA	2808	A
11	AA	2810	C
11	AA	2814	G
11	AA	2817	A
11	AA	2844	C
11	AA	2845	A
11	AA	2867	C
11	AA	2871	G
11	AA	2872	A
11	AA	2875	U
11	AA	2876	C
11	AA	2887	A
11	AA	2899	C
11	AA	2910	A
11	AA	2914	G
11	AA	2922	OMG

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Mol	Chain	Res	Type
11	AA	2923	U
11	AA	2935	U
11	AA	2936	A
11	AA	2938	G
11	AA	2942	C
11	AA	2947	G
11	AA	2951	G
11	AA	2971	A
11	AA	2972	G
11	AA	2977	G
11	AA	2983	C
11	AA	2990	G
11	AA	2997	G
11	AA	3012	A
11	AA	3056	U
11	AA	3059	G
11	AA	3078	U
11	AA	3080	G
11	AA	3092	C
11	AA	3101	G
11	AA	3104	U
11	AA	3113	A
11	AA	3122	A
11	AA	3129	A
11	AA	3130	A
11	AA	3131	U
11	AA	3142	A
11	AA	3143	C
11	AA	3153	U
11	AA	3154	C
11	AA	3155	U
11	AA	3156	U
11	AA	3157	U
11	AA	3168	A
11	AA	3170	A
11	AA	3172	A
11	AA	3173	G
11	AA	3176	G
11	AA	3179	U
11	AA	3181	C
11	AA	3187	A
11	AA	3207	U

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Mol	Chain	Res	Type
11	AA	3217	C
11	AA	3218	A
11	AA	3219	G
11	AA	3224	G
11	AA	3243	A
11	AA	3247	G
11	AA	3270	U
11	AA	3276	G
11	AA	3277	U
11	AA	3281	U
11	AA	3294	A
11	AA	3304	U
11	AA	3307	A
11	AA	3313	U
11	AA	3316	A
11	AA	3320	A
11	AA	3341	U
11	AA	3345	G
11	AA	3348	G
11	AA	3351	U
11	AA	3352	U
11	AA	3353	G
11	AA	3369	G
11	AA	3378	C
11	AA	3389	U
13	BB	7	G
13	BB	52	G
13	BB	54	U
13	BB	65	G
13	BB	73	C
13	BB	74	C
13	BB	76	A
13	BB	112	G
13	BB	121	U
14	Bb	4	G
14	Bb	5	A
14	Bb	6	U
14	Bb	7	U
14	Bb	8	U
14	Bb	9	A
14	Bb	15	G
14	Bb	16	U

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Mol	Chain	Res	Type
14	Bb	17	U
14	Bb	19	G
14	Bb	20	G
14	Bb	21	A
14	Bb	22	G
14	Bb	24	G
14	Bb	36	A
14	Bb	41	U
14	Bb	42	G
14	Bb	46	G
14	Bb	47	U
14	Bb	48	C
14	Bb	49	C
14	Bb	55	U
14	Bb	58	A
14	Bb	61	C
14	Bb	62	A
14	Bb	64	A
14	Bb	68	U
14	Bb	70	C
14	Bb	75	C
16	CC	23	U
16	CC	34	U
16	CC	35	C
16	CC	52	A
16	CC	59	A
16	CC	62	C
16	CC	63	G
16	CC	82	U
16	CC	83	C
16	CC	84	C
16	CC	86	U
16	CC	87	G
16	CC	91	C
16	CC	95	G
16	CC	104	A
16	CC	105	A
16	CC	106	C
16	CC	113	U
16	CC	125	U
16	CC	126	A
16	CC	152	G

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Mol	Chain	Res	Type
17	Cc	7	G
17	Cc	9	G
17	Cc	12	G
17	Cc	16	C
17	Cc	18	C
17	Cc	19	G
17	Cc	20	G
17	Cc	22	A
17	Cc	23	G
17	Cc	48	U
17	Cc	53	G
17	Cc	56	U
17	Cc	57	C
17	Cc	62	C
17	Cc	63	C
17	Cc	65	G
17	Cc	66	C
17	Cc	68	C
17	Cc	77	A
20	Dd	16	A
20	Dd	24	U
20	Dd	25	U
60	c	2	A
60	c	4	C
60	c	17	C
60	c	26	A
60	c	34	G
60	c	45	U
60	c	47	A
60	c	61	A
60	c	67	A
60	c	68	A
60	c	71	A
60	c	72	A
60	c	78	A
60	c	111	U
60	c	114	C
60	c	127	G
60	c	131	C
60	c	140	A
60	c	145	A
60	c	146	U

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Mol	Chain	Res	Type
60	c	168	A
60	c	176	C
60	c	183	U
60	c	184	C
60	c	261	U
60	c	262	U
60	c	271	A
60	c	272	U
60	c	277	U
60	c	278	U
60	c	279	G
60	c	285	G
60	c	287	G
60	c	299	A
60	c	309	C
60	c	314	C
60	c	316	A
60	c	322	G
60	c	337	G
60	c	338	C
60	c	361	C
60	c	390	G
60	c	400	A
60	c	401	A
60	c	402	C
60	c	404	G
60	c	414	OMC
60	c	419	G
60	c	423	G
60	c	424	C
60	c	426	G
60	c	428	A
60	c	434	G
60	c	439	U
60	c	444	C
60	c	448	C
60	c	455	C
60	c	460	A
60	c	468	A
60	c	475	A
60	c	477	A
60	c	506	A

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Mol	Chain	Res	Type
60	c	511	A
60	c	515	A
60	c	519	C
60	c	524	U
60	c	525	A
60	c	526	A
60	c	527	A
60	c	534	A
60	c	537	G
60	c	538	A
60	c	539	G
60	c	541	A2M
60	c	557	G
60	c	558	U
60	c	565	C
60	c	568	G
60	c	576	G
60	c	578	OMU
60	c	579	A
60	c	582	U
60	c	583	C
60	c	594	A
60	c	606	A
60	c	611	U
60	c	619	A2M
60	c	620	A
60	c	623	A
60	c	624	G
60	c	639	U
60	c	644	C
60	c	645	C
60	c	648	G
60	c	649	U
60	c	650	U
60	c	651	G
60	c	691	C
60	c	692	C
60	c	695	U
60	c	696	C
60	c	745	U
60	c	760	A
60	c	765	G

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Mol	Chain	Res	Type
60	c	766	U
60	c	775	G
60	c	778	G
60	c	780	A
60	c	781	U
60	c	782	U
60	c	783	G
60	c	784	C
60	c	789	A
60	c	793	A
60	c	794	U
60	c	795	U
60	c	809	A
60	c	812	A
60	c	814	A
60	c	820	U
60	c	821	U
60	c	822	U
60	c	859	A
60	c	860	U
60	c	863	A
60	c	895	G
60	c	898	A
60	c	906	A
60	c	913	G
60	c	914	G
60	c	915	A
60	c	933	A
60	c	935	U
60	c	951	A
60	c	960	U
60	c	966	A
60	c	988	A
60	c	992	A
60	c	993	A
60	c	1002	G
60	c	1010	C
60	c	1026	A
60	c	1028	C
60	c	1031	U
60	c	1032	G
60	c	1052	U

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Mol	Chain	Res	Type
60	c	1053	G
60	c	1058	U
60	c	1059	U
60	c	1060	U
60	c	1061	A
60	c	1063	U
60	c	1076	A
60	c	1081	A
60	c	1082	C
60	c	1092	A
60	c	1097	U
60	c	1100	G
60	c	1138	A
60	c	1150	G
60	c	1151	A
60	c	1158	C
60	c	1162	C
60	c	1185	U
60	c	1194	A
60	c	1196	A
60	c	1199	G
60	c	1200	G
60	c	1202	A
60	c	1217	A
60	c	1218	G
60	c	1221	A
60	c	1222	C
60	c	1223	A
60	c	1224	A
60	c	1225	U
60	c	1227	A
60	c	1228	G
60	c	1241	G
60	c	1244	A
60	c	1245	G
60	c	1246	C
60	c	1252	C
60	c	1256	A
60	c	1258	U
60	c	1259	U
60	c	1261	G
60	c	1274	C

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Mol	Chain	Res	Type
60	c	1280	4AC
60	c	1286	U
60	c	1291	G
60	c	1301	U
60	c	1309	C
60	c	1314	U
60	c	1315	U
60	c	1316	G
60	c	1318	G
60	c	1321	A
60	c	1336	A
60	c	1338	C
60	c	1339	C
60	c	1340	U
60	c	1346	A
60	c	1347	U
60	c	1351	G
60	c	1353	U
60	c	1354	G
60	c	1355	C
60	c	1361	U
60	c	1363	U
60	c	1370	U
60	c	1371	A
60	c	1372	U
60	c	1373	C
60	c	1378	U
60	c	1388	A
60	c	1390	U
60	c	1398	U
60	c	1399	C
60	c	1400	A
60	c	1411	A
60	c	1413	U
60	c	1414	U
60	c	1415	U
60	c	1425	A
60	c	1427	A
60	c	1428	OMG
60	c	1432	U
60	c	1436	A
60	c	1459	C

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Mol	Chain	Res	Type
60	c	1460	A
60	c	1469	A
60	c	1471	A
60	c	1489	U
60	c	1490	C
60	c	1491	U
60	c	1492	A
60	c	1496	U
60	c	1506	G
60	c	1510	U
60	c	1514	U
60	c	1516	A
60	c	1521	G
60	c	1523	G
60	c	1524	A
60	c	1535	U
60	c	1536	G
60	c	1537	C
60	c	1542	G
60	c	1557	U
60	c	1559	A
60	c	1572	OMG
60	c	1573	A
60	c	1575	G7M
60	c	1576	A
60	c	1590	G
60	c	1601	G
60	c	1616	G
60	c	1622	G
60	c	1631	A
60	c	1634	C
60	c	1646	C
60	c	1657	U
60	c	1658	G
60	c	1668	G
60	c	1678	A
60	c	1681	A
60	c	1683	C
60	c	1684	U
60	c	1685	G
60	c	1717	G
60	c	1740	A

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Mol	Chain	Res	Type
60	c	1755	A
60	c	1756	A
60	c	1762	A
60	c	1766	A
60	c	1769	U
60	c	1780	G
60	c	1782	MA6
60	c	1792	G
60	c	1793	G
60	c	1794	A
60	c	1795	U
60	c	1796	C
60	c	1799	U

All (22) RNA pucker outliers are listed below:

Mol	Chain	Res	Type
11	AA	588	G
11	AA	601	U
11	AA	619	A
11	AA	873	C
11	AA	896	A
11	AA	916	G
11	AA	993	G
11	AA	1033	U
11	AA	1348	U
11	AA	1562	C
11	AA	2101	C
11	AA	2253	G
11	AA	2372	A
11	AA	2487	U
11	AA	2490	C
11	AA	2500	A
11	AA	2792	A
11	AA	2922	OMG
11	AA	2971	A
11	AA	3121	U
11	AA	3206	C
13	BB	72	A

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

67 non-standard protein/DNA/RNA residues are 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$
11	1MA	AA	2142	11,85	21,25,26	0.57	0	30,37,40	0.82	1 (3%)
60	A2M	c	28	60	22,25,26	3.23	10 (45%)	30,36,39	2.90	10 (33%)
60	G7M	c	1575	60,17	23,26,27	2.62	8 (34%)	34,39,42	2.38	11 (32%)
60	MA6	c	1781	60	23,26,27	1.45	4 (17%)	33,38,41	3.22	12 (36%)
11	OMG	AA	2619	11	23,26,27	0.54	0	32,38,41	0.44	0
60	A2M	c	541	60	22,25,26	3.19	9 (40%)	30,36,39	3.04	13 (43%)
11	OMU	AA	2921	11,85	19,22,23	2.99	8 (42%)	25,31,34	1.82	5 (20%)
60	4AC	c	1773	60	21,24,25	3.34	10 (47%)	28,34,37	1.65	6 (21%)
11	OMG	AA	2791	11	23,26,27	0.54	0	32,38,41	0.47	0
60	OMU	c	578	60	19,22,23	3.05	8 (42%)	25,31,34	1.82	5 (20%)
11	OMC	AA	1437	11,85	19,22,23	0.63	0	25,31,34	0.87	1 (4%)
60	A2M	c	436	60	22,25,26	3.23	10 (45%)	30,36,39	2.87	10 (33%)
60	A2M	c	100	60,85	22,25,26	3.23	10 (45%)	30,36,39	2.93	10 (33%)
11	OMC	AA	650	11,85	19,22,23	0.61	0	25,31,34	0.64	0
11	A2M	AA	2220	11	22,25,26	3.22	10 (45%)	30,36,39	2.91	10 (33%)
11	A2M	AA	2280	11	22,25,26	3.21	10 (45%)	30,36,39	2.91	10 (33%)
60	A2M	c	796	60	22,25,26	3.25	10 (45%)	30,36,39	2.99	11 (36%)
60	OMU	c	1269	60	19,22,23	3.02	8 (42%)	25,31,34	1.81	5 (20%)
11	A2M	AA	876	11	22,25,26	3.20	10 (45%)	30,36,39	2.93	10 (33%)
11	OMG	AA	2815	11	23,26,27	0.53	0	32,38,41	0.51	0
11	OMC	AA	2959	11,85	19,22,23	0.63	0	25,31,34	0.63	0
11	OMU	AA	2421	11	19,22,23	2.99	8 (42%)	25,31,34	1.86	5 (20%)
11	OMC	AA	663	11	19,22,23	0.62	0	25,31,34	0.74	0
11	A2M	AA	649	11	22,25,26	3.23	10 (45%)	30,36,39	2.85	10 (33%)
11	OMG	AA	2793	11	23,26,27	0.58	0	32,38,41	0.53	0
60	4AC	c	1280	60	21,24,25	3.38	10 (47%)	28,34,37	1.68	5 (17%)
60	OMC	c	414	60	19,22,23	0.60	0	25,31,34	0.79	1 (4%)

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
60	OMG	c	1126	60	23,26,27	0.53	0	32,38,41	0.56	0
11	A2M	AA	817	11,85	22,25,26	3.20	10 (45%)	30,36,39	2.94	11 (36%)
60	OMC	c	1007	60	19,22,23	0.56	0	25,31,34	0.63	0
11	A2M	AA	1133	11,85	22,25,26	3.25	10 (45%)	30,36,39	2.98	11 (36%)
60	OMG	c	562	60	23,26,27	0.50	0	32,38,41	0.50	0
11	A2M	AA	807	11	22,25,26	3.21	10 (45%)	30,36,39	2.97	11 (36%)
11	OMU	AA	2417	11	19,22,23	2.96	8 (42%)	25,31,34	1.86	5 (20%)
11	OMU	AA	2724	11	19,22,23	3.00	8 (42%)	25,31,34	1.81	5 (20%)
11	A2M	AA	2256	11	22,25,26	3.20	10 (45%)	30,36,39	2.98	12 (40%)
11	OMU	AA	2729	11	19,22,23	2.98	8 (42%)	25,31,34	1.77	5 (20%)
11	5MC	AA	2278	11,85	19,22,23	0.60	0	26,32,35	0.63	0
11	OMU	AA	898	11	19,22,23	2.98	8 (42%)	25,31,34	1.80	5 (20%)
11	A2M	AA	2281	11	22,25,26	3.25	10 (45%)	30,36,39	3.14	14 (46%)
60	A2M	c	420	60	22,25,26	3.21	10 (45%)	30,36,39	2.93	11 (36%)
60	A2M	c	974	60	22,25,26	3.22	10 (45%)	30,36,39	2.87	10 (33%)
60	OMG	c	1572	60	23,26,27	0.57	0	32,38,41	0.56	0
60	OMG	c	1428	60,85	23,26,27	0.54	0	32,38,41	0.48	0
60	A2M	c	619	60,85	22,25,26	3.23	10 (45%)	30,36,39	3.00	11 (36%)
11	OMC	AA	2337	11	19,22,23	0.61	0	25,31,34	0.78	1 (4%)
11	OMC	AA	2197	11,86	19,22,23	0.60	0	25,31,34	0.67	0
11	5MC	AA	2870	11,86	19,22,23	0.78	0	26,32,35	0.64	0
11	A2M	AA	2946	11,85	22,25,26	3.23	10 (45%)	30,36,39	2.96	11 (36%)
11	1MA	AA	645	11,85	21,25,26	0.57	0	30,37,40	0.79	1 (3%)
11	OMG	AA	908	11	23,26,27	0.55	0	32,38,41	0.51	0
11	OMG	AA	1450	11	23,26,27	0.54	0	32,38,41	0.44	0
11	A2M	AA	2640	11	22,25,26	3.22	9 (40%)	30,36,39	2.91	10 (33%)
60	OMC	c	1639	60,85	19,22,23	0.63	0	25,31,34	0.54	0
60	OMG	c	1271	60	23,26,27	0.51	0	32,38,41	0.48	0
11	A2M	AA	1449	11,85	22,25,26	3.19	10 (45%)	30,36,39	2.89	10 (33%)
11	OMU	AA	2347	11	19,22,23	3.04	8 (42%)	25,31,34	1.82	5 (20%)
11	OMG	AA	2922	11,14	23,26,27	0.62	0	32,38,41	0.58	0
11	OMC	AA	2948	11	19,22,23	0.61	0	25,31,34	0.77	1 (4%)
11	OMG	AA	2288	11	23,26,27	0.55	0	32,38,41	0.45	0
11	UR3	AA	2634	11	19,22,23	2.82	7 (36%)	26,32,35	1.65	2 (7%)
14	YYG	Bb	37	14,85	38,42,43	2.46	13 (34%)	45,62,65	2.14	13 (28%)
60	MA6	c	1782	60	23,26,27	1.42	4 (17%)	33,38,41	3.29	12 (36%)
60	B8N	c	1191	60	25,29,30	3.34	8 (32%)	28,42,45	1.93	8 (28%)
11	OMG	AA	867	11,86	23,26,27	0.58	0	32,38,41	0.56	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
11	OMU	AA	1888	11	19,22,23	3.05	8 (42%)	25,31,34	1.93	6 (24%)
11	OMG	AA	805	11	23,26,27	0.56	0	32,38,41	0.57	0

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
11	1MA	AA	2142	11,85	-	0/7/25/26	0/3/3/3
60	A2M	c	28	60	-	1/9/27/28	0/3/3/3
60	G7M	c	1575	60,17	-	2/7/25/26	0/3/3/3
60	MA6	c	1781	60	-	0/11/29/30	0/3/3/3
11	OMG	AA	2619	11	-	1/9/27/28	0/3/3/3
60	A2M	c	541	60	-	6/9/27/28	0/3/3/3
11	OMU	AA	2921	11,85	-	0/9/27/28	0/2/2/2
60	4AC	c	1773	60	-	2/11/29/30	0/2/2/2
11	OMG	AA	2791	11	-	0/9/27/28	0/3/3/3
60	OMU	c	578	60	-	4/9/27/28	0/2/2/2
11	OMC	AA	1437	11,85	-	1/9/27/28	0/2/2/2
60	A2M	c	436	60	-	0/9/27/28	0/3/3/3
60	A2M	c	100	60,85	-	2/9/27/28	0/3/3/3
11	OMC	AA	650	11,85	-	0/9/27/28	0/2/2/2
11	A2M	AA	2220	11	-	0/9/27/28	0/3/3/3
11	A2M	AA	2280	11	-	2/9/27/28	0/3/3/3
60	A2M	c	796	60	-	0/9/27/28	0/3/3/3
60	OMU	c	1269	60	-	0/9/27/28	0/2/2/2
11	A2M	AA	876	11	-	1/9/27/28	0/3/3/3
11	OMG	AA	2815	11	-	0/9/27/28	0/3/3/3
11	OMC	AA	2959	11,85	-	0/9/27/28	0/2/2/2
11	OMU	AA	2421	11	-	0/9/27/28	0/2/2/2
11	OMC	AA	663	11	-	1/9/27/28	0/2/2/2
11	A2M	AA	649	11	-	1/9/27/28	0/3/3/3
11	OMG	AA	2793	11	-	0/9/27/28	0/3/3/3
60	4AC	c	1280	60	-	4/11/29/30	0/2/2/2
60	OMC	c	414	60	-	2/9/27/28	0/2/2/2
60	OMG	c	1126	60	-	1/9/27/28	0/3/3/3
11	A2M	AA	817	11,85	-	2/9/27/28	0/3/3/3
60	OMC	c	1007	60	-	0/9/27/28	0/2/2/2
11	A2M	AA	1133	11,85	-	0/9/27/28	0/3/3/3

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Mol	Type	Chain	Res	Link	Chirals	Torsions	Rings
60	OMG	c	562	60	-	0/9/27/28	0/3/3/3
11	A2M	AA	807	11	-	3/9/27/28	0/3/3/3
11	OMU	AA	2417	11	-	1/9/27/28	0/2/2/2
11	OMU	AA	2724	11	-	1/9/27/28	0/2/2/2
11	A2M	AA	2256	11	-	3/9/27/28	0/3/3/3
11	OMU	AA	2729	11	-	0/9/27/28	0/2/2/2
11	5MC	AA	2278	11,85	-	0/7/25/26	0/2/2/2
11	OMU	AA	898	11	-	0/9/27/28	0/2/2/2
11	A2M	AA	2281	11	-	1/9/27/28	0/3/3/3
60	A2M	c	420	60	-	1/9/27/28	0/3/3/3
60	A2M	c	974	60	-	0/9/27/28	0/3/3/3
60	OMG	c	1572	60	-	2/9/27/28	0/3/3/3
60	OMG	c	1428	60,85	-	1/9/27/28	0/3/3/3
60	A2M	c	619	60,85	-	6/9/27/28	0/3/3/3
11	OMC	AA	2337	11	-	0/9/27/28	0/2/2/2
11	OMC	AA	2197	11,86	-	4/9/27/28	0/2/2/2
11	5MC	AA	2870	11,86	-	4/7/25/26	0/2/2/2
11	A2M	AA	2946	11,85	-	0/9/27/28	0/3/3/3
11	1MA	AA	645	11,85	-	2/7/25/26	0/3/3/3
11	OMG	AA	908	11	-	1/9/27/28	0/3/3/3
11	OMG	AA	1450	11	-	2/9/27/28	0/3/3/3
11	A2M	AA	2640	11	-	1/9/27/28	0/3/3/3
60	OMC	c	1639	60,85	-	0/9/27/28	0/2/2/2
60	OMG	c	1271	60	-	1/9/27/28	0/3/3/3
11	A2M	AA	1449	11,85	-	0/9/27/28	0/3/3/3
11	OMU	AA	2347	11	-	0/9/27/28	0/2/2/2
11	OMG	AA	2922	11,14	-	2/9/27/28	0/3/3/3
11	OMC	AA	2948	11	-	0/9/27/28	0/2/2/2
11	OMG	AA	2288	11	-	0/9/27/28	0/3/3/3
11	UR3	AA	2634	11	-	0/7/25/26	0/2/2/2
14	YYG	Bb	37	14,85	-	10/24/42/43	0/4/4/4
60	MA6	c	1782	60	-	3/11/29/30	0/3/3/3
60	B8N	c	1191	60	-	1/16/34/35	0/2/2/2
11	OMG	AA	867	11,86	-	2/9/27/28	0/3/3/3
11	OMU	AA	1888	11	-	0/9/27/28	0/2/2/2
11	OMG	AA	805	11	-	0/9/27/28	0/3/3/3

All (342) bond length outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	796	A2M	C3'-C4'	-9.04	1.30	1.53
60	c	100	A2M	C3'-C4'	-8.98	1.30	1.53
11	AA	1133	A2M	C3'-C4'	-8.95	1.30	1.53
60	c	619	A2M	C3'-C4'	-8.95	1.30	1.53
60	c	28	A2M	C3'-C4'	-8.95	1.30	1.53
60	c	436	A2M	C3'-C4'	-8.93	1.30	1.53
11	AA	807	A2M	C3'-C4'	-8.89	1.30	1.53
11	AA	2640	A2M	C3'-C4'	-8.88	1.30	1.53
11	AA	2946	A2M	C3'-C4'	-8.88	1.30	1.53
11	AA	2220	A2M	C3'-C4'	-8.87	1.30	1.53
60	c	420	A2M	C3'-C4'	-8.85	1.30	1.53
60	c	541	A2M	C3'-C4'	-8.84	1.30	1.53
11	AA	817	A2M	C3'-C4'	-8.84	1.30	1.53
60	c	974	A2M	C3'-C4'	-8.83	1.30	1.53
11	AA	2280	A2M	C3'-C4'	-8.78	1.30	1.53
11	AA	876	A2M	C3'-C4'	-8.78	1.30	1.53
11	AA	649	A2M	C3'-C4'	-8.73	1.30	1.53
11	AA	1449	A2M	C3'-C4'	-8.66	1.31	1.53
11	AA	2256	A2M	C3'-C4'	-8.66	1.31	1.53
11	AA	2281	A2M	C3'-C4'	-8.56	1.31	1.53
60	c	1191	B8N	C4-N3	-8.24	1.25	1.40
60	c	1191	B8N	C6-N1	7.87	1.55	1.36
11	AA	2256	A2M	O4'-C4'	7.74	1.62	1.45
11	AA	649	A2M	O4'-C4'	7.68	1.62	1.45
60	c	420	A2M	O4'-C4'	7.65	1.62	1.45
11	AA	2640	A2M	O4'-C4'	7.64	1.62	1.45
60	c	436	A2M	O4'-C4'	7.64	1.62	1.45
11	AA	1133	A2M	O4'-C4'	7.63	1.61	1.45
11	AA	2946	A2M	O4'-C4'	7.62	1.61	1.45
60	c	974	A2M	O4'-C4'	7.62	1.61	1.45
60	c	796	A2M	O4'-C4'	7.60	1.61	1.45
11	AA	2220	A2M	O4'-C4'	7.59	1.61	1.45
11	AA	1449	A2M	O4'-C4'	7.55	1.61	1.45
11	AA	2281	A2M	O4'-C4'	7.55	1.61	1.45
60	c	100	A2M	O4'-C4'	7.55	1.61	1.45
11	AA	876	A2M	O4'-C4'	7.52	1.61	1.45
60	c	541	A2M	O4'-C4'	7.51	1.61	1.45
60	c	28	A2M	O4'-C4'	7.48	1.61	1.45
11	AA	2280	A2M	O4'-C4'	7.45	1.61	1.45
11	AA	2347	OMU	C2-N1	7.34	1.50	1.38
11	AA	817	A2M	O4'-C4'	7.30	1.61	1.45
60	c	1280	4AC	C4-N3	7.26	1.45	1.32
11	AA	807	A2M	O4'-C4'	7.25	1.61	1.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	1191	B8N	C4-C5	7.23	1.63	1.47
11	AA	1888	OMU	C2-N1	7.19	1.49	1.38
60	c	1773	4AC	C4-N3	7.16	1.44	1.32
60	c	578	OMU	C2-N1	7.09	1.49	1.38
60	c	1269	OMU	C2-N1	7.05	1.49	1.38
11	AA	2421	OMU	C2-N1	7.01	1.49	1.38
14	Bb	37	YYG	C21-N20	7.01	1.52	1.34
60	c	619	A2M	O4'-C4'	6.99	1.60	1.45
11	AA	2724	OMU	C2-N1	6.97	1.49	1.38
11	AA	2921	OMU	C2-N1	6.94	1.49	1.38
11	AA	898	OMU	C2-N1	6.93	1.49	1.38
60	c	1773	4AC	C6-C5	6.86	1.51	1.35
11	AA	2729	OMU	C2-N1	6.83	1.49	1.38
11	AA	2634	UR3	C2-N1	6.81	1.47	1.38
60	c	578	OMU	C2-N3	6.78	1.49	1.38
60	c	1269	OMU	C2-N3	6.69	1.49	1.38
11	AA	2347	OMU	C2-N3	6.69	1.49	1.38
11	AA	2417	OMU	C2-N1	6.69	1.48	1.38
11	AA	1888	OMU	C2-N3	6.67	1.49	1.38
11	AA	2921	OMU	C2-N3	6.63	1.49	1.38
11	AA	2724	OMU	C2-N3	6.62	1.49	1.38
11	AA	898	OMU	C2-N3	6.61	1.49	1.38
60	c	1280	4AC	C6-C5	6.59	1.50	1.35
11	AA	2634	UR3	C6-C5	6.57	1.50	1.35
11	AA	2417	OMU	C2-N3	6.54	1.49	1.38
11	AA	2729	OMU	C2-N3	6.53	1.49	1.38
11	AA	2421	OMU	C2-N3	6.49	1.49	1.38
14	Bb	37	YYG	C13-C12	6.44	1.58	1.50
60	c	1575	G7M	C4-N3	6.34	1.48	1.34
60	c	1191	B8N	C2-N1	5.85	1.56	1.39
14	Bb	37	YYG	O23-C21	5.67	1.43	1.34
60	c	578	OMU	C6-C5	5.62	1.48	1.35
11	AA	2417	OMU	C6-C5	5.62	1.48	1.35
11	AA	1888	OMU	C6-C5	5.60	1.48	1.35
11	AA	2729	OMU	C6-C5	5.60	1.48	1.35
60	c	1269	OMU	C6-C5	5.57	1.48	1.35
11	AA	2724	OMU	C6-C5	5.56	1.48	1.35
11	AA	2921	OMU	C6-C5	5.52	1.47	1.35
60	c	1575	G7M	C5-N7	-5.50	1.32	1.39
11	AA	2281	A2M	O4'-C1'	-5.50	1.29	1.42
11	AA	2421	OMU	C6-C5	5.50	1.47	1.35
11	AA	898	OMU	C6-C5	5.50	1.47	1.35

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2347	OMU	C6-C5	5.43	1.47	1.35
11	AA	2634	UR3	C2-N3	5.33	1.49	1.39
60	c	1575	G7M	C2-N3	5.22	1.45	1.33
60	c	1280	4AC	C2-N1	5.21	1.51	1.40
60	c	619	A2M	O4'-C1'	-5.20	1.30	1.42
11	AA	649	A2M	O4'-C1'	-5.06	1.30	1.42
60	c	1191	B8N	C6-C5	5.04	1.42	1.35
11	AA	2280	A2M	O4'-C1'	-4.94	1.30	1.42
11	AA	807	A2M	O4'-C1'	-4.93	1.30	1.42
60	c	1773	4AC	C2-N1	4.84	1.50	1.40
11	AA	817	A2M	O4'-C1'	-4.83	1.30	1.42
60	c	1280	4AC	C7-N4	4.83	1.47	1.37
60	c	974	A2M	O4'-C1'	-4.83	1.30	1.42
60	c	1280	4AC	C2-N3	4.81	1.45	1.36
11	AA	2256	A2M	O4'-C1'	-4.81	1.30	1.42
60	c	100	A2M	O4'-C1'	-4.81	1.30	1.42
11	AA	2640	A2M	O4'-C1'	-4.79	1.30	1.42
60	c	28	A2M	O4'-C1'	-4.79	1.30	1.42
60	c	1773	4AC	C7-N4	4.78	1.46	1.37
11	AA	876	A2M	O4'-C1'	-4.78	1.30	1.42
60	c	1773	4AC	C2-N3	4.78	1.45	1.36
60	c	436	A2M	O4'-C1'	-4.76	1.31	1.42
11	AA	1449	A2M	O4'-C1'	-4.75	1.31	1.42
60	c	541	A2M	O4'-C1'	-4.75	1.31	1.42
11	AA	2946	A2M	O4'-C1'	-4.74	1.31	1.42
11	AA	1133	A2M	O4'-C1'	-4.73	1.31	1.42
11	AA	2220	A2M	O4'-C1'	-4.70	1.31	1.42
60	c	420	A2M	O4'-C1'	-4.68	1.31	1.42
60	c	1280	4AC	C4-N4	4.66	1.46	1.39
60	c	796	A2M	O4'-C1'	-4.66	1.31	1.42
60	c	1773	4AC	C4-N4	4.65	1.46	1.39
60	c	1575	G7M	C2-N2	4.59	1.44	1.34
14	Bb	37	YYG	C2-N1	-4.49	1.31	1.38
60	c	541	A2M	C6-N6	4.41	1.45	1.34
11	AA	2640	A2M	C6-N6	4.36	1.45	1.34
60	c	28	A2M	C6-N6	4.34	1.45	1.34
11	AA	2256	A2M	C6-N6	4.34	1.45	1.34
60	c	796	A2M	C6-N6	4.34	1.45	1.34
60	c	420	A2M	C6-N6	4.34	1.45	1.34
11	AA	1133	A2M	C6-N6	4.32	1.45	1.34
11	AA	2220	A2M	C6-N6	4.31	1.45	1.34
60	c	578	OMU	C4-N3	4.30	1.46	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	100	A2M	C6-N6	4.30	1.45	1.34
60	c	619	A2M	C6-N6	4.29	1.45	1.34
11	AA	807	A2M	C6-N6	4.29	1.45	1.34
11	AA	876	A2M	C6-N6	4.28	1.45	1.34
60	c	436	A2M	C6-N6	4.28	1.45	1.34
11	AA	2280	A2M	C6-N6	4.27	1.45	1.34
11	AA	2946	A2M	C6-N6	4.26	1.45	1.34
11	AA	1449	A2M	C6-N6	4.25	1.45	1.34
11	AA	817	A2M	C6-N6	4.23	1.45	1.34
60	c	974	A2M	C6-N6	4.23	1.45	1.34
11	AA	649	A2M	C6-N6	4.21	1.45	1.34
60	c	1269	OMU	C4-N3	4.18	1.45	1.38
11	AA	2347	OMU	C4-N3	4.16	1.45	1.38
11	AA	2281	A2M	C6-N6	4.13	1.44	1.34
60	c	1280	4AC	CM7-C7	4.12	1.59	1.50
11	AA	1888	OMU	C4-N3	4.11	1.45	1.38
11	AA	2724	OMU	C4-N3	4.07	1.45	1.38
11	AA	2729	OMU	C4-N3	4.04	1.45	1.38
11	AA	2921	OMU	C4-N3	4.03	1.45	1.38
11	AA	2421	OMU	C4-N3	4.00	1.45	1.38
14	Bb	37	YYG	O18-C16	3.97	1.43	1.33
11	AA	2417	OMU	C4-N3	3.97	1.45	1.38
11	AA	898	OMU	C4-N3	3.92	1.45	1.38
60	c	1781	MA6	C6-N6	3.82	1.47	1.36
60	c	1280	4AC	C5-C4	3.80	1.49	1.41
60	c	1773	4AC	C5-C4	3.78	1.49	1.41
60	c	1782	MA6	C6-N6	3.73	1.47	1.36
60	c	1773	4AC	CM7-C7	3.69	1.58	1.50
60	c	1575	G7M	C5-C6	3.65	1.53	1.43
14	Bb	37	YYG	C6-N1	-3.61	1.34	1.42
60	c	1191	B8N	C1'-C5	3.60	1.58	1.50
60	c	619	A2M	C5-C4	-3.36	1.33	1.39
11	AA	2281	A2M	C5-C4	-3.35	1.33	1.39
11	AA	898	OMU	O4-C4	-3.25	1.18	1.24
11	AA	1888	OMU	O4-C4	-3.23	1.18	1.24
11	AA	2634	UR3	C6-N1	3.21	1.45	1.38
11	AA	649	A2M	C5-C4	-3.21	1.33	1.39
11	AA	2946	A2M	C5-C4	-3.21	1.33	1.39
11	AA	2921	OMU	O4-C4	-3.20	1.18	1.24
11	AA	817	A2M	C5-C4	-3.20	1.33	1.39
11	AA	2421	OMU	O4-C4	-3.19	1.18	1.24
11	AA	2280	A2M	C5-C4	-3.19	1.33	1.39

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	1781	MA6	C5-C4	-3.18	1.33	1.39
11	AA	2724	OMU	O4-C4	-3.17	1.18	1.24
11	AA	807	A2M	C5-C4	-3.17	1.33	1.39
11	AA	2417	OMU	O4-C4	-3.17	1.18	1.24
11	AA	2347	OMU	O4-C4	-3.15	1.18	1.24
11	AA	2729	OMU	O4-C4	-3.15	1.18	1.24
60	c	1782	MA6	C5-C4	-3.13	1.33	1.39
11	AA	1133	A2M	C5-C4	-3.12	1.33	1.39
60	c	28	A2M	C5-C4	-3.12	1.33	1.39
11	AA	1449	A2M	C5-C4	-3.11	1.33	1.39
11	AA	2640	A2M	C5-C4	-3.10	1.33	1.39
60	c	436	A2M	C5-C4	-3.08	1.33	1.39
60	c	100	A2M	C5-C4	-3.08	1.33	1.39
60	c	796	A2M	C5-C4	-3.06	1.33	1.39
11	AA	2256	A2M	C5-C4	-3.06	1.33	1.39
60	c	420	A2M	C5-C4	-3.05	1.33	1.39
60	c	974	A2M	C5-C4	-3.04	1.33	1.39
11	AA	2220	A2M	C5-C4	-3.00	1.33	1.39
60	c	1269	OMU	O4-C4	-3.00	1.18	1.24
11	AA	876	A2M	C5-C4	-2.99	1.33	1.39
60	c	578	OMU	O4-C4	-2.94	1.18	1.24
11	AA	807	A2M	C8-N9	-2.94	1.32	1.37
60	c	619	A2M	C8-N9	-2.93	1.32	1.37
60	c	796	A2M	O2'-C2'	-2.91	1.35	1.42
60	c	28	A2M	O2'-C2'	-2.84	1.35	1.42
14	Bb	37	YYG	C8-N9	-2.83	1.31	1.37
11	AA	817	A2M	O3'-C3'	2.82	1.49	1.43
60	c	796	A2M	C8-N9	-2.82	1.32	1.37
11	AA	2281	A2M	O2'-C2'	-2.81	1.35	1.42
11	AA	2220	A2M	O2'-C2'	-2.81	1.35	1.42
11	AA	2946	A2M	O2'-C2'	-2.80	1.35	1.42
60	c	100	A2M	O2'-C2'	-2.80	1.35	1.42
11	AA	1449	A2M	O2'-C2'	-2.80	1.35	1.42
11	AA	2281	A2M	O3'-C3'	2.78	1.49	1.43
60	c	578	OMU	C6-N1	2.78	1.44	1.38
11	AA	1133	A2M	O2'-C2'	-2.77	1.35	1.42
60	c	541	A2M	C5-C4	-2.76	1.34	1.39
60	c	974	A2M	O2'-C2'	-2.76	1.35	1.42
11	AA	876	A2M	O2'-C2'	-2.76	1.35	1.42
11	AA	2421	OMU	O2-C2	-2.76	1.18	1.23
11	AA	2724	OMU	O2-C2	-2.75	1.18	1.23
60	c	436	A2M	O2'-C2'	-2.75	1.35	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
11	AA	2729	OMU	C6-N1	2.75	1.44	1.38
60	c	541	A2M	O3'-C3'	2.75	1.49	1.43
60	c	1269	OMU	C6-N1	2.75	1.44	1.38
11	AA	2729	OMU	O2-C2	-2.75	1.18	1.23
11	AA	2421	OMU	C6-N1	2.74	1.44	1.38
11	AA	649	A2M	C8-N9	-2.74	1.32	1.37
11	AA	817	A2M	O2'-C2'	-2.74	1.35	1.42
11	AA	2921	OMU	C6-N1	2.74	1.44	1.38
11	AA	2417	OMU	O2-C2	-2.73	1.18	1.23
11	AA	876	A2M	C8-N9	-2.73	1.32	1.37
11	AA	1449	A2M	O3'-C3'	2.73	1.49	1.43
60	c	619	A2M	O3'-C3'	2.73	1.49	1.43
11	AA	2280	A2M	O2'-C2'	-2.73	1.35	1.42
11	AA	2946	A2M	C8-N9	-2.73	1.32	1.37
11	AA	2417	OMU	C6-N1	2.72	1.44	1.38
11	AA	2724	OMU	C6-N1	2.72	1.44	1.38
11	AA	1888	OMU	C6-N1	2.72	1.44	1.38
60	c	420	A2M	O3'-C3'	2.71	1.49	1.43
60	c	541	A2M	C8-N9	-2.71	1.32	1.37
11	AA	2220	A2M	O3'-C3'	2.71	1.49	1.43
11	AA	2347	OMU	C6-N1	2.70	1.44	1.38
11	AA	898	OMU	O2-C2	-2.70	1.18	1.23
11	AA	2281	A2M	C8-N9	-2.70	1.33	1.37
60	c	420	A2M	O2'-C2'	-2.70	1.36	1.42
11	AA	898	OMU	C6-N1	2.70	1.44	1.38
11	AA	1888	OMU	O2-C2	-2.69	1.18	1.23
11	AA	2280	A2M	O3'-C3'	2.69	1.49	1.43
11	AA	807	A2M	O2'-C2'	-2.69	1.36	1.42
11	AA	2220	A2M	C8-N9	-2.68	1.33	1.37
11	AA	2921	OMU	O2-C2	-2.68	1.18	1.23
60	c	619	A2M	O2'-C2'	-2.68	1.36	1.42
60	c	974	A2M	C8-N9	-2.67	1.33	1.37
11	AA	1133	A2M	C8-N9	-2.67	1.33	1.37
11	AA	817	A2M	C8-N9	-2.67	1.33	1.37
60	c	1269	OMU	O2-C2	-2.66	1.18	1.23
11	AA	2640	A2M	C8-N9	-2.66	1.33	1.37
60	c	100	A2M	C8-N9	-2.66	1.33	1.37
11	AA	2640	A2M	O2'-C2'	-2.65	1.36	1.42
11	AA	649	A2M	O2'-C2'	-2.65	1.36	1.42
11	AA	2256	A2M	O3'-C3'	2.65	1.49	1.43
60	c	974	A2M	O3'-C3'	2.65	1.49	1.43
11	AA	2280	A2M	C8-N9	-2.65	1.33	1.37

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	436	A2M	C8-N9	-2.65	1.33	1.37
11	AA	2256	A2M	C8-N9	-2.64	1.33	1.37
11	AA	2640	A2M	O3'-C3'	2.64	1.49	1.43
11	AA	649	A2M	C5-N7	-2.64	1.34	1.39
60	c	1575	G7M	O6-C6	-2.63	1.18	1.23
60	c	28	A2M	C8-N9	-2.63	1.33	1.37
60	c	28	A2M	O3'-C3'	2.62	1.49	1.43
11	AA	1449	A2M	C8-N9	-2.60	1.33	1.37
60	c	436	A2M	O3'-C3'	2.60	1.49	1.43
11	AA	2347	OMU	O2-C2	-2.60	1.18	1.23
60	c	1781	MA6	C5-N7	-2.60	1.34	1.39
14	Bb	37	YYG	O6-C6	-2.59	1.17	1.23
11	AA	1133	A2M	O3'-C3'	2.59	1.49	1.43
60	c	578	OMU	O2-C2	-2.59	1.18	1.23
11	AA	876	A2M	O3'-C3'	2.59	1.49	1.43
60	c	796	A2M	O3'-C3'	2.58	1.49	1.43
60	c	100	A2M	O3'-C3'	2.58	1.49	1.43
60	c	420	A2M	C8-N9	-2.58	1.33	1.37
60	c	1575	G7M	C2-N1	2.57	1.43	1.37
11	AA	2946	A2M	O3'-C3'	2.56	1.49	1.43
11	AA	876	A2M	C5-N7	-2.56	1.34	1.39
11	AA	2280	A2M	C5-N7	-2.54	1.34	1.39
11	AA	1449	A2M	C5-N7	-2.54	1.34	1.39
11	AA	807	A2M	O3'-C3'	2.53	1.49	1.43
14	Bb	37	YYG	C5-N7	-2.53	1.34	1.39
11	AA	2640	A2M	C5-N7	-2.53	1.34	1.39
60	c	1782	MA6	C5-N7	-2.52	1.34	1.39
11	AA	649	A2M	O3'-C3'	2.51	1.49	1.43
60	c	796	A2M	C5-N7	-2.50	1.34	1.39
60	c	436	A2M	C5-N7	-2.50	1.34	1.39
11	AA	1133	A2M	C5-N7	-2.49	1.34	1.39
60	c	1773	4AC	O7-C7	-2.48	1.17	1.23
11	AA	2281	A2M	C4-N9	-2.47	1.32	1.37
11	AA	1133	A2M	C4-N9	-2.47	1.32	1.37
60	c	1781	MA6	C8-N9	-2.46	1.33	1.37
60	c	1773	4AC	C6-N1	2.46	1.44	1.38
11	AA	2634	UR3	C4-N3	2.46	1.45	1.40
11	AA	807	A2M	C5-N7	-2.45	1.34	1.39
11	AA	2220	A2M	C5-N7	-2.44	1.34	1.39
60	c	619	A2M	C5-N7	-2.44	1.34	1.39
11	AA	2946	A2M	C5-N7	-2.44	1.34	1.39
60	c	541	A2M	O2'-C2'	-2.43	1.36	1.42

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	100	A2M	C5-N7	-2.43	1.34	1.39
60	c	1269	OMU	C5-C4	2.43	1.49	1.43
11	AA	2281	A2M	C5-N7	-2.43	1.34	1.39
60	c	28	A2M	C5-N7	-2.43	1.34	1.39
60	c	541	A2M	C5-N7	-2.42	1.34	1.39
11	AA	817	A2M	C4-N9	-2.42	1.32	1.37
60	c	974	A2M	C5-N7	-2.40	1.34	1.39
60	c	619	A2M	C4-N9	-2.39	1.32	1.37
60	c	578	OMU	C5-C4	2.38	1.48	1.43
14	Bb	37	YYG	C10-C11	2.38	1.54	1.49
11	AA	2421	OMU	C5-C4	2.36	1.48	1.43
11	AA	2417	OMU	C5-C4	2.34	1.48	1.43
11	AA	2256	A2M	C4-N9	-2.34	1.32	1.37
60	c	1280	4AC	O7-C7	-2.34	1.18	1.23
11	AA	2729	OMU	C5-C4	2.33	1.48	1.43
60	c	420	A2M	C5-N7	-2.32	1.34	1.39
11	AA	2946	A2M	C4-N9	-2.31	1.32	1.37
60	c	1280	4AC	C6-N1	2.31	1.43	1.38
11	AA	2220	A2M	C4-N9	-2.31	1.32	1.37
60	c	1782	MA6	C8-N9	-2.31	1.33	1.37
60	c	974	A2M	C4-N9	-2.30	1.32	1.37
11	AA	649	A2M	C4-N9	-2.30	1.32	1.37
11	AA	2256	A2M	O2'-C2'	-2.30	1.37	1.42
11	AA	817	A2M	C5-N7	-2.29	1.34	1.39
11	AA	1888	OMU	C5-C4	2.29	1.48	1.43
11	AA	2921	OMU	C5-C4	2.28	1.48	1.43
11	AA	2634	UR3	O2-C2	-2.27	1.18	1.22
11	AA	807	A2M	C4-N9	-2.27	1.33	1.37
11	AA	2256	A2M	C5-N7	-2.27	1.34	1.39
60	c	436	A2M	C4-N9	-2.24	1.33	1.37
11	AA	2634	UR3	C5-C4	2.24	1.49	1.43
60	c	1191	B8N	O4-C4	-2.21	1.18	1.23
11	AA	2347	OMU	C5-C4	2.19	1.48	1.43
60	c	796	A2M	C4-N9	-2.19	1.33	1.37
60	c	28	A2M	C4-N9	-2.18	1.33	1.37
11	AA	2724	OMU	C5-C4	2.17	1.48	1.43
11	AA	898	OMU	C5-C4	2.16	1.48	1.43
11	AA	1449	A2M	C4-N9	-2.15	1.33	1.37
60	c	1575	G7M	C6-N1	2.15	1.42	1.38
60	c	1191	B8N	O2-C2	-2.12	1.18	1.22
11	AA	2280	A2M	C4-N9	-2.11	1.33	1.37
14	Bb	37	YYG	C11-N2	-2.10	1.33	1.38

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Mol	Chain	Res	Type	Atoms	Z	Observed(Å)	Ideal(Å)
60	c	420	A2M	C4-N9	-2.09	1.33	1.37
60	c	100	A2M	C4-N9	-2.09	1.33	1.37
11	AA	876	A2M	C4-N9	-2.08	1.33	1.37
14	Bb	37	YYG	C12-N1	-2.05	1.35	1.40
14	Bb	37	YYG	O18-C19	-2.01	1.40	1.45

All (342) bond angle outliers are listed below:

Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
60	c	1782	MA6	N1-C6-N6	-12.02	102.21	116.86
60	c	1781	MA6	N1-C6-N6	-11.62	102.70	116.86
60	c	1782	MA6	C5-C6-N6	7.92	137.87	125.33
60	c	1781	MA6	C5-C6-N6	7.89	137.82	125.33
14	Bb	37	YYG	C5-C4-N3	-6.94	118.36	123.99
11	AA	817	A2M	N6-C6-N1	-6.89	103.02	118.38
60	c	619	A2M	N6-C6-N1	-6.77	103.30	118.38
60	c	436	A2M	N6-C6-N1	-6.69	103.48	118.38
11	AA	1449	A2M	N6-C6-N1	-6.65	103.56	118.38
11	AA	807	A2M	N6-C6-N1	-6.65	103.56	118.38
11	AA	2220	A2M	N6-C6-N1	-6.63	103.60	118.38
11	AA	1133	A2M	N6-C6-N1	-6.62	103.62	118.38
11	AA	2946	A2M	N6-C6-N1	-6.59	103.69	118.38
11	AA	876	A2M	N6-C6-N1	-6.58	103.72	118.38
60	c	796	A2M	N6-C6-N1	-6.55	103.78	118.38
11	AA	2256	A2M	N6-C6-N1	-6.52	103.86	118.38
11	AA	2280	A2M	N6-C6-N1	-6.52	103.87	118.38
60	c	541	A2M	N6-C6-N1	-6.50	103.91	118.38
60	c	100	A2M	N6-C6-N1	-6.48	103.95	118.38
60	c	420	A2M	N6-C6-N1	-6.48	103.95	118.38
60	c	974	A2M	N6-C6-N1	-6.44	104.03	118.38
60	c	28	A2M	N6-C6-N1	-6.43	104.06	118.38
11	AA	2640	A2M	N6-C6-N1	-6.41	104.10	118.38
11	AA	2281	A2M	N6-C6-N1	-6.34	104.25	118.38
60	c	619	A2M	N9-C8-N7	-6.34	104.94	113.94
11	AA	649	A2M	N6-C6-N1	-6.27	104.41	118.38
11	AA	2281	A2M	N9-C8-N7	-6.26	105.06	113.94
11	AA	817	A2M	N9-C8-N7	-6.24	105.09	113.94
60	c	619	A2M	N3-C2-N1	-6.15	119.27	128.58
11	AA	807	A2M	N9-C8-N7	-6.15	105.22	113.94
11	AA	2281	A2M	C4-N9-C8	6.08	112.13	105.74
11	AA	2256	A2M	N9-C8-N7	-6.08	105.31	113.94
11	AA	2280	A2M	N9-C8-N7	-6.07	105.32	113.94

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
60	c	619	A2M	C4-N9-C8	6.05	112.09	105.74
11	AA	2634	UR3	C4-N3-C2	-6.05	119.71	124.58
11	AA	807	A2M	C4-N9-C8	6.02	112.06	105.74
60	c	28	A2M	N9-C8-N7	-6.02	105.40	113.94
60	c	796	A2M	N9-C8-N7	-5.97	105.47	113.94
60	c	100	A2M	N9-C8-N7	-5.96	105.48	113.94
11	AA	1133	A2M	N3-C2-N1	-5.96	119.56	128.58
11	AA	1133	A2M	N9-C8-N7	-5.95	105.49	113.94
11	AA	2946	A2M	N9-C8-N7	-5.95	105.49	113.94
60	c	974	A2M	N3-C2-N1	-5.95	119.57	128.58
11	AA	2640	A2M	N9-C8-N7	-5.95	105.49	113.94
60	c	1575	G7M	CN7-N7-C5	5.95	134.22	126.80
11	AA	817	A2M	N3-C2-N1	-5.95	119.58	128.58
11	AA	649	A2M	N3-C2-N1	-5.91	119.64	128.58
11	AA	2220	A2M	N9-C8-N7	-5.90	105.56	113.94
60	c	1773	4AC	CM7-C7-N4	5.90	124.79	115.27
60	c	420	A2M	N9-C8-N7	-5.90	105.57	113.94
11	AA	1888	OMU	C4-N3-C2	-5.86	119.34	126.61
11	AA	1449	A2M	N9-C8-N7	-5.84	105.65	113.94
11	AA	2220	A2M	N3-C2-N1	-5.83	119.76	128.58
11	AA	649	A2M	N9-C8-N7	-5.82	105.68	113.94
60	c	974	A2M	N9-C8-N7	-5.82	105.68	113.94
11	AA	2421	OMU	C4-N3-C2	-5.81	119.40	126.61
11	AA	817	A2M	C4-N9-C8	5.80	111.83	105.74
11	AA	2417	OMU	C4-N3-C2	-5.80	119.41	126.61
60	c	28	A2M	N3-C2-N1	-5.80	119.81	128.58
60	c	420	A2M	N3-C2-N1	-5.79	119.81	128.58
60	c	1280	4AC	CM7-C7-N4	5.77	124.58	115.27
60	c	1782	MA6	N1-C2-N3	-5.77	119.85	128.58
11	AA	2281	A2M	N3-C2-N1	-5.76	119.86	128.58
60	c	1781	MA6	N1-C2-N3	-5.74	119.89	128.58
11	AA	876	A2M	N9-C8-N7	-5.74	105.79	113.94
60	c	436	A2M	N9-C8-N7	-5.74	105.80	113.94
11	AA	1449	A2M	N3-C2-N1	-5.73	119.91	128.58
60	c	100	A2M	N3-C2-N1	-5.73	119.91	128.58
60	c	578	OMU	C4-N3-C2	-5.71	119.52	126.61
11	AA	876	A2M	N3-C2-N1	-5.70	119.95	128.58
11	AA	2946	A2M	N3-C2-N1	-5.70	119.96	128.58
11	AA	2921	OMU	C4-N3-C2	-5.70	119.54	126.61
60	c	1269	OMU	C4-N3-C2	-5.69	119.54	126.61
60	c	436	A2M	N3-C2-N1	-5.69	119.97	128.58
11	AA	2256	A2M	C4-N9-C8	5.68	111.70	105.74

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	Bb	37	YYG	O23-C21-N20	5.66	120.30	110.77
60	c	28	A2M	C4-N9-C8	5.61	111.63	105.74
60	c	541	A2M	N3-C2-N1	-5.61	120.10	128.58
11	AA	1133	A2M	C4-N9-C8	5.60	111.62	105.74
11	AA	807	A2M	N3-C2-N1	-5.59	120.12	128.58
11	AA	2347	OMU	C4-N3-C2	-5.59	119.67	126.61
60	c	796	A2M	N3-C2-N1	-5.58	120.13	128.58
60	c	974	A2M	C4-N9-C8	5.58	111.59	105.74
11	AA	817	A2M	C5-C6-N6	5.56	137.06	123.29
60	c	100	A2M	C4-N9-C8	5.55	111.57	105.74
11	AA	2729	OMU	C4-N3-C2	-5.55	119.72	126.61
11	AA	2946	A2M	C4-N9-C8	5.53	111.55	105.74
11	AA	1133	A2M	C5-C6-N6	5.53	136.97	123.29
11	AA	2280	A2M	N3-C2-N1	-5.51	120.24	128.58
60	c	420	A2M	C4-N9-C8	5.51	111.52	105.74
60	c	796	A2M	C4-N9-C8	5.51	111.52	105.74
11	AA	2220	A2M	C4-N9-C8	5.50	111.51	105.74
60	c	619	A2M	C5-C6-N6	5.49	136.88	123.29
11	AA	898	OMU	C4-N3-C2	-5.49	119.80	126.61
60	c	541	A2M	N9-C8-N7	-5.47	106.17	113.94
11	AA	2724	OMU	C4-N3-C2	-5.47	119.82	126.61
11	AA	2280	A2M	C4-N9-C8	5.45	111.46	105.74
11	AA	2256	A2M	N3-C2-N1	-5.43	120.36	128.58
11	AA	2640	A2M	C4-N9-C8	5.41	111.42	105.74
11	AA	2946	A2M	C5-C6-N6	5.40	136.64	123.29
11	AA	2640	A2M	N3-C2-N1	-5.39	120.42	128.58
60	c	796	A2M	C5-C6-N6	5.38	136.61	123.29
11	AA	2220	A2M	C5-C6-N6	5.36	136.55	123.29
11	AA	807	A2M	C5-C6-N6	5.33	136.49	123.29
11	AA	649	A2M	C4-N9-C8	5.33	111.34	105.74
60	c	436	A2M	C5-C6-N6	5.33	136.48	123.29
11	AA	1449	A2M	C4-N9-C8	5.30	111.30	105.74
11	AA	876	A2M	C5-C6-N6	5.28	136.36	123.29
60	c	974	A2M	C5-C6-N6	5.28	136.35	123.29
11	AA	876	A2M	C4-N9-C8	5.28	111.28	105.74
11	AA	1449	A2M	C5-C6-N6	5.28	136.35	123.29
11	AA	2256	A2M	C5-C6-N6	5.27	136.33	123.29
60	c	28	A2M	C5-C6-N6	5.23	136.23	123.29
60	c	100	A2M	C5-C6-N6	5.22	136.21	123.29
60	c	436	A2M	C4-N9-C8	5.21	111.21	105.74
60	c	541	A2M	C5-C6-N6	5.17	136.09	123.29
60	c	420	A2M	C5-C6-N6	5.16	136.07	123.29

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	2280	A2M	C5-C6-N6	5.15	136.03	123.29
11	AA	2640	A2M	C5-C6-N6	5.11	135.94	123.29
60	c	1191	B8N	C5-C4-N3	5.09	125.39	116.15
60	c	541	A2M	C4-N9-C8	5.04	111.03	105.74
11	AA	649	A2M	C5-C6-N6	5.03	135.74	123.29
11	AA	2281	A2M	C5-C6-N6	5.01	135.68	123.29
60	c	541	A2M	C5-C4-N3	-4.91	119.96	126.72
60	c	1575	G7M	C2-N3-C4	4.75	120.48	112.30
60	c	1782	MA6	C5-C4-N3	-4.67	120.29	126.72
60	c	541	A2M	C1'-N9-C8	-4.64	116.79	127.09
11	AA	2640	A2M	C5-C4-N3	-4.61	120.37	126.72
60	c	1781	MA6	C5-C4-N3	-4.58	120.41	126.72
60	c	1575	G7M	CN7-N7-C8	-4.55	117.89	124.79
11	AA	2280	A2M	C5-C4-N3	-4.50	120.53	126.72
11	AA	876	A2M	C5-C4-N3	-4.46	120.57	126.72
60	c	1575	G7M	C5-C4-N3	-4.46	119.72	128.15
60	c	1782	MA6	N9-C8-N7	-4.42	107.67	113.94
11	AA	1449	A2M	C5-C4-N3	-4.41	120.64	126.72
60	c	1191	B8N	C4-N3-C2	-4.40	120.20	125.62
11	AA	876	A2M	C1'-N9-C8	-4.33	117.50	127.09
60	c	420	A2M	C5-C4-N3	-4.31	120.79	126.72
60	c	100	A2M	C5-C4-N3	-4.30	120.80	126.72
11	AA	649	A2M	C5-C4-N3	-4.28	120.82	126.72
11	AA	2640	A2M	C1'-N9-C8	-4.26	117.65	127.09
60	c	541	A2M	N3-C4-N9	4.24	134.39	127.17
60	c	1781	MA6	N9-C8-N7	-4.23	107.93	113.94
60	c	796	A2M	C5-C4-N3	-4.22	120.91	126.72
11	AA	2220	A2M	C5-C4-N3	-4.19	120.94	126.72
60	c	436	A2M	C5-C4-N3	-4.14	121.01	126.72
11	AA	2946	A2M	C5-C4-N3	-4.13	121.03	126.72
60	c	28	A2M	C5-C4-N3	-4.12	121.04	126.72
14	Bb	37	YYG	N9-C4-N3	4.10	136.08	129.45
11	AA	2421	OMU	N3-C2-N1	4.09	120.22	114.89
11	AA	2417	OMU	N3-C2-N1	4.09	120.22	114.89
11	AA	1888	OMU	N3-C2-N1	4.08	120.20	114.89
11	AA	807	A2M	C1'-N9-C8	-4.06	118.09	127.09
60	c	100	A2M	C1'-N9-C8	-4.05	118.11	127.09
60	c	1575	G7M	C5-C6-N1	4.04	120.19	111.84
11	AA	2640	A2M	N3-C4-N9	4.01	133.98	127.17
11	AA	807	A2M	C5-C4-N3	-3.97	121.25	126.72
11	AA	1133	A2M	C5-C4-N3	-3.97	121.25	126.72
60	c	28	A2M	C1'-N9-C8	-3.96	118.31	127.09

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
60	c	974	A2M	C5-C4-N3	-3.93	121.31	126.72
60	c	796	A2M	C1'-N9-C8	-3.91	118.41	127.09
11	AA	2921	OMU	N3-C2-N1	3.91	119.98	114.89
60	c	1781	MA6	C4-C5-C6	3.91	119.95	115.91
11	AA	2256	A2M	O2'-C2'-C1'	3.89	116.38	108.99
11	AA	2634	UR3	C5-C4-N3	3.89	120.16	115.04
11	AA	876	A2M	N3-C4-N9	3.88	133.77	127.17
11	AA	1449	A2M	C1'-N9-C8	-3.88	118.49	127.09
11	AA	2281	A2M	C5-C4-N3	-3.87	121.39	126.72
11	AA	2256	A2M	C5-C4-N3	-3.87	121.39	126.72
60	c	796	A2M	C2'-C1'-N9	-3.85	107.42	113.75
60	c	1269	OMU	N3-C2-N1	3.84	119.89	114.89
60	c	578	OMU	C5-C4-N3	3.82	120.16	114.80
11	AA	2280	A2M	N3-C4-N9	3.81	133.66	127.17
11	AA	2280	A2M	C1'-N9-C8	-3.80	118.67	127.09
11	AA	2220	A2M	C1'-N9-C8	-3.79	118.68	127.09
60	c	100	A2M	N3-C4-N9	3.79	133.61	127.17
11	AA	1449	A2M	N3-C4-N9	3.78	133.59	127.17
60	c	619	A2M	C5-C4-N3	-3.77	121.52	126.72
11	AA	649	A2M	C1'-N9-C8	-3.77	118.72	127.09
11	AA	2347	OMU	N3-C2-N1	3.77	119.80	114.89
11	AA	2724	OMU	C5-C4-N3	3.76	120.07	114.80
60	c	420	A2M	C1'-N9-C8	-3.76	118.75	127.09
11	AA	898	OMU	C5-C4-N3	3.75	120.05	114.80
60	c	420	A2M	N3-C4-N9	3.75	133.54	127.17
11	AA	2417	OMU	C5-C4-N3	3.74	120.04	114.80
60	c	578	OMU	N3-C2-N1	3.73	119.75	114.89
11	AA	2729	OMU	N3-C2-N1	3.73	119.75	114.89
11	AA	2724	OMU	N3-C2-N1	3.73	119.75	114.89
11	AA	2281	A2M	C4'-O4'-C1'	-3.73	101.24	109.47
60	c	1575	G7M	C1'-N9-C4	3.72	137.47	126.49
11	AA	817	A2M	C5-C4-N3	-3.70	121.62	126.72
11	AA	2729	OMU	C5-C4-N3	3.70	119.98	114.80
11	AA	898	OMU	N3-C2-N1	3.70	119.70	114.89
11	AA	649	A2M	N3-C4-N9	3.69	133.44	127.17
11	AA	1888	OMU	C5-C4-N3	3.68	119.95	114.80
11	AA	807	A2M	N3-C4-N9	3.67	133.41	127.17
60	c	1782	MA6	C4-C5-C6	3.67	119.70	115.91
11	AA	2347	OMU	C5-C4-N3	3.67	119.94	114.80
11	AA	2921	OMU	C5-C4-N3	3.67	119.94	114.80
11	AA	2421	OMU	C5-C4-N3	3.66	119.93	114.80
60	c	1269	OMU	C5-C4-N3	3.63	119.88	114.80

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	2281	A2M	C1'-N9-C8	-3.63	119.04	127.09
60	c	28	A2M	N3-C4-N9	3.62	133.32	127.17
14	Bb	37	YYG	C10-C11-N2	3.61	126.56	119.32
60	c	796	A2M	N3-C4-N9	3.57	133.25	127.17
11	AA	2281	A2M	N3-C4-N9	3.57	133.24	127.17
11	AA	2946	A2M	N3-C4-N9	3.56	133.22	127.17
60	c	1781	MA6	C2-N1-C6	3.55	120.51	111.83
11	AA	2220	A2M	N3-C4-N9	3.55	133.21	127.17
11	AA	2946	A2M	C1'-N9-C8	-3.55	119.22	127.09
60	c	974	A2M	C1'-N9-C8	-3.54	119.24	127.09
11	AA	2281	A2M	O4'-C1'-N9	3.53	114.88	108.09
60	c	1191	B8N	C1'-C5-C4	3.53	122.97	117.61
11	AA	2280	A2M	C5-N7-C8	3.52	108.99	103.45
60	c	974	A2M	N3-C4-N9	3.52	133.15	127.17
11	AA	817	A2M	C5-N7-C8	3.51	108.97	103.45
11	AA	2640	A2M	C5-N7-C8	3.49	108.94	103.45
60	c	619	A2M	C5-N7-C8	3.49	108.94	103.45
11	AA	1133	A2M	C1'-N9-C8	-3.48	119.36	127.09
60	c	436	A2M	N3-C4-N9	3.47	133.06	127.17
11	AA	2256	A2M	C1'-N9-C8	-3.46	119.42	127.09
60	c	1575	G7M	O6-C6-C5	-3.46	120.29	128.01
11	AA	1133	A2M	C2'-C1'-N9	-3.45	108.08	113.75
11	AA	1133	A2M	N3-C4-N9	3.43	133.01	127.17
60	c	1575	G7M	C1'-N9-C8	-3.42	115.20	126.74
60	c	436	A2M	C1'-N9-C8	-3.41	119.53	127.09
60	c	1782	MA6	C2-N1-C6	3.41	120.15	111.83
60	c	796	A2M	C5-N7-C8	3.41	108.80	103.45
60	c	100	A2M	C5-N7-C8	3.40	108.80	103.45
11	AA	807	A2M	C5-N7-C8	3.40	108.80	103.45
11	AA	2281	A2M	C2'-C1'-N9	-3.39	108.17	113.75
11	AA	2256	A2M	C5-N7-C8	3.39	108.77	103.45
60	c	1782	MA6	C2-N3-C4	3.38	120.09	111.83
11	AA	2946	A2M	C5-N7-C8	3.38	108.76	103.45
60	c	28	A2M	C5-N7-C8	3.38	108.76	103.45
11	AA	876	A2M	C5-N7-C8	3.37	108.75	103.45
60	c	1191	B8N	N3-C2-N1	3.34	120.80	116.72
60	c	619	A2M	N3-C4-N9	3.34	132.85	127.17
11	AA	1449	A2M	C5-N7-C8	3.33	108.68	103.45
60	c	541	A2M	C2-N3-C4	3.30	119.89	111.83
11	AA	2220	A2M	C5-N7-C8	3.29	108.62	103.45
60	c	420	A2M	C5-N7-C8	3.29	108.61	103.45
11	AA	2281	A2M	C5-N7-C8	3.28	108.61	103.45

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
14	Bb	37	YYG	O18-C16-C15	3.28	119.84	111.49
11	AA	649	A2M	C5-N7-C8	3.27	108.59	103.45
11	AA	1133	A2M	C5-N7-C8	3.26	108.58	103.45
60	c	1781	MA6	C2-N3-C4	3.25	119.76	111.83
60	c	1575	G7M	C2-N1-C6	-3.25	119.22	125.11
60	c	541	A2M	C5-N7-C8	3.23	108.53	103.45
11	AA	1449	A2M	C2-N3-C4	3.23	119.72	111.83
11	AA	2256	A2M	N3-C4-N9	3.23	132.66	127.17
11	AA	649	A2M	C2-N3-C4	3.22	119.70	111.83
60	c	436	A2M	C5-N7-C8	3.22	108.51	103.45
60	c	420	A2M	C2-N3-C4	3.22	119.69	111.83
60	c	974	A2M	C5-N7-C8	3.21	108.49	103.45
14	Bb	37	YYG	N1-C2-N2	-3.20	109.45	114.03
11	AA	876	A2M	C2-N3-C4	3.19	119.63	111.83
14	Bb	37	YYG	O22-C21-N20	-3.19	119.63	124.86
11	AA	2280	A2M	C2-N3-C4	3.15	119.52	111.83
11	AA	2220	A2M	C2-N3-C4	3.13	119.47	111.83
11	AA	2640	A2M	C2-N3-C4	3.13	119.47	111.83
60	c	619	A2M	C1'-N9-C8	-3.13	120.15	127.09
14	Bb	37	YYG	O23-C21-O22	-3.12	120.07	124.62
60	c	619	A2M	C2-N3-C4	3.12	119.46	111.83
11	AA	817	A2M	N3-C4-N9	3.12	132.47	127.17
60	c	100	A2M	C2-N3-C4	3.12	119.45	111.83
11	AA	817	A2M	C2-N3-C4	3.10	119.40	111.83
60	c	436	A2M	C2-N3-C4	3.09	119.38	111.83
11	AA	2946	A2M	C2-N3-C4	3.07	119.33	111.83
60	c	1280	4AC	C6-C5-C4	3.06	120.69	117.00
11	AA	2347	OMU	O4-C4-C5	-3.05	119.90	125.16
11	AA	1133	A2M	C2-N3-C4	3.05	119.28	111.83
60	c	28	A2M	C2-N3-C4	3.05	119.27	111.83
60	c	796	A2M	C2-N3-C4	3.03	119.23	111.83
60	c	541	A2M	O2'-C2'-C1'	3.02	114.73	108.99
11	AA	2281	A2M	C2-N3-C4	3.01	119.19	111.83
11	AA	2946	A2M	C2'-C1'-N9	-3.01	108.80	113.75
11	AA	2724	OMU	O4-C4-C5	-3.00	119.98	125.16
60	c	974	A2M	C2-N3-C4	3.00	119.16	111.83
60	c	1280	4AC	O7-C7-N4	-3.00	117.18	121.90
60	c	578	OMU	O4-C4-C5	-2.99	120.00	125.16
11	AA	807	A2M	C2-N3-C4	2.99	119.12	111.83
60	c	1575	G7M	N9-C4-N3	2.98	131.92	125.95
11	AA	817	A2M	C1'-N9-C8	-2.95	120.55	127.09
11	AA	1888	OMU	O4-C4-C5	-2.94	120.10	125.16

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
11	AA	2256	A2M	C2-N3-C4	2.92	118.96	111.83
60	c	1782	MA6	N3-C4-N9	2.88	132.07	127.17
11	AA	898	OMU	O4-C4-C5	-2.87	120.21	125.16
60	c	1782	MA6	C5-N7-C8	2.87	107.96	103.45
60	c	1781	MA6	N3-C4-N9	2.86	132.04	127.17
14	Bb	37	YYG	C8-N9-C4	2.86	109.29	106.54
11	AA	2921	OMU	O4-C4-C5	-2.82	120.30	125.16
60	c	1781	MA6	C5-N7-C8	2.80	107.85	103.45
11	AA	2417	OMU	O4-C4-C5	-2.75	120.42	125.16
60	c	1773	4AC	C5-C4-N3	-2.75	118.30	122.60
60	c	1773	4AC	O7-C7-N4	-2.73	117.61	121.90
60	c	1269	OMU	O4-C4-C5	-2.71	120.49	125.16
60	c	1782	MA6	C4-N9-C8	2.67	108.54	105.74
11	AA	2417	OMU	O2-C2-N1	-2.65	119.34	122.80
60	c	420	A2M	C2'-C1'-N9	-2.65	109.39	113.75
11	AA	2421	OMU	O4-C4-C5	-2.57	120.73	125.16
11	AA	645	1MA	N1-C6-N6	2.56	126.13	119.71
11	AA	2729	OMU	O4-C4-C5	-2.54	120.77	125.16
14	Bb	37	YYG	C11-C12-N1	2.53	107.09	105.31
11	AA	2142	1MA	N1-C6-N6	2.52	126.05	119.71
11	AA	2281	A2M	O4'-C1'-C2'	-2.52	102.25	106.59
60	c	1781	MA6	C4-N9-C8	2.52	108.39	105.74
60	c	1280	4AC	C5-C4-N3	-2.51	118.67	122.60
60	c	1773	4AC	O7-C7-CM7	-2.50	117.60	122.05
11	AA	1437	OMC	C1'-N1-C2	2.50	123.96	118.44
14	Bb	37	YYG	C8-N7-C5	2.48	108.67	104.26
60	c	1191	B8N	O4-C4-C5	-2.47	118.30	122.58
60	c	1773	4AC	C6-C5-C4	2.46	119.97	117.00
60	c	541	A2M	C4-N9-C1'	2.37	132.18	126.63
14	Bb	37	YYG	N9-C8-N7	-2.34	109.07	113.40
60	c	578	OMU	O2-C2-N1	-2.31	119.79	122.80
11	AA	2948	OMC	C1'-N1-C2	2.28	123.47	118.44
60	c	1191	B8N	O4-C4-N3	-2.27	116.31	119.99
60	c	1191	B8N	O4'-C1'-C2'	2.27	108.29	105.15
11	AA	2421	OMU	O2-C2-N1	-2.24	119.89	122.80
11	AA	2921	OMU	O2-C2-N1	-2.23	119.90	122.80
11	AA	1888	OMU	O2-C2-N1	-2.22	119.91	122.80
60	c	1575	G7M	O3'-C3'-C2'	2.22	118.92	111.82
11	AA	2729	OMU	O2-C2-N1	-2.17	119.97	122.80
11	AA	807	A2M	C4'-O4'-C1'	-2.17	104.68	109.47
60	c	414	OMC	C1'-N1-C2	2.16	123.21	118.44
11	AA	2347	OMU	C1'-N1-C2	2.16	121.47	117.59

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Mol	Chain	Res	Type	Atoms	Z	Observed(°)	Ideal(°)
60	c	1269	OMU	O2-C2-N1	-2.15	120.00	122.80
60	c	1280	4AC	O7-C7-CM7	-2.14	118.24	122.05
11	AA	898	OMU	O2-C2-N1	-2.12	120.03	122.80
11	AA	817	A2M	C4-C5-N7	-2.10	108.18	110.58
60	c	1782	MA6	C4-C5-N7	-2.09	108.19	110.58
11	AA	1888	OMU	C2'-C1'-N1	-2.09	110.28	114.24
11	AA	2337	OMC	C1'-N1-C2	2.08	123.03	118.44
60	c	1773	4AC	C5-C4-N4	2.05	126.39	122.94
60	c	1191	B8N	C31-N3-C4	2.05	120.08	117.18
14	Bb	37	YYG	O18-C16-O17	-2.03	119.89	123.85
11	AA	2256	A2M	C4-C5-N7	-2.02	108.27	110.58
11	AA	2724	OMU	C1'-N1-C2	2.01	121.21	117.59
60	c	1781	MA6	C4-C5-N7	-2.01	108.28	110.58
60	c	541	A2M	C6-C5-C4	2.00	119.92	117.18
60	c	619	A2M	O4'-C1'-N9	-2.00	104.25	108.09

There are no chirality outliers.

All (85) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
11	AA	663	OMC	C1'-C2'-O2'-CM2
11	AA	1437	OMC	C1'-C2'-O2'-CM2
11	AA	1450	OMG	O4'-C4'-C5'-O5'
11	AA	2197	OMC	C2'-C1'-N1-C2
11	AA	2197	OMC	C2'-C1'-N1-C6
11	AA	2256	A2M	C1'-C2'-O2'-CM'
11	AA	2417	OMU	C1'-C2'-O2'-CM2
11	AA	2619	OMG	C1'-C2'-O2'-CM2
11	AA	2640	A2M	C1'-C2'-O2'-CM'
11	AA	2724	OMU	C1'-C2'-O2'-CM2
14	Bb	37	YYG	C14-C15-N20-C21
14	Bb	37	YYG	O23-C21-N20-C15
14	Bb	37	YYG	N20-C21-O23-C24
14	Bb	37	YYG	O22-C21-O23-C24
60	c	100	A2M	C1'-C2'-O2'-CM'
60	c	414	OMC	O4'-C4'-C5'-O5'
60	c	420	A2M	C1'-C2'-O2'-CM'
60	c	541	A2M	O4'-C4'-C5'-O5'
60	c	541	A2M	C3'-C4'-C5'-O5'
60	c	541	A2M	C1'-C2'-O2'-CM'
60	c	619	A2M	C1'-C2'-O2'-CM'
60	c	1271	OMG	C1'-C2'-O2'-CM2

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Mol	Chain	Res	Type	Atoms
60	c	1280	4AC	O4'-C4'-C5'-O5'
60	c	1572	OMG	O4'-C4'-C5'-O5'
60	c	1782	MA6	O4'-C4'-C5'-O5'
14	Bb	37	YYG	O17-C16-O18-C19
14	Bb	37	YYG	O22-C21-N20-C15
14	Bb	37	YYG	C15-C16-O18-C19
11	AA	2922	OMG	C3'-C4'-C5'-O5'
60	c	414	OMC	C3'-C4'-C5'-O5'
60	c	1280	4AC	C3'-C4'-C5'-O5'
60	c	1575	G7M	C3'-C4'-C5'-O5'
14	Bb	37	YYG	C12-C13-C14-C15
60	c	619	A2M	O4'-C4'-C5'-O5'
60	c	1575	G7M	O4'-C4'-C5'-O5'
11	AA	2870	5MC	C2'-C1'-N1-C6
11	AA	817	A2M	C3'-C2'-O2'-CM'
11	AA	908	OMG	C3'-C2'-O2'-CM2
11	AA	1450	OMG	C3'-C4'-C5'-O5'
60	c	578	OMU	O4'-C4'-C5'-O5'
60	c	1572	OMG	C3'-C4'-C5'-O5'
11	AA	867	OMG	C3'-C4'-C5'-O5'
60	c	619	A2M	C3'-C4'-C5'-O5'
60	c	1782	MA6	C3'-C4'-C5'-O5'
11	AA	2922	OMG	O4'-C4'-C5'-O5'
11	AA	2256	A2M	O4'-C4'-C5'-O5'
60	c	100	A2M	O4'-C4'-C5'-O5'
11	AA	867	OMG	O4'-C4'-C5'-O5'
60	c	1280	4AC	O7-C7-N4-C4
60	c	1280	4AC	CM7-C7-N4-C4
60	c	1773	4AC	O7-C7-N4-C4
60	c	1773	4AC	CM7-C7-N4-C4
60	c	28	A2M	C1'-C2'-O2'-CM'
11	AA	807	A2M	C3'-C4'-C5'-O5'
60	c	578	OMU	C3'-C4'-C5'-O5'
60	c	619	A2M	C2'-C1'-N9-C8
60	c	1191	B8N	C31-C32-C33-N34
11	AA	2870	5MC	O4'-C1'-N1-C6
11	AA	2870	5MC	C2'-C1'-N1-C2
11	AA	2256	A2M	C3'-C4'-C5'-O5'
60	c	1428	OMG	C4'-C5'-O5'-P
60	c	1126	OMG	C3'-C4'-C5'-O5'
11	AA	2870	5MC	O4'-C1'-N1-C2
11	AA	807	A2M	C3'-C2'-O2'-CM'

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Mol	Chain	Res	Type	Atoms
11	AA	817	A2M	C4'-C5'-O5'-P
60	c	541	A2M	C2'-C1'-N9-C4
11	AA	2280	A2M	C3'-C4'-C5'-O5'
60	c	541	A2M	C2'-C1'-N9-C8
11	AA	2197	OMC	O4'-C1'-N1-C6
11	AA	2197	OMC	O4'-C1'-N1-C2
11	AA	645	1MA	C2'-C1'-N9-C8
11	AA	645	1MA	C2'-C1'-N9-C4
60	c	1782	MA6	C4'-C5'-O5'-P
11	AA	649	A2M	C1'-C2'-O2'-CM'
11	AA	876	A2M	C3'-C2'-O2'-CM'
60	c	541	A2M	O4'-C1'-N9-C8
60	c	619	A2M	O4'-C1'-N9-C8
14	Bb	37	YYG	N20-C15-C16-O17
11	AA	2280	A2M	O4'-C4'-C5'-O5'
11	AA	2281	A2M	O4'-C4'-C5'-O5'
60	c	619	A2M	C2'-C1'-N9-C4
14	Bb	37	YYG	C13-C14-C15-C16
60	c	578	OMU	O4'-C1'-N1-C6
11	AA	807	A2M	O4'-C4'-C5'-O5'
60	c	578	OMU	C2'-C1'-N1-C6

There are no ring outliers.

36 monomers are involved in 56 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
60	c	28	A2M	2	0
60	c	1575	G7M	1	0
11	AA	2619	OMG	1	0
60	c	541	A2M	3	0
60	c	1773	4AC	4	0
11	AA	1437	OMC	1	0
60	c	436	A2M	1	0
60	c	100	A2M	1	0
11	AA	650	OMC	1	0
11	AA	2220	A2M	3	0
60	c	796	A2M	1	0
11	AA	876	A2M	1	0
11	AA	2815	OMG	1	0
11	AA	2959	OMC	1	0
11	AA	663	OMC	3	0
11	AA	649	A2M	2	0

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Mol	Chain	Res	Type	Clashes	Symm-Clashes
60	c	1280	4AC	3	0
11	AA	817	A2M	1	0
11	AA	1133	A2M	1	0
11	AA	807	A2M	1	0
11	AA	2417	OMU	2	0
11	AA	2724	OMU	3	0
11	AA	2729	OMU	1	0
11	AA	898	OMU	1	0
11	AA	2281	A2M	1	0
60	c	420	A2M	2	0
60	c	974	A2M	1	0
11	AA	2870	5MC	1	0
11	AA	908	OMG	3	0
11	AA	2640	A2M	1	0
60	c	1639	OMC	1	0
60	c	1271	OMG	1	0
11	AA	1449	A2M	1	0
11	AA	2922	OMG	3	0
11	AA	2948	OMC	1	0
14	Bb	37	YYG	1	0

5.5 Carbohydrates [i](#)

There are no oligosaccharides in this entry.

5.6 Ligand geometry [i](#)

Of 315 ligands modelled in this entry, 311 are monoatomic - leaving 4 for Mogul analysis.

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	$\# Z > 2$
87	SPD	AA	3619	-	9,9,9	0.32	0	8,8,8	0.87	0
87	SPD	AA	3618	-	9,9,9	0.30	0	8,8,8	0.80	0
87	SPD	AA	3620	-	9,9,9	0.28	0	8,8,8	0.75	0

Mol	Type	Chain	Res	Link	Bond lengths			Bond angles		
					Counts	RMSZ	# Z > 2	Counts	RMSZ	# Z > 2
87	SPD	c	1965	-	9,9,9	0.28	0	8,8,8	0.80	0

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
87	SPD	AA	3619	-	-	0/7/7/7	-
87	SPD	AA	3618	-	-	2/7/7/7	-
87	SPD	AA	3620	-	-	4/7/7/7	-
87	SPD	c	1965	-	-	1/7/7/7	-

There are no bond length outliers.

There are no bond angle outliers.

There are no chirality outliers.

All (7) torsion outliers are listed below:

Mol	Chain	Res	Type	Atoms
87	AA	3620	SPD	C3-C4-C5-N6
87	AA	3620	SPD	C2-C3-C4-C5
87	AA	3620	SPD	C4-C5-N6-C7
87	AA	3618	SPD	N1-C2-C3-C4
87	AA	3620	SPD	N1-C2-C3-C4
87	c	1965	SPD	C2-C3-C4-C5
87	AA	3618	SPD	C7-C8-C9-N10

There are no ring outliers.

4 monomers are involved in 5 short contacts:

Mol	Chain	Res	Type	Clashes	Symm-Clashes
87	AA	3619	SPD	1	0
87	AA	3618	SPD	1	0
87	AA	3620	SPD	2	0
87	c	1965	SPD	1	0

5.7 Other polymers ⓘ

There are no such residues in this entry.

5.8 Polymer linkage issues ⓘ

There are no chain breaks in this entry.

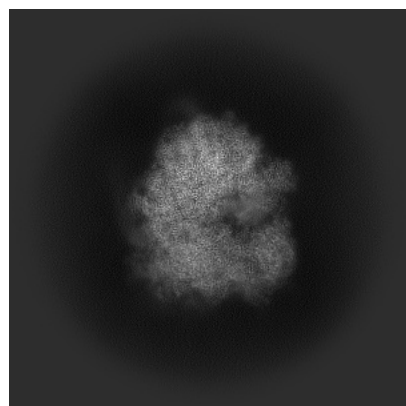
6 Map visualisation [i](#)

This section contains visualisations of the EMDB entry EMD-16563. These allow visual inspection of the internal detail of the map and identification of artifacts.

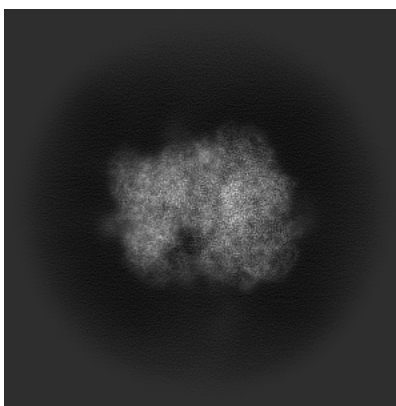
Images derived from a raw map, generated by summing the deposited half-maps, are presented below the corresponding image components of the primary map to allow further visual inspection and comparison with those of the primary map.

6.1 Orthogonal projections [i](#)

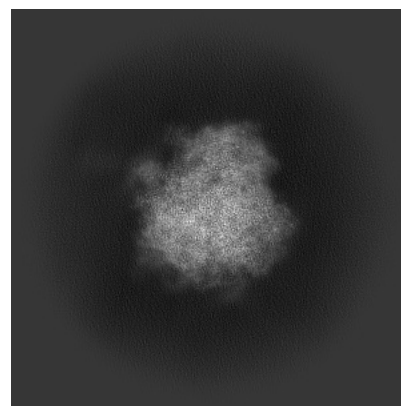
6.1.1 Primary map



X

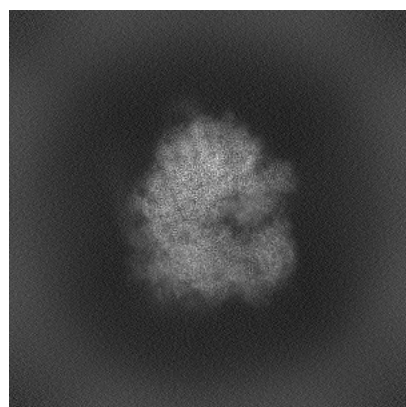


Y

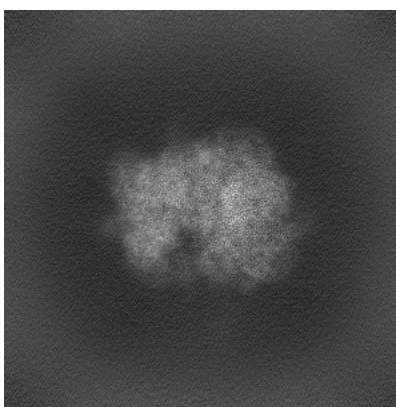


Z

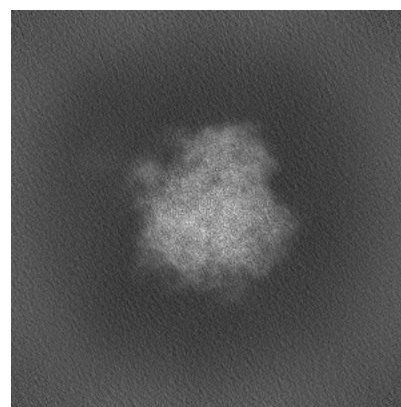
6.1.2 Raw map



X



Y

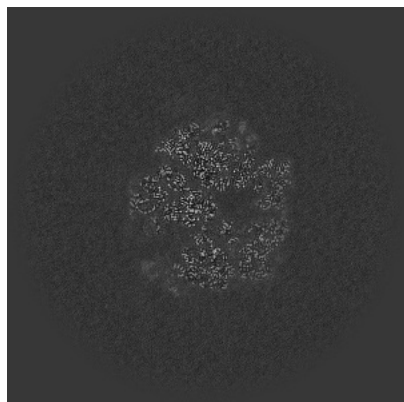


Z

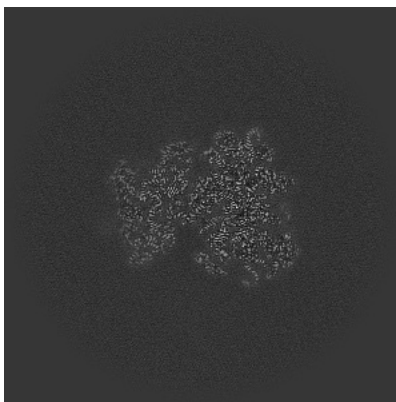
The images above show the map projected in three orthogonal directions.

6.2 Central slices [i](#)

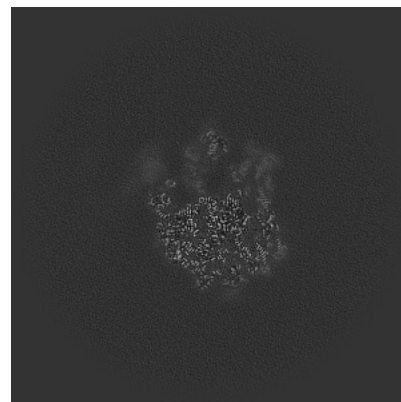
6.2.1 Primary map



X Index: 300

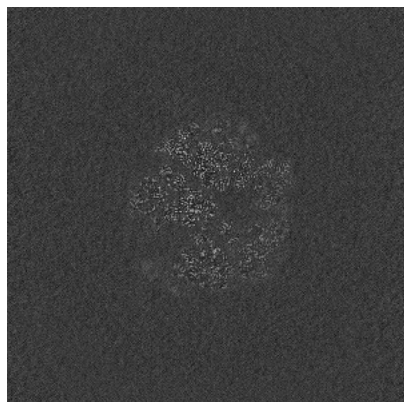


Y Index: 300

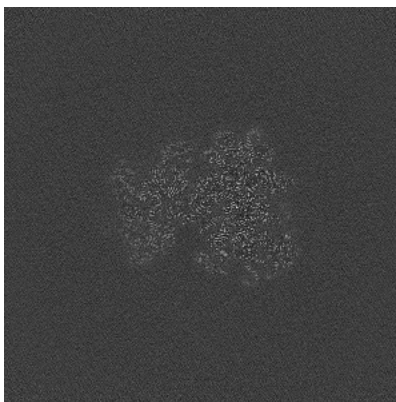


Z Index: 300

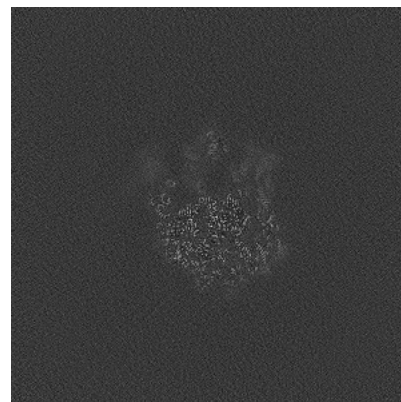
6.2.2 Raw map



X Index: 300



Y Index: 300

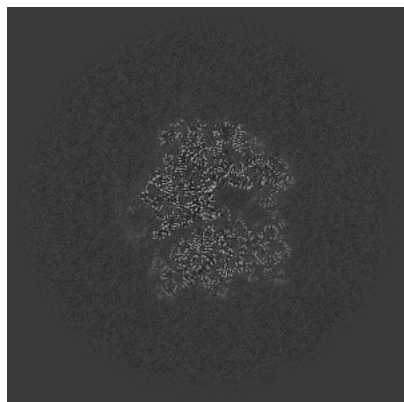


Z Index: 300

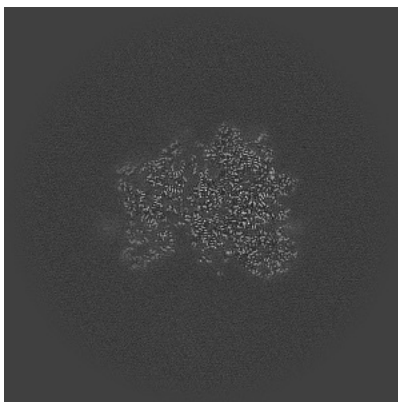
The images above show central slices of the map in three orthogonal directions.

6.3 Largest variance slices [i](#)

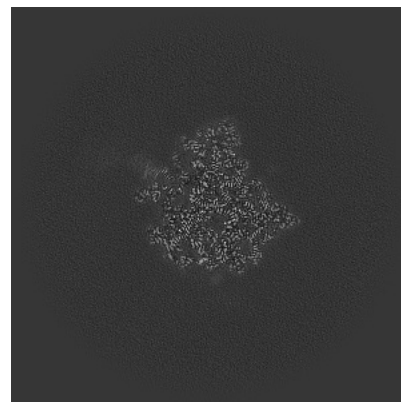
6.3.1 Primary map



X Index: 319

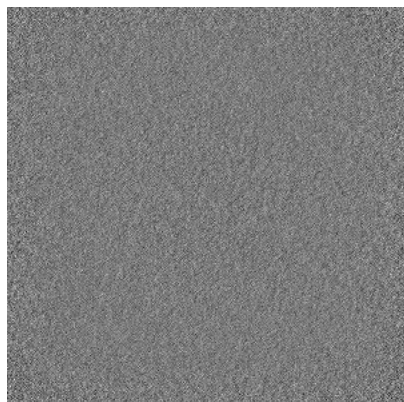


Y Index: 290

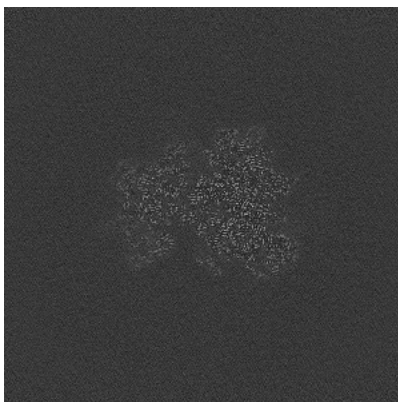


Z Index: 342

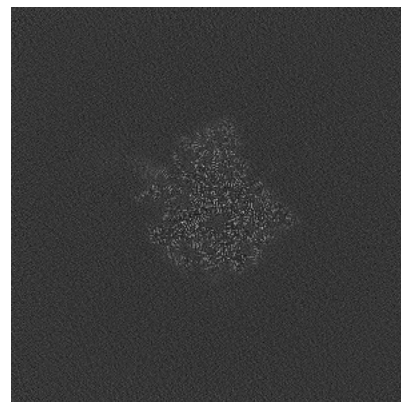
6.3.2 Raw map



X Index: 0



Y Index: 295

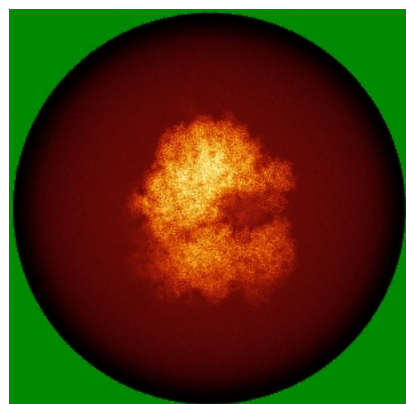


Z Index: 341

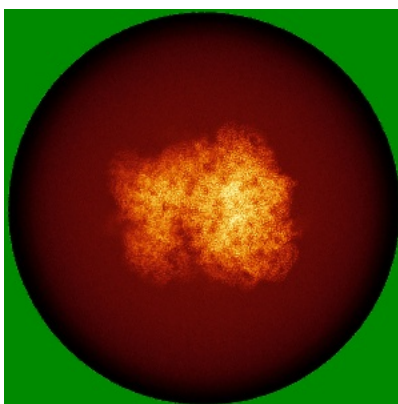
The images above show the largest variance slices of the map in three orthogonal directions.

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

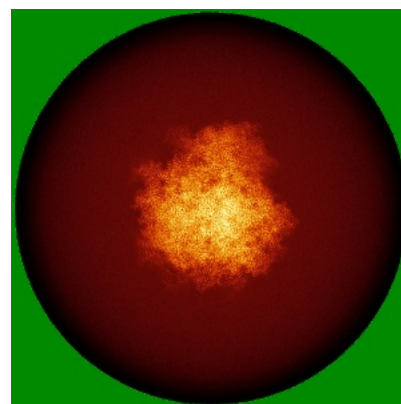
6.4.1 Primary map



X

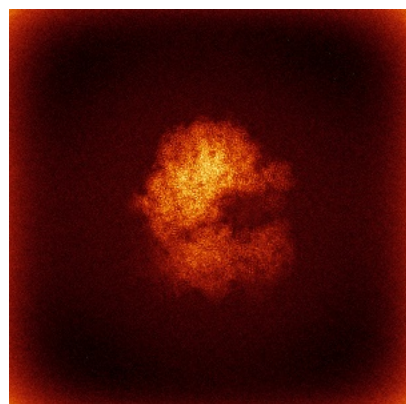


Y

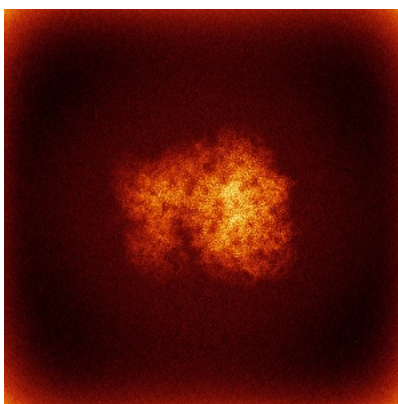


Z

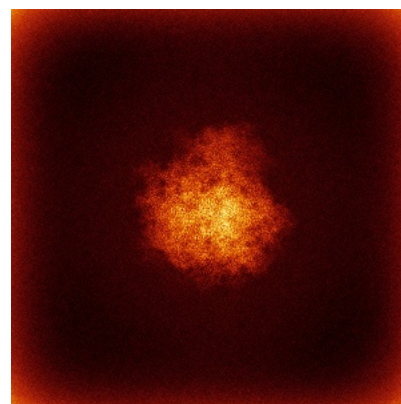
6.4.2 Raw map



X



Y

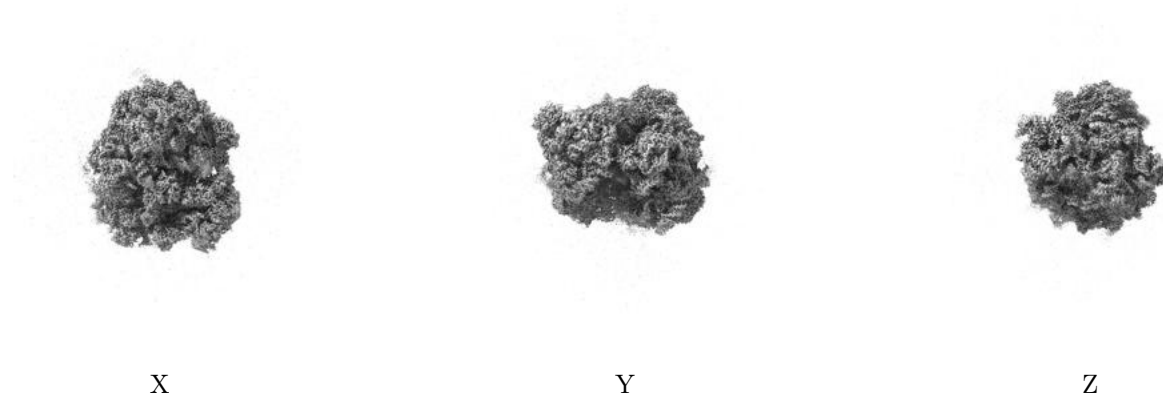


Z

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.

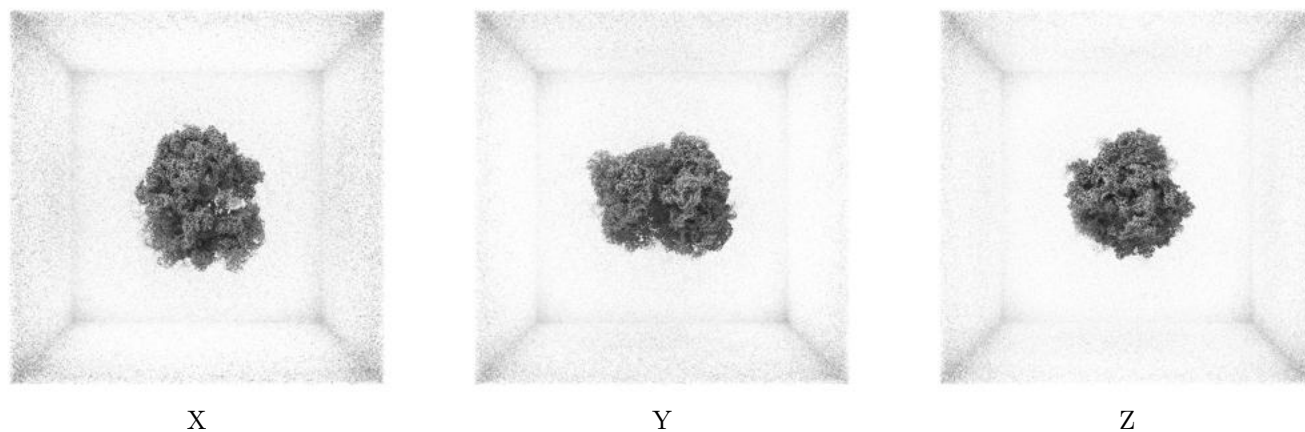
6.5 Orthogonal surface views [i](#)

6.5.1 Primary map



The images above show the 3D surface view of the map at the recommended contour level 0.164. 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.

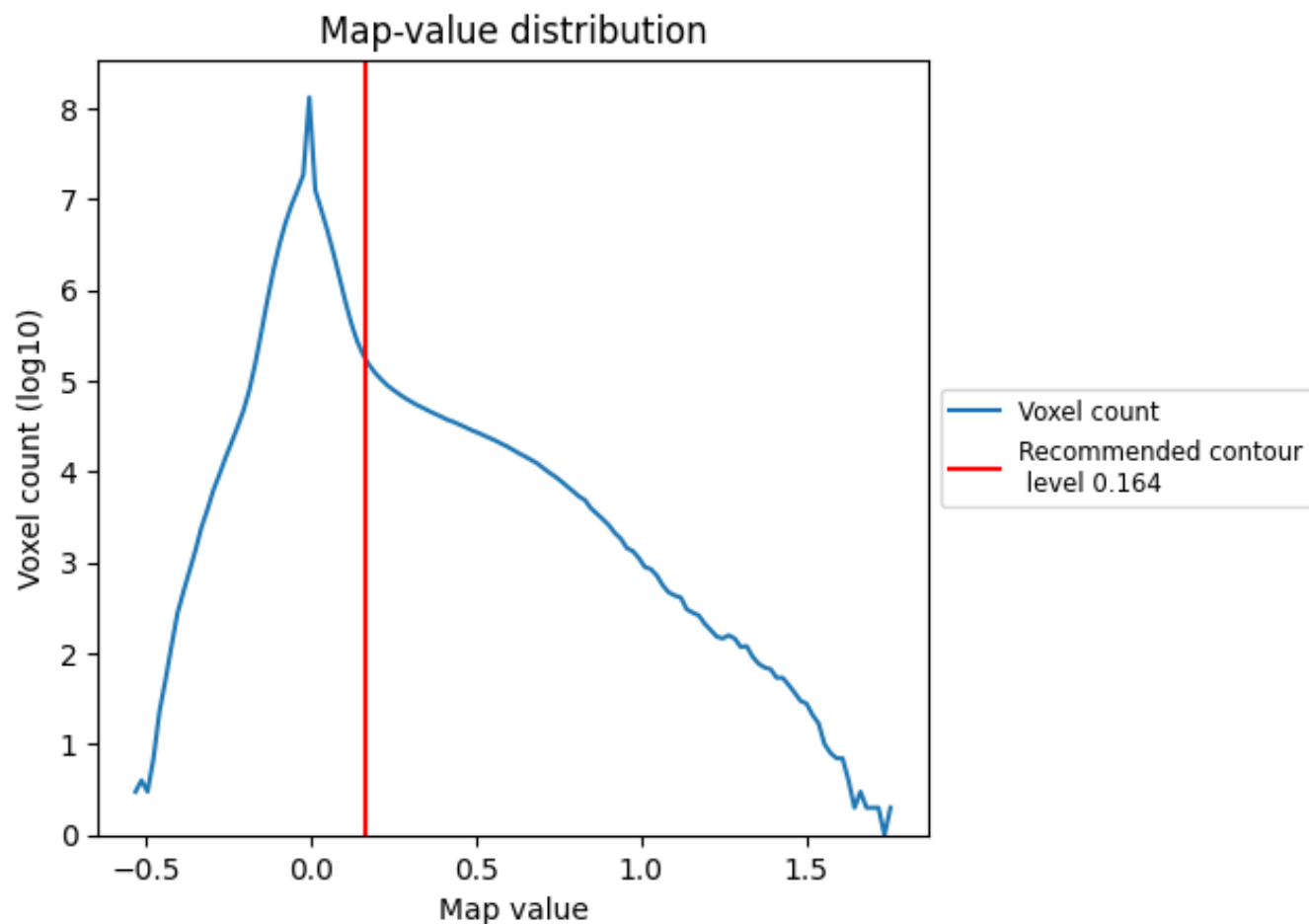
6.6 Mask visualisation [i](#)

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

7 Map analysis [i](#)

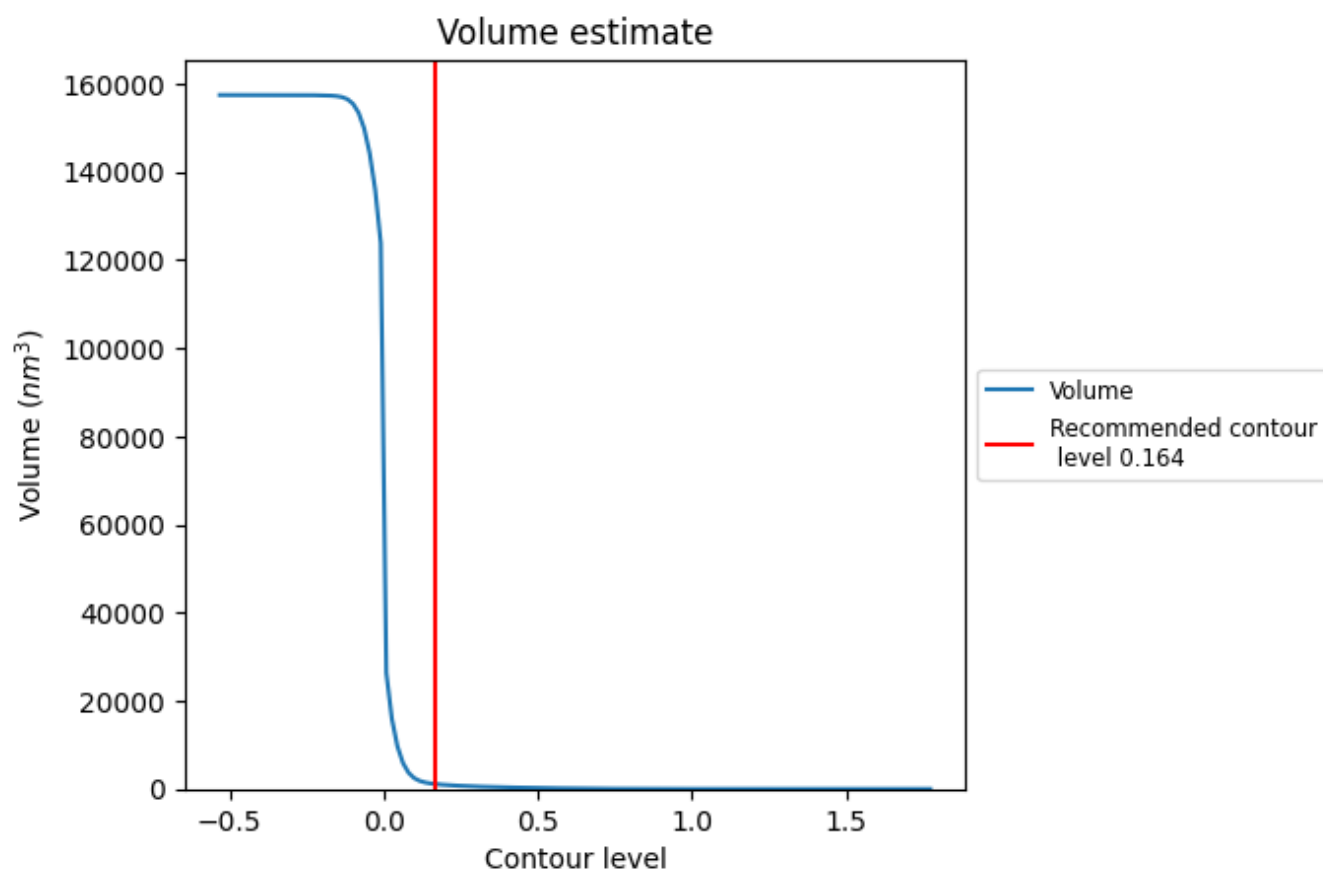
This section contains the results of statistical analysis of the map.

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.

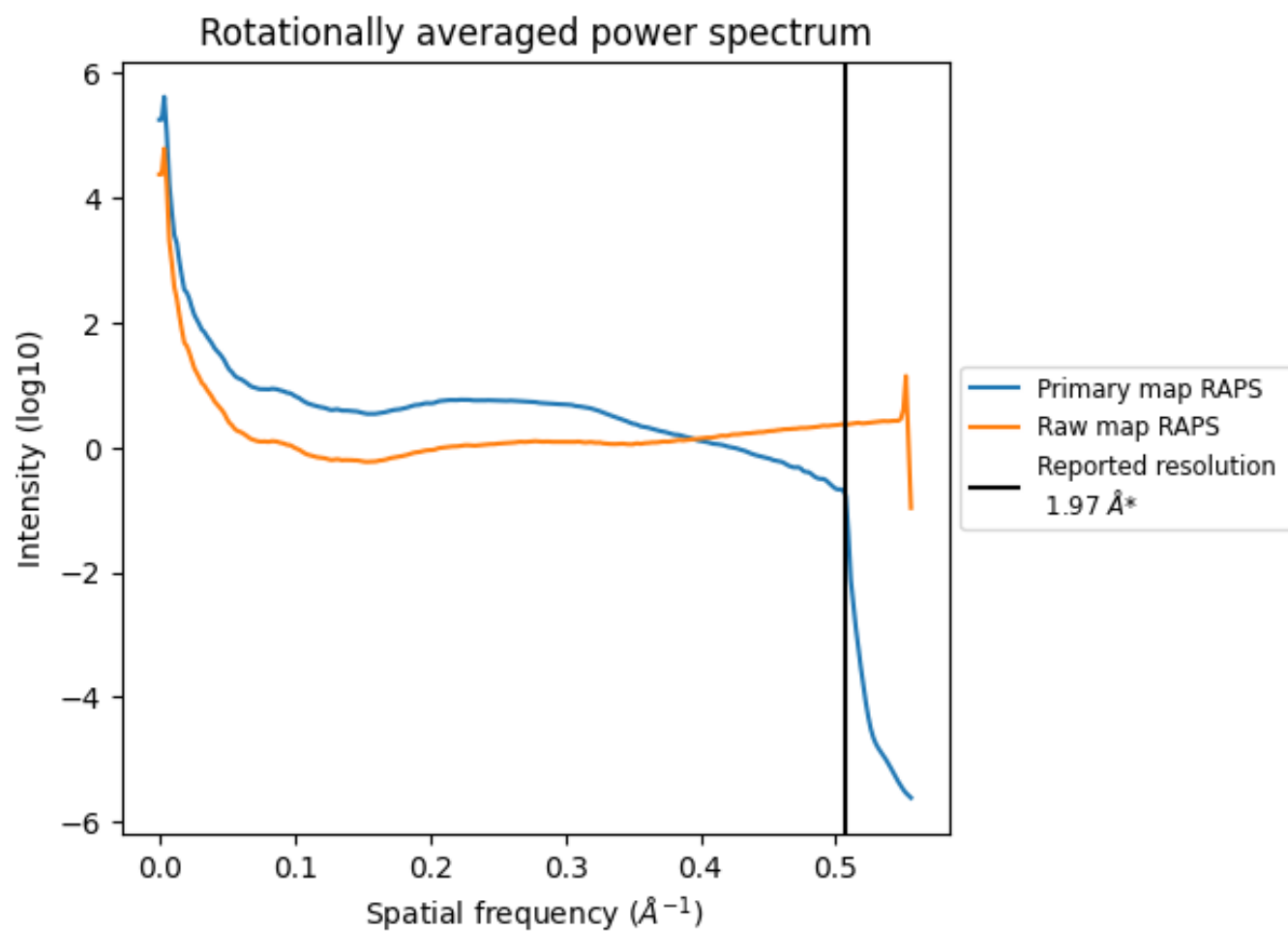
7.2 Volume estimate [i](#)



The volume at the recommended contour level is 1147 nm^3 ; this corresponds to an approximate mass of 1036 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 ⓘ

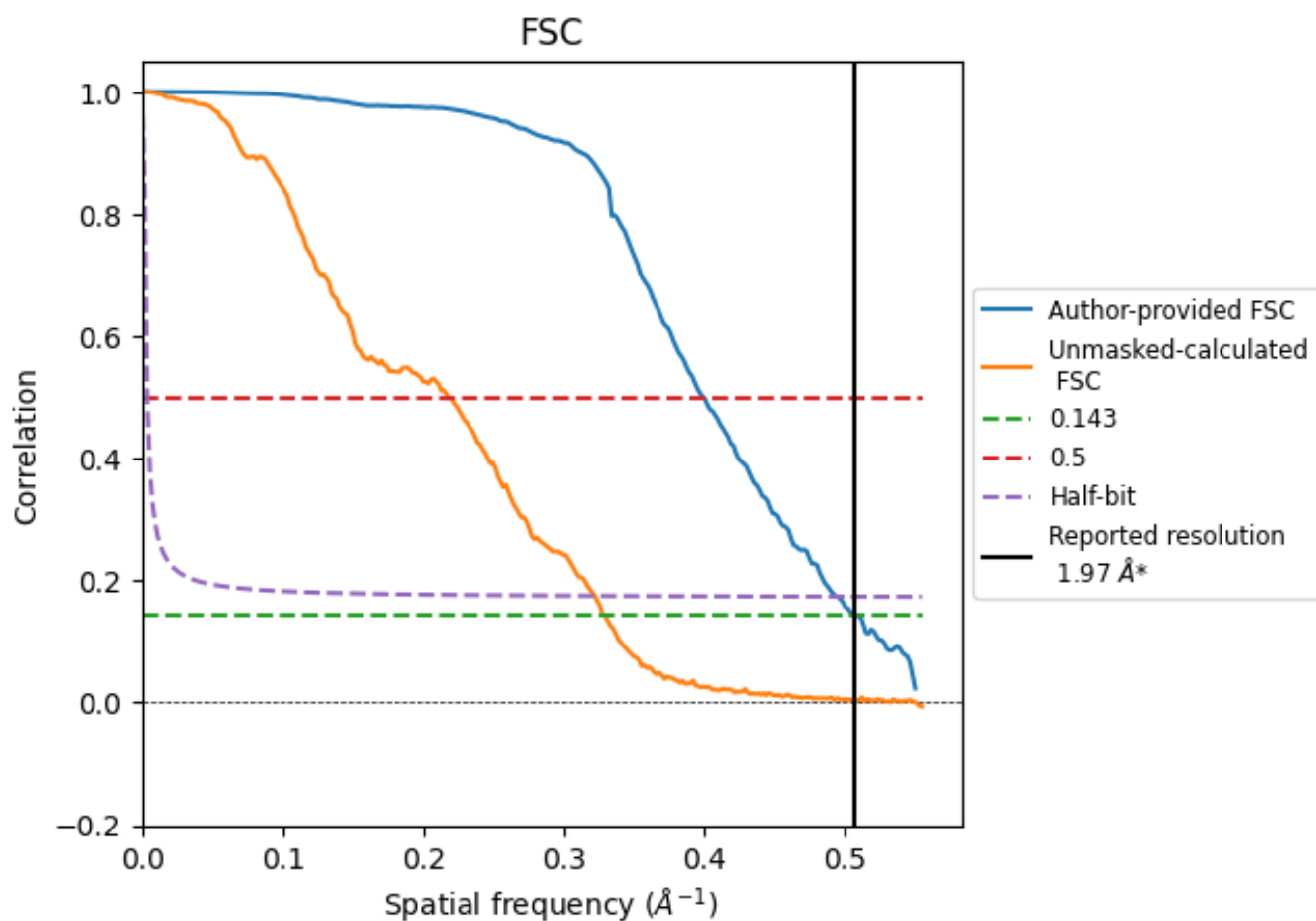


*Reported resolution corresponds to spatial frequency of 0.508 $\text{\AA}^{-1}$

8 Fourier-Shell correlation [i](#)

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

8.1 FSC [i](#)



*Reported resolution corresponds to spatial frequency of 0.508 $\text{\AA}^{-1}$

8.2 Resolution estimates [i](#)

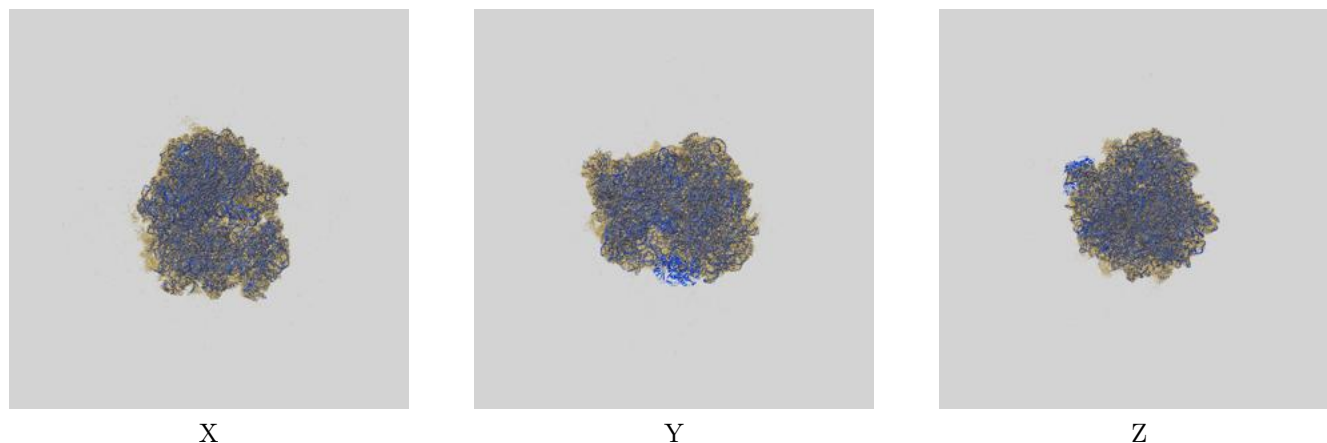
Resolution estimate (Å)	Estimation criterion (FSC cut-off)		
	0.143	0.5	Half-bit
Reported by author	1.97	-	-
Author-provided FSC curve	1.97	2.50	2.02
Unmasked-calculated*	3.04	4.59	3.10

*Resolution estimate based on FSC curve calculated by comparison of deposited half-maps. The value from deposited half-maps intersecting FSC 0.143 CUT-OFF 3.04 differs from the reported value 1.97 by more than 10 %

9 Map-model fit [i](#)

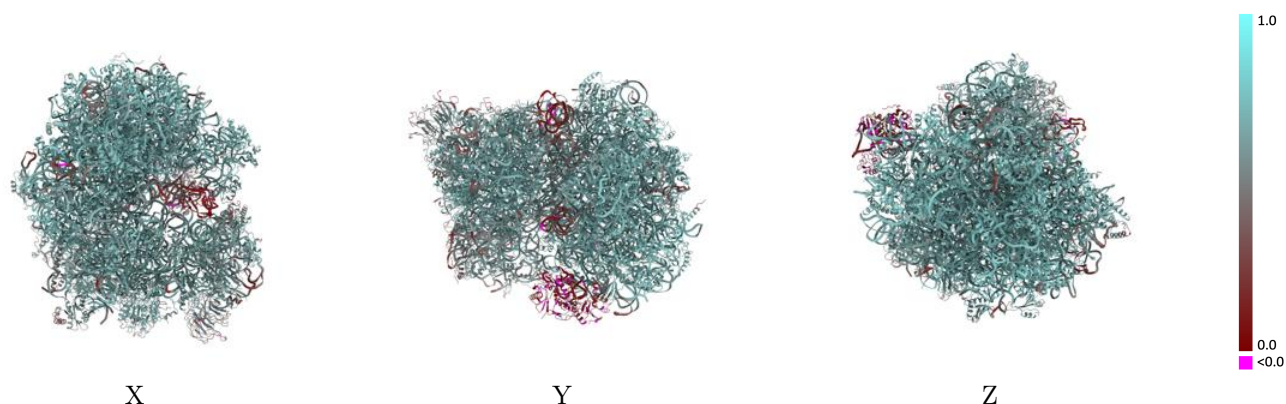
This section contains information regarding the fit between EMDB map EMD-16563 and PDB model 8CCS. Per-residue inclusion information can be found in [section 3](#) on [page 24](#).

9.1 Map-model overlay [i](#)



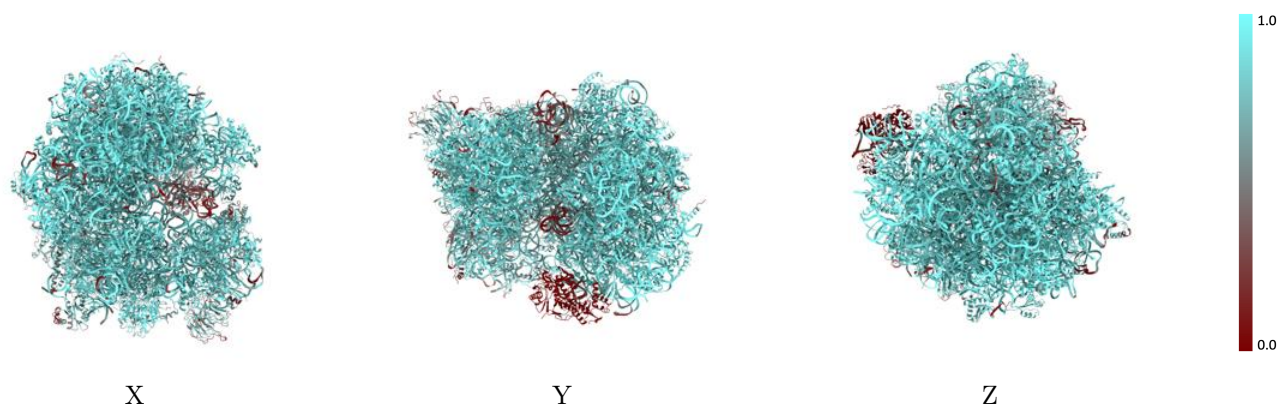
The images above show the 3D surface view of the map at the recommended contour level 0.164 at 50% transparency in yellow overlaid with a ribbon representation of the model coloured in blue. These images allow for the visual assessment of the quality of fit between the atomic model and the map.

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



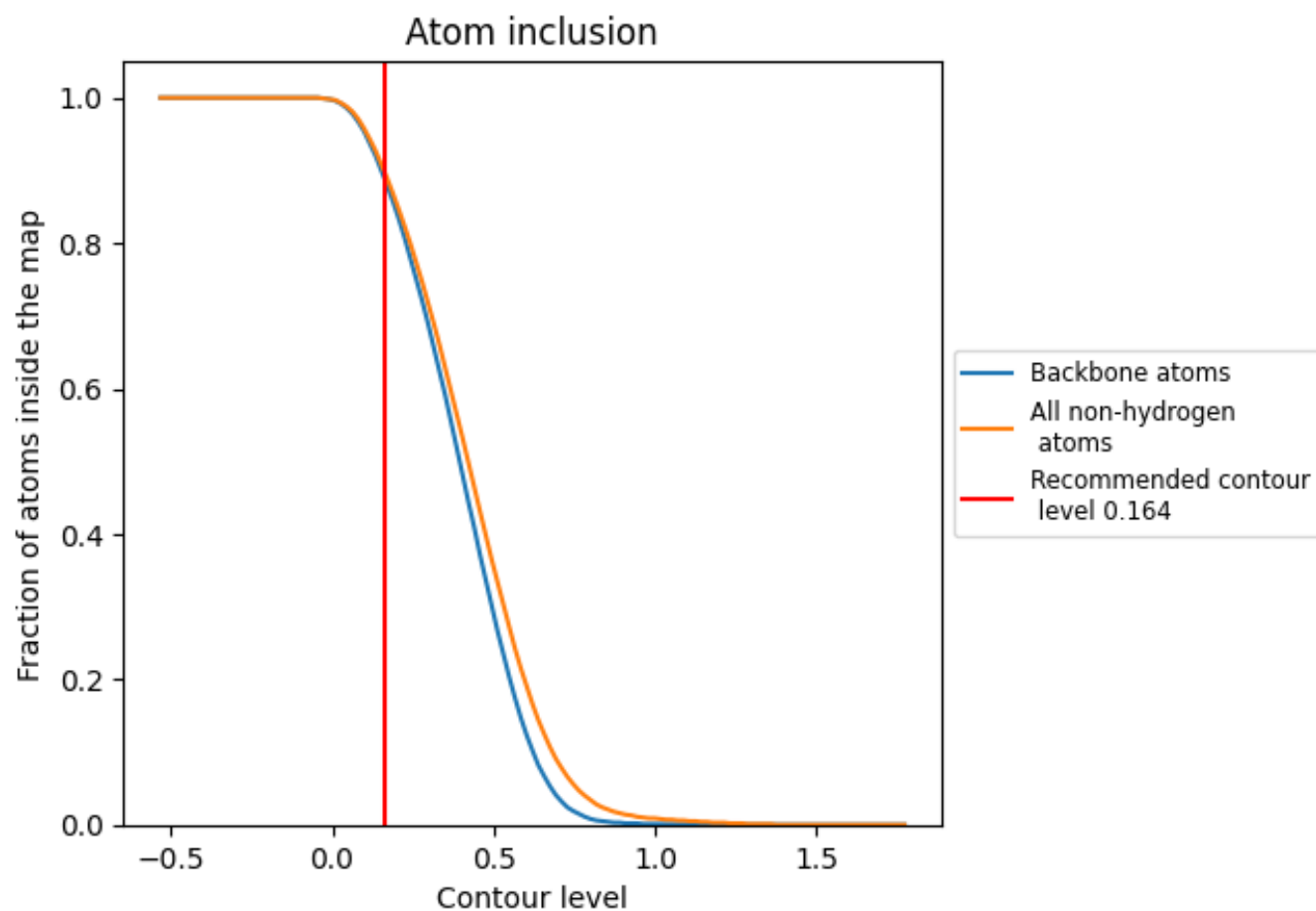
The images above show the model with each residue coloured according to its Q-score. This shows their resolvability in the map with higher Q-score values reflecting better resolvability. Please note: Q-score is calculating the resolvability of atoms, and thus high values are only expected at resolutions 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 (0.164).

9.4 Atom inclusion [i](#)



At the recommended contour level, 89% of all backbone atoms, 90% 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 (0.164) and Q-score for the entire model and for each chain.

Chain	Atom inclusion	Q-score
All	 0.8960	 0.6400
0	 0.7530	 0.5640
1	 0.5390	 0.4430
2	 0.9200	 0.6700
3	 0.8200	 0.6100
4	 0.7710	 0.5830
5	 0.9530	 0.6600
6	 0.8130	 0.5650
7	 0.6420	 0.4910
8	 0.4080	 0.3750
A	 0.9680	 0.7120
AA	 0.9320	 0.6560
B	 0.9770	 0.7260
BB	 0.9920	 0.6820
Bb	 0.5140	 0.4590
C	 0.9740	 0.7150
CC	 0.9750	 0.6880
Cc	 0.7450	 0.5040
D	 0.9000	 0.6740
DD	 0.0290	 0.1660
Dd	 0.8170	 0.6060
E	 0.9610	 0.7020
EE	 0.9590	 0.7170
Ee	 0.0070	 0.1260
F	 0.9400	 0.6940
FF	 0.9610	 0.7100
G	 0.8720	 0.6280
GG	 0.9620	 0.7090
H	 0.9680	 0.7150
HH	 0.8750	 0.6450
I	 0.9550	 0.7060
II	 0.9360	 0.6840
J	 0.9520	 0.6980
JJ	 0.9580	 0.7050
K	 0.9550	 0.6990



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Chain	Atom inclusion	Q-score
KK	 0.9000	 0.6640
L	 0.9330	 0.6730
LL	 0.9190	 0.6740
M	 0.9570	 0.7060
MM	 0.9220	 0.6790
N	 0.8870	 0.6600
NN	 0.8250	 0.6030
O	 0.9190	 0.6780
OO	 0.9150	 0.6800
P	 0.9020	 0.6790
PP	 0.9480	 0.6920
Pp	 0.2100	 0.2700
Q	 0.9750	 0.7240
QQ	 0.9930	 0.7270
R	 0.9900	 0.7320
S	 0.9510	 0.7070
T	 0.9340	 0.6840
U	 0.9060	 0.6540
V	 0.9880	 0.7270
W	 0.8430	 0.6230
X	 0.9540	 0.6940
Y	 0.9210	 0.6900
Z	 0.9010	 0.6690
a	 0.9330	 0.6950
b	 0.9690	 0.7170
c	 0.9310	 0.6280
d	 0.8850	 0.6070
e	 0.8800	 0.6430
f	 0.9380	 0.6720
g	 0.8410	 0.6190
h	 0.8680	 0.6110
i	 0.8050	 0.5890
j	 0.7220	 0.5490
k	 0.6950	 0.5510
l	 0.8080	 0.5910
m	 0.7860	 0.5650
n	 0.7660	 0.5710
o	 0.8600	 0.6310
p	 0.9210	 0.6650
q	 0.9480	 0.6630
r	 0.8200	 0.6080
s	 0.8710	 0.6130

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Chain	Atom inclusion	Q-score
t	 0.7660	 0.5580
u	 0.7890	 0.5840
v	 0.8530	 0.6020
w	 0.7590	 0.5740
x	 0.9070	 0.6430
y	 0.9740	 0.7030
z	 0.9260	 0.6750